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Experimental curating in times of the perpetual beta: strategies and platforms for online-based art.

Master Thesis

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Abstract

Topic:

Experimental curating in times of the perpetual beta:
strategies and platforms for online-based art.

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Content:

Based on existing issues associated with exhibiting online-based art and informed by previous approaches, the present thesis presents and analyzes examples of past and current exhibition platforms and curatorial strategies for online-based art in order to identify the potentials and constraints of the field and, subsequently, suggest further developments and possible actions. In order to provide a more grounded background to the current scenario, the thesis first investigated how online-based art has been exhibited since the 1990s. By doing so, it questions how past practices can contribute to a better understanding and development of the field today. For that purpose, the research relied mainly on existing literature from previous studies and on the still available primary sources of the analyzed projects. In addition to these resources, interviews were conducted as complementary references to the selected projects: *Welcome to the Wired World* (1995) and *net_condition* (1999); Platforms Stockholm's *Curatron* (2013 – ongoing); Link Art Center's *Link Cabinet* (2014 – ongoing); ZKM's *ArtOnYourScreen* (2014); the Akademie Schloss Solitude's *Web Residencies* (2015 – ongoing); the Museum of Digital Art's *Hal 101* curating algorithm (2015 – ongoing); and the Archive of Digital Art's *CODEDOC Remediated* exhibition (2016). The results of this investigation thus include: an overview of past and present platforms

and curatorial strategies for online-based art, which identified significant shifts in their formats and discourses throughout the years (Chapter One); an analysis of current online exhibition platforms, which indicated a need to further question the terminology and to address the potentials of the interface for online-based art (Chapter Two); and, lastly, an overview of past and present community-building platforms, highlighting the current strategies and the importance of the network within the field, which then indicated an ongoing shift in the relationship between curators and artists as more collaborative and less hierarchical (Chapter Three). Furthermore, the thesis concludes that the current scenario asks for a more open, malleable and experimental curatorial practice – one that is aligned with the present culture and structures of the web, which is based on the concept of the *perpetual beta*, i.e., where platforms and practices are constantly updated and in transformation.

Keywords: online-based art; curating; exhibitions.

Supervisor/s: Oliver Grau and Peter Weibel

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Introduction

I. Background of study and theoretical framework

To research and write about online-based art and its past exhibitions is, paradoxically, to “read in between the lines”. The lines are the projects and artworks that were – against all odds – documented, archived and preserved. Everything in between is dust: scattered remains and memories, broken into *bits* and pieces, often recounted through personal recollections. One must, therefore, search for traces and meaning where often lie fragmented stories and broken links. The disparity is then evident: while some projects have been supported and sustained throughout the years (be it through individual or institutional initiatives), others were shut down or abandoned, left to their natural fate. Much has thus been lost. And from what remains, we hear a repetition of names – as a cacophonous cry of the survivors.

This constant reappearance of names in the existing literature on the subject does not necessarily imply that they were the sole practitioners of their time, but rather highlights the (still existing) constraints imposed by the nature of these practices and by historicization. One may call it the survival of the fittest, that is, those who had the aim and the structural and financial conditions to document or maintain their projects somehow alive have historically overshadowed others. But truth be told, other factors also contributed to the recurrence of some and the disappearance of others: hegemonic discourses, the strength of a particular network or community, and of course (as one cannot fail to pin-point) the medium's ephemerality (although everything is in some level ephemeral, and some more than others).

Those names and literature were, nonetheless, the starting point of this research – as they have been for many other studies of the sort. And as one goes through them and start to dig through the debris, more names and titles come to surface and reveal the potential of a much broader scene – like a tip of an iceberg. The Internet itself is a vast universe, just waiting to be excavated. Much has yet to be found and many practices to be retold (hopefully through another light). Faced with the possibility of this resurgence, and without denying the importance of those previously cited names and the immense contribution of the existing documentation on their practices, one must recognize the need to question and re-present the past when confronted with repetition in the present.

As a researcher, there is therefore this desire – often mixed with frustration – of recovering the loss and restituting the gaps. But in what the Internet has of diversity and immensity, it has of dispersion and speed. And as an ever-changing archive, loss and gaps are all in a day's work. The existing literature is also replete with fissures, filled with contradictory facts and discordant

discourses. Dates are mismatched, names are hidden, and concepts disputed. To research and write about online-based art and its past exhibitions is, therefore, to recognize the impossibility of totality as a necessary process of understanding the fragility of the document, history and truths.

But there is potential in gaps. In academic research, gaps are the driving force of inquiry. By identifying a certain lack or constraint, one can formulate questions. This present thesis was initially driven by a lack of historicization and contextualization of past exhibitions. As new exhibition platforms for online-based art appear, and as art institutions seek new forms of engaging their public within these emergent formats on the web, the need to better understand previous practices arises. Although there has been significant initiatives towards a somewhat historicization of online-based art – such as Tilman Baumgärtel's *Net.art* (1999) and *Net.art 2.0* (2001), Rachel Greene's *Internet art* (2004), Julian Stallabrass's *Internet Art* (2003), Josephine Bosma's *Netitudes* (2011), and, most recently, the *Net Art Anthology* launched by Rhizome in 2016 – a historical overview of online-based art exhibitions is scarce. Most of the available literature focus on the artworks or on the conceptual frameworks of those practices, addressing the particularities of an exhibitions only when pertinent to the analytical context (such as Vuk Ćosić's *documenta Done* in the occasion of documenta X). This research, on the contrary, will focus more on the exhibition strategies and platforms – as well on the relationships between curators, artists and their public, established through those environments – and will address artworks only as a resource to better understand the decision making process behind each analyzed exhibition platform.

Online-based art exhibitions and their present issues have, however, been more thoroughly discussed in literature on “digital media” or “new media art” curatorial practices. Yet, as such, they are broad in scope and, therefore, tend to generalize the issues to multiple media art forms. But when addressing online-based artworks, they focus on issues of presentation and ephemerality (which is then extended to concerns with preservation). Nevertheless, these previous studies represent a significant effort in identifying and tackling common constraints within existing media art practices and their effects on institutional spaces and roles. Within these publications, Christiane Paul's *New media in the white cube and beyond: Curatorial models for digital art* (2008), Joasia Krysa's *Curating Immateriality* (2006), and David England, Thecla Schiphorst and Nick Bryan-Kinns's *Curating the Digital* (2016), were crucial references to the present study, as they provided a general overview of the current scenario.

On the other hand, medium specific literature, albeit the lack of a concise historicization and analysis on past exhibitions, provided a more detailed overview of curatorial strategies and platforms for online-based art and allowed for a better understanding of past issues. Amongst these initial references were Steve Dietz's *Curating on the Web* (1998) and *Interfacing the digital* (2003), Charlie Gere's *Network Art and the Networked Gallery* (2006) and Sabine Hochrieser, Michael

Kargl and Franz Thalmair's *Cureediting* (2008), which informed this research on some of the crucial aspects of the relationship between online-based art, institutional spaces and curatorial practices. Like many of their kind, these references are quite dated, as they refer to curatorial initiatives and artistic practices that span from early *web 1.0* to early *web 2.0*. The current context lacks, therefore, more recent medium specific curatorial analysis.

Furthermore, the available resources base themselves on the potentials and constraints imposed by the artworks on curating, and seldom discuss or include in this equation the discursive and social-political context of exhibition making pertinent to their times. This thesis, on the contrary, finds it crucial to provide such background when addressing past and current initiatives, as they not only inform the historical context from which they arose, but also present the social, political and cultural conditions and discourses which sustained those practices. For the same reasons, when addressing online-based art, it is also vital to contextualize the very online culture and practices that those initiatives refer to and are situated in.

However, it is just recently that the historicization and contextualization of exhibitions and curatorial strategies have gained more strength as a field of study in its own right. As Paul O'Neil (2007) explains, the emergence, “in the English-speaking world [...], of publications specifically examining the history of exhibitions, curatorial innovations and models from the past and their potential links to an evolving practice” was only more clearly perceived in the 1990s. This publication movement followed a recent institutionalization of the role of the curator – which was being carried out since the “curatorial turn” of the 1960s – and appeared alongside the expansion of academic specializations and training programs for curating. As argued by O'Neil (2007), exhibitions and curatorial practices have had a crucial role in art's conceptual and discursive developments and, as such, the long repression of their historicization and contextualization, overshadowed by a more art historical approach focused on artists, epochs and oeuvres, is noteworthy of critical debate.

Informed by this relatively recent emergence of the historicization and contextualization of exhibitions and curatorial strategies and by the lack of literature on online-based art exhibitions, this thesis relied on available publications related to a general contextualization of curating and exhibitions in order to contextualize the analysis. These publications were composed primarily by Paul O'Neil's *The Culture of Curating and the curating of cultures* (2007), Reesa Greenberg's *Remembering Exhibitions* (2009) and Emma Barkers's *Contemporary Cultures of Display* (1999).

Besides those theoretical resources, the thesis has adopted a conceptual framework which can address the specificities of the field and ground its arguments. First and foremost – as the research attempts to address issues in exhibiting artistic practices that rely on the Internet in order to be shown in their entirety, rather than discuss more conceptual and aesthetic matters related to those

artistic practices – the term *online-based art* was preferred, in contrast to its existing variants (such as *net art*, *web art*, *online art*, *Internet art* and *Network art*), in order to address this specificity.

Such choice took into consideration the fact that (a) *net art* has been largely associated with specific artists and practices, mainly of the 1990s (even without the dot); (b) *web art* makes reference to a specific structure and historical concept of the Internet (the *World Wide Web*), marked by the popularization of the *www* browser and protocols, excluding, therefore, the previous context; (c) *online art* and *Internet art* can be loosely applied to describe any art that is online or on the Internet, thus creating ambiguity; and lastly, (d) *Network Art*, which can imply a much broader concept of networks, beyond the Internet itself. The suffix *-based* added to the applied terminology, therefore, is an attempt to avoid this ambiguity and to reinforce the nature of those practices, which are inherently *based* online.

Unavoidably, the term *online-based art* falls into a more technical-centric perspective of its practices. However, as the thesis aims to discuss more practical issues regarding past and current strategies and platforms developed for the exhibition of art made for and through the Internet, the use of other terminologies which could shift the focus to parallel concerns (although as important to the field) has then been avoided. As there are better suited literature on those further debates, where they have been more thoroughly analyzed (such as in Josephine's Bosma *Netitudes*, 2011, and Andreas Brøgger's *net art, web art, online art, net.art.*, 2000), this thesis has then opted to concentrate in more pressing and practical issues in curating and exhibition-making.

The terms *curating* and *exhibition-making* are also differentiated in this thesis, as the latter, although part of the curatorial process, can refer to more practical issues of making an exhibition (such as those concerning presentation and design). *Curating* is, therefore, here understood as a much broader set of practices which extrapolates the time span of the exhibition itself, and may include activities such as research, the selection of artists and the commissioning of artworks. This differentiation stresses both the importance of the practicalities of exhibition-making to online-based art (especially when addressing issues of interface design and user interaction in both physical and online spaces) and the multiple facets of the curator, who often transits in between the curatorial, exhibition-making, mediation, editorial, and other sectors.

Curating is, furthermore, understood here as a shifting concept, which parted from the notions of the “caretaker” to assume a more encompassing practice (as this thesis will argue further on), and is presently a term in dispute in our highly data driven world. With the extreme amount of digital content being produced and circulated, the term *curating* has been recontextualized and resignified in order to be reused by other fields, where it is often attributed as a synonym of “organizing” or “selecting”. In this context, we increasingly see a plethora of associated terms such as “online content” or “news curating”, “blog curating”, “fashion curating”, and even “food

curating”.

Although the appropriation has risen much debate and critique, with curators reclaiming their hard-fought conceptual grounds and adhering to an ongoing semantic battle, it is, nevertheless, a process of desacralization which asks the field to reposition itself and rethink its discourses and practices. The profanation of concepts – in the sense of reclaiming the sacred and returning it to the common men – not only allows for the reconfiguration of the sacred but also highlights its growing proximity to the vernacular. As such, in both context *curating* can refers to the act of (re)framing or of depicting (and other further associations to image making or photography, for that matter), which indicates (as the *index*), through selection, composition and discourses, a certain practice, subject or object within a myriad of sources. Like photography, curating is also a form of concatenating meaning and creating correlations through juxtapositions of time and references and, as such, it is equally responsible for the formation and maintenance of artistic discourses and knowledge. *Curating* is, therefore, a form of meaning making and, as such, understanding the discourses and the relationships it establishes with artists, artworks and the public sphere is fundamental.

In addition to the above concepts, the thesis has, throughout its contents, applied the term *platform* to describe the structures and spaces used for exhibiting online-based art. This concept refers to both physical and online spaces, and allows the concept of *interface* (developed in Chapter Two) to be better explored. But when using the term *online platform* (or *online exhibition platform*), the thesis refers exclusively to the online software-based structures and spaces. This terminology contrasts to Michael Connor's (2016) understanding of *internet* (with the lowercase *I*) – often referred as an *online platform* – which for him refers to a broader idea that includes a set of technological structures composed not only by software and hardware, but also by social and cultural practices. Therefore, in this thesis, when addressing primarily the structural elements of the Internet, the word is then capitalized.

II. Research aims and questions

This thesis aims to present and analyze examples of past and current exhibition platforms and curatorial strategies for online-based art in order to identify the potentials and constraints of the field and, subsequently, suggest further developments and possible actions. For this purpose, and having identified an existing gap in the historicization of online-based art exhibitions, the research initially investigated how online-based art has been exhibited in the last twenty-seven years¹. With the present scenario in mind and faced with the current challenges, it then asked: how was online-

¹ It takes as a starting point early 1990s initiatives, such as THE THING (1991) and *äda'web* (1994), but also highlights the importance of previous approaches to the scene, with a special emphasis on telecommunication projects in the 1980s.

based art shown and experienced in the past? Which were the conditions and discourses that supported these initiatives? And how can these platforms, discourses and strategies contribute to a better understanding and development of the field today?

This initial study, which sums up the first chapter of this thesis and the first part of Chapter Three, does not aim to provide a thorough historical analysis, *i.e.*, with detailed and linear account of events, but rather present an overview of selected practices, as representatives of a certain period or discourse, which may elucidate the context and issues of present approaches. The aim of this initial study was, therefore, to provide a more grounded background to the current scenario in order to be able to evaluate and address some of today's main characteristics and challenges.

With this background delineated, the thesis aimed to identify in the following chapters the underlying characteristics of projects that seem to, in one way or another, question or push the existing boundaries of the field. This second part of the investigation, by taking into consideration the premisses upon which the thesis was based on, then asked: how have current initiatives dealt with the existing issues of the field? What strategies do they propose in contrast? And within which social and cultural context and conditions do they propose them?

Furthermore, based on the hypothesis of this research, the thesis then asks: what is the role of the curator within those proposed strategies and platforms? And what type of relationship do they establish with the space, the artists and the public? These and the above aims and questions grounded, therefore, the following analytical methods.

III. Methods

In order to analyze past and present projects and exhibitions, the thesis was based, first and foremost, on available written sources. In particular, this was the main method for the analysis of past physical exhibitions that are no longer on show and of past online exhibitions that are no longer available online. They were also fundamental sources for the investigation of curatorial strategies, as they were mainly existing literature on the selected projects and exhibitions (books, articles and critiques), and further documentation, such as published interviews with projects' creators, artists and curators.

The analyzed exhibition platforms and curatorial projects only served as primary sources when available, *i.e.*, those that were preserved and archived for consultation or that are still ongoing. In order to document this analytical process and to offer a visual assistance to the reader, print-screens of the analyzed online exhibition platforms are presented throughout the thesis. Of course, as online platforms, this documentation process is not able to provide the full experience of those exhibitions and their artworks. This issue addresses directly the core problems in preservation

and documentation strategies for online-based art. In order to experience the artworks (and, as such, the online exhibition platforms), they must be accessed in their full online mode. For that matter, the available print-screens in this thesis serve only as a documentation of the *research process* (and not as documentation of the platforms or artworks themselves), and illustrate, above all, the current modes of online research. As such, the print-screens include the browser, which in turn has the full link address on its superior frame, indicating how these platforms and artworks were accessed for the present investigation.

However, the print-screens, as visual fragments of a more dynamic and vivid structure, still offer a way of capturing the overall presentation of those exhibitions platforms and artworks, which will certainly, due to the culture and conditions of the web, shift with time. Therefore, although the reader may have direct access to the links and is then able to experience the exhibition platforms and artworks by her or himself, they might have access to a different version and, as such, may not be able to grasp the projects as they were described here in this thesis.

The exception to this documentation process is *net_condition's* exhibition as this research had direct access to the visual documentation of the exhibition space. Images from ZKM's archive were selected in order to illustrate the analysis of the exhibition space, the presentation of the artworks and the curatorial choices.

While primary and secondary sources were the main references for the analysis of the exhibition platforms (mostly regarding their concepts, structures and context), interviews were conducted in order to better understand the curatorial strategies behind them. They served as a research tool which could give a detailed analysis of the decision making process and answer the fundamental questions of this thesis regarding the role of the curators and their relationship with the spaces, the artists and the public. The interviews were a means to also elucidate inquiries that arose from the initial analysis of primary and secondary sources.

The present study includes interviews with six of the ongoing projects analyzed: ZKM's *ArtOnYourScreen (AOYS)*; the Akademie Schloss Solitude's *Web Residencies*; Link Art Center's *Link Cabinet*; the Archive of Digital Art's *CODeDOC Remediated* exhibition; Platforms Stockholm's *Curatron*; and the Museum of Digital Art's (MuDA) *Hal 101* curating algorithm. These projects were selected as representatives of projects that are, in one way or another, questioning or pushing the existing boundaries, as they address many of the current issues and concerns of the field: *AOYS* addresses presentation issues by experimenting with interface design and user engagement strategies, while acknowledging the historical importance of previous approaches through new interpretations; *Link Cabinet* also addresses issues in presentation by exploring the potentials of the online interface, but leaves public interaction to the artworks; *CODeDOC Remediated* questions the limitations of the platforms by experimenting with the boundaries and concepts of the archive;

Schlosspost's web residencies rethinks the models of online-based art making and art thinking, by providing an online platform for engagement and experimentation; and MuDA and *Curatron* questions the role of the curator, by proposing exhibitions with algorithm-based curating strategies.

However, these projects are still quite incipient and, as such, they have not yet been thoroughly addressed in previous studies or offer a broad or analytical documentation of their historical background and contexts. The questions conducted during the interviews, therefore, focused primarily on setting this contextualization and historicization, but also on addressing their potentials and constraints, informed by the current concerns of the field and guided by the premises and hypothesis of the thesis.

Additionally, an interview was conducted with Peter Weibel on *Welcome to the Wired World* (1995) and *net_condition* (1999), which serves as a form of revisiting those exhibitions in light of today's context. Notwithstanding the existence of detailed literature on the subjects (mostly from exhibition catalogues), it was found relevant to recontextualize it, considering the shifts in perspectives on online-based art exhibitions today.

Lastly, in order to analyze a few examples of networks in community-building platforms associated to online-based art, the thesis applied social media and big data analysis, in partnership with Labic (*Laboratório de Estudos sobre Imagem e Cibercultura*), a lab in Brazil which focus on online network analysis, addressing issues in web culture, structures and dynamics. The method applied involved the collection of online data from two of the major social media platforms, Facebook and Twitter, in order to retrieve and analyze the engagement established with certain networks and the contents they produce.

The application of those methods, however, faced certain restrictions. Due to the characteristics of the medium of investigation, many of the past projects analyzed in this thesis are no longer available for direct consultation and analysis. This means that when researching online-based art one must often rely on secondary sources as the main source of information, contradicting the traditional research guidelines and standards. The implication of such a method is the impossibility of making further analysis on what was not archived, investigated or questioned. Those sources, give an already framed perspective on past projects, based on the concerns of the time, and, therefore, influence the present investigation to some extent.

The present study was then limited, as others of its kind, to projects which were more thoroughly documented and openly accessible. As the desire to broaden the scope of analysis permeates its foundations, in order to avoid further repetition of projects which have already been well addressed in previous studies and considering the importance of stretching the boundaries of online-based art research, the present investigation sought to diversify the projects analyzed, within its capability. However, the limitations encountered during the process of investigation, which are

typical of the field, act as a prominent reminder of the importance of further research and reiterate the field's urgent need of initiatives that provide the available resources to conduct a deeper historical revision and retelling of past and “lost” projects. In this context, the thesis salutes the ongoing approaches conducted by institutions such as Rhizome and the Media Arts History conference series, network and archives, which have been broadening the conditions for online-based art research, preservation and archiving by providing the necessary tools (and by doing so, decentralizing the efforts) and also the space for debate and collaboration.

IV. Premises and hypothesis

Based on the initial readings of the literature, on initial observations of existing practices, and informed by a previous study conducted at the *Zentrum für Kunst und Medien* (ZKM)², the thesis based itself on the premise that the current scenario of online-based art exhibition faces four general concerns or constraints. The first and most evident concern of the field is with *presentation* of the selected works. Both artists and institutions have been struggling, since its early years, with how to present online-based artworks in both physical and online spaces. Although there was initially a stronger movement towards site-specificity aligned with counter-institutional discourses, artists and institutions still seek to exhibit online-based practices in the physical space. Most often, this is done through the projection of a browser view on a wall. In previous approaches, those artworks were exhibited through the classical computer screen (a strategy which reappears now and then).

Those straight forward strategies, however, not only risk losing key aspects of the artworks – hence the continuous fight over site-specificity – but often end up shoving online-based art into a box which it does not necessarily fit. The aggravated scenario is when the artwork is presented offline or as a video documentation (which then seems more of an archival gesture than a curatorial one). The artworks which present the most challenges are, therefore, the ones that require direct public participation, live feed or embrace more networked culture or practices and, as such, extrapolate the spatial boundaries of the physical exhibition space. In this sense, the concern with presentation stretches towards the notion of spatiality – far beyond the limits of museum walls – and touches the concept and application of interfaces.

A second (although not in importance) concern when it comes to exhibiting and implementing platforms for online-based art is *engagement*. This concept refers not only to the

² During July and August 2016, I conducted a research on online exhibition platforms at ZKM, along with an evaluation of the *ArtOnYourScreen* (AOYS) project. During this period, interviews were conducted with project managers, curators, artists and partner institutions addressing issues in curatorial strategies for online-based art. This previous research, although not published, served as a starting point of some of the inquiries here presented.

challenge of establishing public participation and agency, especially within online platforms, but also to the acceptance by the art sector itself (this includes, interestingly, the curatorial staff within institutions). Public engagement in art institutions is a general concern, especially in times of “attention economy”, thus it does not refer solely to online-based art (although online-based art can impose a few more challenges when it comes to public awareness of the medium and the concepts behind the artworks). But the acceptance (or lack of acceptance) of current initiatives by some of the actors in the sector is noteworthy, especially when it comes to implementing online platforms and computer or algorithm aided curating. There seems to still be a certain disbelief and apprehension towards these more recent practices, specially when addressing the use of algorithms, which may come from a fear of replacement or loss of representation or from a concern towards the present limitations of the technology applied.

This then leads us to another concern regarding online-based art exhibitions: *reach*. Although the term has been borrowed from the marketing lexicon, it refers not only to the challenges in public reach (both in numbers and diversity) within the art sector today, but more significantly to the constraints faced by art institutions in reaching their own network of practitioners. Mainly, current initiatives have been struggling to find emerging artists, due in part to the web's dispersive structures and shifting cultures, and, in such a case, some have then been applying strategies to stretch their reach and strengthen their network (through open calls and algorithmic curating, for example).

Last, but not least, some of these initiatives have been facing constraints of a more *conceptual and political* nature. A lack of a concise terminology and conceptual framework to contemporary artistic practices influence directly presentation, engagement and reach, as emergent practices defy the existing structures and discourses. When the artwork has not yet been discussed or analyzed thoroughly within the art field, how can we present it in a determined space or context? How can we address it to the public? And, most importantly, how and where can we find it?

Additionally, there seems to be some discrepancy or contradictions when implementing projects for online-based art, specially when it comes to a general understanding of the medium's language and web culture. This does not necessarily refer to a lack of knowledge or expertise, but more significantly to current limitations and clashing practices within economical and political stances. Often appropriationist and immersed in a largely mash-up and copy-left digital culture, online-based art has been imposing challenges to the political and legal apparatus on which these art institutions often rely on. In this context, it is common to find an exhibition platform which exhibits artworks that include appropriated contents or an online platform that promotes user engagement but, at the same time, is legally bound to restrict access to its own archive and contents (what Steve Dietz called a “Legal Bug”, 2003). Conceptually and ideologically these interfaces are contradictory

to the artistic practices they embrace and to the web culture they inhabit.

Furthermore, the thesis developed the research based on a fundamental premise, also sustained by the previously cited literature, regarding the influence of technology to the arts. More specifically, it believes that technological developments have been shaping (and is equally shaped by) the artistic practices and has promoted significant shifts within art institutions and their structures. Most importantly, the use of recent technological developments in the art (from the Internet to more recent approaches in VR, AR, bioart, etc.) has been shifting the very notions of an exhibition space, as it imposes new challenges for exhibition-making, engagement, archiving and preservation.

This last premise then leads us to the hypothesis of this thesis, which sustains the idea that, with the technologically-driven changes and challenges, the forms through which online-based art has been exhibited in the last twenty-seven years has also shifted (to answer the initial questions of this thesis) and, more so, it is also shifting the role of curators and their relationship towards the spaces, the artists and the public. The thesis has then selected projects that indicate a movement towards these shifts. Nevertheless, it seems that a change in curatorial strategies and roles is very much claimed for, as suggested by Domenico Quaranta's (2008) and Josia Krysa's (2006) criticisms towards the current practices, and, therefore, a thesis on the subject can perhaps open a debate towards this shift, if not yet in motion.

V. Justification and importance of study

There is a noteworthy concern and interest of artists, critics and theorists in present online-based art curatorial practices. Just as this thesis was being written, CRUMB list launched a new discussion thread entitled *Internet art and platform building* (2017), where curators and artists were invited to explore the topic of curating online-based art through the concept of platform building (after Steve Dietz's concept of the curator as a "serial platform builder"). The thread aimed to explore the "changing nature of the artistic practices online, the exhibition, and spatial perception more generally under the theory of the 'semantic web'" (Ball, 2017). Organized by Alejandro Ball, the mailing-list counted with the participation of Max Dove, Marialaura Ghidini, Paul Brown, Diego Cruz, Marc Garrett, among others, and addressed issues within the relationship between online and offline space, between the curatorial and artistic approaches, and issues of "platform politics", therefore corroborating the present importance of this subject to the field and this thesis.

Furthermore, new online platforms are constantly being launched on the web, indicating a further need and interest in exhibiting art online (and not only online-based art), to which this thesis can also come as resourceful. However, although some of the issues addressed in the thesis could be

stretched to, and often overlap, other genres, the thesis aim to provide a necessary medium-specific approach to the field of online-based art – first, due to the lack of existing current approaches on this specific subject, and second, due to the need to reinforce online-based art within the larger field of Media Arts. As some literatures have indicated (Cramer, 2011; Bosma, 2011; Arns & Lillemose, 2005; and Quaranta, 2008), there seems to be a certain “marginalization” of online-based art, not only in institutions of more traditional art forms, but also within the media art sector.

Moreover, by giving further contextualization of the current and past practices in online-based art curating and exhibition, and in light of the present concerns, the thesis reignites the interest in and the relevance of these more experimental initiatives, bringing the topic back to debate. As such, it opens a space and opportunity to discuss further matters in this field, as a direct outcome of its investigations.

VI. Overview of chapters

Chapter 1 addresses how online-based art has been exhibited in the past twenty-seven years. It starts by describing the context in which online-based art found itself in the late 1980s and early 1990s, highlighting projects such as *äda'web* (1994) and *Gallery 9* (1997) as pioneer online galleries. The existing documentation of these projects describe the experimental aspects of both artistic and curatorial practices of the time. However, counter-institutional discourses promoted by many artists and critics of this period – mainly through mailing-lists such as *Nettime* – questioned the very need and existence of these spaces, in regard to the specificity of the medium.

The chapter then presents and analyzes different modes of exhibiting online-based art throughout the years (both institutional and artist-run, both strictly online and physical) concentrating on the different types of structures and discourses, rather than presenting a linear historical overview. With the available resources, the chapter argues that, before *äda'web* and *Gallery 9*, there was a number of other projects and platforms that provided a space not only for debate, but also for exhibiting and promoting online-based art practices.

By presenting these early community based platforms as exhibition spaces, the thesis also questions the browser-centric view on online-based art practices and exhibitions. In doing so, the chapter highlights the importance of such communities, online and offline, to the development and, furthermore, to the institutionalization of these practices. It argues, therefore, that initiatives such as *äda'web* and *Gallery 9*, although they might have aimed towards experimentation and self-criticism, inevitably inserted these practices into the institutional realm.

This mark of the institutionalization of online-based practices does not infer the defeat of these artistic practices, artists or activists, but rather signalizes an awareness of a significant

discursive shift regarding the Internet and its structures – from the libertarian perspective of the open and free network to the over commodification and commercialization of its environments. The chapter brings these artistic practices and curatorial approaches into context, by addressing the shifts within Internet culture and their influence on the development of the field. This contextualization is fundamental to understand the initiatives for exhibiting online-based art and the shifts in curatorial strategies throughout the years.

The examples analyzed in this chapter are linked to the historical context of the Internet and are supported by documentation on the debates and discourses behind these initiatives. These historical and discursive contextualization enables us to identify specific traits of the projects analyzed and also allows us to identify common denominators in other initiatives and periods. The turbulent context created by heated discussions on the concepts and theories of online-based art (more specifically on the *net.art* terminology), in which exhibitions such as *documenta X* (1997) and *net_condition* (1999) found themselves in may have contributed to the reception and appraisal they received at the time, especially in regard to the presentation format of the artworks. In light of today's context, these exhibitions highlight the challenges of exhibiting online-based art and presents us with an interesting debate around the relationship between the online and offline spheres.

Ars Electronica 1995's *Welcome to the Wired World*, on the other hand, was situated in the early years of this debate, when artists were still exploring the medium and its possibilities and, therefore, was perceived differently by critics and theorists. In fact, as many early initiatives, it received (if we look at the existing literature and documentation on the initiatives of that time) less attention than those situated in the middle of the *net.art* debate.

The proclaimed death of *net.art* was followed by the crash of the dot-com market, which demystified the Internet as a safeguard for prosperous investments as many online based companies rapidly shut down. However, that same period saw the rise of a whole different online dynamics, where new forms of communities gained form. This scenario culminated in what was coined as the *web 2.0*, where an Internet of predominantly static personal webpages expanded to a more dynamic, interactive and participatory environment, sustained largely by user generated contents. Blogs and other forms of community-building platforms were widely adopted and became the emergent spaces for the exhibition and discussions of online-based art.

As the web user apparently gained more control over content production, more artist-run initiatives appeared and in new formats – as surf-clubs and social media based galleries. With the advances in technology and the shifts in web culture, curators began exploring new online territories, such as games and virtual and augmented reality platforms as exhibition spaces. These formats, however, have been seldom explored and documented in previous literature on online-

based art. By acknowledging and analyzing these different platforms as legitimate exhibition spaces, the chapter not only highlights their importance to the field and the history of online-based art exhibitions, but also suggests the need to rethink and recontextualize the very notion of these exhibition spaces. Moreover, the intrinsic dynamics of these initiatives questions the core concept of curating and, as the lines between online and offline life blurs, they suggest the need of a broader term, more aligned with contemporary (web) culture.

But, if on one hand artists gain more creative autonomy with the shifts towards a more user-driven Internet, on the other hand, institutions reinserted themselves in this expanding environment. Although the dot-com market collapse may have initially destabilized online investments, the Internet has since then become ever more accessible, ubiquitous, and, consequently, part of our everyday life. The traditional museum has then increasingly ventured through the online sphere, expanding its activities beyond its physical space by exploring the curatorial potentials of the interface.

Chapter 2 gives an introduction to the insertion of the museum in the online sphere. As artists experimented with new practices and technologies back in the 1960s, curators expanded their activities towards a more mediative role in order to insert and present emerging artworks and technologies within the institutional realm. With the popularization of the Internet, and the subsequent emergence of online-based art and appearance of the first online exhibitions, this mediative role took a sudden turn towards unknown territories.

Although initially there might have been reluctance from the institution's perspective to explore this new sphere, a few curators and theorists saw the creative and communicative potentials of the Internet, not only for online-based art, but, more broadly, for institutions themselves. With the Internet becoming gradually more ubiquitous, art institutions established their first online experiences. Today, in a widely globalized and connected world, art institutions are expanding their online participation not only by establishing an additional communication channel and, therefore, strengthening their relationship with the public, but also by providing an alternative environment for experiencing art. Consequently, as the web endeavors through a more participatory culture, these initiatives dive into the growing field of user experience and interface design, going beyond the institution's physical and more traditional structures.

The chapter, therefore, presents and analyzes projects that have been venturing through these relatively new territories. The projects aim to rethink the existing structures and, by doing so, address pressing issues in curating online-based art. ZKM's *Art on Your Screen* platform strengthens the relationship between artists and the public, by exploring the interface's participatory potentials. This relationship, however, goes beyond the online platform, stretching its reach to the physical spaces of the museum. Such projects show that online and physical spaces can and should

be seen as coexisting structures.

The *Palais des Beaux Arts* in Vienna, Austria, illustrates this symbiosis between two different spheres, by creating a virtual museum attached to a determined physical space. Although the project does not work strictly with online-based art (since it actually functions offline through a closed network which is then connected via the visitor's mobile device), it is a crucial example that shows how a platform's interface can become the museum itself, literally embodying a museum without walls.

Through the analysis of these examples, the chapter investigates how user experience and interface design thinking can become essential tools for the development of such projects. It also investigates the shifts in curatorial practices through the acknowledgement of the importance of collaboration in such contexts. Additionally, the chapter highlights the potentials and the challenges of these structures and curatorial strategies, exposing both sides of emergent and experimental practices.

Although working with interface design is fundamental, these platforms also risk overshadowing the artworks. In addition, as these online exhibition platforms expand their activities through time, documentation and archiving becomes an evident need. However, they risk misinterpretations, as the platforms acquire both practices within the same structures. The chapter concludes that such projects need to have a very clear outline of its roles and activities, which can be highlighted through interface design thinking in order to differentiate the exhibition space from the archive of past exhibitions. Link Art Center's *Link Cabinet* demonstrates how these challenges can be addressed by proposing a single artists and single artwork exhibition interface and by clearly separating current exhibitions from their archive.

As projects which are set to be primarily exhibition platforms incorporate archival measures, archives are also developing exhibitions through their online platforms. By analyzing the Archive of Digital Art's recent online exhibition the chapter investigates the thin line between exhibition and archival strategies. Furthermore, the chapter, through the analysis of such examples, compares the concepts of the online exhibition platform with the concepts of the archive, addressing characteristic elements and concepts of curating, archiving and creative practice. In conclusion, the chapter highlights the need for an interface criticism for the further development of such practices, presenting how this theoretical framework can aid in understanding the interface beyond the browser, by pushing its borders back to the physical space of museum.

Chapter 3 addresses some of the major differences in today's online-based art scenario in comparison to its early context. The chapter analyzes previous and current online-based art initiatives in order to address present issues in curating, especially regarding the shifts in web structures, discourses and culture. It starts by characterizing early community-building initiatives,

such as BBS and mailing-lists, as spaces for both critical debate and artistic experimentation, where the utopian discourse of early Internet culture promoted discourses and practices of online-based art. The chapter brings the discussion back to the *net art* context, when counter-institutional discourses and the DIY culture of the time enabled the development of a strong sense of community between artists, curators, critics and theorists across multiple borders.

By identifying some of the main characteristics of these early communities, the chapter observes how they also arose from existing offline initiatives, such as events and artists gatherings, highlighting once more the link between online and offline spheres. It also stresses their international diversity, while acknowledging an European and North-American predominance in the historical and discursive accounts of online-based art.

Moreover, the chapter argues that the changes in the concept and structures of online communities, from the BBS and mailing-lists to surf-clubs and social media platforms, have significantly influenced curatorial strategies of online-based art, as there is a lack of a sense of community belonging and a lack of a clear artistic discourse or definition in today's online practices, which leads to "alternative" curatorial measures in order to identify emerging artists and artworks across the Internet. It then identifies initiatives which have been trying to recreate community-building structures, such as Rhizome's and Furtherfield's, highlighting their potentials, but also their limitations regarding today's web practices and culture. More importantly, the chapter defends the need to rethink these structures in order to align them to today's web culture and, by encouraging us to experiment with new formats and explore recent technological developments, urges us to also turn to platforms and practices which embrace Internet's subcultures.

