

PRESERVATION OF ELECTRONIC AND DIGITAL ART IN THE CONTEXT OF MUSEUMS: An Information Management Perspective

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Abstract

This article aims to elucidate two fields of interest on the aspect of information management by museology and other actors of “art systems”. The first field refers to the issue of the preservation of “digital” information focused on the perspectives and dilemmas in digital arts. The second one seeks to discuss memory issues through the access of information present in the context of management, curatorship and mediation, mainly in the context of digital arts and inserted in the perspectives raised by the article, regarding information capacity to perform and allow such processes, access and memory.

Keywords

Information, Museology, Digital Preservation, Digital Art, Heritage.

Introduction

Initiating the reflection proposed by this article, it is essential to keep in mind some guiding aspects about information processing. One is the understanding and extent of the data, information and knowledge. While the first word can be represented by a cluster of codes collected by various systems in a systematic way, “information” can represent the meaning extracted from the set of data that becomes or carries a particular value. The “Knowledge” can be treated more broadly, as the set of information that promotes tangible and intangible aspects in several fields of knowledge in constant transference.

For a long time, society has been facing the influence of media developments, whether through digital, electronic and computational devices provided by mass industry and the economy, or through the unprecedented growth of global communication in contemporary societies, mediated primarily by virtual and remote access of data (internet).

Giving that, and considering museology as a manager of symbolic and aesthetic value’s information, and also the relations of cultural spaces in contemporary society, as well as its memory, the dynamics of acting and

concepts have produced structuring changes in the last three decades. Among the most important changes we could mention, it is the perception that its object of study is not unique. On the contrary, it addresses several fronts that will include, besides the object itself, a context of broad analysis of “social objects” complementary to the constitution of memory when it comes to collections.

This study does not include the implications of the use of information to museum administration and information science for technical purposes. On the contrary, it seeks a reflection on the issues of materiality and immateriality of information, ephemerality and obsolescence of information itself and the systems in which it is inserted - stable and unstable - under the proposal that they can be subject to some attention in the present, with the perspective of maintenance and perpetuation of material and immaterial access by societies. “Information, after all, as it is understood and practiced in Information Science, is above all a cultural and political fact, not a technical one” (MARTELETO, 2007, p.25). Thus, we discuss preservation in an information management perspective, but not in a technical way.

Therefore, the issues of digital preservation and information through this highly generative system from the infrastructural point of view of special languages and codes, besides the material issues of physical and virtual networks and media are very peculiar. The same occurs in relation to the electronic and digital arts, which are part of the “arts systems”, where museums, collections, professionals, curators and mediation activities are found.

Concerning these and other aspects it may be possible to establish correlations between information management, the role of institutions that safeguard collections and museums - also in the central condition of mediation - the field of quality, process and quantity of information for the access of contemporary culture and history, towards the paradigms of the “digital” and

the massive information society. Discussing these inputs is a current and recurrent need, especially in the field of digital arts.

Information in Museology

“The actual object of the museum is the transmission of pertinent information, of which form of showing is not necessarily and exclusively the three-dimensional object” (SOLA, 1987, p.258).

Using very few words, Tamislav Sola is able to analyze the role of information in contemporary museology. The museological phenomenon should encompass the entire context beyond the aesthetic object of the museum, or through it, develop contributions that may allow new interpretations and recognitions about realities, cultural history and the contemporary time. It must reflect on memory and its access by society.

The new museology widespread, mainly in the 1980s by the ICOFOM (International Committee for Museology), allowed an expansion of the understanding that “data” are sensitive parts in the construction and building of sites and knowledge on the part of museums and their collections.

It occurred, in the same period, the expansion of new conceptual fronts that enlarges the performance of museums, mainly because of the broad notion of “Heritage” as suggested by Mathilde Bellaigue (*apud* CERÁVALO, 2004, p.260). It means, in brief synthesis, that society in its diversity belongs and is part of the belonging of social, cultural and political construction with reflections in the institutions present in this community and social system. While information is present in all these moments of space and time, whether through absorption, creation or diffusion, the community itself is a central collaborator of informational processes. It is not reasonable to imagine it as systems isolated or encapsulated from the constructive process of museums, collections, the institutions as a whole.

