

Relationship Between Augmented Reality Technology And Full Participation Environment

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Abstract

Communication is a necessity for humanity. In order to meet this requirement, people have always worked hard. Mankind has used technical knowledge to improve technology. This development of technology brings new communication environments and transforms individuals into individual users. Virtual reality technology, in which the reality is reproduced with the emergence of internet technology in particular, has added innovations to communication environments. The augmented reality technology that is produced surrounds the individual by making interactions with the real world and the virtual world that the individual is in. This technology, which has striking effects on the individual's everyday life, carries real life by transferring the individual to full participation.

Keywords: augmented reality, virtual reality, technology, techno copy, internet

Introduction

Communication is a necessity for humanity. Humans have worked non-stop to improve this necessity and spread it to every field of the social life. They have bought about the technology with technical information they have acquired. Humans have also developed and used it for their own advantage. However, the technology that has been improved to meet the main needs such as communication has also formed and transformed the humans. Humanity is changing every year, so the technology of the last year seems like it is a technical information that had been obtained many years ago. Every technical information that has been acquired gets bigger by being added to the previous one. Thus, the production of new technological devices and the contents made with them are happening at a high speed. The realization of the production and consumption at a high speed is making the destructive effects of capital transformation more clear. Technic is 'the information of obtaining and producing something' (Yengin, 2012:12). The production and consumption have been possible with the technological advancements which are dependent on technic, especially after the 2000's. This intertwinement has turned into a total unity and opened a way to the information era from which it is impossible to return back especially with the penetration of internet into the individual's life.

The decisiveness of technic is effecting the development of technology, and discarding all the circumstances that prevents improvement. Technic is trying out every way for the communication to improve, and take place in a much shorter time. In this context, technic is so cruel for the technology to develop itself, and make the consumer consume a lot. Writing was the first and the important invention in the context of technique's management. The existence of writing has provided today's and tomorrow's technology to exist. Writing is the cornerstone of technic, which is necessary for the development of technology. Harold Innis states in his book called 'Empire and Communications' how important changes writing can cause. To Innis, writing has reformed human history. The communication concept, under the guidance of writing, has caused empires to be founded or fallen down.

Especially after the Industrial Revolution, the technology which has started to develop quickly has accelerated the formal and contextual evolution of traditional media devices. The traditional media tools, which have internalized the one-way communication model that happens from the source to the target, have been embraced by individuals (Yengin D. And Bayrak T. 2017a). However, this

communication system did not satisfy the individual. The user's desire towards changing the content of the message has caused traditional media devices to be questioned, and led the users to think of alternatives to them. Right at this point, technologies called new media technologies have stepped in. New media technologies have emerged as an alternative to the traditional media technologies. The individual user who was continuously forced to use one-way communication now wants to be the source not the target, has the technical information and embraces the advantages at these Technologies in his life, caused new media technologies to develop with a speed that has never been seen before.

The most important element of the new media technology is the internet. Just like most technologies in their development stage, the internet was firstly designed for the army, too. However, it could not have resisted the user-based development so much, and so contributed to the beginning of the information age. Internet provides an environment for the producers to prepare new media technology contents. This environment differs from the real environment in meaning. It means 'hyperreal (virtual) environment'. In this environment where real objects are coded with numerical expressions, new media technology brings about a digital space. Individuals' new living space, digital space, is one of the most distinct products of the new media technology which has emerged after the traditional media period. The journey starting with bits in the internet technology, which is digital space's creator, is being examined by the researchers, and evaluated differently according to its qualities and quantities. Jan Van Dijk states that bits, which are the important part of the computer systems, are the most important point of the information system, and they form of the binary system, which consists of ones and zeros. The units called bits forms the basis of digital coding system. Dijk has designed a pyramid showing how bits compose the information. As can be understood from this pyramid, bits are the smallest building blocks of an information. Bits, which exist as meaningless units, form data by coming together. However, data still do not mean anything alone. In this context, it needs information from outside, and a processing period. The data starting to be formed with the processing of information turns into as information after some time. The steps of the pyramid Dijk has created are bits (a series of ones and zeros), data (images, writings, and other signs), information (the data that is commented on), knowledge (truth, effects), and wisdom (in-depth knowledge) (Dijk, 1999: 186).

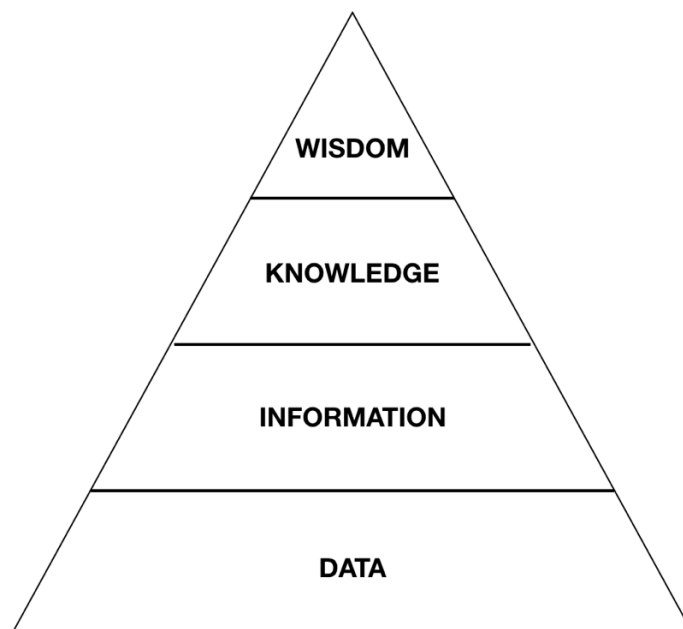


Image 1. Information Processing Pyramid (Source: Dijk, Jan Van, 1999: 186)