Within this context, the Museum of Digital Art's (MuDA) curatorial strategy and Cameron MacLeod's *Curatron* explore the potentials of algorithms in seeking and exhibiting artists within the Internet. Computer aided curating, however, is not a new concept, going back to projects such as C@C (Computer Aided Curating) in the early 1990s. These initiatives, nevertheless, address issues regarding the politics of curating and can be associated with previous archiving initiatives such as Runme.org which rely partially on folksonomy practices. The chapter then concludes by highlighting the collaborative possibilities between artificial intelligence and user generated inputs in our contemporary society.

These chapters, together, provide a general overview and analysis of the current scenario, which is then reviewed and further discussed in the conclusions of this thesis. The conclusions address more directly the outcomes of this investigation, which include the identification of the present constraints and potentials of the scenario in order to indicate further developments and fields of action. Among those outcomes are identified issues and necessary developments in the field of study, issues in exhibition and presentation of online-based art, and issues in community

and network-building within the arts. Most significantly, the conclusions argues that the current scenario asks for a more open, malleable and experimental curatorial practice – one that is aligned with the present culture and structures of the web, which is based on the concept of the *perpetual beta*, i.e., where platforms and practices have to be constantly updated and in transformation.

Chapter 1

1.1. Shifting strategies: revisiting exhibitions

As the Internet became more popular and accessible in the 1990s, and as more artists ventured through the medium, online exhibition spaces started to appear. *äda'web* is perhaps the best well-known online space for the exhibition of online-based art of that period, described as a pioneer of its kind³. Created in 1994 by Benjamin Weil, with the production and financial support of media developer John Borthwick and designed by Vivian Selbo, *äda'web* was described as a platform for research and development where artists were invited to “experiment with and reflect upon the web as a medium, and as a means of distribution for their work” (Selbo, 1998). It was launched almost a year after Mosaic – one of the first user-friendly web browsers which had a crucial role in the popularization of the Internet in the 1990s, together with Tim Berners Lee's WorldWideWeb browser (Nexus) and the Netscape Navigator. *äda'web* appeared and developed, therefore, amidst the early hype of the technology developments of the web, reaching its demise in 1998, just after the rise of the dot-com boom and the economic bubble.

äda'web was, therefore, a bold project, proposed at a time where little was known about the commercial needs and challenges of the Internet, venturing through the early stages of the online world as we know it. Named after Ada Lovelace, one of the pioneer women in computer science, the project shared with her the conviction of the potentials of computation to artistic practices. “Their vision [Benjamin Weil and John Borthwick's] was to build a research and development lab, inviting artists (visual artists, architects, composers, filmmakers, and so on) to collaborate with experienced designers and programmers in an investigation of the creative potential of the Web” (Scott, 1998).

As *äda'web*'s executive producer Andrea Scott (1998) recalls, this collaborative environment was initially inspired by the working model of the Experiments in Art and Technology (E.A.T), launched by engineers Billy Klüver and Fred Waldhauer and artists Robert Rauschenberg and Robert Whitman in 1967⁴. As such, *äda'web* offered artists the conditions to explore this new

³ Other initiatives were developed within this period, but not as well documented. An “incomplete” list of these initiatives was published in Rhizome's *Artbase* (2017), with a brief description of project from 1991 to 2013, made possible with inputs from artists and critics such as Cory Arcangel, Claude Closky, Michael Connor, Lauren Cornell, Raffael Dörig, Martin Germann, JODI, Miltos Manetas, Eva and Franco Mattes, Domenico Quaranta and Billy Rennekamp. The list, however, includes all types of initiatives (from forums and archives to institutional exhibitions and artist websites/artist-run projects), not presenting an analytical view or any categorization of the initiatives, which were mostly influenced by the contributor's backgrounds and activities. Although Rhizome's effort is of great importance, a big part of the examples are, unfortunately, untraceable due to broken links and lack of further documentation.

⁴ E.A.T., set as a not-for-profit organization, served as a port for a diverse range of collaborative practices in arts and technology, and sprung from the early 1960s to the 1990s. Although its formal consolidation as an institution was

platform for artistic experimentation without them needing to have any prior programing experience, by working hand in hand with web developers, producers and curators. “Rather, the input happened more at a conceptual level, with an understanding of the network that was informed by a practice developed with other media” (Weil, 1998).

During its four years of activity, *äda'web* exhibited more than twenty different projects in its platform. They were mostly commissioned artworks from established artists with a diverse range of backgrounds, such as Doug Aitken, Julia Scher and Lawrence Weiner⁵. Benjamin Weil described them as being mostly artists “who had an interest in the public space, an experience with various media, and who specifically did not rely on any form of craftsmanship to produce their work” (Weil, 1998).

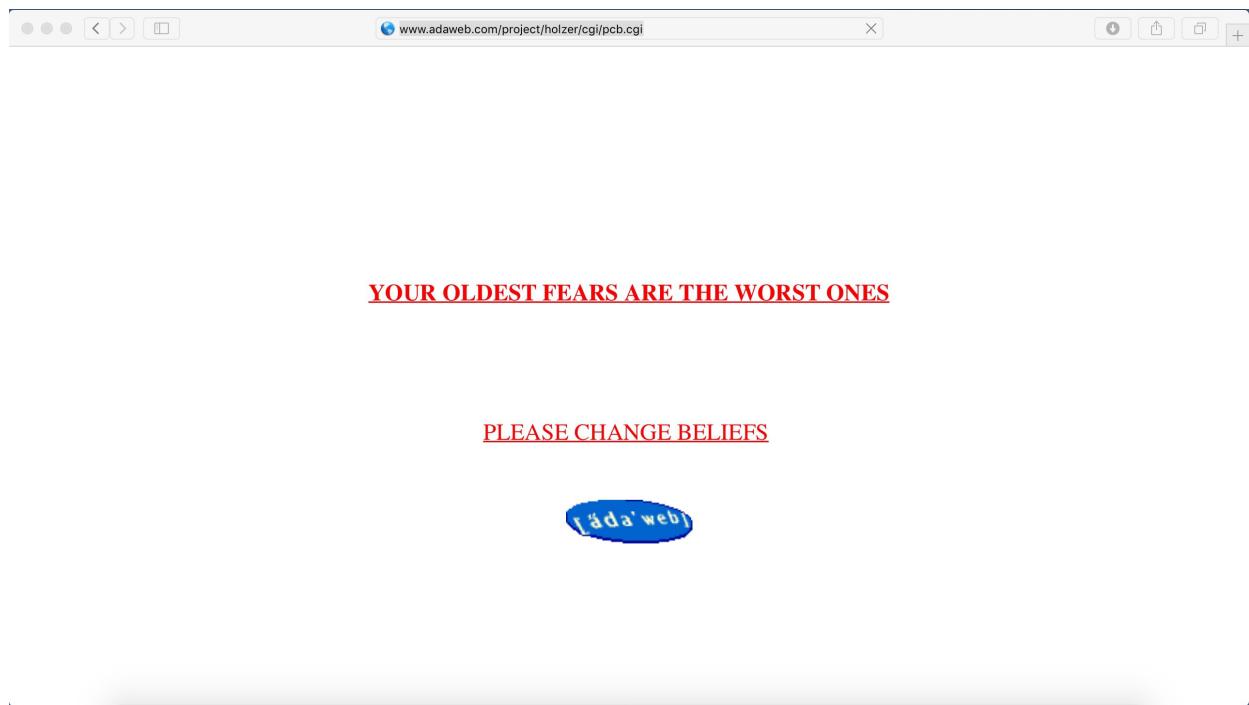


Image 01: *Please Change Beliefs* (1995), Jenny Holzer. Print-screen from
<http://www.adaweb.com/project/holzer/cgi pcb.cgi?please>

only reached in 1967, the growing interest and the subsequent collaborative projects that preceded these years were a fertile environment which informed its groundings. As Kathy Battista (2015) described it, what started out as individual invitations for collaborative work between artists and engineers (mainly from the Bell Telephone Laboratories in which Klüver worked in), grew into an organization focused on giving artists' access and technical support to emerging technologies, informed by the needs of the field at that time. It is then no surprise that its demise was reached with the popularization of these technologies over the course of the end of the century, as computers, programing languages and the online network became more accessible. “By the end of the millennium, what had begun as a groundbreaking effort to merge art and technology would be considered as antiquated as a result of the ubiquity of that technology” (Battista, 2015).

⁵ However, other forms of participation were also included, with artists interested in linking already existing pieces to the platform. “As the site grew and started having a real presence online, artists who were working online expressed interest in anchoring projects from the *äda'web* site, because they were interested in the context it would create for their work. As a consequence, *äda'web* soon offered an “associate” dimension in which projects by such artists as Michael Samyn (GroupZ), Jodi, and Maciej Wisniewski were featured” (Weil, 1998).

The first one to exhibit on the platform was Jenny Holzer, in 1995, with *Please Change Beliefs*, a participatory browser-based piece which invited visitors to change and add English aphorisms. By that time, Holzer's works had been shown in major museums such as the Institute of Contemporary Art in London (1988), the Guggenheim Museum (1989) and the Walker Art Center (1991), and she held a prestigious Venice Biennale *Leone d'Oro*. Her art focused on the politics and aesthetics of language and the public space, where she often projected and printed "truisms" questioning identity and consumerism, among other topics. Holzer's approach on *äda'web* seemed, therefore, to address the Internet as an equally public sphere in which, differently from her previous approaches, speech could be appropriated and edited by the visitor. The web's participatory interface then added another layer to Holzer's work as it brought public intervention to her conventional "truisms".

Like Holzer, the following artists explored the platform as a malleable medium to which one could transform and call for participation. The platform itself experimented with its own boundaries, changing its interface constantly – a process understood by Weil (1998) as also part of the curatorial duties. In total, *äda'web* had four major interface versions, all of which had a certain experimental approach to it, but also a need for content organization. "As the number of visitors to *äda'web* was growing and their knowledge of art was probably less than the 'early adopters', it was deemed important to provide specific information about the projects [...]" (Weil, 1998). This information-based curating proposed by *äda'web* was, as argued by Josya Krysa (2001), influential within the approaches with online-based art that followed. Not that information was not necessary for previous approaches, or that information technologies was not of interest before that, but, as Weil (1998) explains, the new medium (and its growing numbers of users) needed contextualization in order to welcome visitors from outside of the programming field or the (yet infant) Internet art world.

For Weil (1998), *äda'web* would act as an alternative to existing online galleries and virtual museums through which many emerging artists and students promoted their works, mostly in painting and sculpture, and where "one would basically find glorified catalogues and other forms of 'brochureware; somehow presumptuously referred to as 'digital art'" (Weil, 1998). Weil saw, therefore, the need to better discuss the concepts that were arising with the hype of the online realm, by establishing a platform which would create, as Steve Dietz (2005) described, an international community for the "critical contextualization of a burgeoning digital culture".

In this emerging scenario, Weil (1998) saw the role of the curator as more of a facilitator and a translator, responsible for creating a dialogue between the artists – who had no previous experience with the web – and the specialized team of designers and programmers, for a newborn digital public. For Weil (1998), curating meant "a matter of adapting to the nature of the art praxis it

has had to work with” and believed that, with new artistic approaches and new technologies, there was a need to rethink the notions of presentation and conservation. *äda'web*, therefore, dealt with online-based art as a continuous dialogue, where the artwork tends to maintain itself open. “So, rather than presenting a finished work of art, most artists seek to engage viewers in order to let them participate in the experience and generate meaning” (Weil, 1998). Weil talks here about the participatory potentials of the web, where its fluidity “calls for unfinished thoughts”. Hence, *äda'web*'s commissions was adapted to this logic, by inviting artists to develop works such as Julia Scher's *Securityland*, which started in 1995 and continued to unfold throughout the whole life span of the platform.

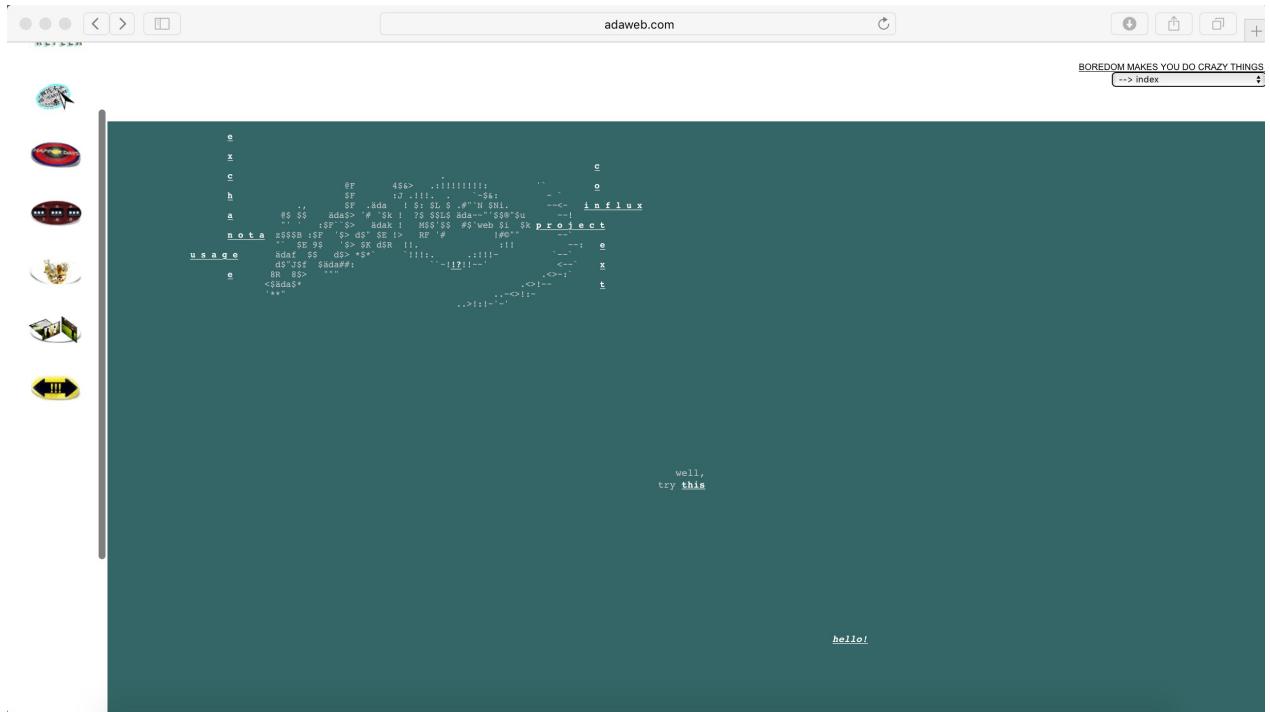


Image 02: *äda'web*'s last home layout. Print-screen from <http://www.adaweb.com/home.shtml>

äda'web, which lost its financing means by 1998, was then donated to the Walker Art Center and became part of its newly developed *Gallery 9*. Launched in 1997 under the direction of Steve Dietz, this online platform “was created as an online venue for both the exhibition and contextualisation of Internet-based art” (Paul, 2006) and, as such, functioned as a shelter for projects such as *äda'web*. However, *Gallery 9* followed a different curatorial approach with its own commissions. From its inception, the project focused on “all things cyber”, as Dietz described it in 1998 (Walker Art Center, 2017). It created a space for artistic exploration and exhibition, but also for discussions and collaborations between artists and contributors which were already engaged with the online art scene (in contrast to *äda'web*'s artists), such as 0100101110101101.org, Alexei Shulgin, Mark Amerika, Lisa Jevbratt and Marek Walczak.

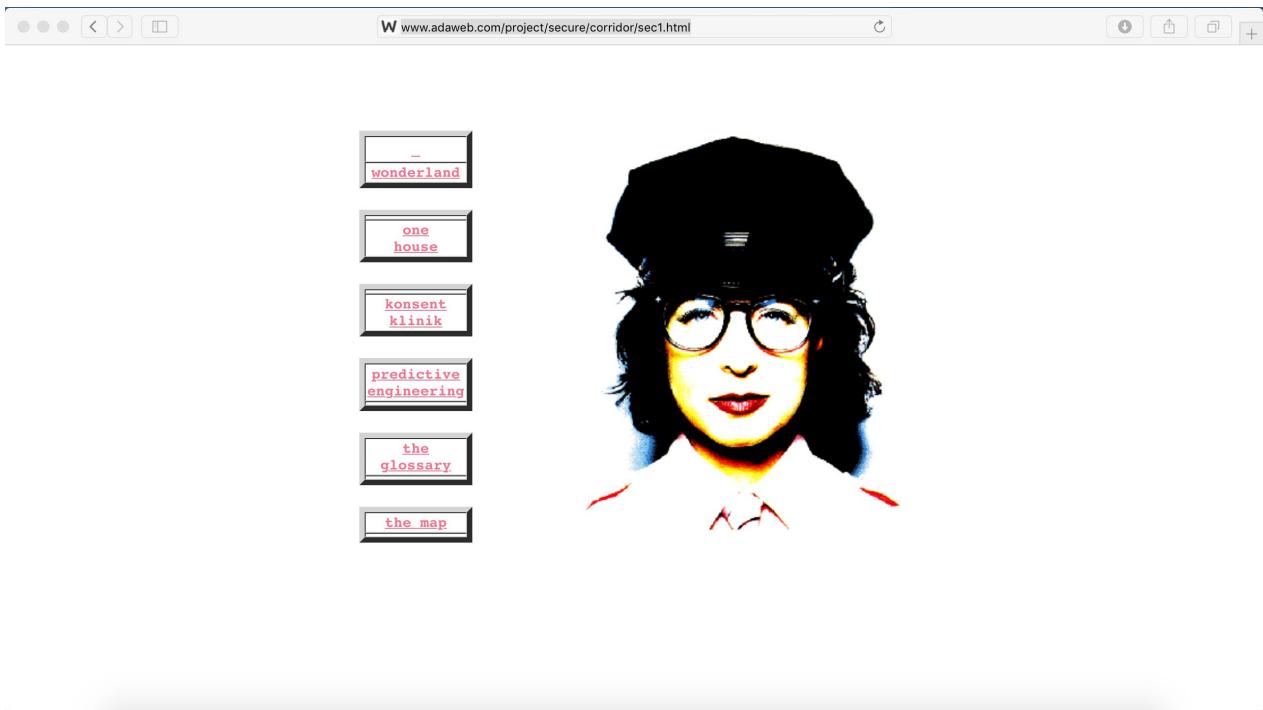


Image 03: Julia Scher's *Securityland* (1995 – 1998). Print-screen from
<http://www.adaweb.com/project/secure/corridor/sec1.html>

Of course, *Gallery 9* found itself in a somewhat different scenario, where the early Internet hype was reaching its peak and was followed by its rapid downfall with the dot-com crash. In such a context, the online-based art scene did not need as much contextualization as it did in the early years of *äda'web* regarding its potential use⁶, but rather called for further discussions of its concepts and discourses. *Gallery 9* was, therefore, part of a growing community of artists, curators, theorists and critics which delved into the specificities and implications of the Internet as an artistic medium. As such, Walker Art Center's initiative to preserve and document projects such as *äda'web* was (and still is) of great relevance at a time when artists and theorists were engaged in understanding and further exploring their practice, while highlighting the importance of the previous initiatives to the field.

Nevertheless, *äda'web* was criticized, mainly for inviting artists from outside of the existing online-based art communities. “Weil’s interest in collaborating with several well-known artists unfamiliar with the Internet was controversial: some online-art pioneers regarded it as a heretical rejection of the medium itself, if not downright pandering to a celebrity-obsessed culture” (Atkins, 1998). *äda'web*’s curatorial approach was then seen as having disregarded an existing online-based art scene and its concepts and discourses. Although still incipient, fragmented and very much in

⁶ However, one can say the practice still remains, until this day, very much marginalized.

dispute throughout *äda'web*'s existence, these concepts and discourses were based on the ideal of the Internet as a space for artistic experimentation and for the critique of traditional art models and institutions. As Domenico Quaranta (2006) recalls it, it was a time when making art online largely meant "[...] leaving the art world behind, forgetting about institutional frameworks and market values, merging art and life, playing with identities and roles, creating horizontal communities, and submitting their work to large audiences who may not recognise its status as art." (Quaranta, 2016)⁷.

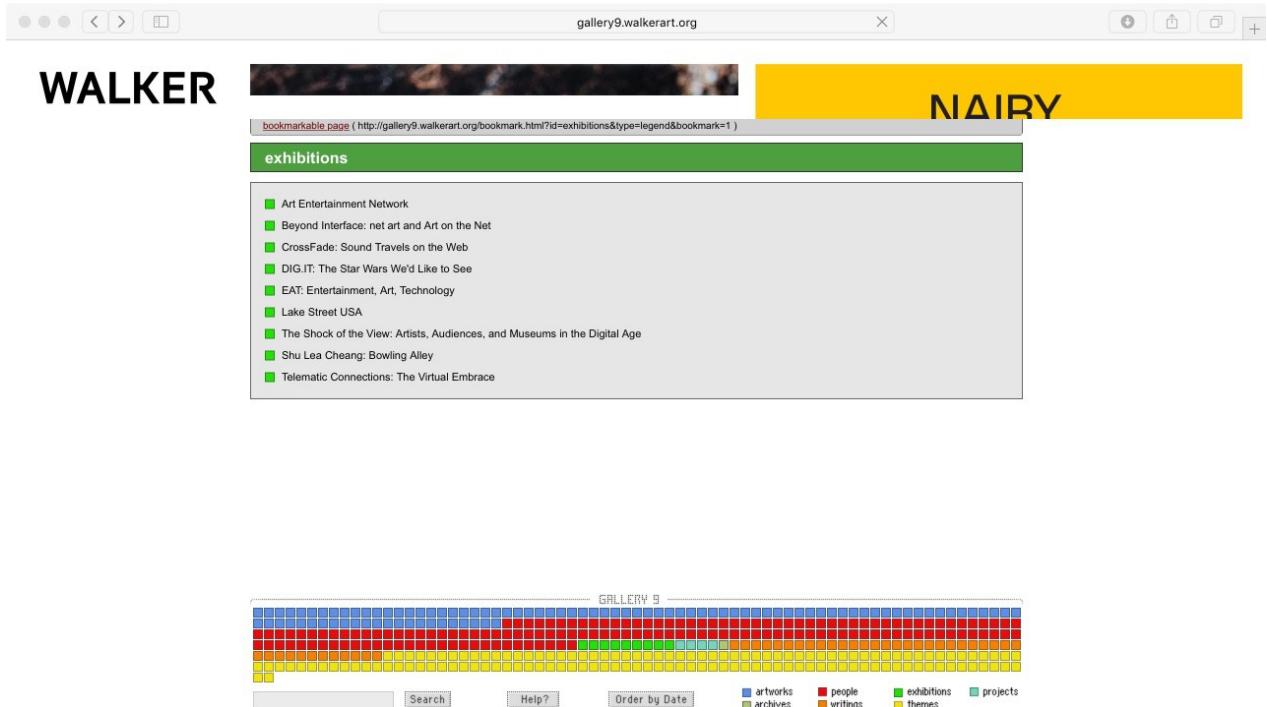


Image 04: the Walker Art Center's Gallery 9 exhibitions page. Print-screen from
<http://gallery9.walkerart.org>

äda'web was essentially a commercial project (in the sense that it was initially backed up by entrepreneur John Borthwick and later on bought by AOL, a multinational mass media corporation). "Like most work you see in a museum, *äda'web* fell down the rabbit hole of commerce to get here. The site was initially conceived as an entrepreneurial venture, and for three years it existed at the intersection of the art world and the burgeoning new-media industry" (Scott, 1998). But it did, however, aim to support an artistic practice disregarded from the traditional institutional realm and, attracted by the potentials of the web in reaching a broader and more diverse public, to insert it into the public arena in order to promote and discuss the emergence of an artistic practice beyond its commercial values. As Andrea Scott described it, "it was a commercial means to a noncommercial end" (Scott, 1998).

These were not the ideals and desires of a net art community that was forming during that

⁷ However, artist Olia Lialina would counter-argue that the Internet was also a means to the art world (Quaranta, 2016).

period. For many of those artists, the web was an open and public sphere where artists could circulate their work themselves, without the sanction of a gatekeeper – a figure often ascribed to curators, and to art institutions as a whole, as they inevitably attribute concepts, discourses, and values of what is and what isn't art through the exhibition and archiving of selected artworks.

Those artists relied on the potential of the web as an exhibition platform itself, by creating, maintaining and promoting their own webpages. Differently from institutional initiatives such as *äda'web* and *Gallery 9*, these exhibition formats were, like their own practice, less concerned with making themselves understood. Although there was a need to contextualize the developments and explorations of the practice to a broader context and public, there was, as Vuk Ćosić described it, a simultaneous “[...] imperative to innovate and to obfuscate” (Quaranta, 2016). They embraced a certain freedom to create and to experiment with formats, pushing the boundaries of what constituted an exhibition space.

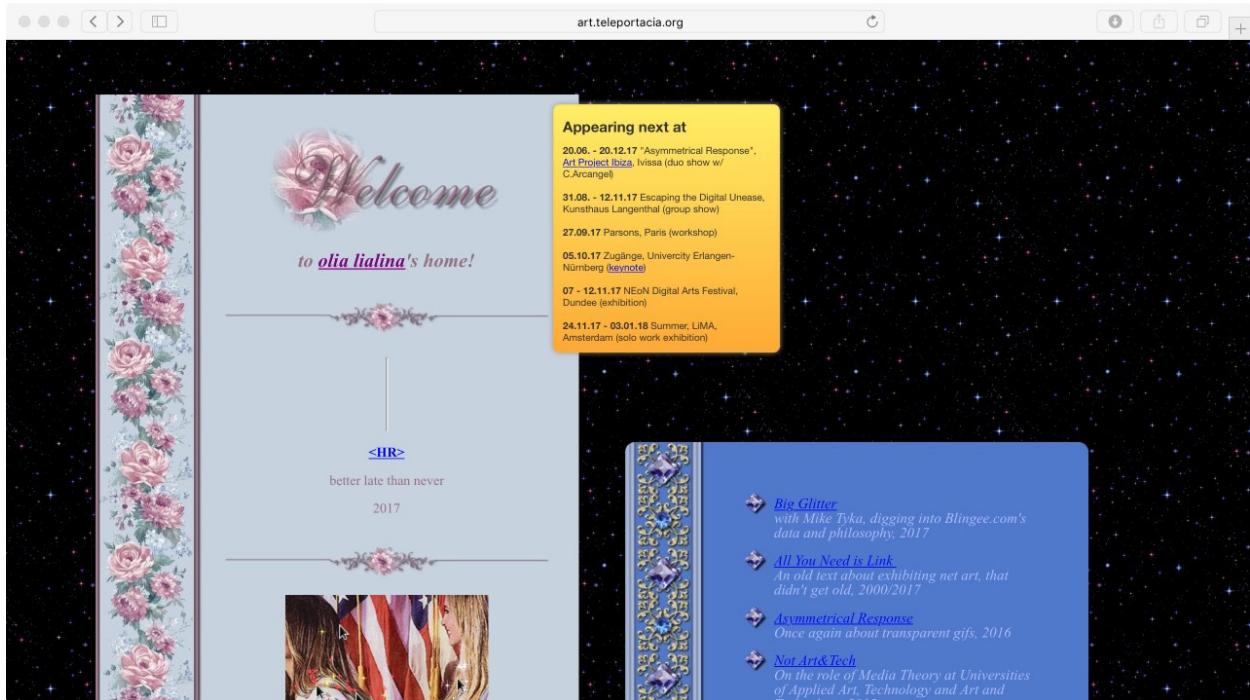


Image 05: Olia Lialina's *Teleportacia* home page (1996 –ongoing). Print-screen from

<http://art.teleportacia.org>

Artists' pages did more than exhibit and promote their own artworks. They served as a space for exchange and debate, and often included collaborative works and other resources. “As a place without gatekeepers or the validating power of institutions, it prompted artists to develop platforms, networks, directories and community projects in order to contextualize their efforts within a broader practice” (Quaranta, 2016). Moreover, they often criticized hierarchical models and roles. Olia Lialina's *Teleportacia* (1996 –ongoing), for example, hosts the *Last Real Net Art Museum* (2000 –

ongoing), a project which presents a list of links to different versions of Lialina's emblematic *My Boyfriend Came Back From the War* (1996) by other artists, highlighting not only the collaborative, open and mutable aspects of such initiatives, but also the inherent multiplicity of roles which one would execute in times when, as Lialina recalls, “[...] to be an artist was to be a curator, a system administrator, an art critic, an archivist or a vandal of your own work” (Quaranta, 2016).

Furthermore, these artist-run webpages often questioned institutional curatorial approaches. In *Location= "Yes"* (1999), Lialina proposes a virtual guided tour through online-based artworks in an attempt to discuss certain traits that have often been misrepresented by art institutions in previous initiatives. The title is a reference to the location field in an online artwork's URL, which is often presented with the specification *location= "No"* in exhibitions. Lialina argues that, although there had been a growing interest in the practice, as museums were starting to collect and exhibit online-based art, their understanding was superficial. “Maybe they think that the location bar (which can contain more than technical information), has nothing to do with art. Maybe they think net art is a browser adopted version of interactive art; that this is simply animated gifs, JavaScript's and hyperlinks” (Lialina, 1999a). Lialina talks, therefore, about essential elements of online-based artworks of that time – which had a significant meaning to the practitioners and were often disregarded by curators and art institutions⁸.

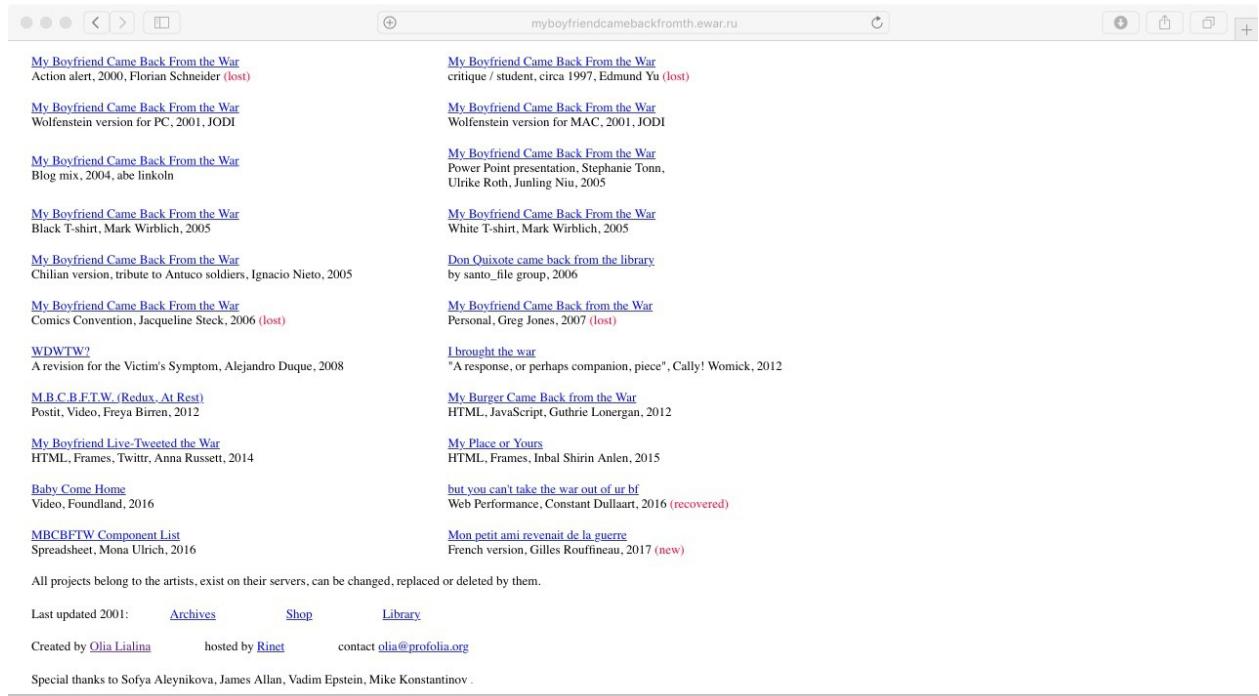


Image 06: Olia Lialina's *Last Real Net Art Museum* (2000 –ongoing). Print-screen from

<http://myboyfriendcamebackfromth.ewar.ru>

⁸ Such as domain names, which were often part of the artworks themselves, as they contributed to their conceptual framework and had political and aesthetic values.

On the other hand, the emphasis and discussions regarding domains, hyperlinks and front-end aspects of online-based artworks had concurrently given the browser window and the webpage a superseding role. Instead of a mediative interface, they were often seen as part of the artwork, as it provides a feeling of “materiality” to the back-end context of servers, codes and data. This may also come as no surprise, as the development of the World Wide Web and its first user-friendly browsers were responsible for the popularization of the Internet and for triggering further interests in its artistic potentials. It is, therefore, through these elements that most of us experience what we think the Internet is.

Furthermore, the browser-centric view not only disregards the existence of other forms of online-based art, ignoring practices that predate the *www* such as those involving early online technologies, but also excludes previous modes of online-based art exhibitions and other notions of exhibition spaces. From the early stages of the Internet, online-based art has been circulating in many different formats, from Bulletin Board Systems to current social media platforms. Before the browser-based galleries, many artists used these community-building platforms not only for communication, but to create and exhibit their own work (a concept further developed in Chapter 3).

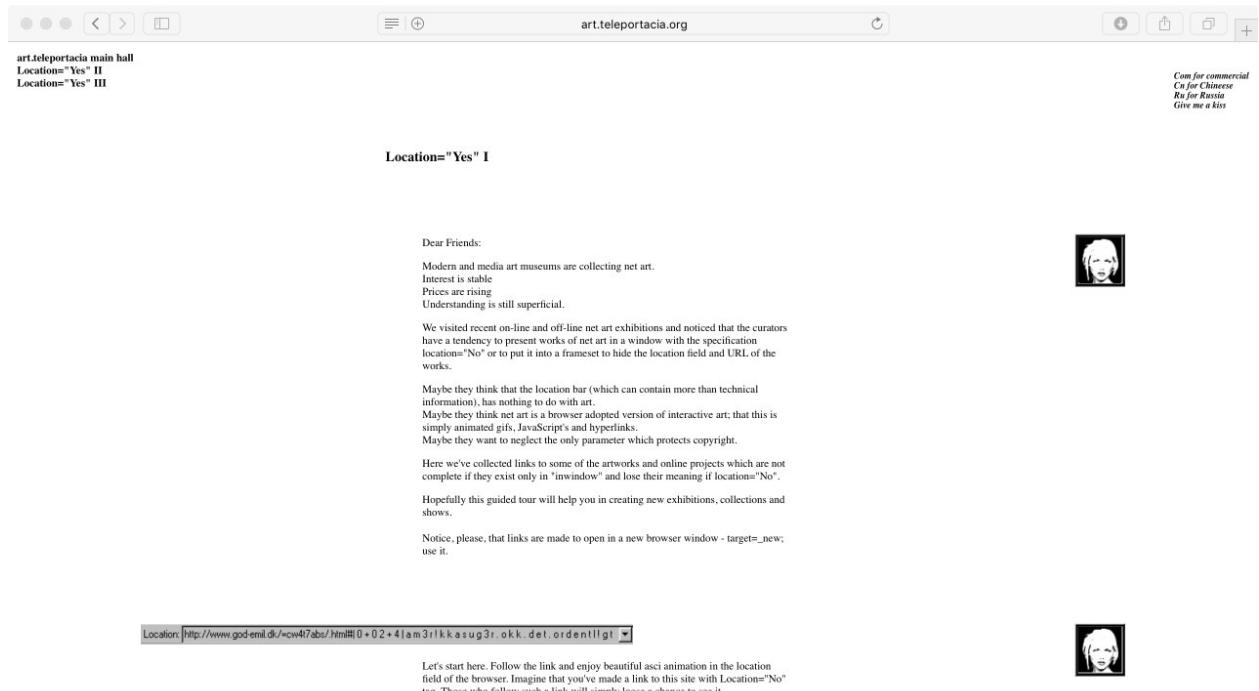


Image 07: Olia Lialina's *Location="Yes"* (1999). Print-screen from http://art.teleportacia.org/Location_Yes/

Within this perspective, initiatives such as *ada'web* and *Gallery 9* were definitely prominent efforts in expanding the notions of exhibition spaces towards a growing online sphere, but, more

significantly, they marked the institutionalization of online-based art in a time where the Internet and its practices were under the spotlight. *äda'web*'s commissions of well-known artists from outside the online art world intended to validate the emerging practices within an established and more traditional art scene⁹. And its following donation to the Walker Art Center reified the practices within an institutional art discourse and inserted it, as argued by Atkins (1998), within a larger narrative of 20th-century art. “But in the case of *äda'web*, institutionalization signals not only arrival into the arena of art history, but also the end of an era. *äda'web*'s acquisition by the Walker brings with it a melancholic sense that a vital moment – the birth of online art – has already passed” (Atkins, 1998)¹⁰.