“(…) museums should be recognized by the communities, it would be a result of them, their commitment and their participation. The roles would be reversed: museums should not be made for the community, but with it. (...) (...) “a more advanced form of contemporary museology” (RÚSSIO *apud* CERÁVALO, 2004, p.261)

The participation of a system with several “Inputs”, or the insertion of data and contributions, begins through transdisciplinarity, in which many disciplines cross over

lines of interest in museology, determining contributions to the scientific field. This has been already foreseen in the “theory of systems and museology” reported by Stránsky (1995).

The conceptual, synthetic and accentuated cut proposed at the beginning of this article, aims to elucidate the role of information in the context of institutions, but mainly in the perception of the society development towards information in the contemporary world. This can help the awakening of considerable and structural changes not only in the academic field, but in the image of the communities and their institutional structures.

For this study’s purposes, the deepening of such dynamics and role of the social system formed by society and its constructions of information and knowledge should be observed under the prism of preservation and memory in digital media, which can occur in actions of “self-archiving” between individuals and small institutions, with direct or not direct relations to museology and preservation policies or institutionalized practices through collections, museums, and media centers.

Questions related to the “Digital” are too complex. In museology, the theme is variably peculiar when it comes to the aspects of science information, because of the various subtopics that are inscribed in the “problem”. Some of them are: the virtualization of museums, the use of digital technologies in museum mediation, the construction of databases and the use of information amid unconventional norms and standards, adaptability and curatorial processes of documents, public policies related to digital preservation and digital culture itself, among many others.

In an even more exclusive topic, the problems of preservation and memory of electronic and digital arts are related, on the pretext of future collections, conservation and accessibility. What chronic fields is the information on digital art work lost in, in a medium and long term? What are the alternative determinants of museology as a field of interest in information science, perpetuation of data works based mostly by the obsolescence and transience of technology and the stream of Information Society itself?

These are some questions that become central to the idea of accessibility of contemporary history of digital arts in the future and even in the present time. Contemporary art as a whole is not excluded from this context. In Lidia Alvarenga’s paper (2003), on the representation of knowledge in digital time and

spaces, quoting Lancaster (1991, p.38), it is clear that in the perspective of secondary representation, i.e. the representation (non-ontological) of information through systems and access for identification, treatment, organization and recovery, there is no guarantee, if access to the original and essential files is not allowed.

In the study proposed here, digital arts, and the “digital” in the context of collections for later accessibility, and the compaction of concepts and processes represent a reality, as well as a certain fragility of patterns that denote a future without memory, and therefore, without information.

Ephemeral in Digital Arts

The theme of ephemerality in the arts, especially in contemporary art, is a constant debate on aspects of preservation, exhibition and memory. There are a large number of professionals and entities involved in discussions about regulations, methods, concepts and problems that surround the universe of artists, museological institutions, collections, and educational institutions, among others (TADDEI, 2011).

In digital art it is commonplace to contemporary art, artistic movements and manifestations such as photography and performances, some questions about its volatility towards different factors, which include its ability to keep itself in the “present time”. In this article, time is understood as being subject to permanent access and expographically visible when requested by curators and institutions.

As an artistic field, electronic art by means of the so-called “new media” tends to suffer strong influences from some sectors, such as Design, industry in general and strongly from electronics, technology and communication sectors. Thus, the first concepts about ephemerality applied to digital arts are formed, considering their avid dependence on technological vanguard. It is susceptible to all the variety and nuances of areas which are sensitive to contemporary society, being influenced more directly by economic, political and social issues. There are other meanings about ephemerality that will be mentioned later.

Still speaking about the characteristics of the artistic field of digital arts, it is important to reflect on other topics: the distinction between human questions and language. Besides them, support issues that fall upon two other subcategories: instability of Software and instability regarding Hardwares and/or Interfaces.

In the problematic sphere of human related issues,

it will occur a tension between human language and computational language. The production of special language is related to computers for the production of tasks and data processing. In this area of observation, since the 1970s, the conflict of the adaptation of human universe to the world of machines (and vice versa) has been presented. Just as it is possible to enumerate the advantages of robotics, equipment and programs developed around and for the biochemical and biomedical sciences (nanotechnology just to mention some) in the field of the arts, this capillarity and acceptance does not go with the same flow and at the same pace. However, it is noticeable its increasing presence in the space of the arts. What might be relevant to reflect is that the development of professionals in the artistic fields, including art systems (museums, galleries, curators, artists), is seen as strange and, mainly, with technical and professional distance to deal with new issues, such as technology and computer language. There is a disparity - even temporary - of “non-native” and “digital-native” professionals.

