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# METAVERSE DIGITAL ENVIRONMENTS: PATTERNS, NEW INSIGHTS, BEHAVIORS AND DIGITAL MEDIA

**Dr. Youcef Brahimi**[1]

[1]University of Algiers 3, Laboratory of media legislation and professional ethics in Algeria (Algeria).

**The E-mail Author: brahimi.youcef@univ-alger3.dz**

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**Abstract:**

In this research paper , we are dealing with the nature of the new directions which global companies are specializing in the field of media and communication technologies rely on to invest in this space (Metaverse) in the future, as it is newly born and developing . Knowing that, investing in such virtual (hypothetical) spaces is an adventure that can be exemplified and realized into reality as it can be failed. On this basis, these recent investment initiatives by digital giants remain dependent on the popularity and the ability to convince of today's societies, considering that this virtual communication environment is completely different from real reality on the side. On the other side the process of introducing this new idea (Metaverse) for the first time to present generations, is intended for digital pioneers to draw a new competitive map that is based on large scale pragmatic ambitions that are endless and transcend physical reality. However, in order to achieve the varying needs and increasing new goals of contemporary societies, this is for the delivery of services that are beyond borders, temporal and geographical. On the other hand, the study will also touch on the scale of the huge financial covers allocated by these major digital companies to control this new world (Metaverse) based on a very complex communication ecosystem. In addition, this research study also seeks to present the most important jurisprudence for the establishment of digital environments suitable for this new birth (Metaverse). By highlighting the role of the world's leading digital agencies in designing of smart environments that are different to physical reality.

**Keywords:** Metaverse, Digital Spaces, Digital Trends, Digital Investment, Technology.

## 1. Introduction:

From the end of the 20th century until the 3rd millennium, the Internet is one of the main pillars of propelling technological mobility. It allowed for a new dose of society's dynamism to enter the world of modern information and communication technologies and work with them across different areas of life, in order to overcome the various difficulties that members of society seemed impossible to overcome. Exceeding geographical and temporal boundaries, telecommunications operations, the advent of smartphones that currently represent the digital connectivity of the five continents due to their complex and superior specifications.

So, with the widespread proliferation of modern technologies that have given rise over time to so-called virtual environments as a future alternative to physical reality, this is for the purpose of integrating future generations into such parallel environments as essential pillars for adapting to technology outputs from smartphones, Electronic panels, VR headphones and glasses that are the main pillar of travel in virtual worlds that are the foundation of the world of (Metaveres) that digital giants rely on to be the space to be embodied and an alternative to real reality.

Therefore, these leading digital companies are working hard to develop virtual environments in terms of quality and shape to reach economic goals. Allocate billions of dollars to invest in such virtual worlds But this cannot be achieved without the re-modernization of its digital media in order to create an interactive dynamic among the members of today's global societies within these extended virtual worlds, multiplexed from extended to augmented to mixed reality, which is an alternative to physical reality at the level of (Metaveres).

These efforts, in the context of modernizing and creating digital environments that are alternative to real reality, have led technologists to think about ways in which such emerging projects must fit into today's interests, behaviours and reactions to such spaces as combine concrete truth with scientific fiction. To become convinced that these virtual worlds are the best way to meet its different requirements.

In order to persuade modern humans to take symbolic figures (Les Avatars) in extended and different digital spaces at the level of Metavares, they are of an interactive character similar to physical reality in terms of functions and reactionary nutrition. The owners of these projects require the provision of

intelligent technologies with high interactive dimension and performance that are hectic, accurate and rewarding.

Accordingly, in order to understand the general perception of the problem, a number of questions should be answered. These are:

- What patterns of extended reality underpin Metaveres?
- What are the most important interactive portable technologies on which these patterns of environments depend at the Metaveres level?
- What is the importance of modern human reactions to metaphors?
- What are the most important digital media relies on digital environments that extend access to Metaveres?

**I. Extended Reality (XR):**

The term "extended reality" originated from the virtual reality series of the researcher **(MilgrametKishino),** where this most updated series included more new branches of alternative reality and learning about the physical facts also called mixed reality. As well as future holograms such as: digital objects that appear privileged **(Star Trek)(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 06)**.