Moreover, the donation of *äda'web* to the Walker Art Center (and its previous launching of *Gallery 9*) signaled a growing interest of existing art institutions towards online-based art and, more significantly, towards the importance and potentials of the Internet and its practices to contemporary culture and society as a whole. Ars Electronica's *Welcome to the Wired World* (1995), *documenta X* (1997) and ZKM's *net_condition* (1999) all mark this institutional concern of that period.

Organized by Peter Weibel, Karl Gerbel and Hannes Leopoldseder, *Welcome to the Wired World* (1995) questioned the implications of technological developments within the social realm. More specifically, Ars Electronica's approach dealt with the outcomes of the popularization of networked communication and information technologies, following the developments of the Internet post-www and the “information superhighways” discourses. Comprised of a symposium, exhibitions and performances, the event aimed to bring into the artistic field current debates regarding a highly driven and globalized information society, by inviting theorists and scholars such as Friedrich Kittler, Pierre Lévy and Slavoj Žižek, as well as artists, computer scientists and critics such as the Critical Art Ensemble, Tim Berners-Lee and Geert Lovink.

The festival also included a publication with a diverse range of theorists, critics and artists – from Paul Virilio, Saskia Sassen, Thomas Dreher to Eduardo Kac – which addressed pressing issues within emerging information technologies and the arts. Under the subtitle *Mythos Information*, they focused on unraveling the myths and dogmas surrounding an information-based society, where the potencies of accessibility and shareability – as part of the promises of the Internet revolution of the 1990s – were presented as truisms¹¹. The festival, therefore, set to question the statements of the

⁹ The idea of counter-institutional that has permeated initial online-based art practices and discourses is, in a way, problematic, as the insertion of a practice within this realm is, by default, an institutional approach – in the broad sense of the word. As Paul O'Neil (2007) defines it, “what is announced as art is always already institutionalised simply because it exists within the perception of those involved in the field of art, *i.e.* the institution of art is not something external to any work but the irreducible condition of its existence as art” (O'Neil, 2007). The same goes to the debate around “alternative” practices, a criticism which Joasia Krysa (2011) further develops in *Curatorial Alternatives to What?*.

¹⁰ Indeed, by the time *äda'web* was donated, art made online was going through an intense reconfiguration, with heated discussions regarding its formats, concepts and terminologies, mainly through forums and mailing-lists such as *Nettime*.

¹¹ Peter Weibel talks about these dogmas in *The Noise of the Observer* (1995). “The postmodern society is information

wonders of a free and open sphere where anyone can potentially have access to and rapidly circulate a large and diverse range of information. “How will the inhabitants of the net live in this wired world? What will be the price of information and communication within these network worlds? Who will be the hitchhikers and hijackers on the superhighways of information?” (Weibel, 1995).

Within this framework, the projects exhibited at the festival explored the multiple dimensions of networked communication, with a focus on the interactive and immersive potentials of the Internet. Contrary to other initiatives of that time, the projects presented at the festival saw the Internet as an environment composed by a flux of data in which one could access and even “inhabit” or “transit”. They focused less on the idea of the interface as a medium for artistic exploration and more on the idea of the network as a concept and a means to address issues of its own structures and social practices.

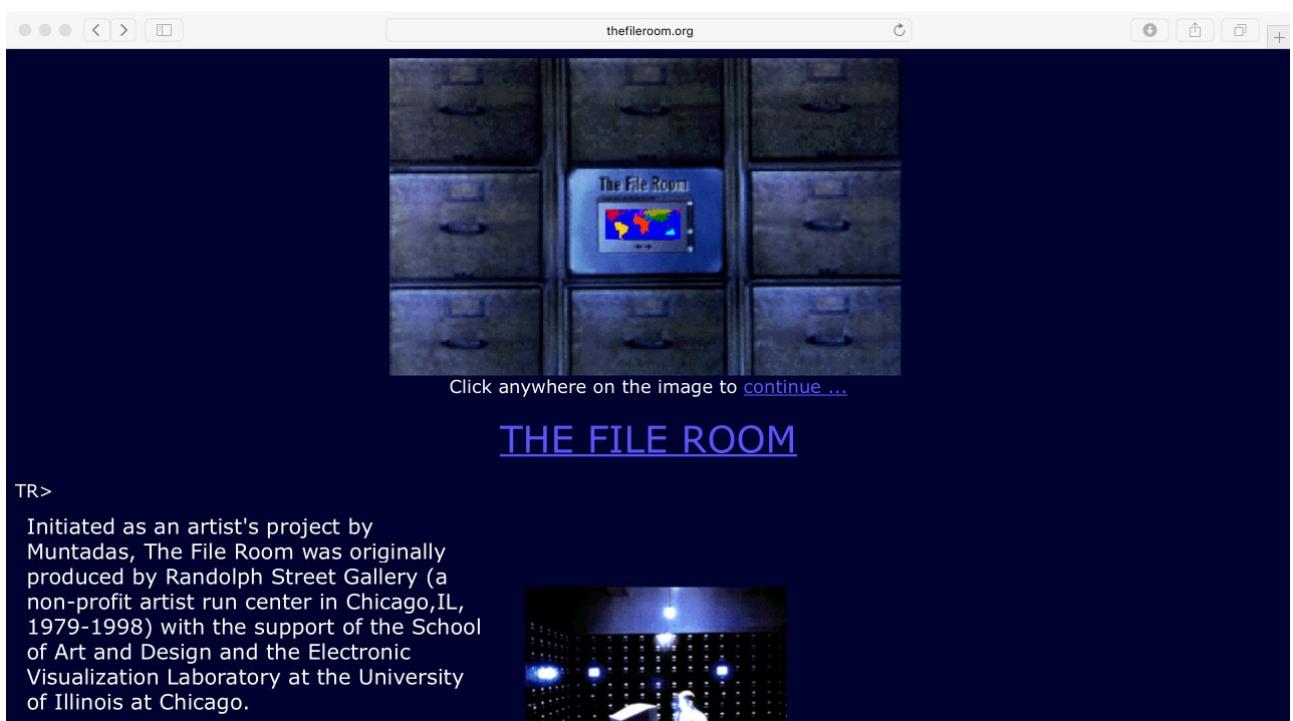


Image 08: Antonio Mutadas's *The File Room* (1994)

Antonio Mutadas's *The File Room* (1994) explored this data-driven space by creating an online archive of art and cultural censorship where people could collaborate and submit a case to an ever-growing digital library. The project was developed in the same period in which the first wiki formats appeared – now a common practice, associated to well-known open and collaborative platforms and initiatives such Wikipedia and Wikileaks. It was, therefore, part of a time when the overwhelming amount of information available online called for critical thinking towards its

based. No longer do mechanical machines support the social servicing system, but information machines, such as computers, do the job. The dogmas of the information society are: there is more information than ever. Information is generally more easily accessible than ever. Information is being exchanged more than ever.” (Weibel, 1995).

contents and its modes of distribution. “As the debate over free and open telecommunications grows, so too will The File Room reflect decisions of why, how, when, where an individual point of view may be removed, can't be seen, heard, or read – each decision resonating with the implications throughout past and future of new technologies, marketing strategies, political decisions, and... 'moral' control.” (Muntadas, 1994).

In *Crossings* (1995), a project by Stacey Spiegel and Rodney Hoinkes, web structures are translated into a “virtual city space”, where buildings represent links and sources of information which can be accessed by a navigator that strolls through the data world. “Like Alice passing through the looking glass, each form encountered in the landscape has the potential to link the participant to other realities. [...] It is in this way that *Crossings* is able to extend its navigational potential through layers of information and cyberspace” (Spiegel, 1995). As many of the projects presented at the festival, *Crossings* stretches to bridge a path between two seemingly separate worlds: the “virtual” and the “real”. This dichotomous discourse was often used to differentiate the data-driven online sphere from its counterpart, fueled by the potentials of the digital and the Internet as a means to dematerialization and disembodiment. However, “Virtuality is not [...] an imaginary or false world. On the contrary, virtualisation is the very dynamics of our common real world, it is precisely what makes the world common and shared” (Lévy, 1995)¹².

Interestingly enough, the exhibition included projects which would, through this “virtualization” of bodies, objects and information, rethink the concept of the exhibition space itself. Kunstlabor's *Elektronische Galerie* established a platform where fifty artists were invited to send contributions via a computer modem or fax to a central computer. The idea was to create a platform that would update itself and would be exhibited automatically from daily data transfers to integrated screens. Additionally, *ARSDOOM* by Orhan Kipcak, created an exhibition within a game composed of approximately 20 artists from Austria and the US. Inspired by the legendary 1993 game DOOM, the artwork replicated the Brucknerhaus (the festival's venue), through which one could navigate and interact with works and artist's icons. “The visitor roaming around the virtual exhibition at the Brucknerhaus was able to turn over every object and every work with the Baselitz tool, spray everything black with the Rainer gun, etc.” (Weibel, 2001). This interactivity promoted within the game was expanded to multiple players and could be played by anyone through the Internet.

Both exhibition platforms highlight the growing interest of the time in understanding and strengthening the relationship between the online and the offline world, as they explored the potentials and limitations of the transposition of the object and the body to the immaterial and

¹² Pierre Lévy, which would later address these issues in his seminal works on the Cyberspace, Collective Intelligence and Virtuality, addresses the virtualisation of bodies and information as a contemporary trend in *Welcome to Virtuality* (1995). As such, the transposition of the physical body to its digital version was also explored in the performances presented at the festival, such as Teshigawara's *Here to Here* (1995) and Granular Synthesis's *MotionControl 5.3*.

interconnected environment of the web. Further on, *net_condition* (1999) continued these explorations by promoting a “multilocal network event”, which occurred simultaneously in Karlsruhe (at ZKM), Graz (at steirischer herbst), Tokyo (at the ICC Intercommunication Center) and Barcelona (at the MECAD Media Centre d'Art I Disseny), and by emphasizing artworks that explored the concepts and technologies of “distributed virtual reality, shared cyberspace, non-local communication, multi-user environments, web TV and net games” (Weibel, 2001).

However, the event found itself in a new context. The original euphoria which permeated the first years of the Internet boom in the 1990s and instigated many artistic experimentations lost its strength and gave way to the need to deconstruct and demystify the structures and dynamics of the Internet. Previous artistic practices were now presented as part of a historical overview, as many were either malfunctioning, ceased to exist or were contextually inaccessible. “Merely five years later the scenery has changed completely: in 1999 many of the works from the mid-1990s appear not only naive but in some cases they are no longer understandable” (Baumgärtel, 2001).



Image 09: Mark Napier's *Digital Landfill* (1998). Print-screen from <http://www.potatoland.org/landfill/>

As argued by Tilman Baumgärtel (2001), this skepticism and criticality towards the medium and its practices incited other artistic approaches which delved upon the issues of their time. Mark Napier's *Digital Landfill* (1998) invited users to dump their digital “trash” (from unwanted e-mails and spams to obsolete data and files) into its webpage, which would then be shown layered on screen, one stacked over the other, as if in a landfill. Within a single and simple webpage, Napier was able to expose and question the overload of data that overwhelmed Internet users. In a similar

approach, Peter Traub's *bits & pieces* (1999) and Maciej Wisniewski's *netomat(TM)* explored the web as a continuous source of retrievable and searchable data, ready to be reused and repurposed.

Described as an experiment by its curator Peter Weibel (*apud* Mirapaul, 1999), *net_condition* at ZKM sought to establish alternative forms of exhibiting online-based artworks by inserting them within the locally bound context and physical structures of the museum. The project emphasized installations and, additionally, proposed two major settings. The *Net.Art Browser*, a visualizing interface conceived by Jeffrey Shaw (which at the time was the Head of the Institute for Visual Media at ZKM), enabled users to shift from one webpage to the next by sliding a 50-inch screen along a 12 meters wall using a handheld wireless keyboard. The interactive interface exhibited browser-based online artworks curated by Benjamin Well, and was mostly comprised of net.art artists, such as Olia Lialina, Heath Bunting and Vuk Ćosić. The project created, therefore, an overlap between the physical space of the museum and the online space of the browser.

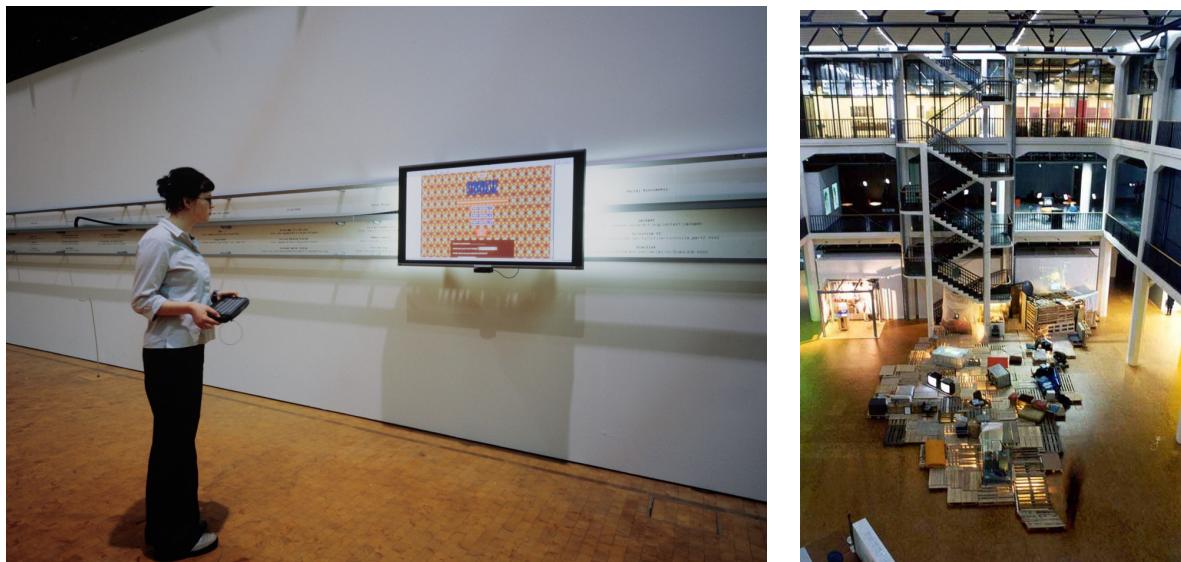


Image 10: Jeffrey Shaw's *Net.Art Browser* (left) and *net_condition*'s *theLounge* setting. Images courtesy of © ZKM | Zentrum für Kunst und Medien Karlsruhe.

theLounge, on the other hand, extended this relationship between the online and the physical museum by creating an environment where visitors could experience online-based artworks in a communal setting. Each computer of this section of the exhibition had access to a solo online piece, and was set in a lounge-like environment. The space, curated by Walter van der Cruijsen, also offered visitors the possibility to browse the web, participate in online forums and other activities, such as performances, talks and workshops. It was then described as a meeting place for the public, artists and activists, emphasizing on the possibilities of a shared experience – in contrast to the individual experience one would often have when using their personal computers at home or at the

office.

“The point of the exhibition was to create a new dialogue between the senses. Normally, the artwork is about proximity senses – you smell something, you touch something, etc. Now you have access to something that your eyes do not see and your ears do not hear. We have a processing of data coming from a distance. [...] So you have to come to the museum to see what I called net-based installations to realize this new step in human notation. [...] So I said, just come here, and you will see the real revolution of the Internet, which is not just sitting at home, watching images online” (Weibel, 2017, personal communication, Annex A).

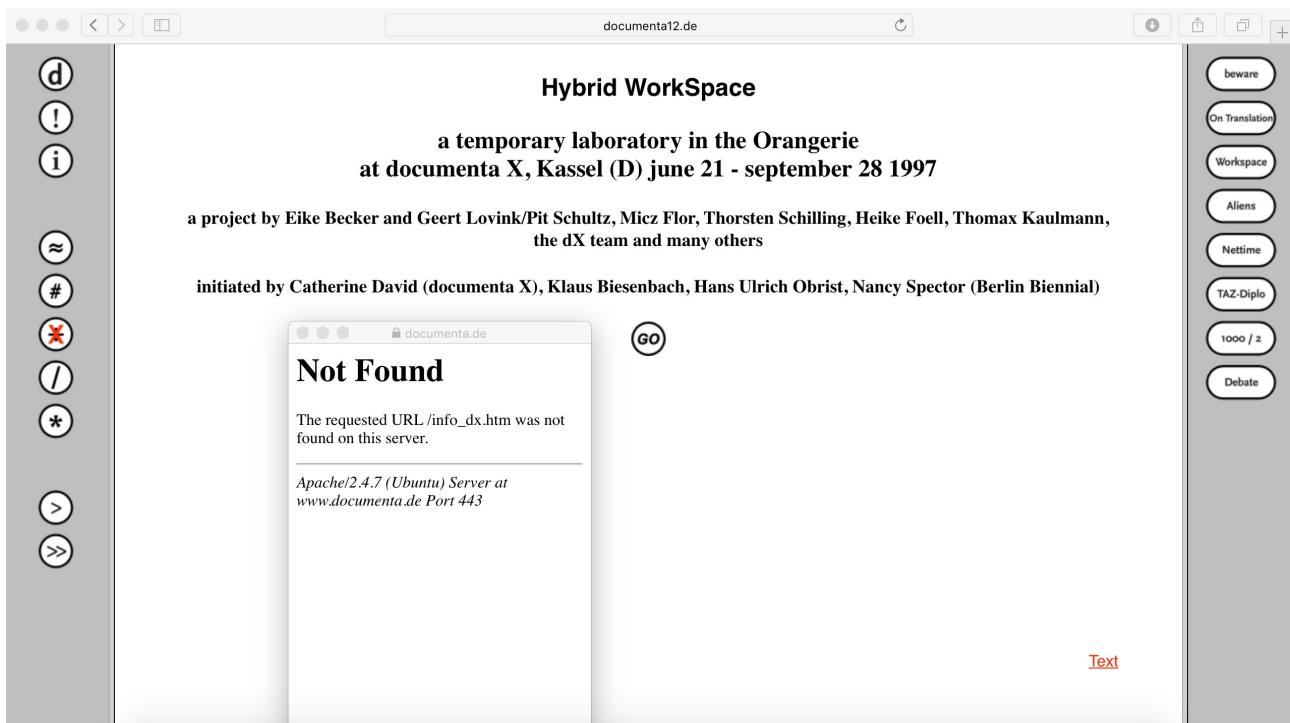


Image 11: documenta X's *Hybrid WorkSpace* (1997) home page, with the access to the external link to the project broken. Print-screen from <http://documenta12.de>

Both settings, however, were criticized for recontextualizing the artworks out of their original and intended dynamics. As users could not access any page other than the artwork exhibited on the computers, artists such as Olia Lialina (1999b) argued that the artworks were dislocated from their “natural environment”, criticizing this “one computer – one artwork” curatorial approach. Interestingly, two years earlier, *documenta X* (1997) had created a bigger gap between the artworks and their original context. The event, which marked the last *documenta* of the twentieth century and the first one to be curated by a woman, had an ambitious strategy to integrate a very diverse set of artistic practices. As curator Catherine David (1997) explained, “[...] in order to provide the appropriate frameworks for critical analysis, interdisciplinary voices and individual tempos of presentation and reception”, *documenta X* was divided into separate “spaces”. These

“spaces” referred both to the physical structures and online platform.

The online-based artworks presented at *documenta X* were then exhibited simultaneously on the webpage and on its physical grounds. However, the latter was not only separated from the rest of the genres exhibited at the event, assigning them as pieces apart from other contemporary practices, but, most surprisingly, exhibited them in their offline version. Interestingly, the offline version of the artworks was exhibited in a satellite environment described as an almost-like office setting. “The net.room simulates an office; with office tables, office chairs, office desk furniture [...] It's an unnecessary confusing symbolical construct, build without consultation of the artists. Net.projects don't need such metaphors when presented in real space exhibits, as tv monitors don't need a home decor [...]” (JODI, 1997)¹³. This curatorial approach was further criticized by artists such as JODI as it separated the artists from the rest of the event by their medium and technique, grouping them under the same label regardless of their differences in conceptual or thematic approaches.

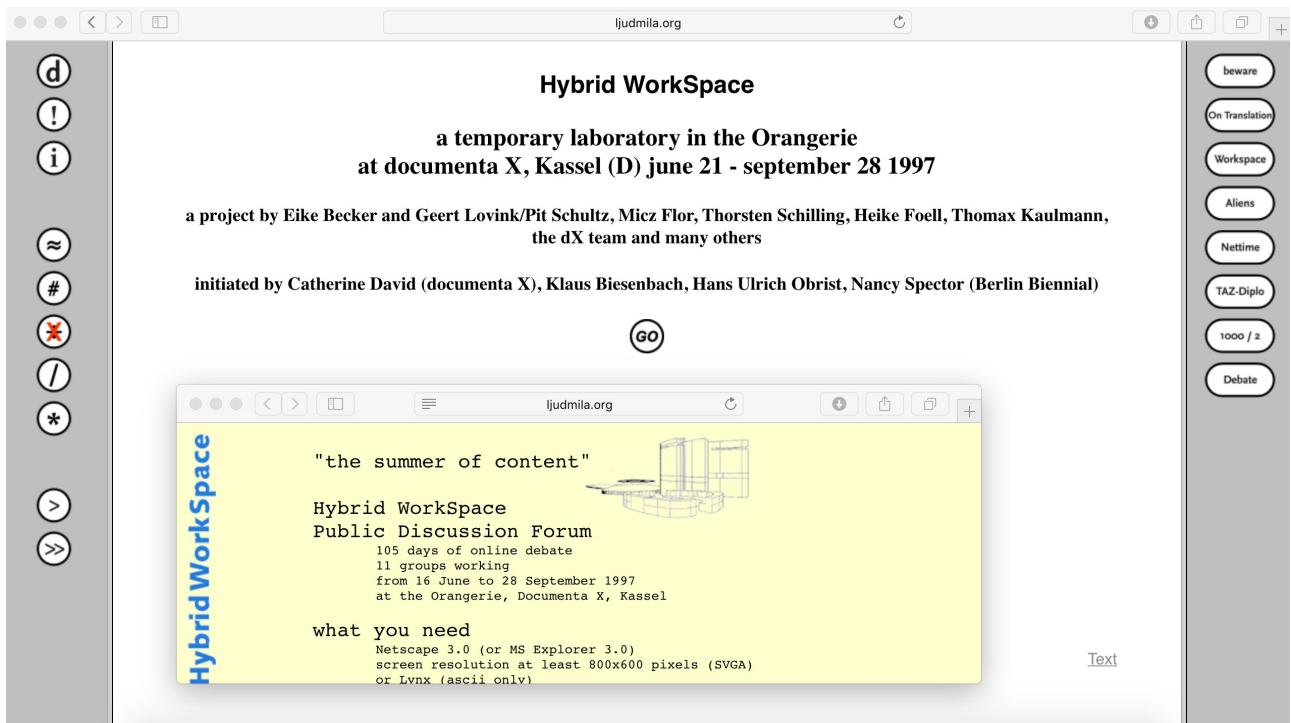


Image 12: Vuk Ćosić's *documenta done Hybrid WorkSpace* (1997) home page, with the access to the external link still functioning¹⁴. Print-screen from <http://ljudmila.org>

As the event ended, and like any other temporary exhibition, the artworks were taken away from public access, and this included the event's website which hosted the online version of the

¹³ Domenico Quaranta (2008) calls this process as *foreignism*, as “installing a computer in an exhibition space, and using it to display a website or work of software does not constitute an act of translation” (Quaranta, 2008), but rather, it is as if we used the word from that language as if there were no equivalent translation.

¹⁴ Images 10 and 11 compares *documenta X*'s website to Vuk Ćosić's artwork – the latter has the majority of the artworks and external links still functioning, while *documenta*'s website has many broken external links.

artworks. They were then transferred to a CD-ROM format, serving as their sole documentation, to which artist Vuk Ćosić reacted with his well-known *documenta Done* (1997). The artwork was then an exact copy of the documenta X's website, and included all original links to the artworks. In this way, the appropriated version of the website not only re-exhibited the artworks in their original and preferred context, but, as critic and curator Caitlin Jones (2017) recalls it, served as the sole documentation of documenta X's online "space" for almost twenty years¹⁵.

These examples of online-based art exhibitions in physical spaces brought up the question of whether they should be exhibited at all in such a context. Many artists and critics argued in favor of site-specificity and rejected any attempt of translation. Aggravated by the technical limitations of the time and by the lack of a deeper understanding of the medium and its emerging practices, skepticism pervaded following attempts. Today, however, these curatorial practices are seen with less criticism, as online-based art continues to be exhibited in the physical spaces of the museum. Nevertheless, there have not been many other major physical exhibitions which address exclusively the web as an artistic medium in itself, or at least not as critically received as *Welcome to the Wired World*, *net_condition* and *documenta X*.

1.2. Turbulence and reconfigurations: the end of the net.art era

To be fair, those initiatives appeared in turbulent times. Although they were motivated by the initial euphoria regarding the potentials and implications of the web to our social, political and cultural practices – especially in regard to Ars Electronica's and ZKM's exhibitions – these initiatives were often received with either unawareness or apprehension towards the magnitude of the Internet's impact on the future of communication and, most importantly, on our everyday life. As Peter Weibel (personal communication, 2017, Annex A) described it, people believed that the Internet could be a threat to institutions such as the museum, as it offered the possibility to access information from afar, dismissing the need to consume contents produced and exhibited locally. "So the art world asked at the time 'wouldn't you destroy the local museum by inviting people to participate online'? The idea they had was that no one would come to the museum and that net art would destroy the museum because you can see at home. This was a very naive animosity." (Weibel, personal communication, 2017, Annex A).

Furthermore, they appeared in the middle of a discursive battle between artists, theorists and institutions regarding the concepts and the medium specificities of online-based art. Many of these discussions were conducted in mailing-lists such as *7-11*, *Eyebeam* and *Rhizome*. But it was through *Nettime* that these debates unraveled a more concise discourse towards online-based art. *Nettime*,

¹⁵ Until just recently, according to Jones (2017), when documenta relaunched its documenta X webpage.

launched in 1995 by Geert Lovink and Pit Schultz, became one of the major community platforms for online-based artists and activists, and was one of the main stages for the definition of what is now known as *net.art*.

As Lovink (2002) recalls it, the debate was ignited by Heath Bunting's "conflict creating" messages and marked by the "Net art vs. Art on the Net" email thread, which led to heated discussions between participants, on and offline. Robert Adrian (1997) would later synthesize these discussions as a generalized agreement that something important and exciting was happening online, but they just disagreed on how and whether to name it. "The disagreements seem to begin with the question of whether it has a name and whether naming would somehow fix it, like a butterfly pinned on a board, as just another 'ism' in the art historian's catalogue." (Adrian, 1997).

Either way, as Josephine Bosma (2000) suggests, the discussion itself was significant, as it acknowledged that something was in fact going on, and as such, it was important to give it attention. "[...] Timothy Druckrey [...] stated that net art was suffering from too much theoretical discourse. I could not disagree more! If net art is suffering from theoretical discourse, then not from its own. Analysis from within the networked field is what we desperately need more of" (Bosma, 2000). Others, such as David Garcia (1997), would argue that excessive discussions, especially on the terminologies and artistic discourses, may lead to its own end¹⁶.

Initiatives such as *net_condition* were then criticized for not positioning themselves within these debates or giving a clear definition of the artworks they were exhibiting. Although they presented critical pieces which questioned these definitions and positioned themselves within a specific lexicon, these exhibitions seemed to have avoided, as suggested by Bosma (2000; 2011), the conceptual and discursive issues and debates within those art practices.

Nevertheless, these initiatives are of great importance as they set to discuss issues which would later on become some of the most significant challenges of our times – from the intricate relationship between the physical space and the online world, to the regulation and administration of online data, including issues of surveillance, cybersecurity and identity. *net_condition*, more specifically, addressed the political, economic and social conditions required for the development of the web, and, concomitantly, the new conditions it imposes in return on the political, economic and social realm. It, therefore, sought to question the current scenario by means of the emerging art practices of its time, turning to artistic practices that were using the web and its concepts and

¹⁶ As it did two years later with the declaration of the death of *net.art* by Ćosić and Bunting (Quaranta, 2008). Peter Weibel (personal communication, Annex A, 2017) would also argue that this initial context did not survive because artists did not understand that online-based art was about programming (and less about the interface itself), as part of the transition between machine art (or hardware) to software art. "They did not see that it was the Art of Programming [...] the early net artists have disappeared because they had a too narrowed concept of net art. They wanted to make images again. They did not understand that it was about programming, about software and generative, constructive, databased art. So net art was in fact the beginning of databased art, not machine-based art" (Weibel, personal communication, Annex A, 2017).

structures in order to address these current issues in society – art that reflected upon and questioned its own social and technical environment and which was not necessarily interested in debating its own artistic discourses (a scenario perhaps more significant in the early years of the web, when artists were experimenting with the emerging technology).

And lastly, those initiatives found themselves in the middle of a structural and social-political reconfiguration of the web, especially towards the turn of the century. This period saw the remains of the utopian “techno-libertarianism” discourse (Lovink, 2002)¹⁷ be gradually superseded by the monopoly of Internet and software giants such as Yahoo, Google and Microsoft. Marked by the crash of the dot-coms, the web faced a new era characterized by its constantly adapting structures (the “perpetual betas”), centered in a more participatory culture and sustained largely by user-generated contents. Coined as the *web 2.0* by Tim O'Reilly, this new era saw the shift from commercial and personal websites to a more flexible, collaborative and sharing culture, characterized by the rise of self-publishing tools such as blogs and other social media platforms. The new generation of online-based artists and activists would then join the reconfiguration of the web¹⁸ and new artist-run platforms started to appear.

1.3. Web 2.0 and the restructuring of the online exhibition space

Like the artist-run websites of the early 1990s, the emerging artists' spaces were more than just personal exhibition pages or artists' portfolios. They were, at a first glance, community-driven spaces for collaborative online art making, which used existing weblogging platforms to create a content-sharing environment where artists would post appropriated, recontextualized and remixed or mashed-up contents, forming a thread-like dialogue with other artists. Termed as *surf-clubs*, these blogs-based practices refer to the act of “surfing” through the web in search of contents to be re-used and reframed. They were fueled by the very web culture, structures and practices that surrounds it¹⁹. As artist Marcin Ramocki (2008) described it, “[...] a surf club imposes certain practice dynamics, which is conducive to a very fast-paced conceptual exchange based on treatment

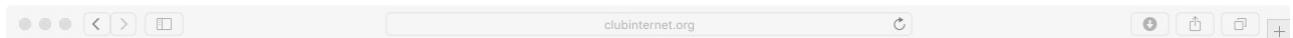
¹⁷ Geert Lovink (2002) argues that techno-libertarianism believes in the free market as a means to decentralize the network and create a truly accessible system for all. “Even now, despite the dotcom crash and growing monopolies, the Net is still presented to an ever-expanding group of (usually young, white and male) developers as a ‘pure’ medium; an abstract mathematical environment, untouched by society, neutral of class, gender or race, capable of ‘routing around’ the problems caused by the dirty old world outside” (Lovink, 2002).

¹⁸ Olia Lialina (2013) would describe them as the “last” generation, as they marked the end of the net art generations and the beginning of a new wave of artists (the third generation) which would perceive the “www as a mass medium, not a new medium” (with the first generation being artists who used the Internet as a new artistic medium, the second being artists who studied JODI at universities, with net art as an institutionalized art practice). This “last generation” seems to represent to Lialina a transitioning phase, just in between the crash of the doc-com and the rise of the web 2.0.

¹⁹ A list and analysis of the major surf-clubs of the time can be found in Paul Slocum's Catalog of Internet Artists Clubs (2016).

and analysis of online material, or using the online material as a base of any kind of investigation” (Ramocki, 2008). In this sense, surf-clubs, as an artistic practice, unavoidably comments on their own incessant content-consuming and content-sharing culture, in an online setting ruled by the copy, the cut and the paste.

And as the practice developed, so did other exhibition formats. Like others of its kind, *Club Internet*, created by Harm van den Dorpel in 2008, borrowed the aesthetics and dynamics of surf-clubs in order to exhibit those internet mash-ups. Although it maintained the thread-like posting aesthetics, the “space” was curated by one or two curators at a time (in contrast to the more open and multi-posting structure of the surf-clubs), and included exhibitions by Domenico Quaranta (2009) and by Miltos Manetas and Jan Amen (on the occasion of the 2009 Venice Biennial).



Club Internet

was an online exhibition 'space' conceived by Harm van den Dorpel, curated by various people, previously accessible at [www.clubinternet.org](http://clubinternet.org) and existed 2008 - 2009. Thank you ❤️



First Selection

May 2008

AIDS-3D, Charles Broskoski, Laura Brothers, Petra Cortright, Aleksandra Domanovic, Harm van den Dorpel, Constant Dullaart, Daniel Eatock & Timothy Evans, Michael Guidetti, Travis Hallenbeck, Jodi, Oliver Laric, Jan Robert Leegte, Guthrie Lonergan, Miltos Manetas, Ilia Ovechkin, Rafael Rozendaal, Will Simpson, Paul Slocum, Thomas Traum, Isaac Bigsby Trogdon, Anne de Vries, James Whipple, Damon Zucconi

Image 13: *Club Internet's* (2008) blog page. Print-screen from <http://clubinternet.org>

By describing itself as a online exhibition “space” in between quotation marks, *Club Internet* addressed the experimental and uncertain nature of the practice, both from the artist's and from the curator's point of view. Co-founder of the *Nasty Nets*, Marisa Olson (2009) argues, however, that although many artists have questioned whether their practice is a movement or whether their posts could be considered as art at all (not to mention the debate of whether those practices are “online art” or its variations), it has shown a number of “movement-like signs”, such as the development of the *Great Internet Sleepover* (2007), a surf-club meeting which occurred at Eyebeam in New York, organized by the surf-club *Double Happiness* co-founder Bennett Williamson. Additionally, many of the artists involved in surf-clubs, such as Constant Dullaart,

have contributed to this view by inserting the practice within an art institutional context and discourse, exhibiting in major museums and curating “surfing” exhibitions.

However, as it happened with the early net art of the 1990s, an online surf-club exhibition seems contradictory in its nature. For surf artists such as Ramocki, this blogging practice is already a “hybrid act involving both curatorial research and conceptual art gesture” (Ramocki, 2008). And as such, its platforms are at the same time an exhibition space and the artwork in itself.

“A singular post is an act of exhibition/exposition, pointing to a specific statement and claiming it’s importance, effectively making a case for extracting it from the formless matrix of information. It is authoritative yet playful; conceptual in nature yet unafraid of beauty. Its inherent immateriality, lightness and transparency lend blog posts into a perfect arena of cultural semiotic games, a “Zen mondo” based in the discourses of modern art history, computing/internet knowledge and a loosely defined generational pop-geekhood.” (Ramocki, 2008).