Regarding the second survey about the media, the hardwares - referred as all the electronic devices of different complexities mainly by management through digital and electronic systems - suggest new focuses. One can be observed in the great discussion in contemporary world, about the “programmed obsolescence”. Since the industrial era, the sense and concept regarding the “object of desire” promoted by industry, communication and economics have come to represent an irreversible dynamic of technological and volatile cycles over the less and less use of functionality of time and space.

The direct relationship with digital arts will be primarily referred to the maintenance of these devices. In the arts, industrial and commercial logic deconstructs and redefines the sense of use and functionality. The objects and supports will not have the same purposes for which they were designed. They are technically undue appropriations to industrial logical thinking and pertinent to artistic creative “thinking”, with the purpose to bring technical and libertarian solutions, of which result will be the whole of the “work and thought” of art and not a single and previously defined product. Therefore, if obsolescence is programmed industrially, in the long term, it may cause irreversible damage to the artistic work which shows no provision for substitution of materials, supports, and more technically and specifically, the exchange of something essential to the operation.

From the perspective of softwares (computer systems programs), the advantages of the use of free standards, in relation to those of private and intellectual property, have been discussed worldwide in various instances of society, such as industries, public administration, education, collecting and preservation institutions, artists, especially members of the new media community. In most cases, it involves computer language programs. However, the problem is more complex than making a simple pattern choice.

Recent studies (distributed and open practices in FLOSS art by Aymeric Mansoux et al.) show that there is a problem common to free programs patterns (Open Source), in which users from all over the world contribute to the developments of the platform. In spite of the multiple contributions of professionals of special computational languages development, there is no consensus for usability and functions by users who depend on more stable systems in the long term.

An example that can portray these users is the development of special databases for collections of all kinds, including museological and artistic ones. Artists are another example of people who work with native and primary computational languages of the first systems in open source platform and still make use of these or others derived from them. In both cases, there are mutations of linguistic kind of the programming. Some metadata are permanent in open source platforms, which include some rules and regulations, but these languages also undergo some acceptance of the digital community that provides knowledge and professional use. This means that it will not be always possible to maintain native bases in activity, or that some of them can migrated (jump from one system to a more recent one) or emulated (reproduced as the old bases but processed in new ones) in the long term.

The observation denotes a complex context to the field of digital arts considering its artists, collections and public that depends on certain stable parameters. The concept, the work's unit and meaning, and mainly, the relationship with its audience in the way they were conceived by the artist, author and curators depend on a minimum stability of data and files.

Among the characteristics of works that use new media, is their intentionality in co-authorship through the interaction and effective participation of the public in the works, which can also be dynamic and generative, possessing singular and multiple values. Interactivity

is part of the context of contemporary work of art. (FERRARA, 1981).

These are key questions from the point of view of memory and preservation of contemporary and digital art. As we will briefly see below, they do not just deal with processes, documentation, migration, emulation, and re-creation. There is a more constant ephemerality in all these processes, especially concerning the subjectivity of the works, the intentionality of the artist and the public interaction. If it is not well dynamized in relation to the above considerations, experiences and future accesses will not be allowed.

Some Issues of Preservation and Digital Memory

Memory is one of the most relevant themes of the 21st century, especially in the field of the arts. Countries such as Canada, the United States, the Netherlands and Germany have made efforts for three decades on the subject in the field of new media. Therefore, digital preservation has as pioneered institutions, ZKM art and media center in Germany, ARS Electronica Center in Austria, Berkeley University, Guggenheim Museum, NIMk media art institute in the Netherlands.

For some years, by means of forums, seminars and researches of each of these institutions, besides group actions and cooperation between some of them and others, practices of how to think and act in the preservation of digital arts and digital document, were discussed.

We could say that after some time, most of these procedures were widely disseminated by the countries. Some of them had a greater or lesser degree of protagonism in the area and possible contextual adaptations from the perspective of the collection type, artistic and museological practices, as well as public and private policies of institutions and governments.