The formation of knowledge can be examined with the help of this pyramid which is very important in order to understand new media technologies. There are two important features in the information process in the pyramid. These features described as quality and quantity makes it clear how bits which are meaningless expressions turns into wisdom. Quality is the description of knowledge which becomes clear after bits have been processed with information. Quantity, on the

other hand, describes the elimination period that countless bits go through at the processing stage. According to this pyramid, one goes from the general to the specific while the processing stage of bits takes place from the bottom to the top, and as the information is being processed, the number of bits decreases (Yengin, 2014: 131).

Communication has attracted the interest of the researchers as a main necessity of the individuals that make up the society. In this context, the researchers who want to understand, and examine the effects of communication have developed several models in the light of the information they have acquired. These models also help us understand the effects of traditional, and new media technologies. As conclusion of the technological developments that have emerged from the past to our day, new communicational improvements have emerged. However, these communicational environments have not only changed the communication models of the society, but also developed a way of communication changing the opportunities to have more control over communicational processing. Environment is an important element in a process in which the communication period is involved. People who are studying in the communication field have, too, taken an interest in the conversation environments. Because communication environments mean 'the environments in which the producers, and consumers are conserving, interacting, and sharing information for the technology'. Philosophers like John Fiske, Marshall McLuhan, and Harold Innis are individuals who have been interested in the communication environments, and could have stated reliable information about them.

Fiske has drawn attention to the way how the process happens by describing the channel and the medium, which are two of the most important parts of the communication process. To Fiske, channels are physical tools from which the signals are transferred from, and the medium is a technical object which transforms the present message into a transmissible signal via a channel. According to Fiske, the new technology offers more opportunities to the user on controlling the communication process. In this context, the communicational environments on which the individual tries to be dominance are continuing to exist as an extension of the traditional communicational environments.

With his famous quote, "Medium is the message.", McLuhan tells us about how remarkable effects mediums can have on individual, who forms the society. To McLuhan, a medium which creates a communicational environment is itself a message alone. Humans create technology to make life easier. However, the mediums they create also evolve and form them. This way, humans become a technology addict, and always demand this technology. Communication is surrounding the world by means of the new technologies as the world is becoming a global village consequently. McLuhan is optimistic about the new technologies subject which improves the communication. He indicates that these technologies have useful effects on the individual, and society and these usages will increase if they are used correctly.

Innis, another important thinker, points out the importance of writing. Innis states that thought has become lighter after the invention of writing, and human history has come across a revision stage completely with the development of writing. The efficiency of writing is so dominant that it can cause an empire to fall down, a culture to fade away, a society to collapse or totally adverse effects. In this context, writing is maybe the most important technology. Both traditional media, and new media are evolving according to this determinism of writing.

New media technology allows this technology to preserve its entity, just like it holds the traditional media technology in itself. According to this, traditional media continues to exist using new media. However, what is prevalent now is new media. The old has become the new, and if this transformation comes to an end, the new will start to get old; that way, transformation will have to be constant. To Mattelart, new communicational environment is qualified as 'the new compasses of the information' (Mattelart, 2004:12). Besides this, Walter Ong studies the period when the writing has entered into the human life with a critical point of view. For Ong, the writing has to be named as 'new technology', and should be treated with the respect it deserves as it is the invention that has changed the human conscienciousness the most. The writing technology, which has taken the place of talking, helps one to comprehend what is actually happening, and what the literate people are conveying. In this sense, writing forms human nature directly or indirectly. Neil Postman is one of the most important philosophers who criticize the communicational environment. Postman states that it is a medium of the control mechanism, and with these mediums any information can be planted into the

minds of the audiences. Postman states that the new communicational mediums reform the understanding of the surveillance society, and these mediums have started to exist as new surveillance mediums (Postman,1986).

The fast development of technology constantly causes the inventions to get older, and the old ones get discarded. For Atabek, because of this reason, the borders that decide what is old or new are becoming harder to distinguish against the speed of the technological developments (Atabek, 2001: 14). Atabek draws attention to the difference between the analogue and the digital when talking about the transformation of the communicational environment. Communicational technologies have been included in the individual's life as analog. However, these technologies are becoming digital, and the border defining the new and the old is inside this difference. For Atabek, the analog technology is 'real', and the digital one is 'the technology which simulates the reality'. According to Atabek, real morals are being used as digitized morals, these new morals can easily be transformed and can be used many times and can easily move among the environments of the new technology.