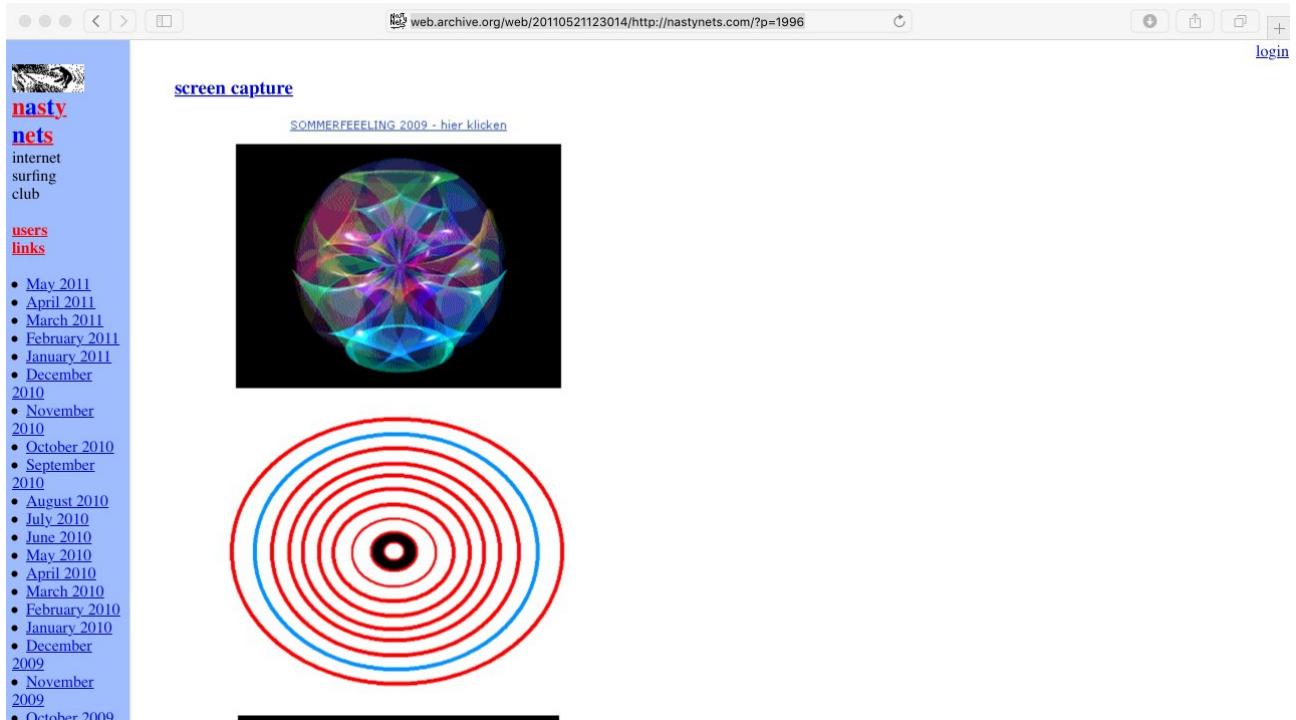


Image 14: Tom Moody's participation at *Nasty Nets* (2008). Print-screen from

<http://web.archive.org/web/20120409015813/http://nastynets.com/>

In this context of emerging “curatorial” processes, the term *curating* also faced an abrupt reconfiguration. As Joasia Krysa explains, “with the pervasive use of popular technologies, such as the social web, mobile and networking platforms, users have assumed roles of amateur curators of their own lived experience” (Krysa, 2011). In this context, the notion of curating has shifted from “caring for objects and collections” to a broad notion of “social cooperation”, especially with the

use of social media platforms and the current context of web culture itself, where collecting, storing and displaying user-generated contents became the *sine qua non* practice of our time.

The problematization towards these definitions illustrates the ongoing controversies and doubts surrounding current (and past) online-based practices, as the borders between artwork and exhibition space, as well as between the roles of the artists and the curator, are evermore indistinguishable. The same goes with the practices involving other social media platforms, and not only blogging. From Twitter bots to Facebook live interactive performances, the platform is the exhibition space and yet it is also an intrinsic part of the artwork as it integrate elements of its structure and dynamics to its making. Those networked practices, therefore, have increasingly been shifting their structures and, by doing so, they have been questioning the imposed boundaries between curatorial and artistic practices.

As such, these art practices have stimulated other curatorial initiatives, which have also been exploring somewhat more “alternative” structures, such as online game platforms like Second Life (as seen with artists like Jon Rafman and the existing online museums and galleries within the game) and the recent rise of Virtual Reality (VR) and Augmented Reality (AR) applications to online-based exhibition platforms (such as the recently launched Acute Art gallery with interactive works by Marina Abramović & Jeff Koons).

Within these examples, #0000FF gallery, based exclusively on Facebook – a social media platform more commonly used by art institutions and artists to promote their outside projects – , repurposed the existing interface to create an online exhibition space for “new media and net art artists”. Launched in 2012 and curated by Georges Jacotey, #0000FF transformed photo albums into exhibition “spaces” while using the platform's existing content-sharing dynamics to promote and document its exhibitions. In two years of its existence, the gallery had 14 shows, including a variety of artists such as Lorna Mills, Claudia Maté, and Enrico Boccioletti.

Initiatives such as #0000FF, therefore, immerse themselves within the existing structures and dynamics of the web in order to exhibit and address their very own culture and practices. One could even say that such initiatives are perhaps the ideal space for exhibiting art made with and for Facebook, for example. By using the very own medium of the exhibited artworks, the artworks are then situated within its own context and “natural environment” – to paraphrase previous criticism on the initial online-based art exhibitions of the 1990s.

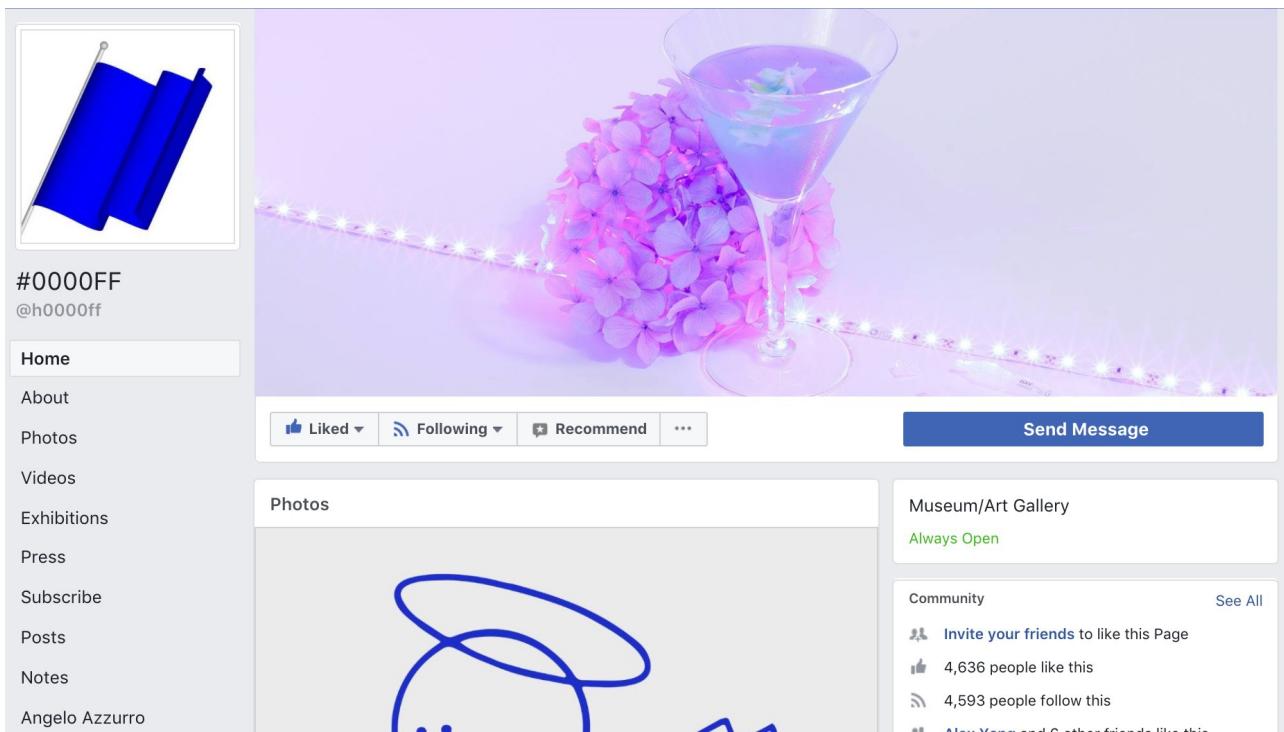


Image 15: #0000FF gallery (2012 – 2014) on Facebook. Print-screen from
<https://www.facebook.com/h0000ff/>

But it might seem that online-based art exhibitions have been marked by the reoccurring displacement of their artwork in order to exhibit it within the confined structures and discourses of the institutionalized art world. It is almost as if the artwork has to be taken out of context, out of its own natural environment and dynamics, to be able to be exhibited in a legitimized notion of “exhibition space”, as if these practices request a curatorial gesture (be it executed by the artists or by any other), in order to be *seen* – an act that could only be done away from its blurry context, when the amalgam between what constitutes an everyday web practice and what constitutes an artistic gesture is finally distinguished.

Rather, although still full of gaps and blurry facts, the history of online-based art exhibitions has shown that it has been done from both sides: from inside out and outside in. From artist-run initiatives to more institutionalized practices, there has been a constant attempt to find ways to exhibit online-based art (albeit all the constraints). And, although its curatorial strategies have shifted over time – from the need to contextualize the medium within the hegemonic artistic discourses and spaces to the full acceptance of the web's ubiquity and immersion into its existing structures and cultures – those initiatives have all sought to present a practice that unavoidably questions that very purpose.

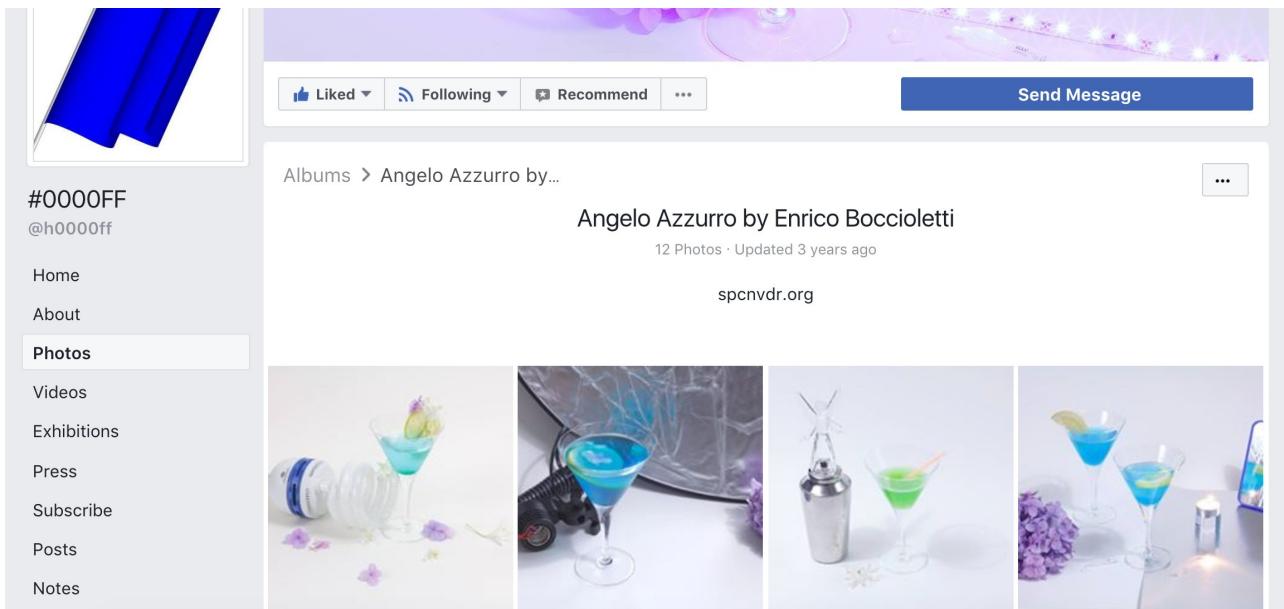


Image 16: Enrico Boccioletti's *Angelo Azzurro* (2014) exhibition at #0000FF gallery. Print-screen from

<https://www.facebook.com/h0000ff/>

But as the Internet expands its contents and its practices diversifies, the need to grasp and understand them continues. The curatorial comes into this process as a form to seize this flow – as a cut in a moment in time – and puts it into perspective. Displacement has always been part of the curatorial, be it the displacement of artworks from their original context of making (its *hic et nunc*) or the displacement of bodies or the gaze towards site-specificity. The challenge lies, therefore, *in between* – in how this gap created by displacement is addressed and sutured.

1.4. Conclusions

Over the past twenty-seven years, there have been significant shifts in exhibiting online-based art, influenced largely by the technological and cultural developments surrounding the Internet. By analyzing some of the previous approaches which have, in one way or another, questioned or contributed to the ongoing debate regarding the modes of online-based art exhibition, it is possible to identify at least three major shifts in those developments. After the initial euphoria of the popularization of the Internet in the 1990s – which promoted many experimental projects within the field, lured by its potentially open and democratic sphere for further public engagement and collaboration – a first shift can be noted as the following initiatives became less centered in an information-based curating (which established the necessary introductions and contextualization of these emerging practices to the incoming web users) and focused more in questioning and providing further discussions on the concepts and characteristics of the already developing practices.

A subsequent shift is then observed by a rapid interest of major art institutions and festivals, which were focused in understanding the paradigms of online-based art within a highly globalized and networked society. This is then coherent with Paul O'Neil's (2007) analysis of curatorial shifts, when he discusses the significant emphasis on large-scale and global exhibitions that came across since the late 1980s and early 1990s. "Within an ever-increasing number of biennials and large-scale temporary exhibition-events, contemporary curating transcends geographical boundaries and looks to global networks of cultural production for its source material" (O'Neil, 2007).

A further shift is then perceived along with the structural and cultural changes of the Internet to its *web 2.0* phase, where artists and curators started to further explore web culture and its network dynamics within emerging user-based content platforms, blurring even further the lines between the artwork and the exhibition space. That scenario, although still focused on experimenting with the current structures of the web, is less concerned with site-specificity as it tends to acknowledge a practice that goes beyond a browser-centric perspective. It then opens the field to further explore the potentials of the network to artistic practices and allows, as the following chapter addresses, curators to immerse themselves more in the potentials of the interface for online-based art exhibition.

Chapter 2

2.1. Archeologies of the virtual museum

Since the popularization of the Internet in the 1990s, museums and galleries have been gradually immersing themselves into the online sphere. They not only included the online in their physical exhibition spaces – be it through online-based artworks or through their mediation strategies – but also expanded their public presence through online platforms. This shift came hand in hand with their aim to insert themselves in what was deemed as the break of the “information age” or the “digital revolution” (Castells, 1999), as institutions felt the pressing need to position themselves in a fast-growing sector where digital information technologies were at its core.

Concomitantly, they have been stretching their online presence beyond the aims of institutional representation by experimenting with the formats and concepts of the “virtual” or the “online museum or gallery”. These terms, however, have been loosely applied, and can span from the digitalized archive made accessible on the web to the use of virtual reality technologies in order to digitally represent an online exhibition space. Although the strict concept of a “virtual space”²⁰ – or even more so of “virtuality” (Lévy, 1998) – does not necessarily imply an online network, there seems to be a generalized conception of the Internet as a virtual space *per se*. This “virtuality” often refers to the idea of the online formats of the museum or gallery as this external, immaterial and dislocated space from its main physical compounds.

As Erkki Huhtamo (2002) explains, the idea of the virtual museum goes far beyond the emergence of the Internet, and can be brought back to the use of telecommunication networks in the arts²¹. The media archeologist goes even further by suggesting the emergence of exhibition design as one of the key factors in the origins of the virtual museum, attributing great importance to the awareness and practices of the avantgarde art movements of the early 20th century as they proposed “a radical re-thinking of the relationship between exhibition spaces, exhibits and spectators/visitors” (Huhtamo, 2002).

Within this critical awareness, the challenge resided in deconstructing and exposing the preconceived structures of the exhibition space. It implied reconsidering all the elements of the physical space of the museum and gallery as an integral part of exhibiting artworks, and not as

²⁰ More thoroughly addressed in Oliver Grau's *Virtual Art* (2003), which discusses in detail the developments of the virtual space in the arts.

²¹ Huhtamo (2002) cites as an initial example *The Museum Inside the Telephone Network* (1991), an exhibition by the Inter Communication Center (ICC) accessible by telephone and fax in Japan. “It was meant as a model for a new kind of an ‘invisible’ museum” (Huhtamo, 2002). It was then followed by another exhibition at the ICC, *The Museum Inside the Network* (1995), which was then accessed by means of the Internet.

separate entities used only for display. “Instead, they are considered integral elements of a total environment that envelops the visitors and encourages them into a dynamic relationship with the space and all its dimensions and elements” (Huhtamo, 2002).

But the repurposing of the exhibition space – represented primarily by the works of László Moholy-Nagy, El Lissitzky, Herbert Bayer and Frederick Kiesler in Huhtamo's (2002) essay – was not always well received by the more traditional institutions, as it extrapolated the boundaries set between the curator, the artwork and the exhibition space. The impossibility of interference between them has long ruled exhibition making and curatorial practices, as the exhibition space was (and still is) largely perceived as this neutral zone which should serve for the display of an artwork that could “speak for itself” – a concept which Huhtamo (2002) and others would attribute to a dominant ideology of modernism. “The modernist gallery is a space for meditation and interiority; [...] the new principles of exhibition design first came to flourish outside the art world, at trade fairs, world fairs, amusement parks and science centers that were able to embrace the idea of interactive exhibits as a novelty without feeling the weight of tradition” (Huhtamo, 2002).

Nowadays, it seems that these boundaries have narrowed down, as mediation and public participation strategies become even more present within museums and galleries. On the other hand, there still seems to be a tangible distance between the physical museum and its online counterpart, as institutions perceive their website as an additional, or even primary, means of communication and source of information of their activities, but often fail to incorporate the potentials of the online and its web culture within their exhibitions. When so, these strategies often take the form of a complementary platform for an existing exhibition or as an external platform for an specific exhibition made for the web²².

2.2. Bridging the gaps: when online and physical spaces coexist

There are, however, initiatives that have been attempting to bridge the gap between the physical museum and its online platform. Tate, for example, used the online platform to unify all of its existing physical structures. “Indeed the last is not simply an adjunct to the rest, or even a 'sixth site'; it is the 'place' where all the other sites are brought together, the only place where Tate can be seen to exist as a single entity, as well as making possible the commissioning and display of net art” (Gere, 2006). More significantly, the institution regards its online platform not as a counterpart, but,

²² Steve Dietz (1998) gives a quite descriptive analysis of the approaches of the late 1990s – which interestingly enough could still be applied to today's context in many ways – where he identifies four modes of exhibition-making on the web: the *virtual tours and augmented museum* exhibitions, where the online platform acts as complementary source of information to the existing show; the *immersive interface*, where the platform acts as mirrored interactive online layer of the existing exhibition; the *extended exhibition*, where the physical exhibition is re-presented and adapted to the online sphere; and, finally, the exhibition designed exclusively for the web.

as Charlie Gere (2006) explains, as having an equal status to its physical sites. “The implications of the decision [...] is far more momentous than it might appear at first, especially in ontological terms, even if, at first, it would seem simply to confirm the widely held, if problematic, idea that electronic networks are a kind of virtual space, different to but analogous to our physical material space” (Gere, 2006).

This analogous status of the online platform highlights the importance of such technologies in today's context as the Internet has become part of everyday life. More so, in times of Internet of Things (IoT), the physical and the material world can no longer be dissociated from the often invisible and distributed presence of digital data and online networks. Connectivity is becoming the imperative mode of living, as an increasingly amount of people own smartphones or similar devices²³ through which they can easily inhabit and engage with a multiplicity of digitally driven platforms. Technological developments have, therefore, an enormous influence in our contemporary social practices due in part to their increasing ubiquity, contributing to shifts in user perception, attention and engagement²⁴.

These shifts have been noted by art institutions and curators, which in response are broadening their use of the emerging technologies and methods, as they acknowledge their importance and potentials in promoting further public participation²⁵. Within these practices, *ArtOnYourScreen (AOYS)*, a project developed at ZKM by Margit Rosen, is an online exhibition platform for online-based art which integrates public engagement through its interface and the artworks presented. Launched in 2014, the project included artworks by Mark Amerika, Lynn Hershman Leeson, Martine Neddam, Robert M. Ochshorn, Paul Panhuysen, Jirka Pfahl, Rafaël Rozendaal, Roberto Fassone and //////////////fur////.

As described by curator Matthias Kampmann, the project initially aimed to create a space for the display of commissioned online-based artworks, which would enable ZKM to further develop its current concerns with past and emerging practices in the field, aligned with its sense of responsibility towards digital cultural heritage, by presenting the “bleeding edge of contemporary but not only technically-based art and how it is related to internet technology” (Kampmann, personal communication, Annex B, 2016). Moreover, the project envisioned to foster artists and artworks working with the Internet through both the commissioning and, later on, open calls, in order to reflect on the ongoing and emerging use of the technology and its consequences to our societies²⁶. Kampmann (personal communication, Annex B, 2016) would include in his own

²³ According to Statista (2017), over 36% of the world's population are expected to own a smartphone by 2018.

²⁴ As suggested by studies conducted by Jeni Maleshkova et al (2016)

²⁵ As suggested by studies conducted by artist and curator such as Nora O' Murchú (2016).

²⁶ Interestingly, this aim is coherent with ZKM's initiatives of the past eighteen years regarding online-based art (and reflects its overall curatorial approaches with media arts in general), as it addresses the conditions imposed and resulted from the use of technology onto society, not only onto the arts. net_condition (1999) and Making Things Public (2005) – with online-based projects curated by Steve Dietz – are a few of these examples.

curatorial aims the importance and the need to address both an art historical perspective and a critical approach to contemporary practices within online-based art exhibitions.

Additionally, the project proposed to dissolve the existing boundaries between art genres by means of the Internet, as the technology enables a broader and more diverse approach to existing media practices. In this sense, the commissioning and the open call for artworks were thought in order to encompass different perspectives and dynamics, translated through keywords which were summed up by Kampmann (personal communication, Annex B, 2016) as: "Passive" perception, participation and production (Neddam, Ochshorn); cultural heritage (Panhuyzen); updating traditional genres (////////fur///, Rozendaal, Ochshorn, Amerika); crossing boundaries between different types of arts (Amerika, Ochshorn, Pfahl); and, addressing contemporary issues of activism, freedom of speech and technological impact (Hershman, //////////fur///, and !Mediengruppe Bitnik, Zentrum für Politische Schönheit²⁷).

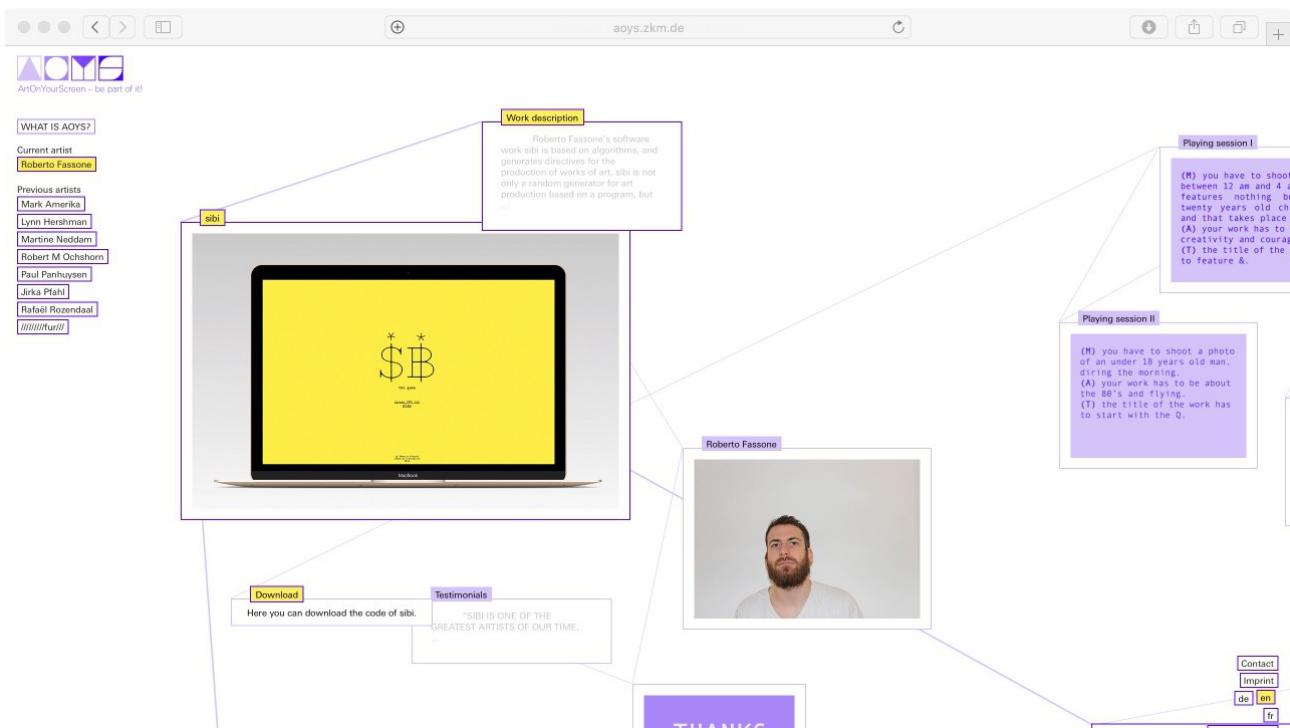


Image 17: Roberto Fassone's *SIBI* exhibition on AOYS (2015). Print-screen from <http://aoys.zkm.de/>

The curatorial was later aligned with the institution's education department, which developed public engagement strategies together with the interface design team. The interface was

²⁷ This last project was unfortunately not realized, due to legal impediments. As described by Kampmann (personal communication, Annex B, 2016), !Mediengruppe Bitnik proposed a project which randomly replaced every image on ZKM's web site with found footage from Google. "Affected were many copyrights and due to negative and expensive experiences this project was rejected – unfortunately. That leads to the core question of art today. Is art allowed to address legal issues? Which are the boundaries? Hard and heavy economic interests? Is there a difference between an artistic activism and a criminal violation of law? And where is the right or best place to give space and answers and to experience the results? And furthermore: Where is the place in which we can experimentalise society's future in vitro, if not in museums by the work of artists?" (Kampmann, personal communication, Annex B, 2016)

then developed in order to establish a less hierarchical structure, where the artworks were presented in the same “ground plan” or layer as the complementary information of the artworks and artists. The platform included not only the artists' bio, but also detailed documentation of the artistic processes, as well as further contents on previous and similar practices by the artists. This non-hierarchical structure was conceived so that the online visitor could freely “navigate” through the contents, without encountering rigid or predetermined “paths” within the designed interface, and yet access a broad scope of information²⁸. Furthermore, the interface was designed in order to incorporate the public's produced contents, which were encouraged by means of ZKM's online media channels, such as Twitter and Facebook. The project, therefore, sought to encompass the very own web culture it addressed within the artworks exhibited²⁹.

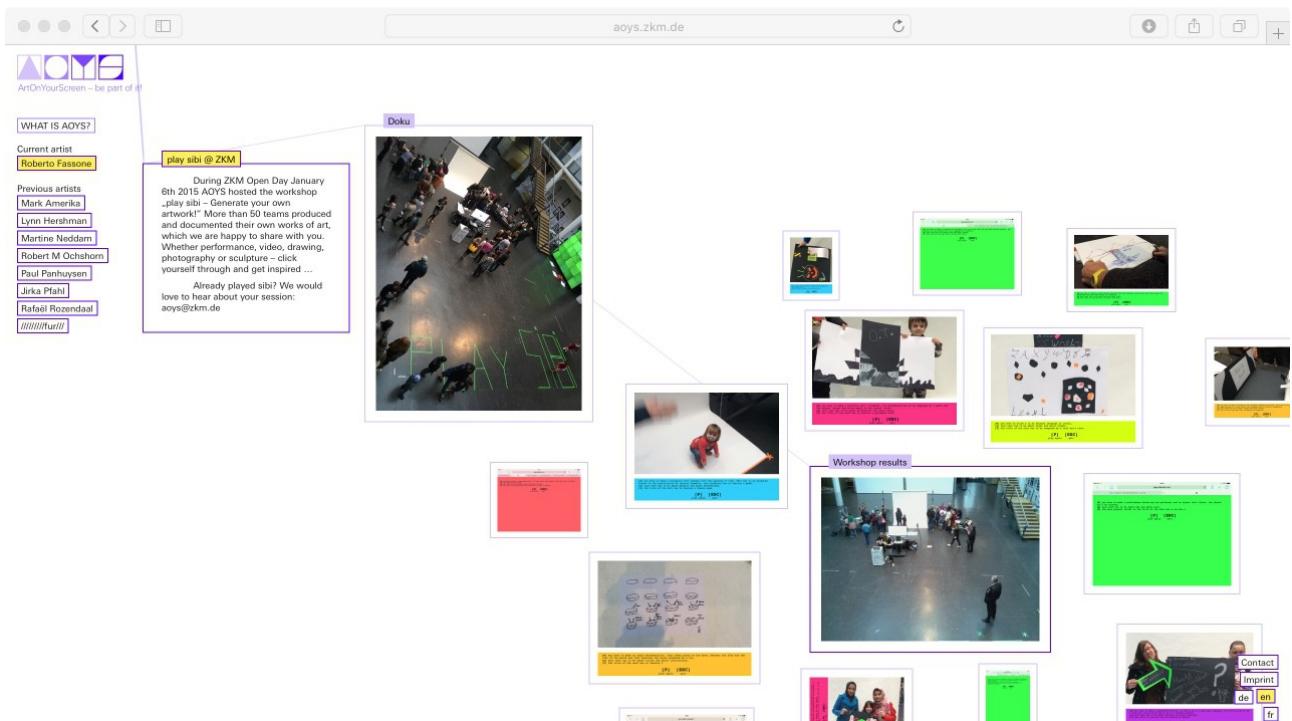


Image 18: Public participation at Roberto Fassone's *SIBI* exhibition on AOYS (2015). Print-screen from

<http://aoys.zkm.de/>

While most of the selected works were exhibited online, two projects established a direct connection with the physical museum in Karlsruhe, Germany. Roberto Fassone's *SIBI* (2016), an algorithmic artwork generator, was also presented at a public event at ZKM, where visitors were invited to play with the software and create their own artworks. The playing sessions, which

²⁸ Which in a traditional physical exhibition setting might be limited to the space and exhibition design, thus exploring the potential of the web to widen the exhibition space beyond the physical limitations.

²⁹ Although, as noted by Kampmann (personal communication, Annex B, 2016), this had its limitations due to the legal and political apparatus which the institution relies on, and yet critically challenges it through exhibitions (within its conditions).

counted with the assistance of the mediation and educational department, were then documented and exhibited on the online platform. The online interface functioned, therefore, as the meeting point between artists, artwork and the museum's public – as a space for both exhibition and engagement.

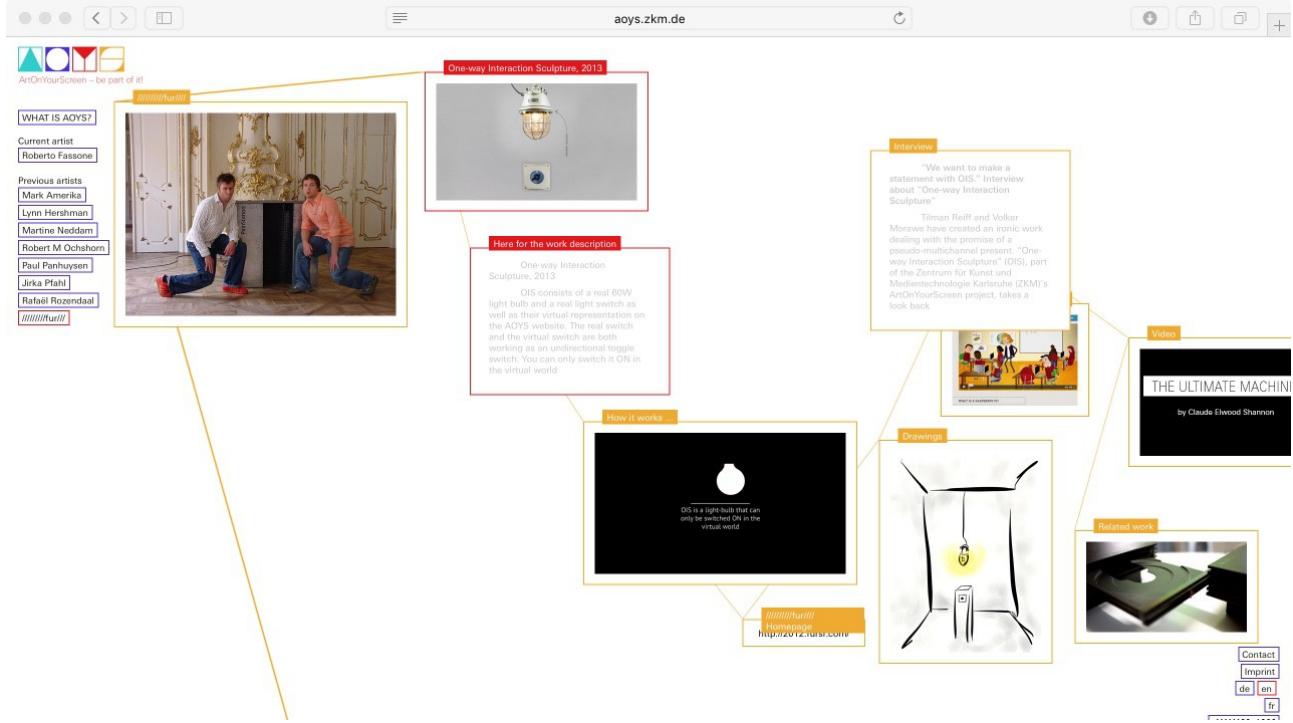


Image 19: //////////////fur//// 's *One-way Interaction Sculpture (OIS)* exhibition on AOYS (2014). Print-screen from <http://aoys.zkm.de/>

////////////fur//// 's art piece, on the other hand, was partially physically present, as the artists installed what they defined as a sculpture (composed of a lamp, a surveillance camera and a switch) at both ZKM and the Goethe Institute, where one could turn the lights off. The *One-way Interaction Sculpture (OIS)* (2014) could only be turned back on through its online counterpart, exhibited at the AOYS platform, from which one could view the “other side” through the live feed of the camera installed. The online exhibition platform hosted one part of this communication system applied by the artists, meaning that the entirety of the artwork and, consequently, the exhibition, was composed by both online and physical structures of the museum. This interactive gesture between online and physical spheres – and ultimately between the public context of the museum and the private context of the online visitor³⁰ – resulted in the full integration of the institution's spaces, perceived more as *coexisting* (and not merely superposed).

³⁰ Ultimately and supposedly, as the definition of “public” within institutional grounds and the definitions of “private” in times of mobile communication technologies are even more blurred.

2.3. Breaking down the walls: the exhibition space as interface

The Palais des Beaux Arts in Vienna goes even further with this intricate relationship between the physical and the immaterial nature of museums and galleries by questioning the very concept of these institutions. Described as a “historic site for future-thinking art”, the project has been challenging the preconceptions of what constitutes an institutional space by literally establishing a “museum without walls”. The Palais des Beaux Arts, named after an existing building at one of Vienna's 19th-century-old districts, sets up an exhibition space which has a physical location (Löwengasse 47), but is only accessible through the visitors' mobile network devices. The exhibitions, which have included digital artworks by artists such as Joe Hamilton, Pussykrew, Rosemary Lee and Enrico Zago, have addressed the very topic of immateriality, exploring the potentialities of the networked interface.



Image 20: *Palais des Beaux Arts's online platform. Print-screen from*

<http://www.palaisdesbeauxarts.at/>

Although André Malraux's concept of the museum without walls³¹ may be questioned – especially when regarding issues of mass consumption of and accessibility to art, as Emma Barker (1999) delineates – the overall idea of re-presenting art outside of the traditional notions of the museum through means of contemporary technologies of reproduction and distribution (in

³¹ Which is actually a very loose translation of the French “*Le Musée Imaginaire*” (The imaginary museum).

Maulraux's case, photography) fits very well to the Palais's use of mobile networks and digital interfaces to exhibit art that rethinks its own nature. Created and maintained by artists and curator Bernhard Garnicnig, together with Fabian Faltin, Eva Mandl, Simone Borghi and Salvatore Viviano, the project is essentially a downright commentary on our current art-making and exhibition context, where “the conceptual space between the history of the building and the prevailing artistic tendencies on the internet creates a site for the constructive reflection on institutions for the (re-)production and (re-)presentation of art in the post-digital age” (Palais des Beaux Arts, 2017).

Although the platform created to host this “imaginary museum” is not connected to the World Wide Web *per se*, but established within a closed network which is locally bound, it nevertheless reiterates the malleability of space (and, subsequently, of its concepts) in a highly digitally-driven and networked society. Moreover, it is breaking down the walls of the art institution by presenting its exhibition space *as an interface*.