In order to elucidate a guiding axis for different cultural scenarios, four crucial and comprehensive topics on digital art have been defined. Some projects and institutions such as Variable Media Network, Avant-Garde Archive, GAMA-Gateway, DOCAM - *Documentation and Conservation of the Media Arts Heritage*, have set standards for this axis. There are four distinct moments and stages that are applicable: documentation, emulation, migration and re-creation.

The documentation follows the museum and collection practices when texts, images, and complementary information will be conditioned to a detailed work,

aiming to increase the number of data and information. It is necessary to define the “enlarged view” as an objective, both by the artist and audience’s perspective, as stated by Pip Laurenson (*apud* MARCHESI, 2011) from TATE Modern.

Emulation and migration are somewhat conditioned to a logic of maintaining access to the work in an original form, but without being it. In the emulation process, sensitive responses regarding support performance (hardwares) and informational management systems (software) or program behavior to the sensorial responses of the work in media art, are reproduced in updated copies of the same media (hardware, software) in a copying and imitation procedure. It reproduces the digital artwork, supported by a more current (physical or virtual) system, that is, the “new” plays the role of “old”. In the migration process, as a difference in relation to the previous process, we must consider an important factor from the projecting perspective, and from the point of view of Design. The final result, that is, the dynamics of the devices’ behaviors in the relation established by the interaction of the work and the public does not suffer changes. However, the work is structurally modified, either by tangible measures on devices and computational language, or in the issues of intangibility about the originality and context of the same devices.

Re-creation is one of the most intrusive possibilities in the process of preservation and memory, in the sense of reviewing. It would be the use of the documentation from less contextualized references. The “new work” would be the most important one (or at least a “brand new” or a “renew” one). The construction of a new media art in another time, by means of media that is different from the its previous versions, will produce a new context, a new work of art and maybe a new critical narrative.

It is important to remember that the four aspects signed at this section is focused on information of the artwork. Even re-creation will concentrate on information (got from documentation) to construct the artwork again. So, we understand that manage information has an important role on preservation of digital art, permitting conservators and curators to construct the first efforts to maintain the digital art memory at collections and museums.

Although some consensus on these four preliminary aspects of the preservation of digital in media art works through various actors in the system of related of correlative arts and institutions are constant, dichotomies between theory and practice, involving

all these interconnected networks are also constant. Christiane Paul (2007) brings a collaboration on this aspect when she says that art through new media is flexible, and demands a new standard to be established by the art systems.

It is not possible to say that these standards are being established on some considerable scale and order to preserve the future of contemporary digital art, as well as preserve its memory in even more usual terms, such as the preservation of documents relating to it. A Dutch compilation of the Virtueel Plataform project, proposed for the theme and organized by Annet Dekker (2010) by means of articles and interviews with professionals working on several fronts such as designers, audiovisual artists, curators, editorial directors, galleries and collections managers, denote, through its vicissitudes, some problems encountered in complying with the widely disseminated manuals of good practices. They also contribute with surveys about some alternatives to the issue of preservation and access to the increasingly emerging digital memory.

Anne Laforet (2010) refers to the open code called open source, from the perspective of the “corrupted code” view, when programming changes will not allow any of the re-creation steps. A pattern of awareness is necessary for the maintenance of strong and robust databases that do not change in the long term, as it occurs with closed source programs by market developers.

Richard Rinehart (2004), from the Variable Network Media project, disseminates a concept and a practice of “self-collection” and “open museum”, based on the accountability of subjects individually arranged in a network, not centralizing in the entities in the roles of protection and access. There is a great tendency to the role of actors’ responsibilities in the arts system, especially in relation to artists who work with new media.

The content is absolutely extensive and overly complex, from studies and practices to digital preservation of new media arts. For the context of this article, it is important to establish some basic notions in order to perceive the ephemerality of processes and how peculiar the demands of digital arts in the field of information management are, having in mind, preservation and memory.

The Accessibility of Digital Arts in Exhibition Spaces and Museums

In the conceptual surveys discussed so far in this article, it was proposed the attention towards some of the complex connections between the issues of ephemerality of digital art and the issues of “programmed obsolescence”. So, the same thing that gives life and an effervescence of possibilities in a constant technological revolution of the knowledge society leads, at the same pace, to its own memory absence, or even its material extinction as an expository object.