New Media Principals

The new media, which improves the one-way communication that traditional media offers to the user individuals and centralizes the users who were once have been the target, is becoming more effective day by day. With his work about the new media technologies in which internet plays an important part, and which is called 'Communication Researc and Technology', Roland Rice describes these technologies as technologies that typically use microprocess or computer characteristics, give the opportunity to individuals to internet between each other or Technologies which makes this situation compulsory. In this context, new media Technologies with their speed accessibility and excellent storage capacities have the new information technologies that give an opportunity for new employment eras.

Dizard, with his work called 'Old Media, New Media' about the new communicational environment the new media holds in itself, makes the description 'the environments in which the individual user can reach the information and enter resources as the result of the rise in the interaction. According to this, the new technology is continuing in the direction the individual has decided on, and the old technology is continuing its existence by changing its form, but saving its core.

When we look at the studies done, we can see that, firstly, what can be counted as a new communication environment should be decided on in order to describe the new communication environment which is being emphasized on. The difficulty in deciding on the border between the old and new is the main cause of this situation. The most popular new communication environments are shown as internet, computer games, virtual reality technologies, etc. However, because the new ones are constantly entering these environments, the transformation of the traditional media also shows different points of views. For example, television channels that air digital videos and animation movies, the reality of which has been augmented that are shown in cinema, radio channels, the live shows of which can be listened to in a smartphone, and many more examples similar to these show that how the traditional media can work with the new media in harmony, and is literally struggling to survive. The old and new have been intertwined so much that during the production and obtaining period of a product, conceptual conflicts may happen so many times. For example, the text that has been written on a computer environment is in the new communicational environment. However, when this text is printed, it leaves the new media environment, and comes back to the old one. As can be seen, while the writing was the most advanced technology on the days it was first released, it is perceived quite ordinary nowadays. The thing that should not be missed out on at this point is that there has not been any changes in the core of the communication concept, and it is being attributed as new. The essence of the communication concept has not changed throughout the human history, and will stay that way.

New media associates medium with the fact that the environment concept offers, and is used in the transfer of the message from the source to the target, with all the communicational devices it holds in itself. In the new media where the loss of data is completely inhibited, the environment has quite an extensive cycle of information. The environment is transforming with the development of the technic, and advancement of the technology. However, during this transformation, new features are

constantly coming out. The environment is presenting the mediums in which the information roams to process the data obtained, and is being pushed to change with the force of the technology. Each new system always develops, and transforms when first released. However, the previous system resorts to conformity instead of dying out. Thus, every system affects, transforms, and reforms the system before itself. The systems that cannot adapt to this rarely gets discarded, but even in this situation, it encourages new productions with the information it holds in itself. In this sense, this quality the new media has is similar to the traditional one's, and the one who has attributed this quality to it is the human himself. Therefore, it is seen that this quality has settled in accordance with the demand of the people. Every new system needs some time to embrace it. However, each new system gets embraced in the end because it is a human invention after all. It just differs in the context of the duration of use and transformation into a new format.

The transformation process of the systems in the new media is being evaluated in the digital process. In his book 'The Language of New Media', Lev Manovich indicates that the digital process is established on the analogue system, which exists in the real life. To him, the communicational environment which is computer based is the adaptation of the message to the binary system. This system is a system made up of zeros and ones, and is used to create the virtual equivalent of everything real. From this point of view, everything in the virtual world is nothing but numbers; that is, the addition of zeros and ones is logical. The new communicational environment involves the digital representatives which have been added logically to the computer environment, and transmitted from the analogous system to the computer environment. One of the most important features of this environment is that the data are countable, and they become formally describable. The data that come out because of this become programmable by the producers for the consumers.

Digitalization, one of the most evident qualities of the new media concept, expresses the transmission of an object which has been subjected to the sampling, and scaling process. The objects which have turned digital is used by the individual user, and whatever his technical information level may be, he can recreate this object which has turned digital again and again. Especially the modularity feature that the internet technology offers supports this reproduction cycle. In this sense, another evident feature of the new media is the changeability concept. According to this, an object can confront us in many forms. In a digital context, the object which has a numerical representative never has a fixed form. In this context, the object in the numerical environment is in motion among the databases, and faces a change by a producer in its every move. Thus, thousands of products which have the same core are used by the individual users and exchanged with such an ease that even just the interface of a program designed before is changed, the final product is described as a newly produced product.

In contrary to the new communicational environment, the traditional communicational environment does not provide any opportunities for the individual user to move freely. These environments, which are closed to the production and feedback of the user, are deprived of a modular flexibility, and cannot stand out against the tempting factors the new media offers to the users. Besides this, processing digital data whether it is technical information or not, is easier and faster than analogous data for the individual user. As the access to the data processed in the new communication environment is quite easy, the individual user can redesign this new communication environment in accordance with his own purposes. In addition, the user can deliver his demands directly or indirectly to producers that create content and globalized in technical information. The remarkable thing which the user makes in the new communicational environment is interaction. With the help of the interaction concept, the individual who is passive in the analogue communication environment becomes active by acquiring individual characteristics in the digital environment. In this context, interaction concept is a really important factor used to help the user personalize the content. Thanks to interaction, which offers quite a lot features, the number of things users can do in new communication environment increase. Besides interaction, one of the most important features of the new communication environment is hypertextuality. It is when the texts intertwine, and create a special bond between each other. In this context, an individual user can obtain the intertwined texts by means of the connections. Meaning 'gigantic mountains of information', hypertext is in the position of being one of the highest points of the new media compared to the traditional media. Manovich approaches the hypertext concept by explaining it. To Manovich, hypertext has different contents such as audios, videos and

pictures besides the text, and in this context, hypertext is merely a text, and also is a concept the hypertext holds in itself.