On the other hand, the diverse categories within the chain allow the user to experiment with Metaveres through different facts that are alternative across both the physical and digital world **(Minna Pakanen, 2022, p. 40 )** .

Among these patterns of extended reality that have attracted the interest of many academic researchers and specialists in the digital industry based on modern metaphysics, we find:

**1- (Virtual reality) :**

This type of reality has outstanding features in terms of fully synthetic or synthetic perspectives. Commercial Virtual Reality headphones provide the use of interaction techniques in a normal manner, including head tracking or touchable controls **(Jonathan W. Kelly, 2021 , pp. 687-694) .**

In such a situation, users are positioned in complete digital environments and interact with digital objects through the use of interaction techniques. In this context, Virtual Reality is defined as being ultimately further from the reality in the VR series. This means that users with VR headphones are required to give

total attention to digital environments, thus separating them from tangible reality **(Maximalian Speicher, 2019, pp. 1-15)**.

Moreover, it can be said that users at the Metaveres level will produce content in digital twins. At present, virtual commercial spaces have enabled users to make contents such as: the art of Virtual painting.**(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 06)**

In the other hand, user cost exploration can be reached through user interaction with virtual entities in the virtual environment, for example: modifying the formation of a virtual object and creating new art objects, where several users in such digital environments can collaborate with any other user in real time (actual). This occurs on the basis of precisely defined requirements in digital environments: common sense in space, common sense in attendance, common sense in time (i.e. real-time interaction), communication method (gestures, text, sound, etc.). And the means of sharing information and controlling things **(S. Singhal, 1999).**

It is important to note users' control of the virtual world and this means that subgroups in Metaveres should receive the corresponding information as seen by other users. Users can also interact with any user in a consistent and real-time manner.

In other words, how users should know virtual objects and multi-user collaboration in shared virtual spaces will become critical factors.

Taking into account the recent phase of the Metaveres evolution, users must simultaneously place themselves within the common virtual space and with any additions or interactions related to the natural (physical) aspect exclusively: augmented reality, mixed reality.

Hence, it can be said that the essential building block of Metaveres passes through the creation of several common virtual spaces which must be combined with simultaneous actions among all beings. Among them: avatars representing their users and their interactions as an example: avatars vs objects, object vs Object, avatar vs avatar....Etc.

In this context, all participation in virtual environments must be simultaneous and reflective of the dynamic situation and events in virtual spaces **(Huaiyu Liu, 2012).**

Nevertheless, managing and synchronizing large-scale dynamic situations and events is a major challenge, especially when we think of an unlimited number of simultaneous users working collectively within virtual objects and interacting with each other without reasonable delay in response time, as response time can adversely affect the user's experiences **(ALL One Needs to know about A Metaverse : A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 06)**

**2- (Augmented Reality) :**

This reality differs from the rest of other worlds in terms of going beyond the only virtual environments. The augmented reality of its core features is to provide alternative experiences to users in their physical surroundings, focusing on strengthening our physical world. **(Takuji Narumi, pp. 93-102)** .

Thus, computer-generated virtual contents can be presented through various cognitive information channels, for example: sound, visuals and touch **( J. LaViola et al, 2017).**

On the other hand, the first generation of the systems enhanced reality frameworks, which only takes into account visual improvement. It aims to organize and display composite digital overlays over our physical surroundings, as illustrated in the very early work of the early 1990s, where the huge view through the display is not considered portable and requires users to interact with two-dimensional texts, destinations and concrete control tools in a stable position.

In addition, important research efforts have been undertaken to access such augmented reality in order to improve user interaction and digital entities in this augmented reality. It is therefore important to note that these digital entities may be (Metaveres) overlaying in front of the user's physical surroundings. These entities must therefore allow users to integrate simultaneous actions similar to real reality.