According to another observed topic, there is a volume of existing variables regarding the data and information present and measurable in the attempts of preservation, maintenance of access to digital art, whether these are dynamized by some methods such as documentation, emulation, migration, recreation among other practices propagated by the diverse actors of this system. We must consider the related circuits as the industry, the economy, the politics and the own cultural movements.

Given these scenarios here elucidated, concerning the concepts listed at the beginning of this study about the management of information and knowledge in the field of museology and through information sciences, we could think of some tensions. How can we perceive the use of information considering the capacities of those responsible for it, the accessibility of digital art works, given the volatility of the art system itself in digital media? What is the role of data, information and knowledge management for the contribution of the materiality of digital art as access and re-exhibition of works in the content proposed by them?

We can initially address the issues of digital curatorship and mediation. When working with electronic and digital art, some technical and procedural aspects are required, such as some specific skills different from other artistic fields. The collaborative work is made of professionals from extra areas, such as software engineers, IT analysts, electronic engineers, members who should be consulted in the case of institutions which has not only the exhibition as a mission, but also work safeguarding.

Howard Besser (2014), in his article on the “longevity of electronic art”, proposes questions and scenarios that are rather specific. He problematizes the various forms of representation of digital art, as the internet, performances, installation art, “site-specific art”, and game arts. In each of these situations there will be distinctions of quantity, quality and typology of the

information presented in the works. On the other hand, there will always be a certain endemic unity applied to all these models of digital art, i.e., in the intentionality of the artist towards the work and the interactors that represent the participating public. The concerning about information as preservation or access will be recurrent.

For each case, the main aspects of a certain sense of work preservation should be taken into consideration. In net art works, maybe it will be essential to preserve the data and image processing applications in the WEB environment (Javascript, flash, etc) as well as a constant maintenance of the servers, images of the work in execution and empirical data of user’s experiences. In addition, it is important to record the original computational code base of the work, determining a special database for it, as well as unique physical interfaces.

From the perspective of digital audiovisual performances, the universe of data and information to be collected, recorded and considered, will have other aesthetic, technical and ethical surveys. For scripted, dependent or elaborated performances based on a script, the issues related to audio-visual records, photos and images, technical data of editing (montage/ assemblage), the artist’s own impressions on the action and, consequently, the public’s impressions on the exhibition will be stimulated. However, in performances considered generative or mutant because of the nonlinear algorithm of the computational codes, intentionally arranged this way, the complexity about the information becomes a special topic, in the sense of the qualitative and quantitative values that will be important to its preservation and access in the future.

According to these two cases, what are notoriously important to digital art as information and management in order to have its preservation and future access in a materialized, revisited and rediscovered way? Contextualization? Interpretation? In this analysis, we presented special topics for the museological practices of curatorship, mediation and information management to works of digital art.

It is noticeable that recent studies and institutions such as ZKM, DOCAM, ARS Electronica Center, demonstrate that among the norms and standards disseminated over time on aspects of digital media art, those in which curatorship and mediation have jointly collaborated with the collections in order to perceive the qualities of the information present in the

non-rigid processes in documentation practices, could achieve better results. This had an impact on resignified actions such as oral practices about the public and other participants in the exhibition including technicians and their experiences (MULLER, 2010). There is the strategy of “Print out Internet”, defended by Florian Cramer (EIKELNBOOM, 2010) with a similar connection research by Alessandro Ludovico from *Neural Magazine*, which has in the physical support of paper and printing a relation of double function - registering and transferring, being an aspect quite far from coding problems and digital protocols and its undeniable longevity.

Practices for thinking about information management with purposes of achieving materiality, preservation, memory and access, such as the virtuality of museums, works, performances and spaces as a whole, demonstrate other present forms of data arranged in a wide universe of contents. For this reason, besides memory be the theme of great interest of our 21st century, due to the mass of information produced in these scenarios, curatorship and mediation also gain special attention in our contemporary time.

By making some situational cuts it is possible to perceive that the standards are unfamiliar for some of the fields of information management, if they are thought from the museum, curatorial and mediation perspectives. This can, at one point, become experiences of diversity of performance and perception about data, information and knowledge. In the long run, in order to make accessible and re-view contexts, it is not possible to say whether they will be better driven by consensus or dissent from standards and norms. Ephemerality and digital obsolescence should not be justified to the point of information and its administration. In the field of the arts, a deeper context is embedded, regarding the representativeness aspects of a social, political, contemporary history under constant loss.