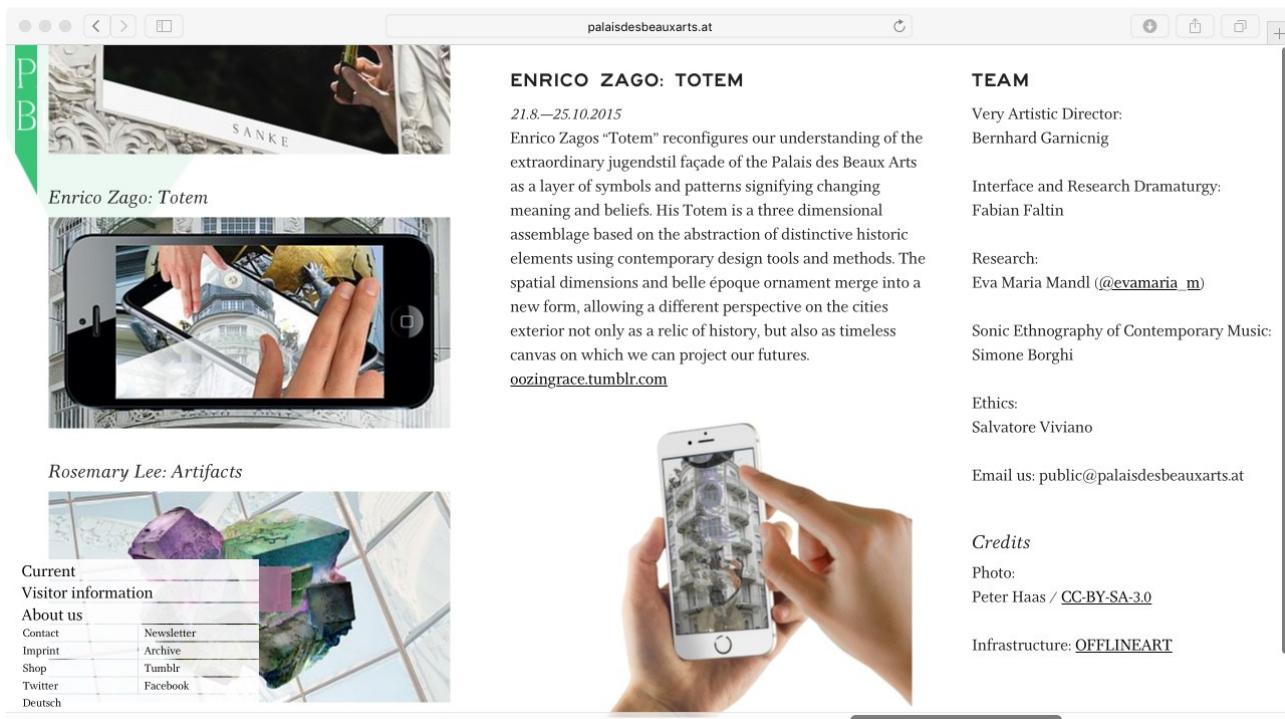


Image 21: Enrico Zago's *Totem* (2015) introduction at the *Palais des Beaux Arts*'s online platform.

Print-screen from <http://www.palaisdesbeauxarts.at/>

Interfaces, however, can take many forms – be it the online platform, screens in an exhibition or even a museum wall. Some even take a less tangible form, as “the range of interfaces is expanding to meet the needs of different technologies, uses, cultures and contexts: mobile, networked, ubiquitous or embedded in the environment and architecture. Some interfaces may even be designed to be invisible and imperceptible [...]” (Andersen & Pold, 2011). But they are often

perceived as having a mediative role between two or more different and distant spheres.

In computational terms, an interface aims to represent digital data and processes in order to be comprehended by the human senses. In this context, as Søren Pold (2005) explains, it is not a static and material object *per se*, although it can be materialized, visualized and be represented in some form. As such, it can ultimately be perceived as a “sense organ”, as “it integrates still crude but far-reaching sense apparatuses, which are sometimes embedded in networks and procedural calls between layers of code and at other times are modeled or mapped on the human senses (hearing, touch and sight)” (Pold, 2011).

The concept of interface is even more present in our daily lives. As part of an *interface culture* (borrowing the title from Steven Johnson's 1997 book), we increasingly experience and relate to the world and to others through some sort of screen, device or other mediative frame. It is in this context that exhibition design is transgressing its traditional boundaries towards interface design – a context already highlighted by Steve Dietz back in 1998. “I am skeptical of interface becoming the new art form for a century [referring to Johnson's envision]³², but I do find plausible that our understanding of interface will expand dramatically and impact directly on creative expression [...]” (Dietz, 1998).

This growing ubiquity of the interface, both in concept and in terms of the existing digital platforms, is already shifting the ways we perceive and interact with the world today. It has increasingly required a more critical view on its applications and understandings. Søren Pold (2005) believes in the potentials of digital art in establishing this “interface criticism”, as it, “instead of focussing only on functionality and effects, [...] explores the current materiality and cultural results of the interface's representational effects” (Pold, 2005) in society. Alsina (2015), on the other hand, would stretch these critical approaches towards a less material perspective by highlighting its possible invisibility and immateriality, while acknowledging the potentials of the critical approaches in demystifying the interface. More so, Alsina (2015) invites us, through an interface manifesto, to “conjugate the verb 'interface'”. To interface is to understand it as action, as *processual* and not solely structural.

This is when the notion of the browser as the main interface of online-based art (at times defended as the artwork itself) can be perceived as deceiving. Within a single online-based artwork, there can be numerous elements that interface (as a verb) this experience – from the screen, through the browser and the webpage or online platform, to many other structures which translate data, bits

³² “The most profound change ushered in by the digital revolution will not involve bells and whistles or new programming tricks [...]. The most profound change will lie with our generic expectations about the interface itself. We will come to think of interface design as a kind of art form perhaps the art form of the next century. And with that broader shift will come hundreds of corollary effects, effects that trickle down into a broad cross section of everyday life, altering our storytelling appetites, our sense of physical space, our taste in music, the design of our cities” (Johnson, *apud* Dietz, 1998).

or codes into something attainable to the human senses. Although many artists explore the poetics and aesthetics of these interfaces within their artistic practices, an interface is not necessarily the artwork (unless stated), but often the medium through which artists stage, sustain, show, represent or mediated their online-based piece – a concept sustained especially by artists who explore the network's structures, process and culture as the fundamental part of their artworks (an understanding of online-based art as *network art*, as sustained by Bosma, 2011).

In this sense, interfaces can be equally part of the curatorial toolbox and, therefore, can be further explored, conceptually and aesthetically, in order to exhibit online-based art within any given surface. This is where digital mediation and design theory and practice come in handy. And, as shown by the studies presented by England *et all* (2016), there has been a growing movement towards transdisciplinarity in the curatorial field, as artists and curators delve more into the engineering, computer sciences and design field. Moreover, there seems to be an increased interest in the Human-Computer Interaction (HCI) field, especially in what refers to user engagement through user design experience (UX) and general interface design methods and applications³³.

2.4. Setting new boundaries: exhibition or archive?

The emphasis on the development of interface design with the attempt to increase public engagement, however, can often overshadow the artworks. There is a thin line between these two curatorial and mediation needs. Link Art Center's online exhibition space for online-based art, has, contrary to many existing examples, a very simple structure and yet very efficient (within its presentation aims). *Link Cabinet*, developed by Italian artist and curator Matteo Cremonesi, was launched following the model of Link Art's previous physical exhibition space. The gallery, which was situated in Brescia, was a small white cube where artists were invited to install their own work and host a solo exhibition within a single-day event. The artists were, therefore, encouraged to interact and transform the physical space, as an integral part of the exhibition format.

This spatial transformation method was then applied to the online project, as artists are now invited to take over the platform's exhibition space and transform its interface accordingly. The online exhibition space is also intended to host a solo show, with a single piece by a single artist, for the period of a month. As Cremonesi explains it, "*Link Cabinet* was thought as a white cube structural metaphor (and not in its economical model). It was thought as the ideal starting point to

³³ However, as argued by Andersen & Pold (2011), as the fields of art and design collide, there still seems to be existing tensions. And although transdisciplinarity has been heightened, the overall practice maintains itself within their disciplinary boundaries. "This development calls for a new discussion of the role of digital art and aesthetics within an interface culture where art is increasingly intermingling – though not coinciding – with design" (Andersen & Pold, 2011). Anderson and Pold (2011), therefore, seem to suggest an urgent need to conciliate the needs and practices of both fields.

display web-based art through an artist point of view” (Cremonesi, personal communication, Annex D, 2017). In this sense, the online exhibition space is set to give the artists a somewhat “white page”, with all the freedom they need, to “install” their artwork in the institution’s server.

The exhibition space is then the interface made available to the artists, which presents nothing else but the single artwork. It then lacks any other form of engagement, leaving this element exclusively to the artists, putting the artwork on the spotlight. “So Link cabinet was thought as a space with the least possible interface, with no framework, just the work in full screen [...]” (Cremonesi, personal communication, Annex D, 2017). Since its launch in 2014, Link Cabinet has hosted to this day nineteen exhibitions, including artists such as Jonas Lund, Roberto Fassone, Michael Mandiberg and JODI.

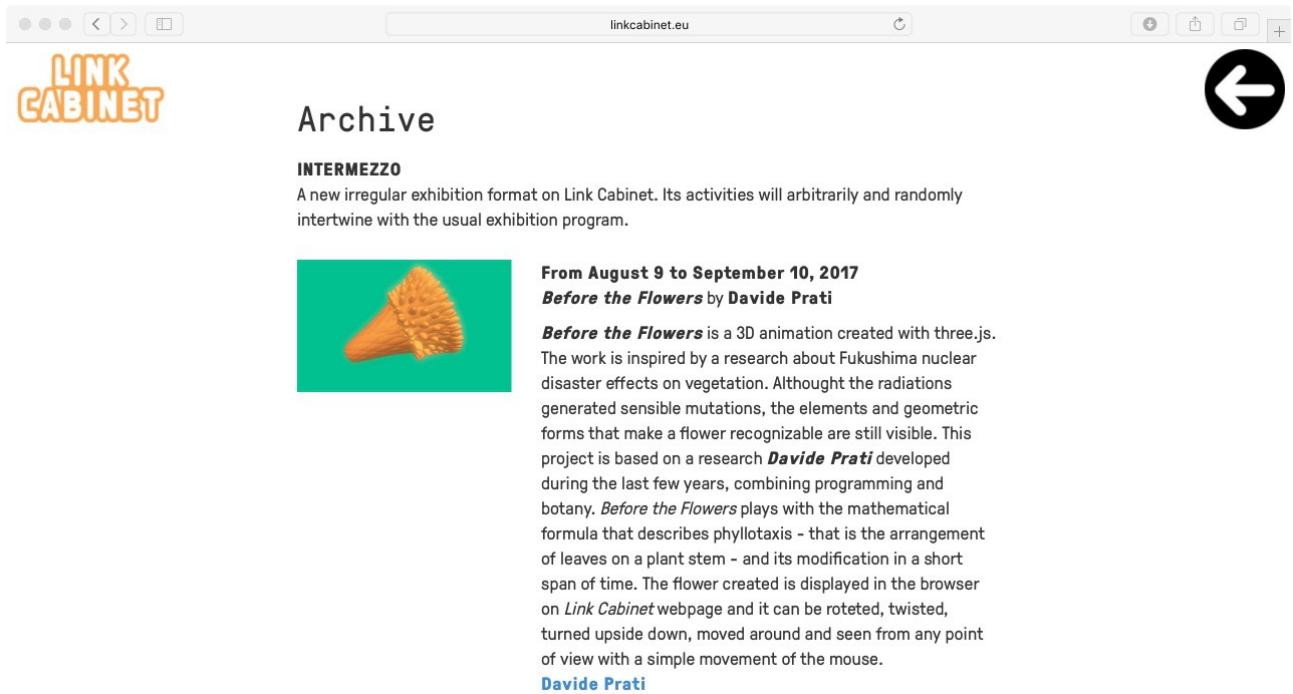


Image 22: Link Cabinet's archive section with past exhibitions. Print-screen from

<https://linkcabinet.eu/About/index.html>

As the exhibition ends, the artwork is then taken away – as they would be in a regular temporary physical exhibition – and the process archived on Link Art’s platform. This archive is, therefore, hosted in a different “space”, carefully dissociated from the current exhibition on show. This is also an interesting approach to online exhibition platforms, as they tend to be confronted with a “spatial” issue after some time of activity. And contrary to the physical exhibition context, a “spatial” issue in online platforms is often one of interface design. Many of the existing online exhibition platforms fail to clearly separate their artworks on show from their growing collection (sometimes, separated only by a hyperlink or page, but within the same interface structures). These

two steps overlap with time, and what once seemed to be an “exhibition space” now looks more like any digital archive.

This interface issue has to do with basic curatorial strategies, as curators are asked to clearly delineate the boundaries between what constitute their exhibition space and the online archive or collection of the institution, presenting the artworks in such a way that avoids any further confusion with other formats of online display of artworks (such as the artists own webpage and portfolio, for example) – a completely different concern to which they would be appointed to at a physical exhibition space.

Therefore, when it comes to the concepts and formats of “online exhibition platforms”, a clear intent is expected, translated by means of interface design and architecture. On the other hand, history shows that online-based art has a tendency to question and challenge the existing boundaries. And as such, one should pose the question of whether it makes sense any longer to separate these spheres as online exhibitions spaces and digital archives intertwine. Just recently, the Archive of Digital Arts (ADA) hosted its first online exhibition. Launched in 2016, the exhibition set in ADA's online platform revisits two past exhibitions (or installments) of *CODeDOC* – a curatorial project which explores “the relationship between the underlying code of software and the results it produces” (ADA, 2017). The project, therefore, focus on the idea of presenting code art or software art in “reverse”, *i.e.*, by presenting the artworks not only in its front-end version, but also in its back-end (where the code can be seen “raw”).

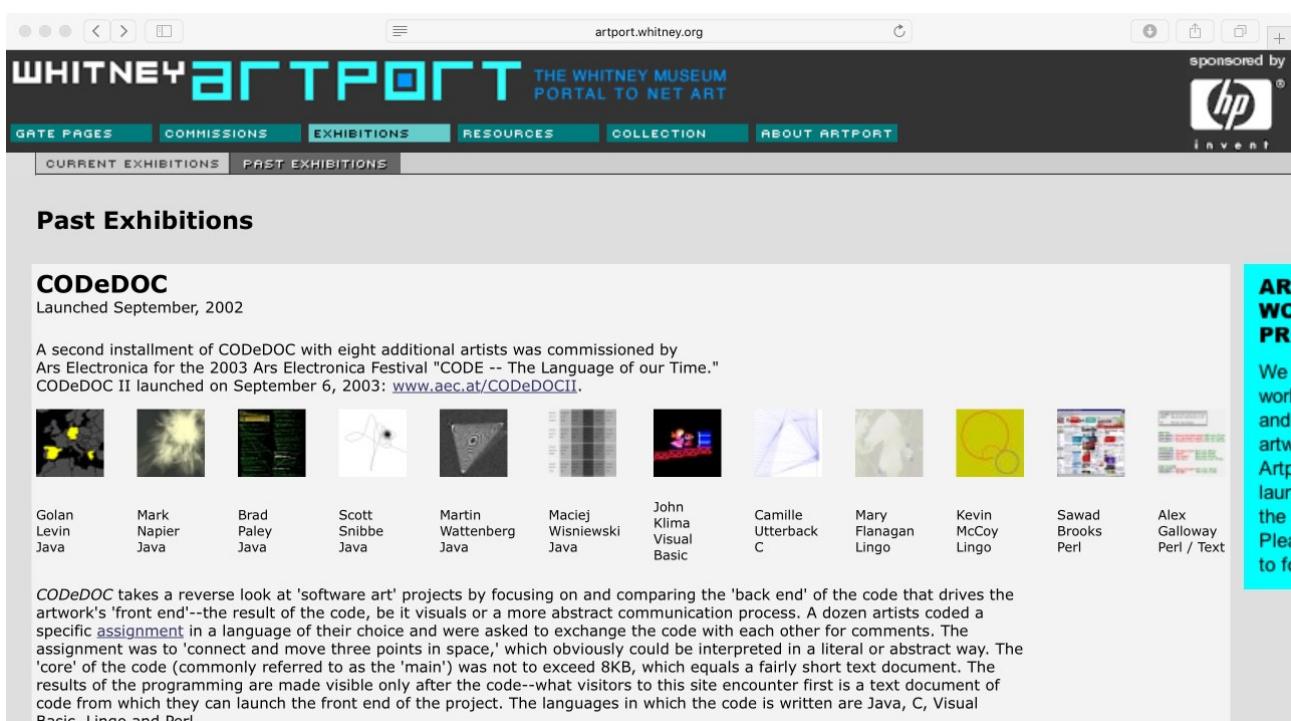


Image 23: The Whitney Museum's previous *artport* platform. Print-screen from

<http://artport.whitney.org/about.shtml>

The project explores and questions the relationship with the interface which is taken as given, as it only partially presents the intricate work of online and code-based artworks. There is, therefore, this hidden layer of code-based practices that is obfuscated by the interface, which is intended to execute a mediative role between these two spheres, but is often disregarded as such. By questioning these preconceptions, the interface can now be interpreted as a barrier, which, instead of intermediating, actually prevails us from seeing that other side. The project, by inverting this mode of visualizing code-based art, highlights the importance of the code and reinforces its status as art.

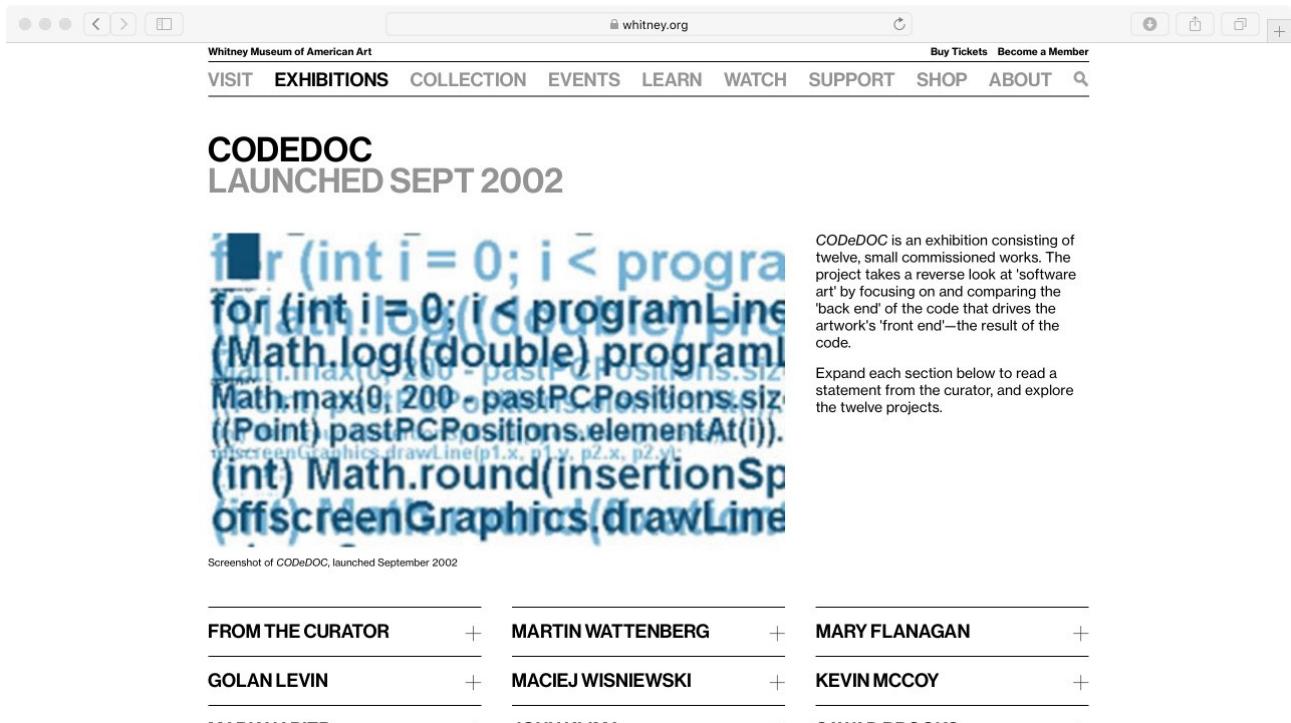


Image 24: The current Whitney Museum's online platform (2017). Print-screen from
<http://whitney.org/Exhibitions/Artport>

CODEDOC was first exhibited at the Whitney Museum of American Arts's *artport* online platform in 2002 and was shortly after extended through a further commissioning by Ars Electronica in 2003. For curator Christine Paul, these first installments are seen as a continuum: “Ars Electronica wanted to open the exhibition concept to participation by European artists and invited me to curate that second installment. To me this was a continuum, I saw no difference between launching the exhibitions within the context of a festival vs. a museum” (Paul, personal communication, Annex E, 2017). The exhibition at ADA's platform, entitled *CODEDOC remediated*, now re-presents the artworks in the context of a digital archive.

What does this new context imply differently? Structurally, very little. The Whitney Museum's *artport* was from the beginning launched to function simultaneously as an exhibition space and as an archive. It was set initially as an archive of "gate pages", where "each month, an artist is invited to present their work in the form of a gate page with links to the artist's site and most important projects" (*Artport*, 2001), while presenting within the same general interface a "commissions area" (where the Whitney's net art commissions were presented), an "exhibition space" (which actually only provided access to the net art and digital arts exhibitions at the Whitney, together with access to their information and documentation), a "resources archive" (which linked galleries and other museums working on the web with net art) and a "collection area" (which was in fact the museum's archive of the works shown).

```

//SpringyDotsApplet.java is the main code for this applet.
//It includes code to display the applet, handle user interaction,
//and animate the 3 Dots object.

//SpringyObject.java is support code that simulates
//the behavior of springs and masses.

//Bitmap255.java is a library that handles the drawing of trails on screen.

public class SpringyDotsApplet extends Applet {
    SpringyDotsPanel dotPanel;

    public void init() {
        setBackground(Color.darkGray);
        setLayout(null);
        dotPanel = new SpringyDotsPanel(size().width, size().height);
        add(dotPanel);
        dotPanel.init();
    }

    public void start() {
        dotPanel.start();
    }

    public void stop() {
        dotPanel.stop();
    }

    public boolean mouseDown(Event e, int x, int y){
        return dotPanel.mousedown(e,x,y);
    }

    public boolean mouseDrag(Event e, int x, int y){
        return dotPanel.mouseDrag(e,x,y);
    }

    public boolean mouseUp(Event e, int x, int y){
        return dotPanel.mouseUp(e,x,y);
    }

    public void update(Graphics g) {

```

Image 25: Mark Napier's project for *CODeDOC* (2002). Print-screen from

<http://artport.whitney.org/commissions/codedoc/Napier/code.html>

Today, *artport* has a completely different structure, focusing on providing "access to original art works commissioned specifically for *artport* by the Whitney; documentation of net art and new media art exhibitions at the Whitney; and new media art in the Museum's collection" (*Artport*, 2017). Nevertheless, it still combines both archival or digital collection structures to the occasional exhibitions hosted within its online platform³⁴. ADA's platform, similarly, functions as

³⁴ *Artport*'s current interface, however, is no different to the entire museum's web interface, which serves both as its public communication channel and as the institution's online digital archive.

this multipurposed structure, which includes both exhibitions and archive within the same platform – although the focus is clearly stated as archival.

Although no apparent differences can be identified within these two structures in the context of *CODeDOC*, it is possible to identify a few potential differences between the general concepts of online exhibitions and digital archives (which are not always present within existing projects). The first aspect would be *temporal*. Exhibitions tend to have a restricted time span, and are then “dismantled” in order to welcome new exhibitions or curatorial projects. Archives, on the other hand, sets their structures for the long run as the purpose is to maintain previously exhibited or collected artworks for future reference and access. This element, however, does not take into consideration the nature of “permanent exhibitions”, making this aspect flawed in terms of differential factors.

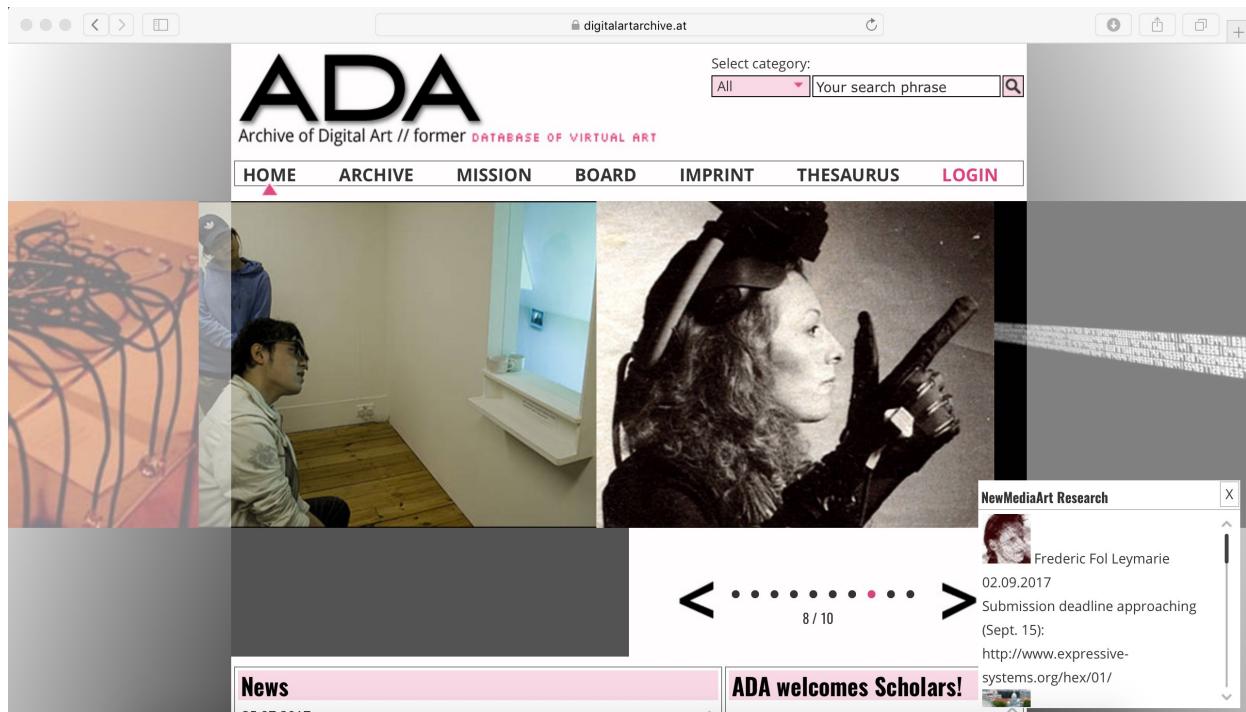


Image 26: ADA's online platform (2017). Print-screen from <http://www.virtualart.at/nc/home.html>

This leads us to issues of *presentation*, which in this context refers to the level of information of the artworks given in a certain exhibition in contrast to the broad availability of data in an archive. An exhibition, therefore, tends to present less content or information about the artworks, in comparison to the existing and necessary data applied in an archive (data from the indexation and categorization methods applied in the archiving process, for example). In an online context, however, this is not a very strict difference, as artworks presented online is most often also somewhat categorized (through tags, for example) in order to enhance searchability. The web

interface, with its hyper-textual potentials, blurs the lines between the exhibition space and the archive when it comes to semantic contextualization, which then leaves us with concerns associated to *interface design* as the differentiation factor.

In this aspect, exhibitions tend to highlight user interaction and participation with the interface's structures (and not only through the artworks), aiming to establish further public engagement. Archives, on the contrary, will implement an interactive interface in order to facilitate or promote access to contents, and so their interface design tends to heighten elements which enhance data retrieval and visualization. However, architectural and engagement elements can be seen in both cases within the existing platforms, as exhibition spaces try to enhance their information and data management, and archives, their visualization/exhibitionary aspects.

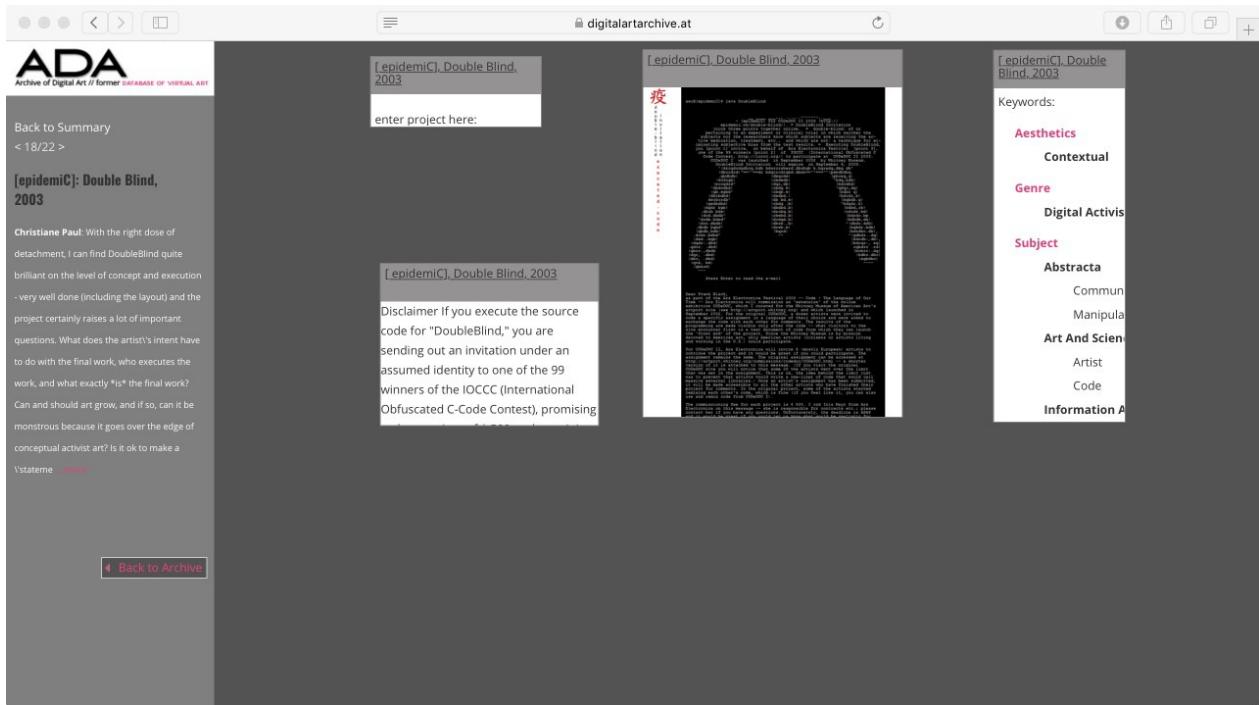


Image 27: [epidemic]'s *Double Blind* (2003) project for *CODeDOC*, now on ADA's online exhibition platform (2017). Print-screen from <https://www.digitalartarchive.at/support/light-box-list.html>

In practice, it all seems to come down to a matter of *declaration of intent*. As these platforms explore the emergent exhibition and archiving formats, the lines between them are still very conflicting. But as they progress and become a growing field, further discussion is needed. In this sense, institutions should seek a clearer idea of the concepts and terminologies they are applying. This would, in fact, contribute enormously to the field, as institutions present their understandings of the current terms and their applicability. When analyzing these platforms, we encounter a lack of a precise definition of their conceptual frameworks, which then leads to the current scenario of loosely applied concepts and contradictory terminologies. Most institutions take for granted the

existing preconceptions of the culturally naturalized concepts of “online”, “exhibition” and “space” or, most recently, “platform”, while sustaining the concept of an “online exhibition platform”, for example. The revision of these terms would certainly benefit these institutions in order to propose and rethink their existing structures – and this is not something that can be sorted out just by defining terminologies, as if in a dictionary, but a matter of understanding the current applications of these terms, in and through practice. Hence the importance of these experiments in the field.

Therefore, the differences between *CODeDOC remediated* and its previous installments are more of a contextual nature. While the previous exhibitions were set first in a museum's and later in a festival's online platforms (which implied, in each occasion, a different group of artworks presented to a certain type of visitors and in a specific format), at the digital archive these same artworks are now exhibited together, but differently received and presented. As curator Christiane Paul puts it, “[...] there are some crucial differences between the installments of CODeDOC and ADA's documentation of the exhibition: the latter puts the two installments in context by showing them together on one platform, and can be seen as a preservation process” (Paul, personal communication, Annex E, 2017). By recontextualizing these artworks, the archive was able to give another emphasis to it, proposing an “expanded concept of documentation”, *i.e.*, “the artworks and their several documentation methods are displayed and interconnected in the context of an exhibition” (Grau *et all*, 2016).

2.5. Conclusions

As institutions venture through the online sphere, proposing different structures to present art online (not only online-based art), they have encountered a series of constraints. Apart from their well-known potentials (in the institutional case, an emphasis is often given to the web's potential in encompassing a larger and diverse public), these emerging online platforms are still relatively virgin grounds to many initiatives. As seen with the examples of online-based art projects, there are still a few gaps that need to be bridged, the relationship between the online and the physical space of the museum or gallery being one of the most critical.

This chapter has aimed to expose the need for institutions to critically review how they have been applying these strategies by questioning their very nature. As Digital Solitude's coordinator Clara Herrmann argued, “If you want to do something online, you have to show that you understand *why* you do it there and not offline [...]. So I think that it is actually the biggest challenge – not only to put it there and say “it is online” and you have a new audience, but to really think about what does it have to offer” (Herrmann, personal communication, Annex C, 2017).

Therefore, more importantly than attempting to set new boundaries for these more

experimental practices in online-based exhibitions and archiving – as they are largely still very open to critical debate – is to grasp the implications and contributions of these online developments to the arts and to society as whole. Hence the relevance in establishing a more critical approach to what has been deemed as one of the most important elements in today's digital and networked world, the interface. Interface criticism asks us to question how these ubiquitous forms of mediative relationships (with the world, with others – humans and machines) are shaping and being shaped by the forms we experience the world, and ultimately, art.

Moreover, this chapter has sustained the potential of the interface in such a process. As art institutions, and curators, comprehend the mediative role of the interface and the implications of interfacing, they are able to rethink their notions of space and reshape the relationship between the artworks, exhibition design and the public, both in its online and physical grounds. As the next chapter highlights, this leads to a shift in the curatorial role towards a more participatory and collaborative approach.

Chapter 3

3.1. Community-building platforms as spaces for art making and thinking

Back in the 1980s and 1990s, online-based art benefited from a strong sense of community, which took form mostly through the early Mailboxes and Bulletin Board Systems (BBS) and, shortly after, through mailing-lists dedicated to online practices, such as *Nettime*, *Eyebeam*, *7-11* and *Rhizome*³⁵. These early community-building online platforms were the stage for both critical debate and artistic experimentation, promoting an open, diverse and collaborative environment – general principles that fueled the creation of many online communities of the time. With the growing accessibility to the technological developments, the burst of these online communities came, as Howard Rheingold (1993) described, as a natural movement driven by people's desire to connect and communicate across borders.

ARTEX (Artists' Electronic Exchange Network), launched in 1980, was perhaps one of the first online community platforms exclusively for artists³⁶. Initially called ARTBOX, the project was conceived by Canadian artist Robert Adrian X who, together with artist Bill Bartlett and with the help of Norman White, established a partnership with an existing networking company (IPSA) and developed an “easy to use” user-group within an electronic mailbox system. As Adrian explains, the idea was “[...] to develop a cheaper and more user-friendly e-mail program for non-corporate and non-institutional users” (*apud* Shanken, 2003), where anyone interested in the current artistic developments could access and share information, artworks and organize cross-border initiatives.

The platform relied on the participation of around 30 members up until its demise in 1990 when IPSA was purchased and subsequently shut down by Reuters, and included artists such as Roy Ascott and Dana Moser, as well as galleries, museums and art universities across the globe. ARTEX formed, therefore, a relatively small but strong network of people and institutions at a time

³⁵ It is important to acknowledge the relevance of Multi-User Domains (MUDs) and Internet Relay Chats (IRCs) within this context. Although practically no documentation exists on the use of these platforms by online-based artists, they were undoubtedly important spaces for communication and exchange for a great deal of Internet users. It is hard to believe that they were not used for building online art communities and for the creation and distribution of art. Natalie Bookchin's and Alexei Shulgin's text *Introduction to net.art (1994-1999)* suggests, however, Multi-User Interactive Environments and IRC, along with others alike (CUSeeMe and ICQ), as net.art genres. The complete list includes: Subversion; Net as Object; Interaction; Streaming; Travel Log; Telepresent Collaboration; Search Engine; Sex; Storytelling; Pranks and Fake Identity Construction; Interface Production and/or Deconstruction; ASCII Art; Browser Art, On-line Software Art; Form Art; Multi-User Interactive Environments; CUSeeMe, IRC, Email , ICQ, Mailing List Art. Furthermore, these chatting platforms, along with the traditional email systems, were the birth place of spams, memes and malwares, which were then also incorporated into artistic practices of the time.