Thus, ensuring that users interact in a transparent and light manner with such digital entities in augmented reality is one of the main challenges, connecting users in the physical world with (Metaveres). **(ALL One Needs to know about A Metaverse : A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda , 2021, p. 07).**

In this area, the techniques of free interaction as exemplified by most science fiction films such as(**Minority report)** (https:

//www.imdb.com/title/tt0181689/)Such a film shows the initiative and the readiness of destinations to use for user interaction in the enhanced world **(Lik-Hang Lee, 2018).** In addition, as is known, there are techniques for free interaction called **(Jeffrey S. Pierce, 1999)(voodoo dolls).**

It serves as a system solution, where users can use hands to choose and work on virtual contents by disk gestures.

This is where there is another free interaction technique called (**Homer)** It is another type of user interaction solution that provides the path to release rays from the user's virtual hand, referring to augmented reality objects that are identified, selected and subsequently processed **( Title of the article: ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda , 2021, p. 07).**

Furthermore, Virtual Reality will be placed everywhere in our life environments for example: placing explanatory comments in an unfamiliar location and identifying objects managed (moved) by user contexts **(Lik – Hang Lee, 2007**).

That is why it can be considered that (Metaveres) under augmented reality will lead to integration with our civilized environment, as digital entities will look in a clear and tangible way above many physical objects in civilized areas **ALL One Needs to know about A Metaverse : A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 7).** In other words, users in augmented reality work in actual environments and automatically communicate with their virtual counterparts at the (Metaveres) level**(Tobias Langlotz, 2011, pp. 623-630).**

To arrive at this station will require considerable efforts in detection and tracking techniques to set the virtual contents displayed with the matching mode in the real environment **(B. Macintyre, 2000, p. 85.88) ,** In this context it is considered a roaming machine (Touring Machine) The first research model to allow users to experiment with outdoor augmented reality is comprised of computing devices and a global positioning system module **(Global Positioning System- GPS-)** Loaded on a backpack as well as an overhead worn display that includes navigation information on the map. **(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 07).**

What's more, the user with the roaming machine can interact with the augmented reality map through a sensitive surface to touch the hand and pen **(A hand-heldtouch-sensitive surface and a Stylus.( (Steven K.Feiner, 1997).**

As augmented reality has seen considerable interest from global companies specializing in smart information and communication technologies. This has led to the introduction of modern earphones dedicated to such realities on which significant improvements have been made, including user mobility. In this case, the user can receive acoustic or acoustic feedback signals that refer to enhanced entities through these augmented reality light earphones. But in contrast, other sensory dimensions such as smell, touch, taste remain elusive. **(lik-Hang Lee, 2018).**

Here it should be noted that VR headphones are not the only options for accessing contents found in (Metaveres). When we look at the current state of augmented reality developments, we can connect augmented reality overlays and even digital entities of (Metaveres) across different devices including but not limited to augmented reality headphones **(lik-Hang Lee P. H.-2.-H.-Y.-P., 2019, pp. 1-10)**as well as handheld devices, **(Philipe Wacker, 2020)**

Ceiling projectors **(Chun Xie, 2016),** Table surfaces (Tabletops) and so on

**(Joan Sol Roo, 2017).** However, augmented reality headphones have great improvements compared to other methods in terms of changing user interest and running users' hands, as users first have to change their interests between physical environments and digital content to other types of augmented reality devices. **(Isha Chaturvedi, pp. 625-636).**

Conversely, augmented reality headphones allow the overlays of this reality to be displayed before the user's eyes **(Ting Zhang, 2016)**,Also, hands will not be operated via concrete devices, as computational units and displays are installed on users' heads. Thus, such enhancements enable users with augmented reality headphones to seamlessly experience (Metaveres) via augmented reality lenses.

**3- (Mixed Reality) :**

In the field of hypothetical truth, researchers consider that there is no common definition of fact or mixed reality, since it is difficult to find a common term that describes the alternative reality that falls between two contradictory terms: augmented truth and hypothetical truth, **(FILES, 2021 , p. 07).**Nevertheless, these multiple different definitions can be summarized in six

practical definitions **(Maximilian Speicher, 2019).** Including the traditional concept of mixed truth in the middle space of the virtual truth series **(P. Milgram, 1994, pp. 1321-1329)**.