Final Considerations

We can finish this brief study by imagining some topics of interest as well as attention to the issue of information management on the part of museums, collections, artists, curators and mediators, extending to public and private managers, even the political spheres present in the system.

Firstly, it is salutary to mention that some studies and surveys on the management of museum spaces, mediation and curatorship have been made and

disseminated from the perspective of documentation and information access. There are some countries that are protagonists in the subject, but it is necessary that the network of practices and mainly museums policies increase, especially in Brazil.

Although we are attentive to the dynamics of the industry supports for solutions of the treatment, storage and flow of data and information, it is necessary in the field of the arts and its systems, to carry out initiatives that are more distant from the industrial and private canons, prioritizing the development of tools in open source and long term, mainly for the context of preservation and memory through indexing of data and assign adaptations to other intelligent and available systems, allowing the exchange of content in a constructive and complementary way.

The policies or the logic of accountability are widely disseminated in the international context. The artistic class, and especially the artists focused on new media, should allow themselves to be attentive to their documentation processes, as it is fundamental to the quality and “reality” of the accessibility of their digital works whenever they are requested. The ephemerality of devices must and will be a constant in the logic of technology. But cultural content and practices should not follow the meaning of symbolic ephemerality. Above all, the art constituted in a triad, “artist-work-public”, must perpetuate as an object and as information, for it portrays a unique context of a constituted and experienced historical time.

The same is not denied to the curator and mediation as a whole. Strict or generalized standards applied to forms, techniques, choice of information and concepts regarding documentary (in a wide sense) safeguarding can generate irreparable losses. Likewise, the absence of cultural, technical and conceptual contexts can lead to the same consequences, given the enormous range of disparate systems and agents that work in this scenario.

The centrality proposed for the issue along this article is based on the perspective of how information management is presented in the scope of the arts and culture through its systems, to the digitally native contents as of the Digital Arts. Will the preservation and memory of digital and digital arts produce representational resources that are capable of materializing from information managed by actors inserted in the established network? And yet, if the materialization of power structures over information and

digital collection and diffusion systems is materialized, will it be through contexts never predicted by its actors (artist and public in the case of digital arts)? These are questions putted and explored by this work, but that will be take place in more long and future considerations.

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Authors' Biographies

Pablo Gobira is a professor doctor at Escola Guignard and at Postgraduate Program in Arts (UEMG, Brazil), artist, curator and researcher. He is a research fellow and manager of Digital Promotion Services of the Brazilian Network at IBICT/Brazil Ministry of Science, Technology, Innovation and Communication (MCTI). Member of the National Institute of Science and Technology INCT-Acqua (CNPq). Writer and editor of the books: "Post-digital configurations" (Forthcoming UEMG Press, 2017); "Games and Society" (Crisálida Press, 2012); Walter Benjamin "B-side" (Crisálida Press, 2011) among others books and writings. He works in curatorship, creation and production in the field of culture and digital arts and also creative economy. He is coordinating the Laboratory of Front Poetics (<http://labfront.tk>).

Tadeus Mucelli is graduate student (master's degree) in Arts by State University of Minas Gerais (UEMG) with thematic on the "Visualization and Materialization of Digital Arts". In the years 2014/2015 dedicated to another research in art entitled; "*A Instabilidade Digital: preservação e memória da arte digital no contexto contemporâneo*" coordinated by Pablo Gobira (UEMG). The research was expanded by the Cultural Fund of the Municipal Foundation of Culture of Belo Horizonte City, resulting in several actions and products, such as

symposium, book and articles, as well as participation in national and international events. Tadeus Mucelli, has been working (curator and entrepreneur) in the digital arts since 1998. He is the founder of the *Digital Art Festival – FAD* (since 2007). Organizer of publications; *FAD Catalog Art* (2011), *FAD Retrospectiva* with scientific essays (2012). In 2012 he was awarded the prize for the promotion of art by Secretary of Culture of the State of Minas Gerais - Visual Arts. In 2014, he was awarded the 1st Brazilian Economy Creative Award, through the Ministry of Culture from Brazil and the Official Government Office of Creative Economy - Cultural Expressions / Digital Art for the project of *EAT – Electronic Arts School*, focused on Art and Technology.