³⁶ As noted by Robert Adrian (*apud* Turner, 2003), by that time there were other mailing systems, such as EIES (Electronic Information Exchange System), and, “[...] there was certainly at least some art and literature activity in these other networks, even if it was restricted to continental regions (e.g.: N.America or Europe) and not linked world-wide” (Adrian *apud* Turner, 2003).

when the technology was not as accessible as today. It enabled, therefore, artists and activists to experiment with a relatively new set of tools which were, as described by Adrian (*apud* Turner, 2003) used largely for corporate and academic purposes. “The creation of ARTBOX [...] opened a door to artistic experimentation that previously was possible only with substantial funding or at great personal expense” (Shanken, 2003).

The series of events and artworks developed with ARTEX experimented with the concepts of immateriality, ephemerality and dislocation within a wider collaborative setting. *The World in 24 hours* (1982), for example, was a collective piece commissioned and exhibited during the Ars Electronica festival in Linz, which invited artists to send contributions via telephone, FAX, slow-scan television and ARTBOX. The program connected artists and artworks from sixteen different cities, including Roy Ascott's *Ten Wings* (1982). Ascott would later present through ARTBOX his *La Plissure du Texte* (1983), a twelve-day-long collective writing piece where, as art historian Edward Shanken explains, “each remote location represented a character in the 'planetary fairy tale,' and participated in collectively creating and contributing texts and ASCII-based images to the interactive unfolding, or distributed authorship, of the emerging story” (Shanken, 2003).

This process, which Ascott would term as “distributed authorship”, illustrated the potentials of online community platforms towards participation, contributing to the redistribution of power between “authors” and “public”. Based on Roland Barthes's *Le Plaisir du texte* (1973), the artwork explored the potentials of distributed networks as a collaborative process of meaning-making where the tessitures of writing and reading intertwine. “[...] Ascott's 'La Plissure du Texte' emphasized the 'generative idea' of 'perpetual interweaving,' but at the level of the tissue itself, which is no longer the product of a single author but is now pleated together through the process of distributed authorship” (Shanken, 2003).

This collaborativeness, fueled by the communal environment set by these emerging platforms, became a key concept which would also permeate subsequent initiatives. BIONIC, launched in 1989 by artists Rena Tangens and padeluun, emerged as a Bulletin Board System focused on decentralizing network structures by proposing engaging collaborative environments for artists and activists. As many of its kind, BIONIC emerged from the existing networks of artists, which were already collaborating offline in some form or another. Rena Tangens and padeluun started with a local gallery in Bielefeld, Germany, which then led to the organization of PUBLIC DOMAIN, a series of monthly open meetings in a local cafe. These events then led to the creation of FoeBuD (*Verein zur Förderung des öffentlichen bewegten und unbewegten Datenverkehrs*), an organization focused on issues of data distribution, digital rights and privacy (now called Digitalcourage), which then made available a physical space where people from a diverse range of backgrounds not only could participate in its activities, but also have access to the technology

(hardware and software) necessary to use the mailbox system developed. BIONIC was, therefore, the result of a series of events and debates regarding the creative, social and political importance of online and digital technologies, driven by the need and responsibility to make it publicly accessible.

BIONIC, as well as ARTEX, illustrates how online and offline networks contributed to each other's development and how they constantly overlapped their seemingly separate environments through these community-building platforms³⁷. Like many others, these platforms were conceived and run by artists which saw the potentials of cross-border connectivity to art making and thinking. Inspired by the Do It Yourself (DIY) culture of the time, artists created these alternative platforms through the “doing and learning” motto, when emerging technologies required a certain knowhow and when costly technical apparatus were often restricted to the commercial and academic sector. For those who were exempt from these contexts, setting up an independent mailbox or mailing-list server was arduous. These platforms then sprout a culture of self-teaching and learning, aided by the existing communities of artists and activists who shared the gained knowledge and experience throughout their networks.

Josephine Bosma (2014) argued, however, that this hands-on approach was also addressed with criticism following the sudden hype which surrounded the developments of the Internet, as people saw a rise of the “amateur web developer”. On the other hand, “[...] ‘amateur’ public initiatives were vital for a non-commercial culture to develop online” (Bosma, 2014). In this context, spaces which had restricted access to the technologies and the necessary knowledge were the ones that often sought alternative means to expand their activities and knowhow through the Internet. They arose from specific local communities which would then, through the establishment of these online platforms, act in a larger and global setting. In this way, they went global in order to tackle local challenges.

Robert Adrian (*apud* Turner, 2003) argued that these initiatives appeared mostly as a consequence of either conservatism or isolation. “The similarity between Vienna, Victoria, Sydney, Bristol, Tokyo and San Francisco is merely isolation – either real or perceived. This has nothing to do with size or even geography – it is related entirely to the centralised art world” (Adrian *apud* Turner, 2003). In ARTEX's context, Vienna has always been known for its traditional art forms and more conservative art scene, and, as described by Adrian (*apud* Turner, 2003), it lacked a strong community of actors due mostly to the artistic and work opportunities in the field of online practices – a scenario which motivated those situated in the city to develop their own means of art making and communities through the Internet. Again, decentralization of power relations and access to means of production were the driving forces for development. “In a global communications environment geographical location is not as important as easy access to the network. This means

³⁷ In the same way offline-born communities developed towards online practices and projects, online-born initiatives would later result in offline and physical contexts.

that the hierarchies have changed [...] and that the most interesting things happening on line [sic] are usually coming from some place outside the major art centres” (Adrian *apud* Turner, 2003).

By establishing these online communities, these initiatives could embrace a much more international and diverse group of people, which included artists, researchers, curators and critics from different backgrounds (initially, a large part from video, radio, performance and previous telematic practices). Although more diverse and cross-border, the majority of these initial projects seem to have been centered in the US and the European context. Within these geographical circuits, certain contexts were more highlighted than others, such as the German, the East-European and the North-American online-based art scene³⁸.

Although Bosma (2014) suggests it is contradictory to speak of a local scene – as the destitution of borders was at interest with the rise of the Internet – she described what could be perceived as a German context: more performative and time-based and with strong connections to the conceptual and new media art experiments of the 1960s and 1970s. It was also largely influenced by the political and social backgrounds in which these initiatives found themselves. “In the case of Berlin, the exceptional political and cultural situation of the city after the fall of the Wall made it an especially attractive place for experimentation [...]” (Bosma, 2014).

The East-European context was also marked by their recent social and political shifts. As Geert Lovink (2002) described: “during the early to mid nineties many of the exciting media (arts) initiatives didn’t come from the recession plagued West but from the ‘wild’ East which had only recently opened up” (Lovink, 2002). Lovink (2002) cites two major projects which attempted to work with this recent openness and which aimed to strengthen the link between West and East: *V2_East* and *Syndicate*, both developed in the mid-1990s by Andreas Broeckmann. However, shaken by continuous political conflicts, which then reverberated through the mailing discussions, these initiatives had a hard time integrating and sustaining this exchange. This shows that to even generalize an European scene is equality incongruous, as the disparate context between the West and the East (or even between nations in the East or the West, for that matter) was clearly felt in such conjoint community-building platforms.

Additionally, the North-American context, said to have had a relatively late start (Bosma, 2014), actually had a foot in the old continent. *Rhizome*, for example, was launched in 1996 by North-American Mark Tribe, who was living at that moment in Berlin but later moved to New York, setting the mailing-list's new headquarters overseas. Nevertheless, as Bosma (2014) recalls, its contents remained largely European-oriented. “Net art debates that were based in a cultural

³⁸ Of course, these assumptions are heavily influenced by the existing art historical literature and documentations, as well as by sustained hegemonic artistic discourses, which are predominantly North-American and European oriented. And although many of these online community-building platforms had other international sections (such as *Nettime*), they were not as heavily engaged as the main list arrays of the North-American and European centered groups.

environment different from New York's acted as a springboard for a generation of US artists, for whom the 'dissident' approach of networks was a relatively alien concept" (Bosma, 2014).

To talk about geographical online scenes is, therefore, problematic. To begin with, it contradicts the sole purpose of the Internet as a communication platform which can potentially deconstitute geographical borders and incorporate diverse discourses and practices. However, decentralization and power distribution does not equal homogeneity, as Lev Manovich sustained when he addressed the "impossibility of national schools on net.art" in an *<Eyebeam><blast>*³⁹ discussion. In this occasion, Manovich (1998) argued that the Internet functions as an agent of modernization where cultural commodities are bound to homogeneity and, as such, we should not expect cultural specificities within net art (or even sustain the existence of such a category). Pedro Meyer (1998) then counter-argued, saying a "national school" (or a scene, for that matter) is not possible *because* of the existing disparities. It had "more to do with the unequal levels of technological development throughout the world, and artistic communities being at the tail end of it all, due to their traditional lack of resources, than any post modernist arguments" (Meyer, 1998). Furthermore, Meyer believed in the potentials of the Internet to offer the possibility to create co-existing yet disparate contexts, "as an expression of diversity, because no longer does such art require for them to be seen and to circulate, *[sic]* that they travel through the gauntlet of the traditional metropolitan centres of dominance" (Meyer, 1998).

In this sense, geographically specific groups were spaces which promoted the discussion of locally oriented issues, segmenting and organizing the flow of contents (in contrast to the flooded global streams), but also served as a counter-balance to the often over-imposing North-American and European contexts. It was a form of empowerment, as they occupied the spaces of a global networks with local specificities and perspectives. However, this segmentation should not be seen as a form of Otherness or as a marginalized practice, as Olu Oguibe (1998) suggested on the forum, but as a part of a whole:

"In same vein [as Frantz Fanon's], my friend from latin america says to me, 'resign yourself to your Otherness the way I [sic] got used to mine; we are both marginal.' nevertheless, with all my strength i refuse to accept that displacement, for to accept that brand on my forehead, to accept that tag, is to defeat the very purpose of my striving on the new frontiers of history. no, be the Other, the subaltern if you may; i will not be anyone's subaltern in or outside cyberspace" (Oguibe, 1998).

Themes such as these heated up the discussions on existing platforms and often resulted in "passionate debates", as Jordan Crandall (2001) would put it. Nevertheless, the debates and communities were largely responsible for the formation of an artistic discourse regarding online-based practices, or better said, multiple discourses, frequently problematized and in dispute. Brian

³⁹ *<Eyebeam><blast>* was part of *Interaction*, Eyebeam's first mailing forum launched in 1998 by Jordan Crandall.

Holmes (2001) would summarize these discussions, specifically in regard to the *<Eyebeam><blast>* mailing forum, by describing the “moods and gestures” as a general cacophony of voices marked by a somewhat self-reflexivity. “Most obviously this concerns the nature of the debates, the kinds of questions asked, the polemics, the flame wars (of which there were really very few)” (Holmes, 2001).

However, it was with *Nettime* in 1995 that the net art community gained its iconic status. Launched in 1995, *Nettime* started off with a main international mailing-list, called *nettime-I*, reaching over 500 members by 1997 and culminating in 3000 members by 2002 (Lovink, 2002). It then expanded to include sub-lists which were divided by language, such as Dutch (established in late 1996), French (1999), Romanian and Spanish/Portuguese (2000) and Mandarin (2002). It was, therefore, one of the most accomplished mailing-lists of the time in terms of network size and engagement⁴⁰.

In fact, Lovink (2002) argued that the presence of ‘lurkers’ (read-only members), common in such platforms, was virtually absent, and the lists benefited from a thriving sharing culture, with contents being collaboratively filtered to ensure quality (meaning, mostly filtering out spams and off-topics). “Nettime was (and maybe still is) a mailing list that has been very influential on the development of various cultural and political debates around new technologies, of which net art discourse was one” (Bosma, 2011). Other relevant topics included the “foundations of media aesthetics, tactical media aspects of protests against corporate globalization, the fight against censorship and the politics of Internet domain name” (Lovink, 2002).

Today, however, these platforms have lost their strength. Although some of these Bulletin Board Systems and mailing-lists are still accessible and new platforms continue to pop up, their golden age has ended long ago – perhaps even prematurely, as Bosma (2011) argues, as “the ‘moods’ of various online communities sank to a significant low after some of their representatives started declaring net art dead around 1999, only a few years after its inception” (Bosma, 2011).

Furthermore, with the shifts in web culture and its structures, these communities are no longer the go-to-places for emerging online-based artists and practices. The Internet shifted from static, hyperlink-based, and filtered mailing systems (“Web 1.0”) to a more dynamic and user-centered interface (“Web 2.0”) where everyone is the moderator of their own network of content-making and content-sharing. Therefore, both the concepts and the structures of community-building platforms have changed significantly, opening the way to new interfaces for online-based artists and activists.

⁴⁰ A complete overview of activities can be found in Geert Lovink's Dynamics of Critical Internet Culture (2002), “Chapter 4 – Nettime and the moderation question boundaries of mailinglist culture”.

3.2. Curating the online world (or Where did the artists go?)

Following the boom of personal publication platforms in this new phase of the web, *surf-clubs* were essentially spaces for the exchange and exhibition of contents made and found online by groups of artists. Set within blogging platforms, artists experimented with its typical thread-line structure, where each participant would respond to an initial posting, concatenating contents one after another. This blog-based art form is then interpreted by surf artist Tom Moody and curator Domenico Quaranta (*apud* Moody, 2015) as a form of resistance to previous practices. “Resistance is made explicit in Guthrie Lonergan’s famous ‘Hacking vs Defaults’ diagram, and is related to the broader shift from Web 1.0 to Web 2.0, from html to blogging platforms, and to the artist’s shift from the position of internet pioneer to amateur user among many others.” (Quaranta, *apud* Moody, 2015)⁴¹.

Although this new generation of online-based artists were addressing everyday online practices, incorporating its “amateur-like” aesthetics and habits, many of them were established or trained artists, as Moody (2015) noted by refuting Quaranta’s argument on the common interest between surfers and net.artists in exploring the web as a counter-institutional approach to art making and exhibition. On the contrary, surf-artists continuously inserted the vernacular and the quotidian use of the web in the traditional exhibition space of the white cube – although this was not the main concern. These artists were, in fact, interested in questioning the presentation format in itself and only then shifted these experimental structures to the curatorial grounds. “An actual schism over a shift from blog-based art to gallery based art happened later, with Paintfx.biz, which broke up over this issue, as Michael Manning noted in a recent panel” (Moody, 2015).

This rise of the blogging culture was followed by a generalized social media hype with platforms incorporating community-building features in thread-posting structures. From the initial MySpace, Orkut and Flickr to the current Youtube, Facebook and Instagram, web users had now a space where they could integrate both content-making and content-sharing practices while building and maintaining their own groups and communities of interests in a more dynamic and enclosed manner (in contrast to the static hyperlinked webpages). Concepts such as *hashtags*, followers and time-line were then introduced as mains features of this new era of community-building platforms, becoming everyday use terms, reshaping existing social and cultural practices.

These general shifts in web culture also reflected upon online-based artists and their

⁴¹ However, Quaranta would identify continuity as well (to which Moody would disagree). “Continuity is related to the participation of artists of the former generation, like Olia Lialina, and younger artists grown up in the cult of early net.art, like Cory Arcangel, in surfing clubs; but also to the ability of the former generation to anticipate tastes and topics of the new” (Quaranta, *apud* Moody, 2015).

practices. To begin with, the collaborative, open and decentralizing concepts that sprung early community-building platforms are now addressed more as utopian ideals of a pre-web 2.0 era, driving many artists and activists to a generalized disbelief in their potentials to change and reorganize current social and political practices. As *F.A.T Lab*⁴² members Magnus Eriksson and Evan Roth (2015) declared upon the demise of the group in August 2015, “We, who believed the Internet could change society, that technology could take other paths than surveillance, centralization and consumerism. The battle is lost and the juggernaut of the security industry, power and capital has been unable to stop” (Eriksson & Roth, 2015). This funereal statement, published on their webpage accompanied by a R.I.P symbol, made an explicit reference to their general frustration with the current scenario, as argued by researcher Andre Mintz (2017), especially with “the concentration and monopolization of the web, and the strengthening of worldwide policies that menace freedom of expression, access to information, and privacy” (Mintz, 2017).

Additionally, due to the growing ubiquity of the Internet today, many of these community-building initiatives are born online and stay online – in contrasts to the early scenario where existing offline communities arduously paved their way to set their online activities following the developments and popularization of the available technologies. The exploratory energy that permeated these early scenarios also diminished with accessibility, and with it the need to constantly justify Internet's importance to art, culture and everyday life, as well as to explain and contextualize its existing structures⁴³. Although digital literacy is still of great need and importance in many parts of the world, gaining access to the Internet and its platforms is a lot easier and cheaper than its previous context in the early 1990s. Needless to say, it has become a mundane practice and technology, especially within institutional grounds. We see, therefore, a rise of online art spaces, as art institutions from all sectors seek to expand and sustain their online presence. From digital archives to exhibition spaces, what was then considered an “alternative”, and even sustained as “counter-institutional” within the artist-run perspective of the 1990s, is now an almost mandatory step for artists and art institutions to enter and connect with its public.

Furthermore, there is no longer that urgent need to promote the means to engage artists and activists to participate in online practices and communities or to even make available the technology

⁴² F.A.T Lab was an artistic collective, launched in 2007 by Eyebeam's fellows Ewan Roth and James Powderly, dedicated to “enriching the public domain through the research and development of creative technologies and media” (Quaranta & Juárez, 2013). The project established a network of artist, scientists, lawyers and engineers in order to address and support the public domain and associated issues, such as copyrights, surveillance and monopolies. In its eight years of existence, F.A.T Lab relied on the collaboration of many artists and activist, among them Mike Baca, Aram Bartholl, Magnus Eriksson, Geraldine Juárez, Michael Frumin, KATSU, Steve Lambert, Tobias Leingruber, Zach Lieberman, Greg Leuch, Golan Levin, Kyle McDonald, Jonah Peretti, Christopher “moot” Poole, James Powderly, Evan Roth, Borna Sammak, Randy Sarafan, Becky Stern, Chris Sugrue, Addie Wagenknecht, Theo Watson, LM4K, Jamie Wilkinson, Bennett Williamson, and Hennessy Youngman.

⁴³ On the other hand, there is still a need to contextualize online-based art and its relatively short history. Prominent efforts have been made recently in order to bring this discussion back, such as Rhizome's recent Net Art Anthology (<https://anthology.rhizome.org/>), a retrospective online exhibition of net art since the 1980s.

to potential new users (as FoeBuD did for BIONIC, for example), as they are largely digital and online literates. On the contrary, online-based art initiatives have now to adapt to the existing structures of the web and incorporate existing online community platforms as they cannot compete with larger platforms such as Facebook or Twitter and with their well-established web culture dynamics⁴⁴.

And with the takeover of these social media platforms, the DIY culture which predominated within artists-run initiatives of the late 1980s and early 1990s, was overthrown by more user-friendly interfaces. Instead of having to develop the structures by themselves and from scratch, web users can easily make use of the available networking platforms. Anyone registered can, for example, create a Facebook group dedicated to online-based practices and, by making use of the existing network of users, promote online engagement and debates. The downside of this process is the monopoly of social interactions and communities by a very small number of corporate giants (such as Facebook and Google). These ready-mades, however, enable the means of content-sharing and production to be even more accessible. In this context, the “amateur web developer” gave way to the “everyone is a critic or curator”, where to share a link on your social media profile is to make a critical stance or a curatorial gesture.

Moreover, artists today seem to embrace a much more diverse set of practices. And they do not necessarily call themselves net artists (or its variants) or embrace a sole artistic category. The current practices lacks, therefore, a general underling concept (although attempts have been made) which aggregates them and creates that sense of communal belonging present in the early days of online-base art. There is, therefore, a lack of a strong community of practitioners (although community-building platforms are amply available), where a network between artists, critics, curators and theorists can be established, as *Nettime* was for *net.art*.

So where did the artists go? In the current scenario of community-building online platforms, social media applications are the main environments for interaction. From Facebook, Twitter, Google+, Tumblr, and Instagram to chatting apps such as Whatsapp, Telegram and Wechat – each platform has its own specific network of people and institutions, which often overlaps and integrates different or “sister” applications. The interchangeable dynamics between the platform's structures and its users is what makes each of these networks specific – meaning that people make

⁴⁴ Rhizome and Furtherfield are some of the institutions that attempted to create their own community platforms within their existing structures, in consonance with their aims and interests towards the commons and community-building spaces (online and offline). Both offered a section in their websites for users to create a personalized account which would enable them to create portfolios and share artworks with their open public. Interestingly, up until 2005, Rhizome had a section in its online community platform where users could curate and create their own online exhibitions. After that year, the institution seems to have shut down its community section (although previous interfaces are still accessible through web.archive.org), which reappeared in 2008 and was again taken offline in its most recent webpage refurbishing in late 2015. Furtherfield, however, still maintains its community section, although there has not been much activity in the last two years. *Art.hub*, on the other hand, adhered to the current practices and web culture, enabling users to connect to its networking platform through existing social media platforms, such as Facebook. This is, in fact, a general trend in user design and user experience (UX) developments.

use of these spheres differently and behave differently in different platforms. Twitter, for example, is considered to be a more open application (in comparison to Facebook, *e.g.*), as it allows its users to follow others without having to ask “permission” or without having to follow back⁴⁵. This followers/following system, thus, shifts the interaction between users towards a more open sharing culture, as contents posted are not always restricted to personal or closed groups of people, but are largely accessible and searchable by any user.

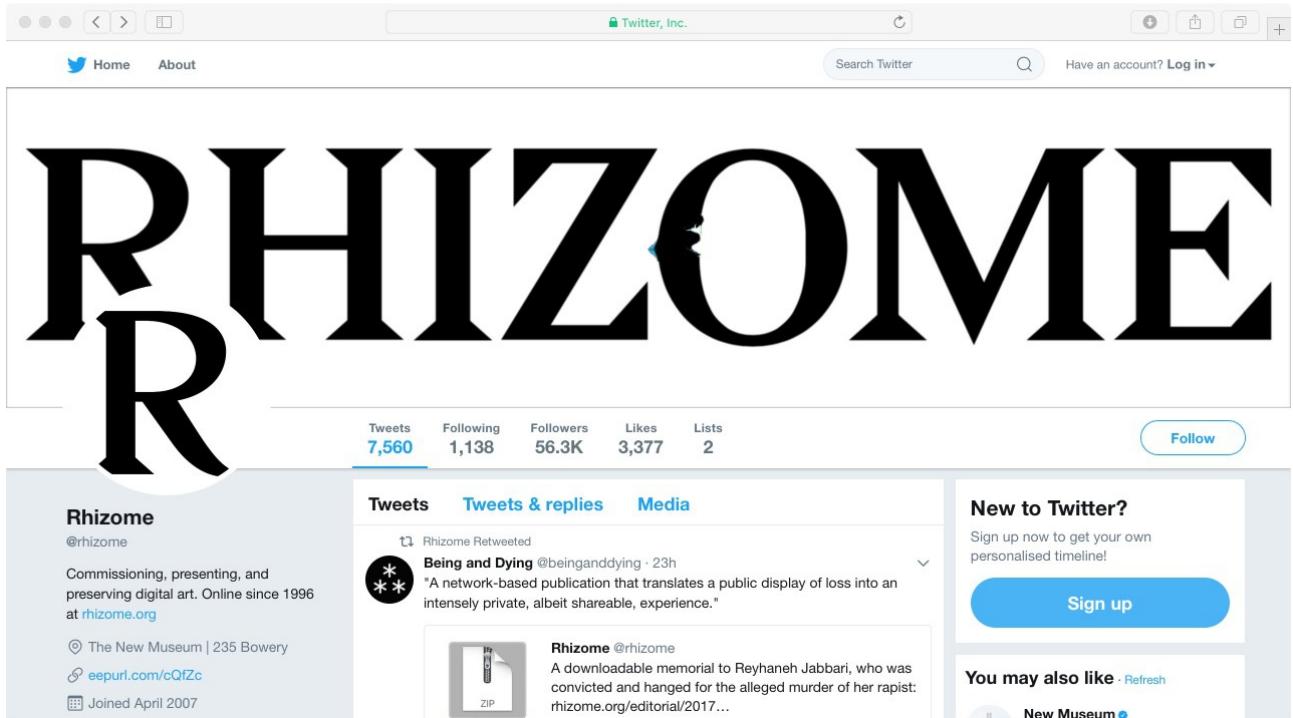


Image 28: Rhizome's Twitter profile (2017). Print-screen from <https://twitter.com/rhizome>

The existing networks on Twitter are, however, based on profile-to-profile interactions, and, as such, it is harder to visualize within a larger frame. Rhizome, for example, has an outstanding 56.3 thousand followers and has only posted around 7,500 tweets since 2007, which indicates that although the institution is not a heavy-posting user, it relies on a large number of followers with whom they can engage with and who can share and amplify its content reach – although, as the data analysis of the network shows⁴⁶, these engagements are based on retweets and likes, rather than in direct conversations or comments.

But with such a large and diverse network of people it is hard to specifically identify their overall interest and engagement regarding online-based art practices and debates. A deeper analysis of these networks can be done, however, through the *hashtags* used. Unfortunately, the topic and

⁴⁵ It is also possible to restrict access to contents by making the account private. However, the culture behind the platform is already embedded in a more open approach to content sharing, with more public/open profiles than private /closed profiles.

⁴⁶ For the purpose of identifying these engagements, the last 3,256 tweets (from September 2016 to August 2017) from the Rhizome's Twitter profile were collected and analyzed.

the lack of a more integrating terminology to current online-based practices makes this method of research somewhat inviable. The use of terms and tags such as “Internet art”, “net art” or “online art” is very broad and pervades different fields and web cultures, stretching from a more art institutional discourse to the current web vernacular.

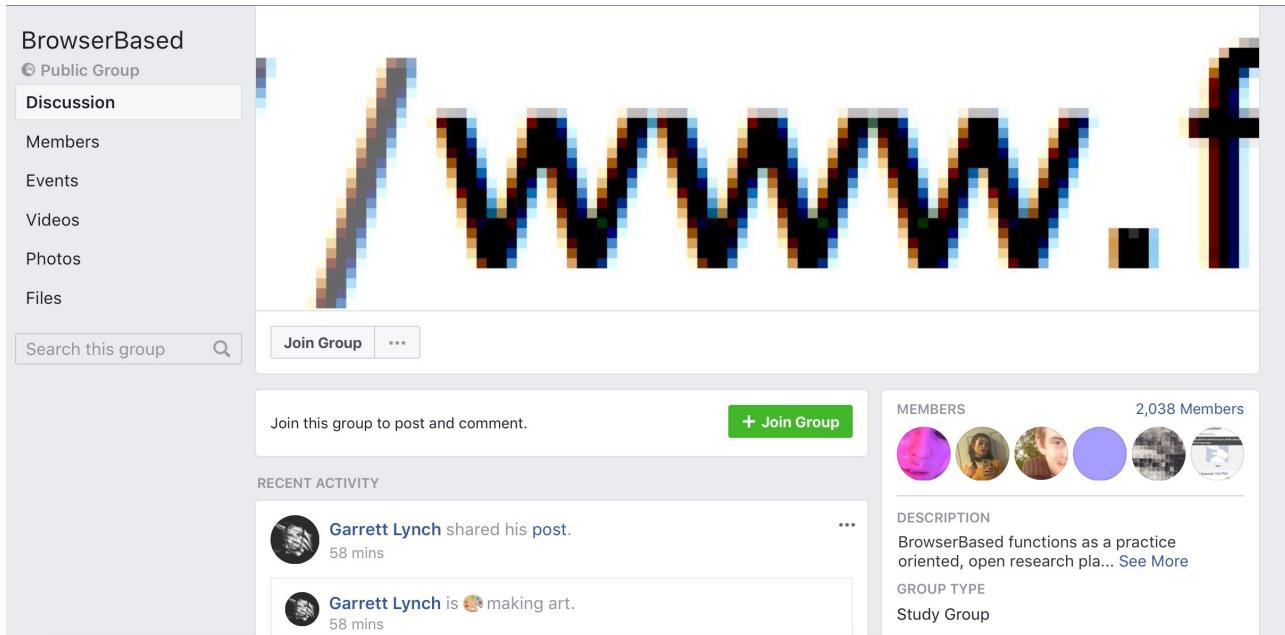


Image 29: BrowserBased's Facebook group page (2017). Print-screen from

<https://www.facebook.com/groups/browserbased/>

It is perhaps on Facebook that we can see more clearly a concise group of online-based art practitioners and enthusiasts, as the platform enables users to create groups within its network. These groups are often divided by disciplines or fields (such as “Media Art History”, “Media Archeology” and “New Aesthetics”), by specific artistic methods or practice (such as “Glitch art” and “Interactive art”), by institutions or pre-existing groups (such as the “Italian digital art”) or by specific purposes or aims (such as “Jobs for artists”). However, the diversity of terms, contents and users in these groups makes it almost impossible to speak of a specific practice or art genre *per se*, contrary to what might be suggested by their names. Groups names are, therefore, often deceiving, such as *Netart*, *Net Art and Literature* and *art.net*, which might suggest an association to the *net.art* practice of the 1990s, but instead are filled with contents on digital arts (meaning everything but *net.art*) or for the sharing of art in the online sphere⁴⁷.

Within the existing Facebook groups, we can encounter a more delineated online-based art community in *BrowserBased*. The group, which was initially part of a “hub for the networked arts”

⁴⁷ Which also indicates a shift in the use and understanding of the term, no longer associated with a specific practice or group of contemporary artists. Instead, “net art” on these communities is often associated to the general meaning of “art on the net”. Amongst today’s online-based artists, the term seems to have also fallen in disuse. Rather, it seems that terms such as “Internet Art” are nowadays preferred to describe their practice, if they rely on a term at all.

at the Gerrit Rietveld Academy in Amsterdam, has now almost two thousand members worldwide. Created and moderated by artists and researchers Zsolt Mesterhazy, Mavros Katramovic, Karina Pálosi and Jan Robert Leegte, it proposes to be “a practice oriented, open research platform which deals with the browser based context and net-culture as a space for knowledge creation and dispersion” (*BrowserBased*, 2017). On Facebook, it is categorized as a “study group” for Internet Art and Culture, but it expands its community environment beyond the web by incorporating the hub's activities, which includes live-coding sessions, gatherings, workshops and exhibitions.

Based on data collected from *BrowserBased*⁴⁸, there also seems to be a clear lack of engagement between members and, most significantly, a lack of critical debate, if we compare it to mailing-lists such as *Nettime*⁴⁹. These communities are often filled with one-link posts, rarely accompanied by a complementary or critical argument, or followed by comments. Instead, engagement is achieved through the “like” or “share” button. It seems, therefore, that the self-reflexivity that permeated the mailing-lists from mid and late 1990s is long gone, with this content-sharing practice functioning more as a form of promotion (and very often, as self-promotion). Collaboration in these networks can then be perceived (if at all) more in the lines of information and knowledge sharing, rather than through the idea of co-creation of contents as explored by Roy Ascot with ARTBOX, for example.

The common practice within these community-building platforms has then shifted significantly from the concept of “distributed authorship”, now leaning towards what can be described as “disputed authorship”. As these platforms reinforce their ownership over the contents created by their user base, authorship has become a critical concern and an increasingly discussed topic. The debates spring not only on copyright issues, but also on censorship and platform-usage restrictions.

By defying the imposed regulations and user policies, artists have had their artworks and profiles constantly restricted or banned. Artist and curator Olga Mikh Fedorova, in an attempt to address this issue, has recently launched an online exhibition entitled *Blockedart.com* with banned images from Facebook. “I asked my Facebook friends to send me art images which were banned in social media. I created an environment to give a second life to these images. No selection was made. All images were accepted” (Fedorova, *apud* aqnb, 2017). The exhibition is currently set in a virtual environment created exclusively for the show, which then becomes a safe port for censored projects.

⁴⁸ For the purpose of identifying these engagements, 390 posts from the last three months (May to August 2017) were collected from *BrowserBased*'s Facebook group page and analyzed.

⁴⁹ However, when compared to the previous analysis of Rhizome's Twitter network, *BrowserBased* had relatively more conversations and comments (but this could be due to the nature of the profiles, the members and the overall dynamics of each online platform).

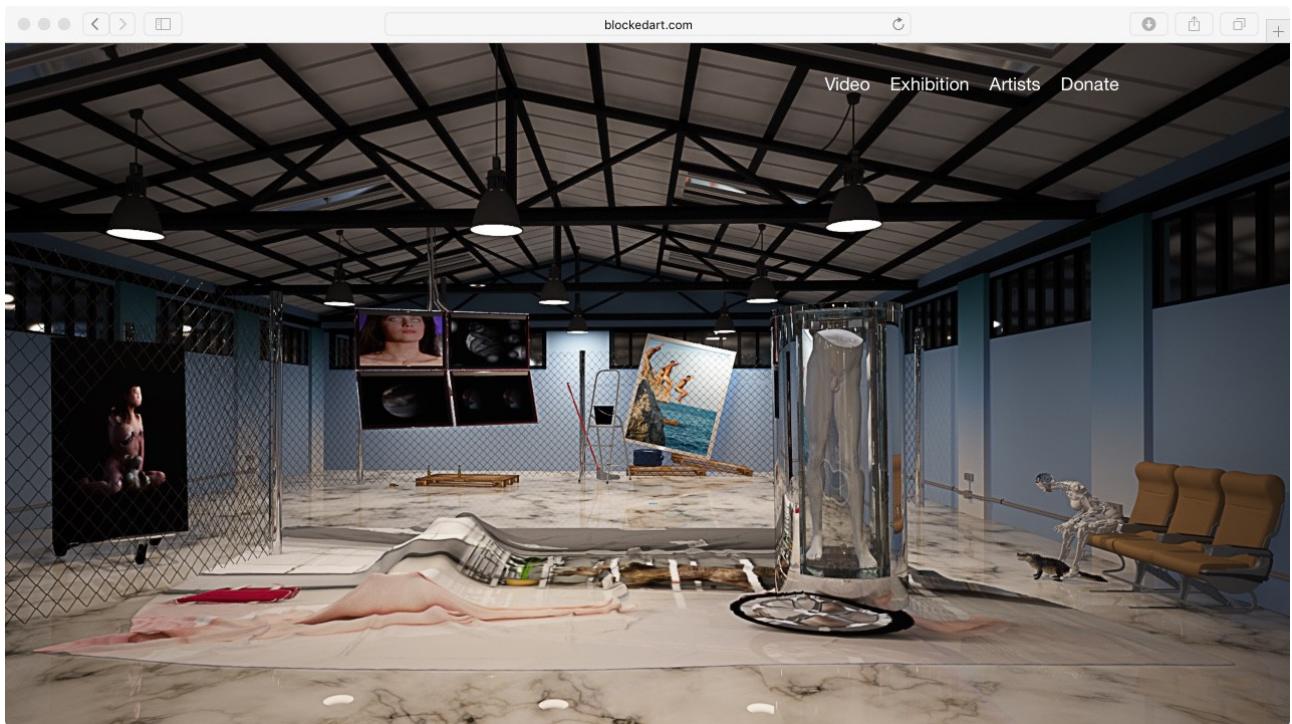


Image 30: Olga Mikh Fedorova's *Blockedart.com* exhibition platform (2017). Print-screen from
<http://blockedart.com>

Restrictions apart, Facebook has increasingly been used by artists and curators as a participatory platform for art making and exhibition, especially with its new live broadcasting features. Artists such as Baron Lanteigne have then explored the potentials of this tool, by creating virtual environments which interacts with the users' participation. By sharing likes while watching the shared live-video stream, users trigger a reaction from the artist's performance. Lanteigne also explores the platform's 360 image viewer, where users can rotate and explore the artist-created virtual worlds.

Although not so much explored on Facebook as its participatory features, collaboration as a form of co-creation and shared authorship is a noteworthy part of contemporary web culture. Memes and mashups are its quintessential forms, fueled by an appropriationist gesture and most frequently associated with humorous, ironic and trolling practices. To illustrate this, Reddit has recently promoted an April fool's day challenge inviting its users to collectively fill a given 1,000x1,000 pixel blank canvas entitle "r/place". The catch, however, was that each logged-in user could only fill one single pixel. By inciting its users with the phase "individually you can create something. Together you can create something more", Reddit promoted a world-wide collaborative online-based art piece. As one can only fill one pixel, whole communities were encouraged to participate, working collectively to create a larger picture. "The fact that so many popped up and remained legible, if not almost entirely preserved, is remarkable. For perspective: a reasonably

perceptible Roman character requires no less than 24 pixels, so more than 24 Reddit users were needed to not only fill that single letter's pixels, but also to stand guard for immediate follow-up vandalism" (Machkovech, 2017).