There is a center conveying the message in the traditional communication environments. In these environments, in which a one-way communication model is applied, the center that distributes the processed data also has the power to direct the masses. Because the new communication environment has the quality of discarding this situation, it is being tried to be controlled. However, it is evident that this control cannot be provided as easily as in the traditional communication environment. Individual users who are in the new communication environment are not a homogeneous receiver audience as in the traditional ones. Because of this, since especially 2000's, media companies are intensively investing in the internet technology and revising the traditional communicational environments they own. The ones which have realized that the virtuality is the copy of the reality, are embracing the concept 'virtual' which means 'unreal' more and more with each passing day. Because virtuality offers individual users chances to interact with objects that are not real in its real habitat. And this is a big temptation source for the ones who want to have the power to control the masses. New media principals become important at this point. The reason for this is that with virtuality, one can isolate himself from the real world. Thanks to the virtuality, which means a completely different world, the individual user who disguises as someone quite different from how he really is in real life gets included in a fully engaged environment via the communicational environment he is in.

As can be realized after the confrontation of the new communication environment with the virtuality, now the 'new' concept emerged should be comprehended. Dennis McQuail indicates that digitalization has made some contributions to the 'new' concept. McQuail states that, digitalization causes the social control to decrease with the spreading of the internet, and this situation creates examples to the characteristics of the 'new' concept (McQuail, 2005: 86).

Table 1. New Communicational Environment Principals

	Roger Fidler	Lev Manovich	Martin Lister	Dennis McQuail
New Communicational Environment Principals	Unified Evolution	Numerical Representation	Digitality	Interactivity
	Metamorphosis	Modularity	Interactivity	Socialization
	Spread	Automation	Hypertextuality	Media Richness
	Continuation of Life	Changeability	Dispersion	Automation
	Opportunity & Necessity	Code Conversion	Virtuality	Happiness
	Late Embrace			Secrecy
				Individualization

(Reference: Yengin, 2012: 53)

In the context of new media principles, Fidler, Manovich, Lister and McQuail play a decisive role in the new communication environment. These four thinkers have drawn attention to the importance of the concept of interaction with the principles of new communication environment. According to these thinkers, the new communication environment is an environment in which the individual acquires the user identity and takes an active role in the interactive communication field. The new communication environments where the individual is active are examined under the headings of the basic terms digitality, interactivity, hypermetalism, virtuality and networking.

As the result of technology's spreading all over the world, it has become a necessity for the analogue technologies to be transferred to the digital environments. This transfer has been possible because of the computer technologies again. In this context, Rushkoff has stated that for something to be digital, it has to be described with numbers. (Rushkoff, 2010: 56) Manovich, mentions digitality, which is described as a numerical representative, is founded on coding, and by means of these codes, things can obtain a digital form. (Manovich, 2001: 27) In short, all the data in the digital system are represented by binary codes. Thanks to them, everything in the real life can be processed as a techno copy. The new media concept cannot be contemplated without interactivity. New communication environments, in which individuals are individual users, are formed with the existence of the interactivity concept. Interactivity concept transforms the individual user from being a passive individual into a completely active individual. This individual gets involved in the communication process, and can even produce things thanks to the interactivity. It allows the individuals to add contents to the present digital environment. Thus, technic is improving, old informations are being blended with the new ones and the information mountains continue to get bigger. With this concept, which is not seen in traditional communication environments people can have endless opportunities which the market offers and desired for them (Lister, 2009: 21). Thanks to the interactivity, digital content is being personalized and the participation of the new individual users is increasing.

The word 'hypertext', which derives from the prefix 'hyper', is used to mean 'extreme' or 'exaggeration', just like it is used to mean 'above' or 'beyond' (Whitehead, 2000:8). In this sense, hypertext is a digital text that connects to more than one text. Hypertext, which only consists of text in terms of content, can also exist coherently with the modular structures. Hypertext has a very flexible form. Because of this, individual user can easily produce things and reach the information he wishes via these texts. Hypermedia concept, which has emerged with the hypertext concept, forms when different contents such as pictures, audio files, videos and texts get together (Manovich, 2001: 38). Thanks to the hypertext, which is the sub-class of the hypermedia, it is possible to gather, share and keep the data up-to-date.

The user audience that interacts with the new media has completely different characteristics from the individuals that use the traditional communication environments. Because the individuals in the new communication environments have carried the supply-demand relation to a different phase by having the chance to intervene in the contents produced. In this context, the users of the new media are not a homogeneous audience, and refuse to have a limited number of contents. In this sense, target audience tends to choose its own messages by having the product title at the same time (Lister, 2009: 30-31). Network connection, which has come to life thanks to the internet technology, takes place according to the the supply and demand of the users of the new technology via the protocols. Thanks to the existence of these protocols, access to the new communication environments can be possible. Protocols such as 'ftp, tcp, http' make the network connection possible.