Accordingly, these six definitions are as follows:

In this context, it can be said that the term Mixed Reality is only a synonym for the term augmented reality **(Pedro Lopes, 2018).**whereas the term mixed reality is also a kind of collaboration.**(Pedro Lopes, Sijing You , Alexandra Ion , Patrick Baudisch, 2018, pp. 1-13).** The term mixed reality is also considered to be that term that combines augmented reality with virtual reality.**(Masaya Ohta**) Others consider it to be aligned with environments

**(Joan Sol Roo R. G., 2017, pp. 1459-1470)**.While some define it as the strongest version of augmented reality **(Ya-Ting Yue, pp. 427-436)**Accordingly, it can be argued that these earlier definitions appear to be relevant to the term mixed truth, as the research family considers that the mixed truth lies between reinforced truth and hypothetical fact that allows user interaction with virtual entities in physical environments. It is worth noting, that mixed truth organisms are supported by a strong ability to understand the environment or circumstantial awareness to be able to work with other realistic organisms in multiple physical environments. Example: A physical screwdriver can fit a digital entity screw via slotted heads in mixed reality, displaying important interoperability privacy Between Physical and Digital Entities **(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 07).**In contrast, current applications in augmented reality usually simply display information accumulated in physical environments without taking into account such interoperability**(Lik-Hang Lee, 2018)(Interoperability)**

On the other hand, mixed reality is the strongest version of augmented reality according to a large number of research articles that establish the most interconnected and collaborative relationships between physical space and user interaction and virtual entities **(lik-Hang Lee P. H., 2018)(Laura Malinverni, 2001, pp. 5132-5144)(Aaron L Gardony, p. 1131).**

Although research studies are not capable of achieving the mixed reality, they can be seen as a starting point for metaphores. There are some characteristics associated with the above-mentioned six operational definitions, which are generally common to metaphores and mixed reality. Thus, it can be said that with

digital twins, metaphores have begun to communicate with the physical world. **(Micheal W. Grieves, 2017 )**in this context, the user began to create content at the level of digital twins **(Viljoen, 2020)(Jens Muller, pp. 1245-1249)**

Accordingly, digitally generated content can be reflected in physical environments, while users can predict such digital objects that fuse with our physical surroundings across space and time **(David Lindlbauer, 2018, pp. 1-13 ).**

Furthermore, researchers consider that current models of mixed truth include some specific objectives such as following up on realistic scenes **(Cha Lee, 2013, pp. 547-556)**And bring or bring scenes to existence **(Antoine Lassagne, 2018, pp. 119-127).** As well as the establishment of a physical space for sympathy.**(Martijn J.L. Kors, 2016, pp. 91-104).**

Elaborate, these goals can be seen as aligning with metaphores that recommend the multiplicity of virtual worlds that operate in an integrated manner with each other. **(Micheal W. Grieves, 2017 ).**

**II. Mobile Input Techniques in the Metaverse :**

These technologies are very important in the user's interaction with digital entities in the real world, and these technologies are also essential in the last station of (Metaveres) where the connection between the real world and the digital twins of (Metaveres) will be connected both.

In other words, all users in the physical world can work with avatars and virtual objects found in both (Metaveres) and mixed reality **(Mixed Reality).**In physical environments, this means that both physical and virtual worlds constantly affect each other. Thus, it is necessary to enable users to interact with digital objects absolutely anywhere.

Through this, the majority of current metaphors allow only user interactions with the keyboard and dual mice, as they cannot accurately reflect the movements of the avatar body **(Haihan Duan, 2021 ).** For example, huge keyboards and a mouse cannot be designed for mobile user interaction and thus strengthen users to maintain static situations such as: seating. **(Lik-Hang Lee, 2018).**

On the other hand, although free interaction is characterized by intuitiveness thanks to exposed processes (zero hands) and more marking and control of objects **(Zhi Han Lim, 2019)**.