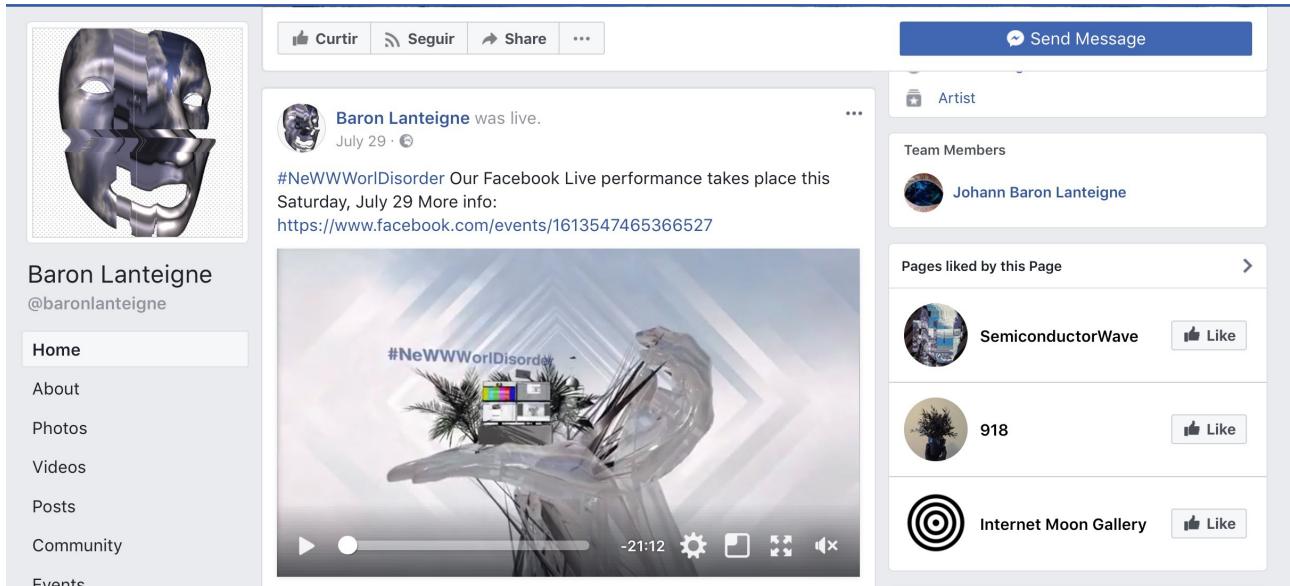


Image 31: Baron Lanteigne's Facebook page where many of his interactive video's are shown live (2017).

Print-screen from <https://www.facebook.com/baronlanteigne/>

The result of this 72-hours project was a large-scale pixel world war between online communities. "In some ways, the results looked like the world's largest team-battle game of MS Paint. Countries invaded countries. Collective efforts to fill certain spaces with single colors eventually fell apart" (Machkovech, 2017). This collaborative dynamics on Reddit showed what web culture is essentially about: fast-paced and ever-changing co-creation environment, where authorship is shared yet disputed, largely fueled by a sense of humor and trolling, and sustained by communities' strength and sense of belonging.

Reddit, along with other forum-based platforms such as *4chan*, is known as the web's main hub for subcultures and a major reference for many online-based artists. In fact, *4chan*, founded by Christopher Poole (later F.A.T collaborator), was once given the title of "the ground zero of Western web culture" (Quaranta & Juárez, 2013). These community platforms are, therefore, where experimentation and boundary-testing projects run free and wild (especially when *4chan* allows for anonymous participation). In these settings engagement is also enhanced, as these platform's content-sharing dynamics rely on a rating system where the most liked posts and comments are "pushed up" on the listings. These platforms, therefore, provide a natural rating system for artists and, as such, often offer direct feedback and host competitions between their

members. As Evan Roth explained, referring to the occasion when F.A.T.'s *Occupy the Internet* (2011) project was hosted on the platform, and in terms of web culture frenzy, “exhibiting on *4chan* is more exciting than exhibiting at the MoMA” (Roth, *apud* Quaranta & Juárez, 2013).

These web subcultures are seldom explored by more traditional art institutions, yet they are an extremely rich environment for artists for both art making and debate. And these are only the practices which can be seen in the surface – artist have also been exploring the substrates of the *deep web* (a hidden layer of the Internet which is nothing more than unindexed contents that cannot be easily accessed by the standard search engines).

3.3. In search of the networks: experiments in online curating

Apart from these examples, online and offline communities for online-based art are still regularly formed through the existing networks of practitioners and frequently supported by both artist-run and institutional initiatives, such as in local and international events and meetings. Amidst these projects, artistic and curatorial residencies are rich environments for the expansion or formation of these communities, as they establish a space for communal working and living, fostering exchange between participants. Open calls for exhibitions, in contrast to the commissions, are also interesting strategies for community building, as they can attract emerging practices and artists, especially when addressing current issues in contemporary practices, and offer a setting where different perspectives can jointly engage through the curatorial process.

The Akademie Schloss Solitude has combined both these strategies in one single program. *Schlosspost* was launched in 2015 as an online platform for the Akademie's Digital Solitude program, which then included all of the institution's digital installments. The idea originated from a blog project developed by the now coordinator of the Digital Solitude Clara Herrmann. “There was so much content at Solitude that it became quite obvious after we started this blog (where we communicated content such as interviews, essays...with various multimedia formats about what was happening in the house) that there was a huge target group for it and that we should use the Internet in another way” (Herrmann, personal communication, Annex C, 2017). From this vibrant online community setting, a larger platform and network was created, *Schlosspost*, in order to encompass the potentials of the web as not only a means of communication, where they could set up a digital archive and publish their online contents, but also as a space for the production and presentation of digital art (especially online-based art).

Among the projects hosted on *Schlosspost* is the Web Residencies, which functions as a sort of residency for a “virtual second Akademie” (*Schlosspost*, 2017). The Akademie has been supporting artists from a diverse range of disciplines through its physical residencies and

fellowships since the 1990s, so it made only sense that its new online platform continued within the same logic. “The logic of Solitude is, of course, to support artists with stipends and free space to live and work. So it was clear that this principle should also be part of the online platform *Schlosspost*, that it should have its own funding program, in its own logic” (Herrmann, personal communication, Annex C, 2017).

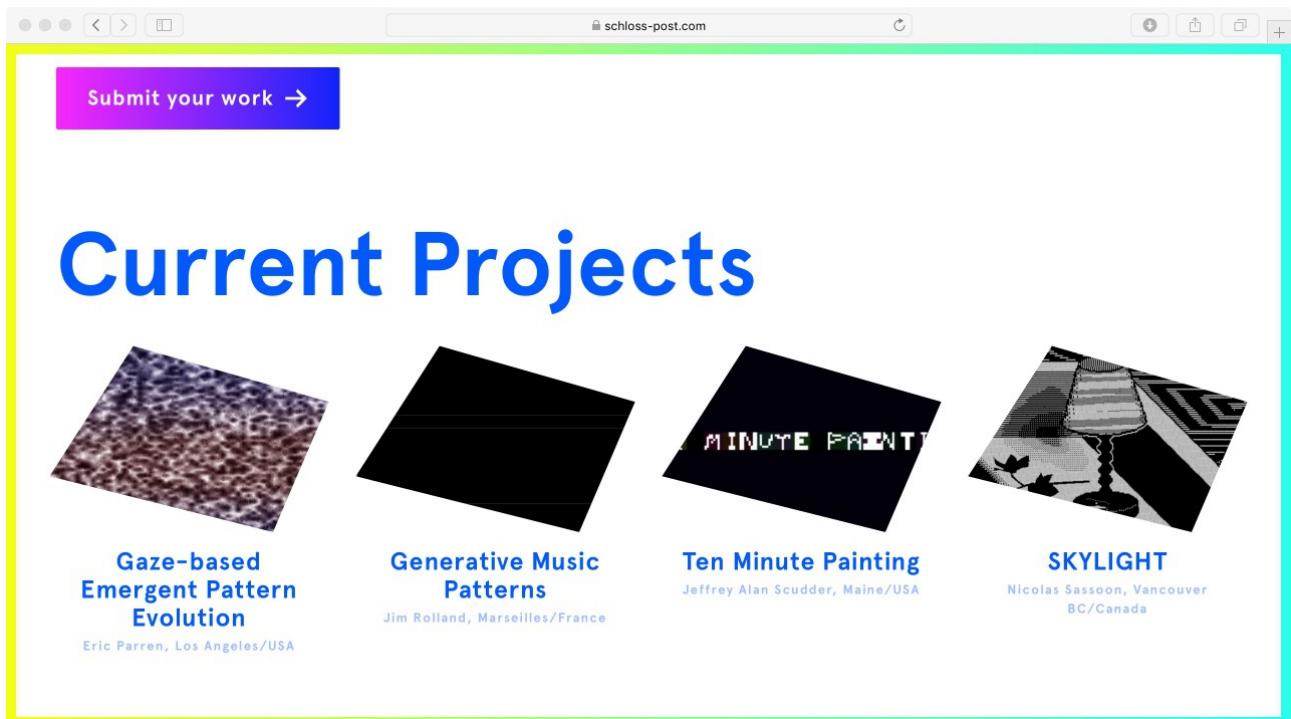


Image 32: Schlosspost's Web Residencies page with current and past online-based projects (2017). Print-screen from <http://schloss-post.com>

The Web Residencies differed from the Akademie's regular residencies and fellowships by proposing a specific topic, suggested by an invited curator, within each open call. “We actually wanted the curators and jurors for this call – which lies within the existing logic of the house where one juror decides for one of the many disciplines – that they have the responsibility and also the curatorial freedom for the topic and concept” (Herrmann, personal communication, Annex C, 2017). The residencies, therefore, changes their conceptual frameworks and dynamics on every new selection. This gives the project a certain fluidity, allowing the institution to surf through different genres and communities and, as a result, involve in their activities disparate practices and artists, yet still congruent to their overall emphasis on web culture.

Moreover, the residencies, right from the formulation of the topic to the final presentation of the projects on the online platform, provide a rich space for collaboration between the institution, the jurors, curators and artists. This relationship is established all online, and reverberates differently each time. “It is a very quick process and the dynamic is incredible. Because when you

have a topic and a certain time frame that people apply for and work within, it has an incredible dynamic for projects and the communication" (Herrmann, personal communication, Annex C, 2017).

Within this collaborative relationship, the role of the invited curator is fundamental. Curators not only set the topics, but have the independence to coordinate the residency accordingly. "So it starts with a relationship of trust with someone we know would be happy to work in that context, [...] who would also be in touch with people [...]. Someone that has an idea on what is a contemporary question within web culture, not only technical questions but also related to net culture, politics & society" (Herrmann, personal communication, Annex C, 2017). The curator is then the starting point to a broader network that is then established within each call, as they create the conditions for engaging with a characteristic group of artists who are working within the selected topic on the web. For each call, therefore, a new network is established. As Herrmann defines them: "[...] with the new web residencies, the network is definitely...well, it develops from call to call, and in new directions...you always find new audiences and communities with people you would probably not have attracted before with other topics" (Herrmann, personal communication, Annex C, 2017).

These shifting networks are nurtured beyond the residency time span, within the larger online platform of Schlosspost, through further collaborations. However, there are a few constraints in maintaining them active. "It should also be the main goal of this program to foster the discussion between web residents a lot more, but it is not so easy, because there are always different people who are differently engaged" (Herrmann, personal communication, Annex C, 2017). The major downfall of these online strategies is precisely the need to constantly engage the existing communities, both their previously established networks of the institutions (from jurors, curators and other collaborators) and the new (with the invited curators and incoming residents).

Nevertheless, be it online or offline, these strategies are often developed to tackle web's diffusivity. The web's overwhelming content production and distribution dynamics, together with the absence of a strong community and a sense of belonging, makes it harder not only to identify and name the trends and practices, but also to find the artists and artworks. The current scenario imposes challenges on curating, not only for online-based art, but also within the larger field of digital arts. It asks curators and theorists to rethink the present strategies and tools, as one is unable to simply "search the web" using standard search engines such as Google's or rely on a consistent community of practitioners. A simple search for trends, topics and people, for example, may lead to an algorithmic loop, as the search will be associated to previous registered activities and to the limitations of one's own network.

Institutions have then invested in the development of their own algorithms and tools in order

to enhance the curatorial process and aid them in their search for emerging practices⁵⁰. The Museum for Digital Arts (MuDA) in Zurich is one of them. Launched in 2015 through an online crowdsourcing campaign on *KickStarter*, MuDA proposed to be “the first physical and virtual European museum devoted exclusively to digital arts”. And with its current focus on code-based practices, the museum fully immersed itself in the coding culture by developing its very own “algorithm curator”. *Hal 101*, as it was named, is then treated not only as an active member of the staff, but is described as MuDA's main curator (Kusber, personal communication, Annex G, 2017).



Image 33: MuDA's Gramazio Kohler exhibition page (2017). Print-screen from <http://muda.co>

In technical terms, *Hal* is a crawler bot – which is essentially a programming script that crawls or scans the web in search for specific data. As such, *Hal* runs through the available online resources in search of information from specific artists and artworks. In this sense, *Hal* was tailored to be MuDA's primary source regarding current practices and, as an algorithm, follows certain parameters which have been preset. Therefore, although the museum has personified the script and put it on the spotlight, they are also very aware regarding its constraints. As curator Alexa Kusber explains, “[...] at the end, all algorithms and programs come from a person, so obviously we have programmed Hal constantly looking on the web for a criteria that we set. But the criteria is still quite open” (Kusber, personal communication, Annex G, 2017).

⁵⁰ Although computer-aided curating is not new, with past examples such as [C@C](#), the current technological developments have enabled significant shifts with its dynamics, relying less and less on human input. A further analysis of these past initiatives can be found in Christiane Paul's *Flexible contexts, democratic filtering and Computer-Aided Curating: Models for online curatorial practice* (2006) and in Paul's personal communication, annexed to this thesis.

As *Hal* crawls the Internet, MuDA's team analyses the upcoming results, to only then select collectively the next artists to exhibit at the museum. The results from the datamining process is then seen as a form of suggestion, and *Hal* as a type of collaborator. Regarding the criteria set for the algorithm, Kusber explains: “We are really obsessed with programming and code. So this is an important part of the artists’ work. So they definitely are programmers, coders, who are then creating something physical to be shown. *Hal* is looking, just as a curator myself would be looking, for dynamic artists who are working now” (Kusber, personal communication, Annex G, 2017).

The algorithm, therefore, aids the museum in finding artists and artworks beyond its own network of people. Although MuDA recognizes the script's limitations, and potential bias for that matter, it emphasizes the importance of such a strategy in order to achieve a more diverse group of artists through what is perceived as a more democratic selection process. “Let's be honest [...] a lot of artists are chosen based on their career at a certain point – on how many biennales they have been in, what galleries are representing them [...] And it is not always fair, let's say” (Kusber, personal communication, Annex G, 2017).

Following the suggestions made by *Hal* and the final selection process, MuDA's team is then able to establish a closer connection with the upcoming artists in order to collectively develop the exhibition. In this context, the curator shifts towards the role of a producer, who then acts as a mediator or facilitator, as curators welcome and assist the artists in adapting the space for their needs and creative use. The team would act as a direct collaborator of both the curatorial and the artistic processes – first with *Hal* and later with the artists, as many of the works require adaptation to the museum's infrastructures or are, from the beginning, site-specific. “The best way to describe it, now that I think about it, is that the curatorial practice here is *collaboration*: with *Hal*, with the artists and with the people who work here. And it is a really open form actually” (Kusber, personal communication, Annex G, 2017).

Furthermore, this inner malleability and changeability of digital art and, more specifically in MuDA's current context, code-based art, is then interpreted by MuDA as a living form. As the artists are constantly adapting and updating their codes and structures, the exhibition and the artworks are never stagnant. “So you can come at the beginning of the exhibition and come at the end, and your experience could be a little bit different depending how they [the artists] changed the code. And this is definitely a new way of experiencing art. The best way to describe it is that the exhibition and the artworks are *living*” (Kusber, personal communication, Annex G, 2017).

By incorporating an algorithm in its curatorial practices and by experimenting collaboratively with its institutional space, MuDA is expanding the traditional art boundaries and suggesting new possibilities in regard to exhibition-making in the digital era. “As this is a new museum, we are very experimental. We are not only dealing with this new medium of digital art,

but we are also challenging ways we want to act and function as a museum” (Kusber, personal communication, Annex G, 2017). Both the physical and the virtual space of the museum, therefore, are thought in accordance to this experimental approach, and as such they are in constant transformation – as the artworks they sets to exhibit.

“[...] we are definitely challenging normal curatorial practice. At the moment, I think it is a nice experiment. We are still working on it. You can look at our texts – this is our third exhibition – and it has changed. And I'm sure it will continue to change, because we are just seeing and trying out – which is really refreshing, because we don't really have any precedents, such as other museums – we go with what works, or what works for *us*” (Kusber, personal communication, Annex G, 2017)

Similarly to MuDA's approach, Platform Stockholm – a large-scale studio collective and gallery in Sweden – has also been using an algorithm for both its exhibitions and artistic residencies. *Curatron*, developed by artist Cameron MacLeod, is a software applied to the institution's open calls, where artists can intervene directly on their own application and selection process. In this context, artists are asked to create a personal profile within the software's platform, which will subsequently be shared with their fellow applicants, who can then select a certain number of artists (depending on the requirements of each specific call) with whom they would like to exhibit or reside with. The artists are asked to select these fellows based on their affinities or engagement interest in order to create a concise group for the exhibition or residency. “[...] when you look at the profiles in *Curatron*, you look at them with the intention of being selected at the end of the exhibitionary process – I would suggest that the majority of the people applying are doing that – which means they are looking for people in a closer way” (MacLeod, personal communication, Annex F, 2017).

Following this initial application phase, *Curatron* then calculates the most popular or frequent matches, based on the suggestions made by each applying artist. The algorithm, therefore, functions as a facilitator or a mediator of the selection process, which is ultimately proposed by the artists themselves – a role which is traditionally executed by a curator who identifies the ideal pairing for a specific exhibition context. The result of this dynamics is, as described by MacLeod (personal communication, Annex F, 2017), a total restructuring of the curatorial process and the relationships established within it, in a global scale.

“[...] *Curatron* has the ability to create a completely alternative process to the selection process. Which means you need to take into consideration every aspect of this method and how it changes the context for everyone that is involved in it: the artists, the people that view the exhibition, the curators, the programmers, people selected from the selection process, people that are

applying...through each step of the application process there is a fundamental change that happens" (MacLeod, personal communication, Annex F, 2017).

To begin with, *Curatron* directly affects the relationship between the artists. By having to select one another, the artists tend to give more thought to the process and are able to reflect upon the artists and their practices, in relation to their own context and interests. "So it reflects and changes the psychological position of the artist through the application process, as they are thinking about their own practice, they are thinking about others, and they are thinking about how their practice relates to others [...]" (MacLeod, personal communication, Annex F, 2017). Furthermore, the algorithm seems to enable a more diverse selection, in contrast to more traditional formats, and, as MacLeod (personal communication, Annex F, 2017) recalls, enables a more democratic selection. As a result of this first phase, a very coherent and yet diverse group of artists, with a strong tie, is formed.

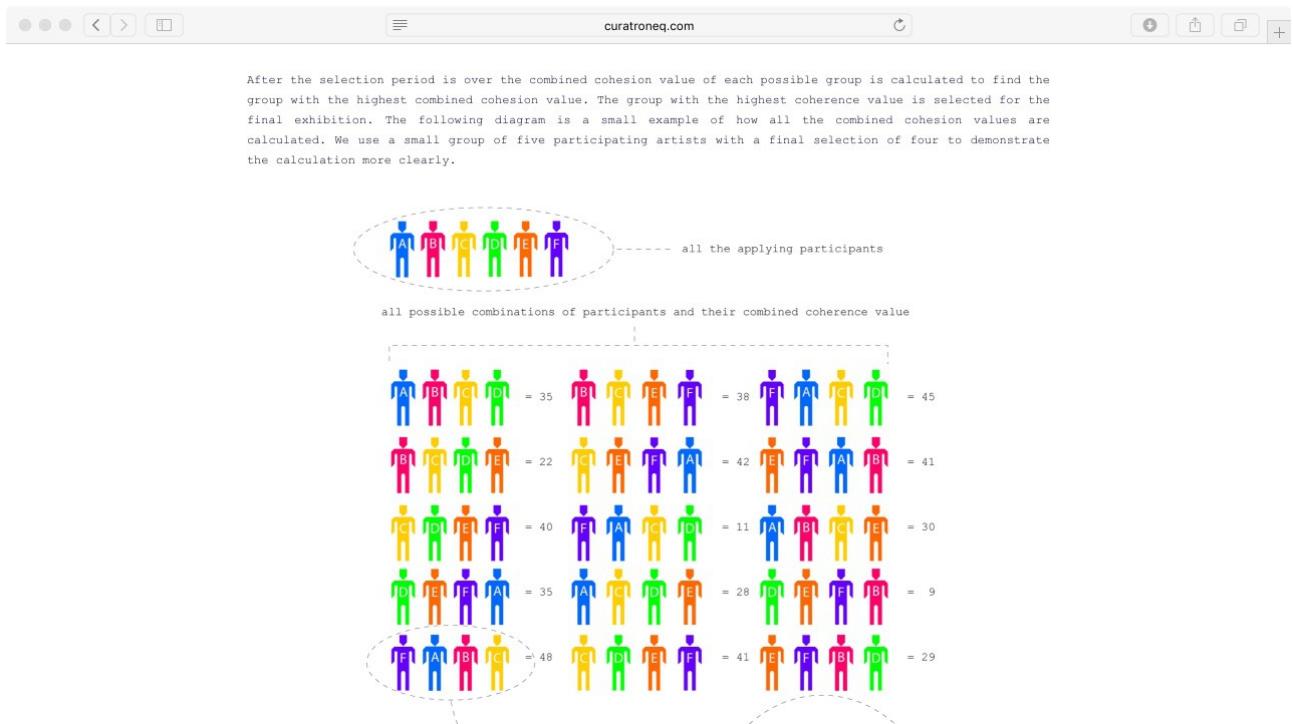


Image 34: *Curatron's* graphical explanation (2017). Print-screen from <http://curatroneq.com>

As MacLeod explains (personal communication, Annex F, 2017), it often happens that the artists selected by *Curatron* have very similar practices – to such an extent that they gain not only a strong sense of collective identity, but, by having participated in its own creation, they also claim for themselves a more direct participation in the curatorial process. "[...] this group has a much better idea or they exist within a very similar mindset, which means that, as a curator, it becomes an almost impenetrable surface" (MacLeod, personal communication, Annex F, 2017). However, this claim is not necessarily a shift or destitution of traditional roles, but more, as MacLeod puts it, "a

product of an artistic authorship rather than a curatorial one” (MacLeod, personal communication, Annex F, 2017).

The results are seen in the final exhibition: a consonant group show collectively proposed and developed, gathered by an algorithm which not only selects but, ultimately, establishes a network of artists. The application of the algorithm, therefore, triggers a series of fundamental shifts, culminating in an ultimately collaborative and engaging practice between *Curatron*, the applicants and the institution. What was initially a script created to decrease the administrative and management roles, by outsourcing the selection process to an algorithm, became, therefore, a rich tool for collective belonging, collaborative thinking and network making.

3.4. Conclusions

The current context of exhibiting online-based art has been largely affected by the previous shifts in web culture, structure and dynamics, which has created and sustained the conditions for the fast-paced production and distribution of an incommensurable amount of digital contents in which we find ourselves. This scenario has imposed several challenges on art institutions and curators, which, in response, have sought for somewhat alternative means to find, engage with, and present the emerging online practices. By analyzing the previous context of community-building platforms, the chapter has attempted to indicate an important shift within the field which might explain part of the current constraints in curating and exhibiting online-based art (as presented in the introduction).

This shift is directly associated to the changes in community-building platforms, upon which the previous practices were greatly dependent on (not only for collaborative art making and exhibition, but, most importantly, for the debate on and the constitution of artistic discourses). Through this analysis, and subsequent presentation of the major differences between these two scenarios, the chapter has identified how the current communities of online-based art are focusing more on information sharing and production (although not as collaborative) than on debate and critical discourses on these practices. This is a reflection of the nature of the existing community-building platforms, which are largely centered on “ego-networks”, where self-promotion and networking seem to be the generalized practice.

However, the analysis has shown that collaboration and a stronger sense of community belonging still exists and thrives, although outside these more popular networks, and can be found within the Internet’s subcultures (as seen with the practices on Reddit). Furthermore, by presenting a few initiatives that have been attempting to tackle some of these current constraints, the chapter has identified in them a certain emphasis on the role of the curator as a collaborator.

This collaborative role of the curator, however, does not refer solely to the process of

mediation (between the artist, the space and the public) – which is still much needed – but of co-creation, especially when it comes to adapting or reshaping the artworks and exhibition spaces together with the artists. This suggests a significant change in power relations, where exhibition and artistic practices can be approached in a more flexible and open form. This, nevertheless, does not seem to imply that curators have lost their importance in this process (as one would suggest with automation through the application of an algorithm or computer-aided curating), but rather suggests that curators have adopted more experimental approaches in order to leave the boundaries of the roles and the concepts (artistic, curatorial, archival...) fluctuating between the different actors (including artificial entities). This “experimental curating” is not a movement or style, but rather an imposed condition to curating when working with and on the web.

Final considerations

The study conducted not only identified the existing challenges and concerns of the current scenario of online-based art exhibition, but also found challenges of its own. From the beginning, the research encountered a series of constraints which have unavoidably shaped the development of the investigations. As stated in the introduction, they were mainly associated to the availability (or lack) of a more current and medium-specific literature and remaining primary sources. These issues alone are indicators of the current context of both online-based art research and online-based art documentation and preservation strategies. It is, therefore, the first topic to be addressed here, as a field that needs further development and action.

In what concerns the research of online-based art today, there is a clear lack of more current reviews and analyses on online-based art exhibition-making and curating, specifically those which provide a more thorough historicization and contextualization of past approaches. Aligned with the still existing issues in online-based art's theoretical and conceptual frameworks – where terminologies and discourses regarding the practices are constantly shifting and in dispute –, and with the issues in documentation and preservation of the practices, the current field lacks a more concise historical discourse.

The current scenario requires, therefore, more prominent efforts in the development of documentation and preservation strategies, through institutions which not only provide the theoretical, analytical and conceptual frameworks for future studies, but also make available the tools for a more decentralized approach to preservation and historicization. There is a lot of potential in the strength of the network, web culture and its dynamics (especially on what refers to accessibility and engagement towards the commons) which can then benefit existing initiatives working on archiving and preservation on the web. Moreover, when it comes to technological developments and as seen with other market sectors, decentralizing those processes not only contributes to a faster development of the projects and tools (as more collaborative and transdisciplinary projects can advance faster and follow the pace of the technological developments better), but it can also offer a viable solution for the costs of preservation strategies.

However, decentralizing those efforts also impose the question of *who* would be responsible for the development of these preservation measures. And although, through a technological and financial point of view, larger institutions may have the potentials to conduct those fundamental steps, artists and other individual initiatives have the advantage of being the starting point of an artwork's life. As artist Rafael Lozano-Hemmer (2015) has argued regarding the importance of early preservation strategies, this process not only secures the works' archival and preservation

success, but gives the artists more control over his or her own work, even after its acquisition by art institutions (as the artists can impose the conditions of the preservation strategies, be it versioning, migration, emulation or other). On the other hand, preservation can be very time-consuming for artists themselves, not to mention costly. Additionally, the life span limitation of the artists and of other individual initiatives can also be an issue, being necessary to invest in a more lasting approach. Thus, collaboration between art institutions and more opened and independent initiatives are the key approach to this field.

Furthermore, there should also be a more medium-specific approach to preservation, archiving and historicization – as currently developed by institutions such as Rhizome with online and software-based art⁵¹. Although many of the concerns delineated in this thesis can also be applied to other digital art forms, it is important to identify what are the issues related to online-based art in order to give them the necessary caution and attention. The field needs to address the specificities of online-based art more in order to put them on the map of practices under-represented in the realm of art history and which require urgent preservation measures (due mostly to the rapid shifts in technology).

The combination of these two factors (lack of historicization and failure in preservation) has been fatal to many online-based art projects. Although not much can be done for those initiatives that have fallen into obscurity, the over twenty-seven years of online-based art has proven that it was not a tech-trend that would have exhausted itself as soon as the technology became widely accessible, but a practice that constantly reinvents itself (due to the Internet's shifting structures and social-cultural dynamics) and that, as such, it needs a more thorough set of tactics which could account for its further existence. And although there are significant initiatives towards preservation of digital media art (which occasionally include online-based art in its scope), there is a critical issue with generalizations or universalization of problems and characteristics: one ends up not giving the adequate term and description to the specific problems and naming the issues is one of the first steps in order to acknowledge the existence of those problems.

Additionally, while analyzing the exiting literature, this research observed a focus on practices of the 1990s, and where most of them disregard the importance of past approaches, such as of telecommunication art (even if as precursors of those practices). Moreover, within the studies of online-based art and the available resources, an European and North-American discourse was found predominant. Although there has been an emphasis on the Internet's potential to dismantle the existing geographical borders, there are, as seen with the analysis of the *Eyebeam* list case in Chapter Three, discursive particularities within sub-groups in online-based art and they should be given further attention. The revision of the historical backgrounds and the acknowledgment of the

⁵¹ As described by Ben Fino-Radin (2011) and seen with the Net Art Anthology (2016) project.

existence of a more plural discourse on online-based art can, therefore, be of great value to the further contextualization of practices and should be used to better inform the current scenario.

In this regard, the field also needs a decentralization of its discourses by incorporating perspectives which are more diverse. It needs, furthermore, to recognize its plurality beyond the historical *net art* context, regarding both the practices and the concepts. This diversity can, therefore, be reached through a critical revision on its history and discourses, while addressing the complexities of their social, economical and political conditions. An interesting approach towards this can be done through the recently developed field of exhibition history, which has been applying the curatorial as a research method by re-staging, revisiting or re-constructing past exhibitions. This method puts artworks, curatorial discourses and exhibition-making methods into question and reflected on through another (more contemporary) light. This methods can be developed in different ways and has shown to be a rich and open field for further experiments⁵².

In regard to the previously identified concerns and constraints which served as the main premises of this thesis, Chapter Two has shown through the analysis of the selected projects that issues in *presentation* and *engagement* could be better addressed by investing in developing further knowledge and experiments with the concept and structures of the interface. More so, there is an interesting relationship which is being established with other fields, namely design and computer science, where this concept could be collaboratively better developed. The current scenario needs, therefore, to open up more to transdisciplinarity and create the conditions and spaces for further debate and exchange.

On the other hand, Chapter Three has provided a more thorough contextualization in order to understand the concerns with *reach* by highlighting the current network and community-building strategies and their importance. The field needs more approaches in this context and, more specifically, a space for community-building that could encompass not just artists and curator of a specific project or institution, but which can aggregate a more diverse number of existing initiatives in order to promote cross-institutional exchange and discussions – like mailing-lists were in the 1990s, but more dynamic and coherent with the current web culture and artistic practices. This is, nevertheless, an ongoing challenge in many other sectors as it involves more complex issues in online engagement and agency, with attention dispersion being one of the biggest concerns.

Within these potential networks, it is fundamental that the field addresses the existing legal and political apparatus upon which it relies on in order to discuss the current limitations they impose on the development of artistic practices and curatorial initiatives. It is urgent that institutions take a stance in this scenario and develop a more active participation in the debate with the public

⁵² Reesa Greenberg (2009) cites three modes: the replica, the riff and the reprise. Other methods are being proposed and analyzed through initiatives such as the UAL Kingston University's *Reconstructing Exhibitions* research project led by Michaela Giebelhausen and Natasha Adamou.

realm in order to seek for the necessary changes.

Furthermore, the thesis has identified, as presented in more details in the conclusions of the previous chapters, significant shifts in the modes of exhibiting online-based art since the 1990s and identified what seems to be an ongoing shift in the role of the curator as they rely on the technological developments of the field. This role has been described, through the interviews conducted, as more collaborative and less hierarchical, as curators work in conjunction with other involved parties while giving more independence to artists to adapt the exhibition space and engage directly with issues in exhibition design. Within these practices, there is, therefore, a shift in decision-making and in the hegemonic curatorial discourses.

Along with these main outcomes, it is important to highlight the importance of the interviews conducted beyond the aims of the chapters, as they offer further discussions on pressing issues in curating online-based art, including aspects related to: (1) the political nature of the current artistic practices and platforms (Kampmann); (2) the implications of the use of Artificial Intelligence in the arts (Weibel, Paul, Cremonesi and MacLeod); and (3) the current applications and shifts in digital technologies in museums and galleries (Kusber).

Lastly, there is one characteristic that can be identified throughout the analysis of the projects within this thesis, in both past and current initiatives. They can all be considered to be, in one way or another, *experimental*. These projects, ventured through the Internet in order to explore and experience the potentials offered by the medium for art and exhibition-making. Projects such as *äda'web* explored the malleability of the Internet's structures by constantly adapting their interface and making the platform itself a space for artistic experimentation. They explored the potentials of the Internet as an open environment for exchange and collaboration, promoting new channels for art-making and thinking. For other projects, such as *net_condition*, being experimental largely means taking risks in emerging fields and adopting more unconventional or less accepted methods towards exhibition-making. It means not conforming to the existing discourses and daring to propose another perspective, although it can also mean to lack the community support or to spark criticism.

And for more recent projects, such as surf-clubs or social media exhibition platforms, being experimental means developing practices which has not yet been termed. It is finding itself to be just within the borders of artistic and curatorial discourses – not fully inside, nor outside. For projects such as AOYS and Palais des Beaux Arts, it might mean testing those boundaries and rethinking the very notions of space. Or for projects such as Link Cabinet and ADA, it may mean to question the existing conceptions and their limitations. And in this process, to experiment is to reconfigure the well-known and define the unnamed.

To experiment, however, also means to acknowledge the possibility of failure. It means to

work with the unknown and, as such, accept the fact that the outcomes do not always turn out as wished for or as predicted. It can then differ from the notion in the sciences, where the term experiment often refers to a method of investigation which values empirical evidence as a means to obtain knowledge and truth. In this strict sense, to experiment is to conduct a research using predetermined methods which should result in a procedure that can be later reproduced and which would potentially give the same results each time. Consistency, measurability and reproducibility are, therefore, sought for.

However, our vernacular notions of experiment often attributes a more loose approach, where one “tries things out” and through trial and error obtains a result (which can vary occasionally). This concept is what allows many to suggest that art is intrinsically *experimental*, as artists seek different forms to explore materials, methods, concepts and situations and where they don't always adopt a strict procedure, but often “play” with casualty, indeterminacy and erraticness. Within this notion of artistic experiment, elements of surprise or chance are often sought for. As such, it often attributes a certain element of serendipity to art making, and can give the artist the mystified character of the artistic “genius”. Experiments can then be seen as fortuitous process of “creation” led by “inspiration”, and the artworks the result of this aesthetic experience. This notion, however, romanticizes the artistic practice as lacking any methodic procedures.

On the contrary, artists have also adopted more “scientific-like” methods within their practices – a scenario which has grown in the past years as art and science collide (take for example bioart). In those contexts, experiments in arts may also seek for consistency and reproducibility – although artists such as Andy Warhol have explored the idea of variability and error within repetition in reproductions. Theorists such as Paul Basu and Sharon Macdonald (2007), will even sustain the similarities between the curatorial and the scientific experiment, arguing that both aim to “make things visible”, as a “knowledge generating procedure”. Therefore, in both art and science the characteristics of an experiment are not always as rigid. Sciences can, and increasingly do, address and incorporate casualty and erraticness, as art can and has also incorporated more controlled procedures and repetition.

Nevertheless, the concept of “experimental art” has been largely associated to practices of the 1950s to the 1970s by artists and art groups such as John Cage and Fluxus, where being experimental meant largely questioning the existing boundaries and reconfiguring the preconceptions of what is art and what it is to make art. By using unconventional or clashing methods (compared to hegemonic practices and discourses), experimental largely meant a break from tradition. Parallelly, art making in that period was also marked by a growing interest in new technologies, specifically in the emerging field of computer-based arts. By the 1960s, this interest sparked collaborations between artists, computer scientists and engineers, many of which would

later contribute to the formation of the iconic Experiments in Art and Technology (E.A.T.) – which, as we have seen in this thesis with projects such as *ädaweb*, was one of the major references in experimental collaborative practices with technology.