Turkish language Institution describes 'virtual' as a thing that has no place in reality and has been designed in the human mind'. In this sense, 'virtual' concept brings along the 'techno copy' concept. Virtual reality is the recreation of the real thing with numerical expressions. Individual interacts with the things he interacts in his real life. In the digital environment, however, because this interaction happens between virtual objects, this environment is called the virtual reality. An individual needs a few items to interact with the virtual reality. Because the display of the unreal thing needs the usage of a few devices which require electricity. These devices that have spread at the beginning of the 2000's are generally made of image titles, and in addition to that, sets consisting of devices that work coherently. However, just like in every technological device, these, too, are improving and transforming. The virtuality concept, which is developing in three categories called the virtual reality, the augmented reality and the mixed reality, creates a new communication environment in which the individual is completely focused.

Virtual Reality As Technology

New media technologies are constantly changing. The dominant effects of technic and the insistence of the consumer to consume make the constant and innovative production of the technology mandatory. The technology that has effects, which destroy and construct the society,

creates different communication environments for the individual users. The individuals, who find the opportunity to acquire different identities owing to these environments, continue living as digital natives according to Marc Prensky. Virtual reality technology has been offered to the individual user as the new communication environment where the new media has created. With this technology that promises to exchange the real environment that the individual is in with the virtual environment, the new media has entered into a quite different era.

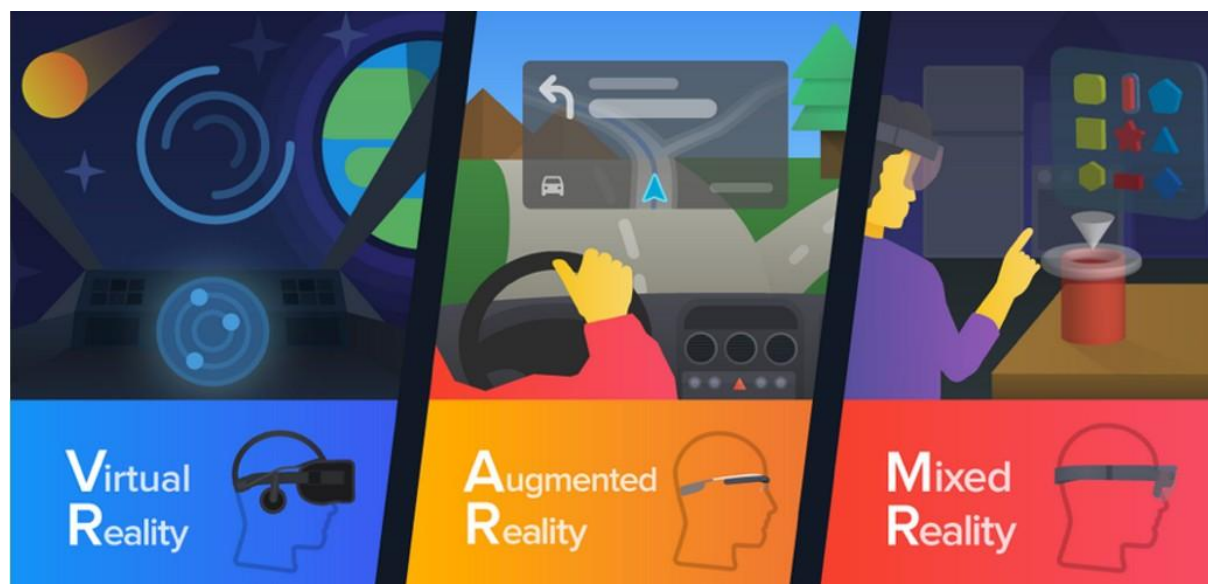


Image 2. The representation of the VR, AR, and MR

(Reference: <http://blog.intrepid.io/understanding-virtual-experiences-the-differences-between-vr-mr-and-ar>)

Virtual reality as a technology is studied under 3 main titles. These are the virtual reality, the augmented reality, and the mixed reality. Virtual reality isolates the individual user from the real world he is in completely. The virtual reality glasses, which work with the help of the vision helmet that is worn to the head, and the devices that work coherently with it, is the least costly products of the virtual reality technology. This technology that the game sector demands continue to develop. Augmented reality makes the real world the individual is in, and the virtual objects interact. Individual user is seeing virtual images in addition to the real world images with the augmented reality glasses he is wearing on his head. These glasses, which are generally being used in educational, architectural, and technical fields, have started to be used by producers. These devices that are much more expensive compared to the virtual reality glasses promise very practical solutions to the user in his daily life. Mixed reality is the last ring of the augmented reality technology and virtual reality. These glasses are devices that the virtual objects directly interact with the real objects. Individual user can make an unreal design real by making a real object and a virtual one interact. This technology that eases the work in several fields such as education, construction, military, and medicine is the most expensive technology in terms of individual user.

Simulation Theory

Simulation, which is one of the most important elements of the new media environments, forms the basis of the virtual reality technology. 'Simulation', which has derived from the Latin verb 'simulare', means 'imitation, doing something similar' in Turkish. David Lyon makes this description about the simulation concept: "Reproduction of computerized imagery via codes and imagery that have been developed." (Lyon, 2006: 236) In this sense, simulation is defined as the reproduction of the reality. Simulation is trying to form a reality effect. Simulation, which means an unreal object that

oppresses the reality perception in the individual user. Real and virtual are concepts that are completely opposite, but simulation removes this difference completely. Simulacra, which means ‘the truth’, is the operational reflection of the reality for Baudrillard.