In contrast, most manual interactions depend on computer vision techniques, where accurate and real recognition of free interaction is technically required, so that the most basic reference in the atmosphere requires sufficient computational resources.**(Lik-Hang Lee, 2018).**

Moreover, insufficient computational resources can cause delays in the user's actions and thus deteriorate in their experience **(Lik-Hang Lee T. B., 2020).**

In this context, part of the computer vision is based on interaction techniques, so we find the research family looking extensively to diversify input methods to support the user's complex interaction including optical **(Aakar Gupta, 2016),**Inertial measurement unit **(Yizheng Gu, 2019)(Inertial Measurement Unit-driven)** As well as infrared thermoelectric radiation **(Takuji Narumi) (Pyro Electric Infrared)** electromagnetic **(Farshid Salemi Parizi, 2019)**capacity, **(Yang Zhang, 2019)**User interactions via inertial measurement unit **(Yizheng Gu, 2019)**.

Such alternative methods can capture the user's activities and thus interact with digital entities via (Metaveres) **(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 9).**

Besides, mobile input techniques enable users themselves to become more convenient and ready to use the so-called interaction interface: **body user interaction (Lik-Hang Lee P. H., 2018).** An example is: a device (ActiTouch)

It is a touchscreen computer that is available on a user's forearm accessory interface. **(Yang Zhang, 2019).**

In addition, the electrodes in this above-mentioned device revolve around the user's body within the wide input interfaces, suggesting that the user can eavesdrop (or press) on their body to communicate with the actors across the various digital entities in (Metasveres) (**ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 9**).

Moreover, there is another similar technology that has contributed to the enrichment of the (**set of input commands)** So that it enabled users to interact with the (Icons) Lists and other digital objects such as augmented reality overlay around the user's arm **(Cheng Zhang, 2016).**

On the other hand, such physical interactions can be used as a solution to personal interactions that allow social contact (via touch) remotely **(Social touchremotely) (Taku Hachisu, 2016)(Kenji Suzuki, 2016).** In this framework, such interaction with the user's body can enrich communication between the users of the slate **(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 09).**

On the other hand, the latest technologies on physical interaction show a trend towards decreasing the size of devices ranging from palm area to fingertips **(Pui Chung Wong, 2018).**

Thus, the user's interaction becomes more unremarkable than the finger-to-arm as mentioned above. However, the search for alternative entry methods does not mean that technology-based computer visibility is not applicable. Thus, the joint use of alternative input methods and computer vision-based techniques can keep both intuition and ability to deal with time sensitivity or complex user input **(lik-Hang Lee P. H., 2018).** For example: computer vision of solutions based on complementary sensor business **(Sensors) (InertialMeasurement Unit-driven).** The computer vision-based technique determines the relative attitude of the user's hands to virtual objects in the air, while **(Sensors)** allow the inertial measurement unit precise and controlled treatment of virtual objects **(Yizheng Gu C. Y., 2019).**

Instead of connecting sensors to our bodies, other alternatives are seen as digital fabric, and the digital fabric is integrated with new materials (hardware) and conductive threads within the usual fabrics that support the user's interactions with 2D and 3D interfaces. Research models such as: **(Konstantin Klamka, 2018) (David Dobbelstein, 2017) (Pocket Thumb).** Convert our clothes inside user interfaces with digital entities in mixed reality**.**

In this context, it is considered a model **(Pocket Thumb)** but it's a smart fabric at the front of the front pocket of the trousers. In this case users can exert pressure and touches on fabrics that l ead to the user's interaction (David Dobbelstein, 2017)As an example: stabilizing the indicator **(cursor)** while defining tasks with 3D virtual objects in mixed reality. Also, for the **(ARCord)** model, which is a fabric based on a coat connector rope (jacket).In this context, users can rub the cord to make the choice of regulation and broadcast radiation on virtual objects in different virtual environments **(Konstantin Klamka, 2018)**

What is remarkable is that the modern information and communication sector's technology giants are doing everything they can to invest in such new spaces to strengthen the next generation of mobile users' input.

In the same area, for example, (Google) Launch of Jacquard Project **(Ivan Poupyrev, 2016) (Jacquard Project)** through which it seeks to produce smart fabric at prices that are accessible to all and widely available.