Baudrillard indicates that simulation surrounds the individual’s life completely and seizes every field of life. For example, mass communication tools are trying to make the information they transfer via the broadcasts, and publications they make. In this context, the ‘reality’, which is already nothing but a copy, is being presented to the individuals by being created again and again. Everything humans interact with is nothing but a vision, and simulation produces everything the humans interact with. Thus, simulation takes the place of the reality.

The simulation theory Baudrillard has developed is the most extensive theory based on the simulation phenomenon. According to this theory, simulation is a hyper reality, and becomes more real than its core. Simulation, which has quite dangerous characteristics, tries to go beyond the object, and be the hyper reality behind the scheme (Baudrillard, 2016: 40).

Baudrillard indicates that simulacra are in close contact with the media. Both the old, and the new media are in need of simulacra to create contents. In this sense, the media is feeding the simulacra forming cycle, and by using the new and the traditional media technologies and consuming the new simulacra without waiting. That way, media reflects itself, and creates a world of its own to control the masses (Alemdar & Erdoğ an, 1998: 354).

Table 2: Baudrillard’s Simulation Stages

Stages	Type	Description
First stage	Meaning	Reality is created by representation
Second stage	Augmentation	Reality representatives (First stage) are augmented by the mechanical technologies
Third stage	Simulation	There is no connection between the reality & representative, but there is hyperrealism instead of these.

(Reference: Laughey, 2007: 149)

According to Baudrillard’s simulation theory, simulation has three stages. Meaning, which is the first, is the imitation of the reality and the simulation expresses masking the absence of the reality. Augmentation, which is the second, is the stage in which the reality representatives are augmented. Simulation, which is the third, steps in when the present signs do not represent the reality. In the world where these stages are active, technology is the simulation environment itself (Güngör, 2011: 172). Simulation theory forms a basis for the models created about reality’s being created again and again. Virtual reality technology, as a communicational environment in which the reality becomes constantly duplicable, uncovers results overlapping with the data the simulation theory puts forth.

Communication Environment in Augmented Reality Technology

Augmented reality technology continues to evolve as a new generation technology. This technology, which is in the new media technology class, consists of glasses that the user individual wears on his head. Unlike virtual reality technology, virtual joints are built into the actual image seen by the person in these glasses, which does not require any sensing or movement device. Thus, the person continues his daily life with virtual articulations added to his real life.



Image 3. Google Glasses, which are an augmented reality technology product
(Reference:

All virtual reality technologies, including the augmented reality technologies, use the advantage of the image that is perceived as realistic by the human brain because of the natural flaws in the human eye. These flaws that create eye illusions cause the image that goes to the human mind to encounter perceptual refraction. Virtual reality technology which has that much critical importance perceptually puts the individual user into three different environments. These environments are partly, full, and multiple participation environments.

Partly Participation Environments: They are environments in which a few physical techno copy objects are used together. The production purpose of a technology that provides a partly participation environment is to prevent the isolation of the individual user from the real world completely. The best example for these technologies that form these environments are flight simulators. These simulators that are the exact copy of a real airplane cockpit are used by individual users for educational purposes without having need to any wearable devices.

Full Participation Environments: These are also known as the computer supported virtual environments. This environment describes the environment that emerges as a consequence of the virtual reality glasses' surrounding of the individual completely. Appealing to all senses of the user individual with the full participation environment is aimed. These environments that are related to all the virtual reality technologies need the user to interact with the virtual objects. There are also several motion and perception devices designed for the full participation environment where the glasses called HMD(Head Mounted Display), into which a helmet or image apparatus are placed.

Multi Participation Environments: These are environments in which individuals who use the virtual technology interact with each other. The main design-related goal of the multi participation environments, which are the developed version of the full participation environments, is the exchange of information between multi disciplines such as medicine, architecture, engineering, and art, and the communication of the individual users with full participation. All of the participation environments are communicational environments that the new media technologies create, and the internet technology gets involved in. This technology that is based on Web 2.0 technology, and has entered a new age with the Web 3.0 technology is improving comprehensively with the participation of the artificial intelligence. In this context, all the artificial intelligence technologies can be described with full participation. Because the image that the individual user sees, real or not, embraces the individual. This technology that can be supported with devices that can talk to all the senses of the individual, such as the tactual sense device, makes the techno copy of an unreal object interact with the individual. The moment the virtual images, whose framing speed is quite high, intertwine with the real images, the brain embraces the new image by updating the total image it perceives as real. Augmented reality technology, too, continues to develop as a technology that aims this embracement.