Thus, smart fabric can be combined with our daily clothes such as coats and trousers to support the user everywhere and in time. Nevertheless, due to limited space, not all patterns of mobile phone input can be discussed. The research group therefore seeks to find interfaces that are less noticeable, more natural, leaner and more accurate for mobile phone inputs and alternative models of **(Extension reality).** An example is: **(Electroencephalography)** and **(Electromyography)(Kirill A. Shatilov, 2021, p. 1.4).**

**III. New human visions of (Metaveres) via mobile headphones:** First of all, it should be considered that mobile headphones have key features, including: matching perspectives between physical and virtual reality and user mobility, so that these mobile headphones can be considered as an emerging channel for viewing virtual content in several places **(Valentin Schwind, pp. 111-118).**

In this regard, Virtual Reality headphones will isolate real users from physical realities, and also pose a risk to their capabilities in public spaces**)Emily Dao(2021 ،**

In this headline of the study, we will address the latest augmented and mixed reality headphones geared towards integrating virtual contents into real environments.

Currently, the user's access to (Metaveres) can be restricted by a limited field of view at the level of augmented reality and mobile headphones for Mixed Reality, where a narrow field of view can negatively affect the user experience, ease of use, as well as the execution of the task perfectly **(Isha Chaturvedi F. H., 2019, pp. 625-636.)-(Arthur, 1996).**

Moreover, as is usually the case, the mobile headphones of mixed and augmented reality hold a less than 60 degree field of view, which is why we say that the limited field of view available on mobile headphones is much smaller than typical human vision. For example: the field of view can be equivalent to a

25-inch screen 240 cm from the user's point of view for low-specification mobile headphones such as Google Class.

In this area, the first generation of **(Microsoft Hololens)** The field of view is estimated at 17X30 degrees Which is a similar size to the estimated 15-inch display located about 60 cm from the user's self-centred point of view **(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity , 2021, p. 09)**.

On the other hand, the researchers believe that ultimately limited visibility will be solved by advanced display technologies, for example: Microsoft's second generation has a large display screen with a 29x43 field of view.

On the other hand, the huge glasses frames found on mixed reality headphones such as: (Microsoft Hololens) It can block users' peripheral visibility. As such, users can reduce their awareness of incoming risks as well as critical situations **(Long Qian, 2018).** Thus, other forms of factors such as: contact lenses can reduce these defects (impediments). If the typical augmented reality display via contact lenses offers low-resolution images to users, it can also offer virtual overlays such as: upper, lower, left and right directions in navigation tasks**(08, 2021, p. 09)**.

On the other hand, the new vision of humans via portable headphones is one of the priorities that seeks to identify the challenges of presenting virtual entities via the latter. This is what makes researchers in this field discuss how to take advantage of these new insights in the world of (Metaveres), where we find that one of the design strategies is to take advantage of the peripheral visual field for users **(Alexander Marquardt, 2019, pp. 190-201)**Which is originally intended to identify obstacles to avoid serious accidents (or situations) and measure foot positions through a wide range of locomotive activities. For example: walking, jogging, driving (driving a car) and other sports activities. And this is combined with other feedback signals such as: tactile and acoustic feedback. This, of course, is what enables users to sense virtual entities with very high accuracy. On the other hand, there are other studies in this framework that are working to provide a design strategy based on displaying digital overlays in areas adjacent to the field of view on mobile headphones for mixed and augmented reality. **(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 10).**

Thus, the presentation of virtual overlays of (adjacent) edge areas may result in practical applications such as: direct (navigation) instructions, left and right during the mission of navigation on augmented reality maps **(Isha Chaturvedi F. H., 2019, pp. 625-636).**In addition, the most important property of such designs is that the virtual overlays on the peripheral visions of users significantly coincide with the activities of the locomotive. Users can also focus on other tasks in the physical world without significant interruptions to the virtual entities of (Metaveres).