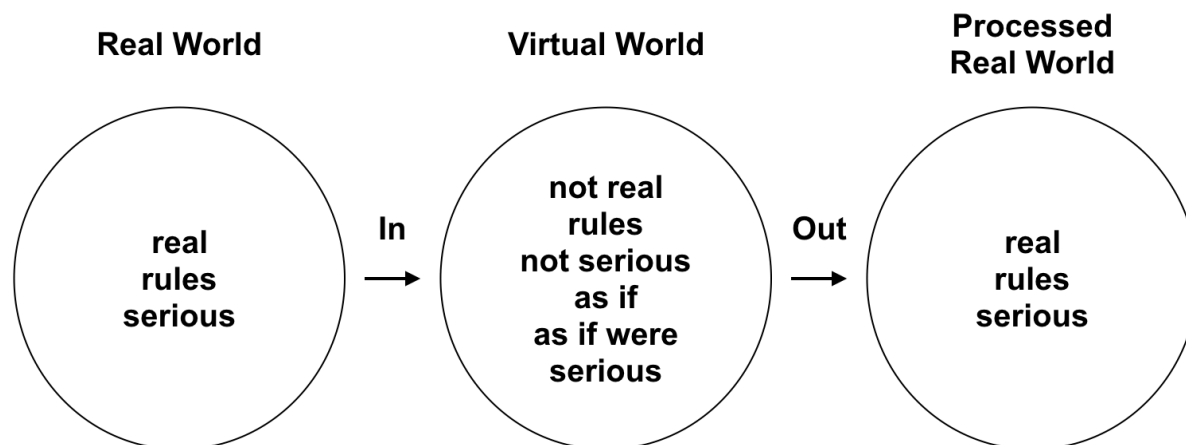


Image 4. The Real World, The Virtual World and The Refined Real World Charts (Reference: Yengin, D. and Bayrak T. (2017b) Virtual Reality: VR. Istanbul: Der Publications

This model indicates that the communicational process that is in the virtual reality technology is processed with the simulacra. In this context, continuity in the communication process has become a necessity in the communicational process. In this communication environment where the interaction is the highest, the real world transforms by intertwining with the virtual world. Because the real world is being processed by being reformed again with the virtual reality, and the individual user continues living with the effects of the virtual reality that he has been exposed to. The individual switches to a life phase that has no turning back in the processed real world. The effects of this world are both destructive and constructive. Some disorders which are also called 'digital disorders' stand out as the problems of the processed real world. Humans are sharing their processed real world with their inner circle, and feed the transformation by introducing the unprocessed real worlds to the virtual reality as it is a social creature that can continue living in the society owing to interactional communication.

Conclusion

The importance of the communication for the humanity has shown itself throughout history. Humans have worked hard to communicate in a shorter time, and create simple interfaced communicational environments adorned in complicated technics. Humans that have realized the communication mediums have come to the point where it is possible to reach to the other end of the world via these mediums. Humans that use the advantages of the writing technology that they own have eased the weight of their thoughts, and prevented the information they have acquired from being forgotten. The transmission of information from generation to generation without being forgotten has opened the doors of the information age in which the internet technology reigns. Human beings are so connected to the necessity of the communication that they kind of have accepted the emergence, leadership, and surrounding its environment of it. Audiences have been governed with devices that carry the characteristics of a message, wars have taken place, and social affairs have started and finished with these devices. Hence, human history has recorded the section which has the power to direct the communication devices.

Communicational mediums, which have caused the empires to fall down or be founded, have the same effects for today's society, too. The reason for this is that the communicational mediums have the characteristics of being based on the destructive nature of the human. Communicational mediums, which are open to all kinds of manipulations, continue its existence by being open to destructive and constructive factors. The controlling of them is quite hard. In this context, traditional and new media mediums differ from each other. Traditional media has emerged in the years following the invention of the electricity. Traditional media, which includes mediums such as television, newspaper, magazines, radios, cinema, has a one-way communication model. The one-way model of the communication in these mediums that the source and target cannot directly make an interaction has made it possible to make broadcasts and publications with a view to directing the masses with ways like propaganda. The new media that has emerged with the discovery of the internet technology

differs from the traditional media, in terms of its characteristics. Internet has given humans the opportunity to direct the communication period as an individual user. Human, who has escaped from being only at the position of the target gets included in the gigantic network by processing the data he has acquired with information.

The internet, the last product of the necessity for internet, is the product of the technical information that has been acquired in so many years. Technic, as the information of acquiring and producing something, has an unstable form. Technic, which grows with the contribution of the humans as a result of the researches they do, is a factor that creates suppression over the humanity. Technic, which continuously encourage humans to produce and spread data that will keep the production and consumption at the highest level. In this context, it is not hard to predict with which purpose the technology has been produced, and the future of the technology. Technology is transforming people as a result of this oppressive behaviour of the technic. The individuals that disguise as individual users continue living as an addict of the technology they have produced. Because a turning back to a society model that does not have internet technology is impossible, and humans are addicted to the internet just like they are to all the other factors that facilities their lives. All the developments that are and will be done technologically are based on the internet technology. However, the communication factor that is the fundamental of all these developments is the main factor in the oppressive behaviour of the technic.

The development of the communication factor that much via technology gives both the producer and consumer to have a range full of different alternatives. Communication mediums, which have emerged as traditional media mediums in the beginning have turned into an old structure in a short time with the development of the technic. The dominance of the traditional media has ended with the emergence of the internet and Web 2.0 technology. With the internet technology, which is also called 'the information age', the new media technologies have developed in a very short time. While the contents that can be fit into portable devices, such as smartphones, carry the qualities of this media does not have within itself, just like it carries all the advantages the traditional media offers. For example, with a smartphone, the individual user can read digital newspaper, watch movies, listen to the radio, and watch live television broadcasts. In addition to all of these, the individual user can connect to the internet and play games. With countless additions, an individual user is transforming with the gigantic information mountains that fit into his pocket and actualizes the digital as a part of his life.