Hence it is important to note, that other factors should be considered together when presenting virtual overlays within visual fields to users. Such as: colors, lighting **(Mingqian Zhao, 2019)**Clarity of content, readability **(Gattullo)(Fiorentino, 2015, pp. 52-61)**Size, Type**(Daniel Boyarski, 1998)**Visual exhaustion (Alexis D ، 2019 ،pages338-328) Vibration of the driving movement **(Yuki Matsuura, 2019, p. 20).**

Besides, the information flow can destroy the user's ability to identify useful information. Thus, the proper design of the information volume and content placements is necessary to improve the effectiveness of displaying virtual overlays extracted from (Metaveres) **(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, 2021, p. 10)**

**IV. The importance of feedback signals towards (Metaveres):**

Feedback signals are also an important dimension of the user's interaction with the metaphoric world, as many researchers try to provide an objective scientific view of (Metaveres) and their relationships to the key elements that make the user interact within three-dimensional worlds by virtualized buttons **(Carlos Bermejo, Lik Hang Lee, Paul Chojecki, David Przewozny, Pan Hui, 202, p. 5).**

Also noteworthy, digital environments can offer highly adaptive environments, but in fact they are still far from realistic environments. **(Jindrich Adolf, 2019).**

This suggests that ease of use and true meaning are subject to the appropriate design of user feedback signals such as: visual feeding, acoustic and tactile

**(Adem Faeth, 2014, p. 3).**

The main difference between touch devices and virtual environments is that touch devices offer retro and tactile feeding signals when the user clicks on the touch screen. Thus, the user's response and function performance are improved. **(Eve Hoggen, 2008, pp. 1573-1582).**

In turn, the lack of feedback and tactile feedback in virtual environments can be compensated in various simulated ways **(Jennifer L Tennison, 2019, p. 1.19)**Example: Virtual Spring ,**(Anatole Lécuyer, 2001, pp. 115-122) ,**Redirect control by tool ,**(Patrick L. Strandholt, 2020, p. 1.13),** rigidity **(Even Pezent, p. 16)**Balancing things out **(Majed Samad, 2019, p. 1.13)**.

On the other hand, with such simulation of signals and tactile users can connect the virtual overlays of buttons with the physical metaphors of the buttons.**(Marco Speicher, p. 1.16)**

In other words, tactile reactions can not only work with acoustic and visual connotations. It also serves as a rich communication indicator for users while interacting with virtual touches and overlays in (Metaveres) **(Zhaoyuan Ma, 2015, pp. 220-227).**And most importantly, such semantics related to feedback should be an accompaniment to the principle of user mobility **ALL One needs to know about A (Metaverse): A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 10).**

On the other hand, some current studies in this area present various factors in the form of external structures.**(Mourad Bouzit, 2007, pp. 6-7-9-4-3-4-)**gloves **(HyunKi In, 2011, pp. 1-6)**Accessory or additional fingers **(Massimiliano Gabardi, 2016, pp. 140-146)**Smart Bracelets **(Jay Henderson, pp. 1-11)**By taking into account multiple mechanisms including jet aircraft **(Rainder Sodhi, 2013, p. 134)**ultrasound **(Tom Carter, 2013)(Cédric Kervegant, p. 23)**as well as lasers, **(Hojin Lee, 2016, pp. 73-74)(Yoshi Ochiai, 2016, pp. 3228-3247.)**In addition to the availability of full classification of portable tactile devices **(Claudio : Pacchierrotti, 2017, pp. 580-600.)**

In addition, after compensating for the absence of tactile feedback in virtual environments, it is important to better use varying reactions and achieve multi-model feedback indicators such as: visual, audio and touch **(Ju-Hwan Lee, 2008, pp. 185-192).**In order to improve user experiences **(Akemi Kobayashi, 2016, pp. 180-191).** And user response **(Anatole Lécuyer J.-M. B., 2001, pp. 115-122)** as well as performing the task accurately **(Adam Faeth, 2014)(Andy Cockburn,**

**2005, pp. 1129-1150)**besides the effectiveness in acquiring virtual objects within different virtual environments **(Mitchell L. Gordon, 2019, pp. 1-12. ).**

On this basis, we can consider what we have mentioned exclusively as an additional advantage to take advantage of tactile reactions in virtual environments, especially for example: visually impaired individuals**(Nikolaos Kaklanis, 2008, pp. 437-440) .**

Accordingly, multimedia tactile reactions cannot be seen as the new rich model that appears in different scenarios within (Metaveres).

Therefore, it is advisable to explore the range of substantially feedback models and introduce new models for example: smell and taste model **(Takuji Narumi S. N., 2011, pp. 93-102).**

**V.Digital Media Accredited in Extended Reality to Access (Metaveres):**

These points are based on current literature in order to create guesses as to how to bring unique emerging contents within the digital environments of (Metaveres), by returning to their actual counterparts in the common public space. For example, the social acceptance of headphones in public space remains controversial and questionable.**(Valentin Schwind, Jens Reinhardt , Rufat Rzayev , Niels Henze , Katrin Wolf, pp. 111-118)** .

This is due to the lack of evidence that these earphones will serve as a single channel for presenting the contents of (Metaveres) within the public space. While, other mature technologies such as: big displays and miniature video projectors (pico-projectors) It may be considered as a channel for presenting (pixels) in our real world.

On the other hand, large projectors and micro-video projectors allow the user to view digital entities with a high degree of realism without using mobile headphone **(ALL One Needs to know about A Metaverse: A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 08).**

In addition, mini projectors embedded within smartphones such as:Movi phone, Allow content to be shared anytime, anywhere **(2023,moviphone.com).**

It is also worth mentioning that smartphones are the most prevalent devices in the present.

At another level, research studies in this area confirm the possibility of enriching the discussion of a three-dimensional technique called holographic imaging to bypass the means of communication of 2D screens **(Kubota, 1992, pp. 503-506)**and follow the real size of screens, in terms of showing images and videos that show any difference from our daily stuff.

n this framework, the current hologram technique can be classified into two basic types. They are **(https://mitmuseum.mit.edu/holograghy-glossary , 2022 ) :**

1. Technique based on reflection**.**
2. Laser imagingtechnology**.**

In addition, the feasibility of colored volume display of large and stable devices with low-resolution practical constraints can affect the user's perceptions of realism. It is the main feature of the reflection based on the linear bond (Holography) However, it creates a color 3D image with a very similar color reproduction with real life objects **(Irene Vazquez -Martin ،J. Martin-Saez, 2021)** .

On the other hand, Plasma Fairies, a three-dimensional aerial image, can be felt by users across skin surfaces. In any case, the devices in this mode can release (Plasmonicemission) in the middle of the atmosphere area of no more than 5 centimetres Cubic.

This refers us to the argument that if, for example, our perception of technological penetration allows massive 3D organisms to emerge in the widespread real world, it is not surprising that (Metaveres) can fuse into our civilized life, as well as improve the power of feeling for Stakeholders' presence in civilized spaces.

On the other hand, we must know that 3D holographic imaging has three main weaknesses: limited resolution, size width and device transmission.

Thus, overcoming these weaknesses becomes the critical turning point for delivering a rich real-world 3D image **(ALL One Needs to know about A Metaverse : A Complete Survey on Technological Singularity, Virtual Ecosystem, and Research Agenda, 2021, p. 08).**

**1.Conclusion:**

Despite the scientific jurisprudence to embody these modern environments of communication through technological means in an attempt to move future generations towards spaces that are alternatives to realistic realities such as (Metaveres) But physical reality remains the constant basis for evaluating these alternative digital spaces either in the affirmative or in the deprivation, Where (Metaveres) cannot be the perfect locomotive to lead contemporary society without physical reality For it is only through which we can assess individuals' retrospective behaviours and feedback through responses to (Metaveres) penetration. Besides, the technology companies investing in this area cannot trust it conclusively despite the exorbitant financial envelopes allocated, since the results obtained may not be fully attained. This is because it is difficult to understand and measure certain behaviours stemming from certain human senses in these digital environments. Among them: smell, taste and others. Accordingly, the success of (Metaveres) remains tied to the foregoing.

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