Virtual technology is reproducing the real life universe in which the individual is in the information age in which the internet is active. In the virtual reality universe which creates a techno copy, the individual can be completely be isolated from the reality. Virtual reality, which provides the environment that is defined as the full participation environment is home to a hyper real world which the individual is completely surrounded, and appeals to all the senses of the individual, and has the ability to isolate him from the real world. In this context, all the devices that have been developed under the name 'Virtual Reality Technology' have been developed with this aim. Augmented reality technology, which is one of the three different virtual reality technologies, is a new kind of technology that matches the real image with the virtual one. The individual matches the virtual images that a mini image device, which is equivalent to a single window of a standart glasses, reflect with the real image. Looking at the development of the technology, it is a fact that the days these expensive glasses that are user-based will get cheaper, and enter all the houses are not so far away.

Humans use technology to reduce the problems they encounter in their daily life to the least, and acquire material and spiritual advantages. Thanks to these features that are the biggest advantages of the virtual reality technology, so many fields such as education, medicine, and consumption tend to use this technology. These fields, in which the visuality is so important, calculates the time and the money. Because the consumption society demands these fields always be productive. These fields that aim to produce more by saving time and money, and so much work, use the virtual reality technology for their own purposes. For example, with the help of the virtual reality technology, the architect who sees the techno copy version of a building, which has been designed fast, can start constructing rightaway, a medicine student can take detailed education on the techno copy cadaver, an engineer can make repairments or designs quickly by reaching to the techno copies

of the machine parts he is interested in. This technology that has destructive effects besides its constructive effects can also be used for the actions that are against the norms of the society. Therefore, producers denote that this technology is close to malwares. However, the time will show how much the malwares and misuses can be prohibited.

Virtual reality technology carries the individual user into the full participation environment. The individual, who is completely surrounded by the virtual image, carries his interaction with the real world to the virtual world. With the augmented reality technology, individual user communicates with full-participation. The individual who interacts the virtual images he has seen with the real objects, and thus, communicates himself gets included in a processed real life. The processed world, in which there are real and unreal objects, gets ready for use by being in the content, which has been designed according to the individual user's purpose. In this context, the augmented reality glasses are in the limelight as a technology that has included the individual into the processed real world.

References

- [1] Alemdar, K. & Erdoğan, İ. (1998) Başlangıcından Günümüze İletişim Kuram ve Araştırmaları. Ankara: Savaş Yayınları.
- [2] Atabek, Ü. (2001) İletişim ve Teknoloji Yeni Olanaklar – Yeni Sorunlar. Ankara: Seçkin Yayınları.
- [3] Baudrillard J. (2016) Simülakrlar ve Simülasyon. Ankara: Doğu Batı Yayınları.
- [4] Dijk, J, V. (1999) Ağ Toplumunu. İstanbul: Kafka.
- [5] Dizard, W, P. (2000) Old Media New Media. New York: Longman Inc.
- [6] Fiske, J. (2014) İletişim Çalışmalarına Giriş. Ankara: Pharmakon.
- [7] Güngör N. (2013) İletişim Kuramlar ve Yaklaşımlar. Ankara: Siyasal Kitabevi.
- [8] Lister, M. ve Diğerleri (2009) New Media: A Critical Introduction. London: Routledge.
- [9] Lyon, D. (2006) Günlük Hayatı Kontrol Etmek: Gözetlenen Toplum. İstanbul: Kalkedon Yayınları.
- [10] Manovich, L. (2001) The Language of New Media. London: The MIT Press.
- [11] Mattelart, A. (2004) Bilgi Toplumunun Tarihi. İstanbul: İletişim Yayınları.
- [12] McQuail, D. (2005) McQuail's Mass Communication Theory. London: Sage Publications.
- [13] Postman, N. (1986) Amusing Ourselves to Death: Public Discourse in The Age of Show Business. NewYork: Penguin Books.
- [14] Rushkoff, D. (2010) Program or Be Programmed: Ten Commands for a Digital Age. Berkeley: Soft Skull Press.
- [15] Whitehead, J. (2000) As We Do Write: Hyper-terms for Hypertext. ACM SIGWEB Newsletter 9 (2-3): 8-18. Wichary, M. Guidebook: Graphical User Interface Gallery.
- [16] Yengin, D. (2012) Yeni Medya Ve... İstanbul: Anahtar Yayınları.
- [17] Yengin, D. (2014) Yeni Medya ve Dokunmatik Toplum. İstanbul: Derin Yayınları.
- [18] Yengin, D. & Bayrak T. (2017b) Sanal Gerçeklik: VR. İstanbul: Der Yayınları.
- [19] Yengin, D. & Bayrak T. (2017a). Sosyal Medyada Dijital Kamuoyu. The Turkish Online Journal of Design, Art and Communication – TOJDAC April 2017 Volume 7 Issue 2.