And like E.A.T, many of the analyzed projects in this thesis were themselves *experiments*, in the sense that they were *exploring* the potentials and applicability of new technologies in the arts. Exploration, therefore, is commonly used as a synonym of experiments in the arts, where one acts as the pioneer or the pathfinder of unknown “territories”. To explore or to experiment is, in this context, to not only seek new methods and concepts, but to also incorporate emerging technologies and diverse practices.

In this sense, with every advance in technology, a new wave of experimental practices in the arts emerges – as we see now with a sudden hype of Virtual and Augmented Reality and of Artificial Intelligence. In both cases, those are not new fields. On the contrary, they have a relatively broad background of application in the arts and sciences. But they are becoming, like the Internet in the 1990s, more accessible to artists, institutions and the general public. And this accessibility sparks new interests and new projects. Virtual or Augmented Reality and Artificial Intelligence – although the terms are quite broad and complex to define – became buzz words, and are constantly reappearing here and there. It might seem that this hype will fade away in a short period of time, but as the technology sector increasingly incorporates these elements to our daily lives – think of the growing number of automated personal assistants in the service sector as the default mode for consumer-service communication or the growing number of gadgets and computer apps or games with VR and AR – this scenario seems unlikely.

Those practices and technologies are, however, still in the “experimental phase”. And, like online-based projects, they will continue to be. This is because the software-based tech market is based on the principle of the *perpetual beta*. As one of the fundamental characteristics of the *Web 2.0*, the perpetual beta is a development model where a software is launched still in its “experimental phase” or launched “in the open”, which means that, although functional, it requires constant updating in order to follow the competitive market and the fast paced technological developments, but also cultural and user-imposed shifts (as those softwares became increasingly depended on user-generated contents, like Facebook and Google). This model is then based on the “release early and release often” motto and on the concept of the user as co-developers. It marked, therefore, the end of the software release cycle and shifted the understanding of software from a product to a service.

This constant and systematic shifts in software-based technology then asks for an equally open and malleable practice which can follow the further developments. Like Peter Weibel suggested in his interview regarding the current conditions of contemporary art making, the present

scenario asks that artists and institutions maintain themselves as constant *experimenters*. In this context, both artists, curators and institutions must acknowledge and should incorporate these development models within their practices in order to keep their projects running (as a simple update in web browsers can make online-based projects malfunction or not function at all). Therefore, being experimental for online-based projects means not only exploring the potentials of technology, or transgressing the imposed boundaries, but, within a technological point of view, to be open and prepared for further developments. That is, being experimental means being a perpetual beta.

Moreover, being experimental in such a scene largely means adopting a more collaborative approach to exhibition-making and curating as the development of such projects require the participation of multiple disciplines (such as design, computer science and other medium-specific approaches). Additionally, as institutions like MuDA and Platform Stockholm have shown, this collaboration means establishing less hierarchical relationships with artists, making space for *co-development* (as it happens in the software development field). Transdisciplinarity is, therefore, the key concept (in contrast to interdisciplinarity) and the exhibition platform or the art institution as a whole (be it a museum, a gallery, a studio, an archive or a maker laboratory) can be a rich environment for the development of these experimental practices.

Although experiments and innovation are largely associated to the image of the science lab or institute, there is a history of approaches which have attempted to transform the traditional spaces for art-making, archiving and exhibition into a laboratory for experimentation. As Elke Bippus (2013) recalls, around 1929 Sigfried Giedion was already calling for an 'experimental laboratory' to be created in every public institution. The architectural historian envisioned the experimental lab as a space which would give a voice to "all art forms under discussion". "With this, Giedion [...] turned against musealisation of art in favour of a 'living chronicle of time'" (Bippus, 2013).

Today, we see a diverse range of "lab" types which inhabit those institutional spaces for art-making and exhibition. Spaces such as "fab labs", "maker labs", "media labs", "hacker labs", and so on, are thriving initiatives, largely influenced by the current hype of the "maker culture" (a somewhat contemporary development of the "Do It Yourself" culture). Those are, however, mostly projects created as spaces for public participation, by promoting open workshops and other educational activities, rather than spaces for experiments in art and exhibition-making. But, as seen in this thesis, the current scenario of curating and exhibition-making for online-based art, which still encounters many challenges in presentation and engagement, calls for projects which work with the concept of the exhibition space as a "living laboratory" where, as Muller & Edmonds (2006) described it, the exhibition is made open to transformation and is also the space for research, innovation and knowledge production in times of the perpetual beta. As the need to constantly

reconfigure itself permeates the practices exhibited, this method allows for fluidity and, as the projects analyzed in this research highlighted, the exhibition platform can be the very space of online-based art experimentations.

Bibliography

ADA. (2017). **CODEeDOC remediated**. Back to Archive. Archive of Digital Art. Retrieved from: <https://www.digitalartarchive.at/support/ligth-box-list.html>

Adrian, R. (1997). **net.art on nettime**: an introduction. In: Schultz, P., McCarty, D., Lovink, G., Cosic, V. (Eds.). ZKP4. Nettim. Retrieved from: <http://www.ljudmila.org/nettime/zkp4/37.htm>

Alsina, P. (2015). **Becoming Interface for World-Building**: Notes towards a theory. PIPES Interface – User, Subjectivation, Materiality. Interfacemanifesto. Hangar. Retrieved from: https://interfacemanifesto.hangar.org/index.php?title=PIPES_Interface_%25E2%2580%2593_User,_Subjectivation,_Materiality_-_Notes_By_Pau_Alsina&oldid=602

Andersen, C.U. & Pold, S.. (2011). **Interface criticism aesthetics beyond buttons**. Aarhus; Oakville, CT: Aarhus University Press; David Brown Book Co.

aqnb. (2017). **Banned images re-birth in Olga Mikh Fedorova's online project Blocked Art**. Retrieved from: <http://www.aqnb.com/2017/06/26/banned-images-re-birth-in-olga-mikh-fedorovas-online-project-blocked-art/>

Arns, I. & Lillemose, J. (2005). **"It's contemporary art, stupid": Curating computer based art out of the ghetto**. In: Buxmann, A., & Depraetere, F.. Argos Festival. Brussels: argos editions

Ars Electronica. (1995), **Welcome to the Wired World**. Mythos Information. Retrieved from: http://90.146.8.18/en/archives/festival_archive/festival_overview.asp?iPresentationYearFrom=1995

Artbase (2017). **An incomplete timeline of online exhibitions and biennials**. Rhizome. Retrieved from <http://archive.rhizome.org/artbase/56398/timeline.html>

Artport. (2001). **About Artport**. Whitney Museum of American Art. Retrieved from: <http://artport.whitney.org/about.shtml>

Artport. (2017). **Artport. Exhibitions**. Whitney Museum of American Art. Retrieved from: <http://whitney.org/Exhibitions/Artport>

Atkins, R. (1998), **What is äda'web?** Walker Art Center. Retrieved from <http://www.walkerart.org/collections/artworks/ada-web>

Ball, A. (2017). Introduction. In: CRUMB. (2017). **Internet art and platform building**. CRUMB list.

Battista, K. (2015). **E.A.T. - The Spirit of Collaboration**. In: Breitwieser, S., Battista, K., & Penetsdorfer, C.. E.A.T – Experiments in Art and Technology. Exhibition catalogue. Museum der Modern Salzburg.

Barker, E. (1999). **Contemporary Cultures of Display**. New Haven, London: Yale University Press; Open University Press, Col. "Art and its Histories".

Barker, E. (1999). **Contemporary Cultures of Display**. New Haven, London: Yale University

Press; Open University Press, Col. "Art and its Histories".

Basu, P. and Macdonald, S. (2007). **Introduction: Experiments in Exhibition, Ethnography, Art, and Science**, in *Exhibition Experiments* (eds S. Macdonald and P. Basu), Blackwell Publishing Ltd, Oxford, UK.

Baumgärtel, T. (1999). **net.art**. Materialien zur Netzkunst, Nürnberg: Verlag für moderne Kunst.

Baumgärtel, T. (2001). **Net Art**. On the History of Artistic Work with Telecommunications Media. In: Weibel, P., Druckrey, T. (Eds.). *net_condition: art and global media*. Steirischer Herbst, Graz, Austria; ZKM, Center for Art and Media, Karlsruhe, Germany; The MIT Press, Cambridge, Mass., London, England; Cambridge, Mass.: MIT; Karlsruhe: ZKM

Baumgärtel, T. (2001). **net.art 2.0**. Neue Materialien zur Netzkunst / New Materials on art on the internet, Nürnberg: Verlag für moderne Kunst.

Bergman, M. (2001). **The Deep Web: Surfacing Hidden Value**. The Journal of Electronic Publishing. Retrieved from: <http://quod.lib.umich.edu/cgi/t/text/text-idx?c=jep;view=text;rgn=main;idno=3336451.0007.104>

Bippus, E. (2013). **Artistic Experiments as Research**. In: Schwab, M. (Ed.). *Experimental Systems: Future knowledge in Artistic Research*. Leuven: Leuven University Press.

Bookchin, N., & Shulgin, A.. (1999). **Introduction to net.art (1994-1999)**. Retrieved from: <http://www.easylife.org/netart/>

Bookchin, N., & Shulgin, A.. (1999). **Introduction to net.art (1994-1999)**. Retrieved from: <http://www.easylife.org/netart/>

Bosma, J. (2000). **Between Moderation and Extremes: the tension between net art theory and popular art discourse**. Retrieved from <http://www.josephinebosma.com/web/node/63>

Bosma, J. (2011). **Netitudes**: Let's Talk Net Art. Rotterdam: NAI Publishers.

Bosma, J. (2014). **Missing Links**. In Bosma, J. & Heidenreich, S.. *Missing Links*. Frieze. Retrieved from <https://frieze.com/article/missing-links>

Brøgger, A. (2000). **net art, web art, online art, net.art**. ON OFF. Retrieved from: <http://afsnitp.dk/onoff/Texts/printerfriendly/broggernetart.we.html>

BrowserBased. (2017). **BrowserBased**. Facebook groups. Retrieved from: <https://www.facebook.com/groups/browserbased/>

Castells, M. (1999). **The Information Age**: Economy, Society and Culture. Cambridge (Mass.); Oxford: Wiley-Blackwell.

Connor, M. (2016). **The Future of Internet Art**. Open Score 2016. Panel 4. New Museum and Rhizome. Retrieved from: <https://www.youtube.com/watch?v=0cOo1IgEI3g>

Cramer, F. (2011). **Net Art back to square one**. In: Bosma, J. *Netitudes: Let's Talk Net Art*. Rotterdam: NAI Publishers.

Crandall, J. (2001). **Introduction**. In: Scholder, A. & Crandall, J. Interaction: Artistic Practice in the Network. New York: Eyebeam Atelier/DAP.

CRUMB. (2017). **Internet art and platform building**. CRUMB list.

David, C. (1997). **dx and new media**. documenta X. Retrieved from:
<http://www.documenta12.de/archiv/dx/english/debatea.htm>

Dietz, S. (2003). **Interfacing the digital**. Museums and the Web. Retrieved from
<http://www.museumsandtheweb.com/mw2003/papers/dietz/dietz.html#fig2>

Dietz, S. (1998). **Curating (on) the Web**. Museums and the Web. Retrieved from
http://www.museumsandtheweb.com/mw98/papers/dietz/dietz_curatingtheweb.html

Dietz, S. (2005). **Äda'web**. In Rothfuss, J. & Carpenter, E. Bits & Pieces Put Together to Present a Semblance of a Whole: Walker Art Center Collections. Minneapolis, MN: Walker Art Center. Retrieved from <http://www.walkerart.org/collections/artworks/ada-web>

England, D., Schiphorst, T., & Bryan-Kinns, N. (Eds.). (2016). **Curating the digital: Space for Art and Interaction**. Switzerland: Springer International Publishing

Eriksson, M. & Roth, E..(2015). **We lost**. San Francisco: F.A.T Gold. Retrieved from:
<http://fffff.at/rip/>

Garcia, D. (1997). **Art on the Net**. In: Schultz, P., McCarty, D., Lovink, G., Cosic, V. (Eds.). ZKP4. Netttime. Retrieved from: <http://www.ljudmila.org/nettime/zkp4/38.htm>

Fino-Radin, B. (2011). Digital preservation practices and the rhizome artbase. Rhizome.

Gere, C. (2006). **Network Art and the Networked Gallery**. Intermedia Art. Tate. Retrieved from:
<http://www2.tate.org.uk/intermediaart/entry15617.shtm>

Grau, O. (2003). **Virtual Art**: from illusion to immersion. Cambridge, Massachusetts: The MIT Press.

Grau, O., Coones, W., Rühse, V., Hoth, J. & Schiller, D. (2016). **Introduction: CODEDOC REMEDIATED – ADA online exhibition**. In: CODEDOC REMEDIATED 1st ADA Online Exhibition. Text collection. Archive of Digital Art. Retrieved from:
https://www.digitalartarchive.at/uploads/txt_vart/1_1_CODEDOCremediated_TextCollection.pdf

Greenberg, R. (2009). **Remembering Exhibitions**: from point to line to web. Tate papers.

Greene, R. (2004). **Internet Art**. London: Thames & Hudson.

Hochrieser, S., Kargl, M., & Thalmair, F.. (2008) **Cureediting**: Translational Online Work. Vague Terrain 11. Retrieved from:
<http://web.archive.org/web/20111007075700/http://vagueterrain.net/journal11>

Holmes, B. (2001). **Archive and Experience: Imagining the <eyebeam> forum**. In: Scholder, A. & Crandall, J. Interaction: Artistic Practice in the Network. New York: Eyebeam Atelier/DAP.

Huhtamo, E. (2002). **On the origins of the virtual museum**. Nobel Symposium (NS 120). Virtual Museums and Public Understanding of Science and Culture. Stockholm, Sweden. Retrieved from:

https://www.nobelprize.org/nobel_organizations/nobelfoundation/symposia/interdisciplinary/ns120/lectures/huhtamo.pdf

JODI. (1997). **dx and new media**. documenta X. Retrieved from:
<http://www.documenta12.de/archiv/dx/english/debatea.htm>

Johnson, S. (1997). **Interface Culture**: How New Technology Transforms the Way We Create and Communicate. Harper San Francisco.

Jones, C. (2017). **The Copy and the Paste**: documenta X's 1997 Net Art exhibition and Vuk Cosic's 'documenta Done'. Rhizome. Retrieved from: <http://rhizome.org/editorial/2017/mar/02/the-copy-and-the-paste/>

Krysa, J. (2008). **Experiments in (Social) Software Curating**: Reprogramming Curatorial Practice for Networks. Vague Terrain 11. Retrieved from:
<http://web.archive.org/web/20111010201703/http://vagueterrain.net/journal11/joasia-krysa/01>

Krysa, J. (2011). **Curatorial Alternatives to What?** 14 Media Art Biennale. WRO 2011. Alternative Now.

Krysa, J. (Ed.) (2006). **Curating Immateriality**: The Work of the Curator in the Age of Network Systems. Brooklyn, NY

Lévy, P. (1995). **Welcome to Virtuality**. Welcome to the Wired World. Mythos Information. Ars Electronica 1995 catalogue. Retrieved from:
http://90.146.8.18/en/archives/festival_archive/festival_catalogs/festival_artikel.asp?iProjectID=8616

Lévy, P. (1998). **Becoming Virtual**: Reality in the Digital Age. Da Capo Press.

Lialina, O. (1999a). **Location=”Yes” I**. Teleportacia. Retrieved from:
http://art.teleportacia.org/Location_Yes/

Lialina, O. (1999b). **art.hacktivism**. Nettyme. Retrieved from: <https://nettime.org/Lists-Archives/nettime-l-9911/msg00127.html>

Lialina, O. (2013). **Net Art Generations**. Teleportacia. Retrieved from:
http://art.teleportacia.org/observation/net_art_generations/

Lovink, G. (2002). **Dynamics of Critical Internet Culture**. An Archive of Content Production. Theory on Demand #1. Amsterdam: Institute of Network Cultures.

Lozano-Hemmer, R. (2015). Best practices for conservation of media art from an artist's perspective. Retrieved from: <https://www.facebook.com/notes/rafael-lozano-hemmer/best-practices-for-conservation-of-media-art-from-an-artists-perspective/10153218634850017>

Machkoveck, S. (2017). **Did Reddit's April Fool's gag solve the issue of online hate speech?** Ars Technica. Retrieved from: <https://arstechnica.com/gaming/2017/04/in-memoriam-reddits-72-hour-live-graffiti-wall-as-a-social-experiment/>

Maleshkova, J., Purver, M., Weyrich, T., & McOwan, P.. (2016). **Interactivity and User Engagement in Art Presentation Interfaces**. In: England, D., Schiphorst, T., & Bryan-Kinns, N.

(Eds.). Curating the digital: Space for Art and Interaction. Switzerland: Springer International Publishing

Manovich, L. (1998). **Internet, modernisation and net.art.** <Eyebeam><Blast>. Retrieved from: <http://www.thing.net/eyebeam/msg00010.html>

Meyer, P. (1998). **Re: Internet, modernisation and net.art.** <Eyebeam><Blast>. Retrieved from: <http://www.thing.net/eyebeam/msg00013.html>

Mintz, A. (2017). **Reimagining the internet:** prospective connectivity paradigms in art and activism. Master thesis. Aalborg: School of Communication, Art & Technology, Aalborg University.

Mirapaul, M. (1999). **Museum puts Internet Art on the Wall.** New York Times. Retrieved from <http://politics.nytimes.com/1999/09/16/technology/16artsatlarge.html>

Moody, T. (2015). **Domenico Quaranta on surf clubs.** Tom Moody. Retrieved from: <https://www.tommoody.us/archives/2015/09/16/domenico-quaranta-on-surf-clubs/>

Muller, L. & Edmonds, E.. (2006). **Living Laboratories: Making and Curating Interactive Art:** In ACM SIGGRAPH 2006. Art gallery (SIGGRAPH '06). ACM, New York, NY, USA

Muntada, A. (1994) **The File Room.** Introduction notes to The File Room. Retrieved from: <http://www.thefileroom.org/documents/Intro.html>

Murchú, N. (2016). **A Designerly Way of Curating:** Reflecting on Interaction Design Methods for Curatorial Practice. In: England, D., Schiphorst, T., & Bryan-Kinns, N. (Eds.). Curating the digital: Space for Art and Interaction. Switzerland: Springer International Publishing

Oguibe, O. (1998). **Other.**<Eyebeam><Blast>. Retrieved from: <http://www.thing.net/eyebeam/msg00202.html>

Olson, M. (2009) **Lost Not Found:** the circulation of images in digital visual culture. In: Klein, A. (Ed.). Words Without Pictures. Los Angeles: Museum Associates / LACMA.

ONeil, P. (2007). **The culture of curating and the curating of culture(s).** Cambridge, Mass.; London: MIT Press.

Palais des Beaux Arts. (2017). **Mission Statement. Palais des Beaux Arts.** Retrieved from: <http://www.palaisdesbeauxarts.be/en/#about>

Paul, C. (2006). **Flexible contexts, democratic filtering and Computer-Aided Curating:** Models for online curatorial practice. In: Krysa, J. (Ed.). Curating Immateriality: The Work of the Curator in the Age of Network Systems. Brooklyn, NY

Paul, C. (2008). **New media in the white cube and beyond:** Curatorial models for digital art. Berkeley: University of California Press.

Pold, S. (2005). **Interface Realisms:** the interface as aesthetic form. In: Postmodern Culture. Postmodern Culture, vol. 15 no. 2. Retrieved from: <https://muse.jhu.edu/article/181585>

Pold, S. (2011). **Interface Perception:** The Cybernetic Mentality and Its Critics: Übermorgen.com.

In: Andersen, C.U. & Pold, S.. (2011). Interface criticism aesthetics beyond buttons. Aarhus; Oakville, CT: Aarhus University Press; David Brown Book Co. Press.

Quaranta, D. & Juárez, G.. (2013). **The F.A.T Manual**. Brescia: Link Editions. Retrieved from: http://fffff.at/TheManual/The_FAT_Manual_Link_Editions_2013.pdf

Quaranta, D. (2008). **Lost in Translation**. Or, Bringing Net Art to another place? Pardon, context. Vague Terrain. Retrieved from: <http://web.archive.org/web/20141030202547/http://vagueterrain.net/journal11/domenico-quaranta/01>

Quaranta, D. (2016). **The First Life of Net Art**: UBERMORGEN, JODI, Vuk Cosic, Olia Lialina. Spike Magazine. Retrieved from: <http://www.spikeartmagazine.com/en/articles/netart>

Ramocki, M. (2008). **Surfing Clubs**: organized noted and comments. Retrieved from: <http://web.archive.org/web/20120619183614/http://www.ramocki.net/surfing-clubs.pdf>

Rheingold, H. (1993). **The Virtual Community**: Homesteading on the Electronic Frontier. Retrieved from: <https://www.well.com/user/hlr/vcbook/>

Schlosspost. (2017). **About Schlosspost**. Retrieved from: <https://schloss-post.com/about/>

Scott, A. (1998), **äda through the Looking Glass**. Walker Art Center. Retrieved from <http://www.walkerart.org/collections/artworks/ada-web>

Selbo, V. (1998). **ah, ‘da process’ ... questions? some answers** Walker Art Center. Retrieved from <http://www.walkerart.org/collections/artworks/ada-web>

Shanken, E. (2003). **From Cybernetics to Telematics**. The Art, Pedagogy, and Theory of Roy Ascott. In: Shanken, E. (Ed.). Roy Ascott. Telematic embrace: visionary theories of Art, Technology, and Consciousness. Berkeley And Los Angeles, California: University Of California Press.

Slocum, P. (2016). **Catalog of Internet Artist Clubs**. Rhizome. Retrieved from: <http://rhizome.org/editorial/2016/mar/30/catalog-of-internet-artist-clubs/>

Spiegel, S. (1995). **Crossings**. Welcome to the Wired World. Mythos Information. Ars Electronica 1995 catalogue. Retrieved from: http://90.146.8.18/en/archives/festival_archive/festival_catalogs/festival_artikel.asp?iProjectID=8652

Stallabrass, J. (2003). **Internet Art**: The Online Clash of Culture and Commerce. London: Tate.

Statista. **Number of smartphone users worldwide from 2014 to 2020**. Retrieved from: <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>

Turner, J. (2003). **Robert Adrian Interview**. OUTER SPACE: The Past, Present and Future of Telematic Art – 02. Outer Space. Retrieved from: <http://openspace.ca/robert-adrian-interview-2003>

Walker Art Center. (2017) **Gallery 9**. Retrieved from <http://gallery9.walkerart.org/>

Weibel, P. (1995). **The noise of the observer.** Welcome to the Wired World. Mythos Information. Ars Electronica 1995 catalogue. Retrieved from:
[http://90.146.8.18/en/archives/festival_archive/festival_catalogs/festival_artikel.asp?
iProjectID=8608](http://90.146.8.18/en/archives/festival_archive/festival_catalogs/festival_artikel.asp?iProjectID=8608)

Weibel, P. (2001). **The project.** In: Weibel, P., Druckrey, T. (Eds.). net_condition: art and global media. Steirischer Herbst, Graz, Austria; ZKM, Center for Art and Media, Karlsruhe, Germany; The MIT Press, Cambridge, Mass., London, England; Cambridge, Mass.: MIT; Karlsruhe: ZKM

Weil, B. (1998). **Untitled (ADA'WEB).** Walker Art Center. Retrieved from
<http://www.walkerart.org/collections/artworks/ada-web>

Annex A: Interview with Peter Weibel (Ars Electronica: Welcome to the Wired World / ZKM: net_condition)

[The following text is a transcript of an interview conducted on the 8th of may 2017 at ZKM with Peter Weibel on Welcome to the Wired World and net_condition]

Lia Carreira (LC): As director, you organized the 1995 Ars Electronica Festival, entitled Welcome to the Wired World and later on, you proposed net_condition at ZKM (1999). Looking back, how would you describe the specific historical and discursive context in which they occurred?

Peter Weibel (PW): When in the 1990s, I made these two exhibitions, the question was: why does an institution that is locally bound wants to show art of the net which is not locally bound? We have an institution, which is a local place (and everybody thinks this is offline), and we have the art (which is online), so it doesn't need a place. How can this be? And people said to me: "Isn't it a bit crazy, paradoxically and insane, that a local institution wants to show art which is non-local?". This was the first problem at that time, especially in 1995, when nobody could see ahead the potentials of the Internet. At that time, people were thinking the Internet was something ephemeral, something just for scientists. They could not see that this would change completely the whole world of communication, from everyday life to democracy. So, it was difficult to convince people, not only because of the difference of locally and non-locally bound institutions and art forms, but it was even more difficult to convince people that the Internet was not just a technical gadget.

What is important to remember is that, already in the 1980s artists had tried to support telecommunication, through the slow scan television, for example. I was part of this movement, and participated in some events, where artists said "ok, we can now use this slow scan technique and send images and films over the telephone". After that, telecommunication was an important subject for me. How can I make art for slow scan television, over the telephone? So for me, this was the first step, and the most important step, because this was the end of radio and TV, the end of monopoly. Now each person could send a message to another person.

Then, for the 1999 exhibition, I changed a little bit the emphasis, because I thought "what are the conditions of society that need to create the Internet" and "what are the conditions of Internet that changes society"? So this was the main agenda: before I ask what are the new conditions which the

net delivers for society, I have to ask what are the conditions of society that wants the Internet. Why do we need it? Why do we need this kind of communication? So the art world asked at the time “wouldn't you destroy the local museum by inviting people to participate online”? The idea they had was that no one would come to the museum and that net art would destroy the museum because you can see at home. This was a very naive animosity. And, on the other side, some of the net artists were thinking it was ridicule to show their work in a museum. They were against locally bound art and they were against the museum as an institution.

So people thought that I was kind of brave to make a show here [at ZKM] about net art, because many protested against it. There was protest in the magazines and from the mass media – which at that time did not know that online would be a real competition. The mass media had been against it, the politicians were against it and even the artists – so it was a very difficult situation. And one of the advices we had for the curatorial strategy was “ok, we should emphasize on net-based installations”, so that is was not only the distribution of digitized analogue work – which I have always been against until today, because for me this is not the reason that society has invented the net condition.

The point of the exhibition was to create a new dialogue between the senses. Normally, the artwork is about proximity senses – you smell something, you touch something, etc. Now you have access to something that your eyes do not see and your ears do not hear. We have a processing of data coming from a distance. And this data can turn into objects again, can turn into sounds and images and words. So we experience for the first time that everything – words, objects, sounds – can turn into data and that this process is reversible, as data can turn back again into images, words, music, text and objects. So I said, this is what you can see here. So you have to come to the museum to see what I called net-based installations to realize this new step in human notation. And, at that time, there was no 3D printing technology accessible. But I was interested in the idea, what I call a 3 dimensional notation or 3 dimensional production. So I said, just come here, and you will see the real revolution of the Internet, which is not just sitting at home, watching images online. This is a data revolution which turns art, sculptures, music, films, etc. into a kind of data administration. So when I heard, much later, about the National Security Administration [sic] for the first time, I thought: wow, they understood that we are living in the era of the administration of data. This was my point: I said, you have to come to the museum to see here what this data revolution is, it is not only sitting at home, being online.

And net art was important and it helped to show the transformation of media art. In the beginning

media art was defined as picture machines as mechanized arts or machine-based art (because you had the camera machine, you had recorders...), as hardware. But now, with the 1990s and the computer, media art is more of a kind of software art. The machines have become smaller and suddenly you could do everything through a small personal computer. It was very clear then that the most important point was programming and software. So net art was very influential in this transition from media arts as machine art (or hardware) to software art.

But I would say that many net artists did not understand it. They did not see that it was the Art of Programming – this was also the title of books by Donald E. Knuth, a mathematician. And I thought this was the most important book for the future. And the early net artists have disappeared because they had a too narrowed concept of net art. They wanted to make images again. They did not understand that it was about programming, about software and generative, constructive, databased art. So net art was in fact the beginning of databased art, not machine-based art. When you have data, you have to administrate it, manipulate it. I would say, maybe incorrectly, that net art, as we knew it, has disappeared. And it will not come back anymore. Naturally, as a museum, we have to conserve it. But I would say it did not survive because the concept was too narrow.

LC: In an interview with the New York Times in 1999, you described the exhibition as an experiment. What did you mean by that?

PW: First I have to explain the word experiment. In the 1960s, when I started my media art practice, I made experiments with literature. Then I made experiments with film. I liked very much a book by Claude Bernard, called *An Introduction to the Study of Experimental Medicine* (1865). This book introduced the term experiment in the 19th century. And since then there is this difference between theory and experiment. And suddenly, we had people who were calling themselves “experimental physicists”, for example, or “theoretical physicists”. And since then, the difference between the theoretician and the experimental has become very important.

But, in the 1960s, when you called yourself experimental, people would think you were a minor artist, because being an experimental artist gave the idea that you were not a master of your arts. A master does not make experiments, he knows what he is doing. And this idea is stupid, because the masters are experimenters. They do the wildest and most craziest experiments, such as in physics. Just look at authors like Émile Zola, one of the most important authors of the 19th century, who wrote *The Experimental Novel*, and it was almost a replica of the book on experimental medicine. So these two books have interested me very much, and gave me the idea about the differences

between the theoretical and the experimental. And what does this mean? You have a theory and then you make an experiment to prove that theory. The experiment can give you new ideas for new theories. And then you make another experiment. And this was my idea of art. I wanted art not to be anymore an individual expression, subjective and arbitrary. I wanted it to become something like the sciences, with a methodology and experimentation.

Some of us were proud to call ourselves, in the early 1960s, experimental filmmakers, experimental poets – but many others hated it. For example, my colleague Kubrick said “I am not an experimental filmmaker, I'm a master filmmaker”. Because I called myself experimental, he excluded me from his cannon, from his shows. He said “I refuse to make experiments” and he asked me “do you think Mozart and Beethoven made experiments?” and I said “Unfortunately not, it would have been much better if they had done”. But for contemporary art, we must be experimenters.

Now we see today a mixture of experiments with theories and machines, precisely in the great tradition of contemporary natural sciences. This is art on the higher level of performativity and of methodology. And this was my idea for Net Condition.

LC: It was then said that net_condition aimed to reflect on the social, economical and political conditions of the Net and the conditions it imposes on the arts. If net_condition was to be held today, almost 20 years later, what issues would it address and how would it be presented?

PW: It would address precisely these questions but also the political and financial consequences. It would be the beginning of a real revolution if people would understand what they don't understand at the moment, i.e. these consequences. I'll give you two examples: when you are a worker, by definition, you give away 8 hours per day of your life time to a factory or a company who has the means of production and pays you for your work. Now, in the Internet age, you sit at home and you produce something called data. So you spend your life time, again, in this system, but now you are called a user and the other one is called a provider, such as Google and Facebook. So you produce content for these providers, yet you are not paid for it. So this is wrong. How can it be, that a company that does not provide content, but only the means of communication, i.e. does not produce the data, become a millionaire, and you, who produces the data and the content have to pay for it? They make money, enormous amounts of money, with the data you provide for free. To be a data provider and user – this is a new kind of employee. Therefore I think that users must be paid for what they are doing.

The other thing is, when you are a blogger, it is different from the classical mass media – which has a very bad reputation nowadays, as we see in Noam Chomsky's Manufacturing Consent. According to it, the political elite class uses mass media to make the masses confirm their ideas, by manufacturing consent. And they still do it until this day. The idea with the Internet was that it could become a field of plurality, where all the voices that have been suppressed could have a space. Before, it was a one way communication, where the power was monopolized. Now, everybody can be a publisher, everybody can set up his or her own radio station... and this creates a polylogue. But this plurality of voices misses one problem. In a magazine, you have to argue and present facts. So each magazine has a fact checking department. But on the Internet, you don't have that. This means that sharing a lie and sharing the truth, is the same thing. It's up to the reader to make out the difference. You can say "Putin is a homosexual and he has 20 boyfriends". Now the reader has to check that. This is now the problem. The plurality of voices has obstructed the need, the claim and desire to tell the truth. It's the opposite: people are happy not to tell the truth or to find the conspiracy within public opinion. But the point must be the opposite. How can we empower democracy through social media? Democracy is suffering because of social media, because of this loss in the difference between truth and non-truth, where any political party can say whatever they want and nobody will take care to see if it's true or not, they just believe it... So we have now to think what can we do with the Internet to empower democracy. Because democracy is at the moment in a phase of erosion. It is occurring the opposite that we expected from the Internet financially and politically. The Internet has become an instrument for power, populism and profit.

The individual as we know it was invented in the Enlightenment, i.e. the autonomous individual. In the 18th century, the individual became this competent, educated subject, which can make his or her own decisions through knowledge. This individual is disappearing in a world where the information flow is controlled by nobody and everything can be said, where the possibility to argue and to have your own opinion disappears more and more. So these are the three points we should address today, as possible net conditions and consequences: individuality, democracy, knowledge society.

LC: net_condition aimed to highlight the link between the “local and physical space and the virtual and immaterial space”, in a time where Internet had just popularized. In today's context, where the Internet has become practically ubiquitous, is there still a need to reinforce this connection? How do you see the relationship between the online sphere and the physical museum today?

PW: In two ways. I still would insist on these early emphasized features. First, as part of the Internet's dream of decentralized virtual geography. In the physical geography we have the power in the center, such as the metropole, the capital city. And there is a battle between decentralization and virtualization on the one side and the center of power on the other side. I was hoping that the Internet would decentralize the power from the center to the periphery, but unfortunately it did not work out like that. The good hospitals and universities are still more or less situated in the big cities. Therefore, this confrontation between the virtual and physical is still to be worked on in each level. We have to reach a kind of equality between them.

And there is the traditional community of proximity in many ways, where everything is in a kind of nearness which can be organized by relational forces. The internet allows for the virtualization of the physical world, where the horizon of encounters has expanded ...that means, where you can meet other people, read other books and have access to other knowledge. People don't even look for sexual partners in real life anymore as they used to do in pubs or at parties, instead internet platforms offer a variety of partners. So, in one side we have to give up the notion of physical community as we know it. On the other side, we can not just say we live in the ubiquitous space of virtuality, because then you miss the control of your sensory life. So the media affect had two functions: first it redefines the relationship of the sensory organs to the environment. But what is most important is that media is a big problem for my own sensory life. When you just live in the virtual world this is like a nihilistic reprogramming of your sensory life. And the proximity, not of communication with the other, but with yourself, declines. In that sense, you loose your orientations, you loose your compass...

LC: Together with the rise of new online exhibition platforms, such as proposed by ZKM's AOYS, we also encounter new projects which explore the potentials of the algorithm and artificial intelligence in curatorial practices. This is not a new concept, however, AI has become a topic of concern and debate in contemporary society. How do you view these new initiatives?

PW: A year before Welcome to the Wired World, I organized and curated an exhibition called *Intelligent Ambience* at Ars Electronica (1994). The idea was precisely that not only we would become more intelligent through technology, but also the environment would become intelligent by sensors. Therefore came the Internet of Things. Today, my preferred term is Artificial System Agents. Internet in that sense, becomes part of this scenario. AOYS should then present a screen as a door to enter into this virtual world. We need to find new artists that could work with this artificial

system agents.

The net is precisely the basis of this idea for a kind of evolutionary environment which is supported by artificial intelligence and artificial sensors. Internet is the basis for a new evolutionary concept which would change our relationship to nature.

Annex B: Interview with Matthias Kampmann (ZKM: *ArtOnYourScreen*)

[The following interview was conducted between July and August of 2016, in the occasion of the AOYS evaluation process and as part of previous research conducted for ZKM. The dialogue below is an interview conducted with project curator Matthias Kampmann by email]

Lia Carreira: What would you say were the main objectives of the project?

Matthias Kampmann: The main objective I would say was to create a display on the web which shows the multiple commitments of the ZKM in a very special way (which then produces many positive side effects in mirroring benefits, knowledge, and problems in contemporary art as such): in the form of internet art. This of course was achieved by taking care of some curatorial spotlights e.g. with regard to a. display the bleeding edge of contemporary but not only technically based art and how it is related to internet technology; b. the responsibility ZKM took and takes with regard to digital cultural heritage. And – not to forget – a third objective: c. To foster artists and their artistic work with the net and to provide a special notion of an ongoing and emerging technology called the internet and its consequences for our societies. Primarily by creating new art works on commissions to let the artists participate economically, which, I'm convinced, is one of the best means to keep the ball rolling besides all these other ideas of AOYS and in opposition to moaning voices from the past saying, net art is dead! So the project at its first stage, when I was responsible for the curatorial story board, has tried to set up a circular display. First to show what is going on today, second to display all the initiatives concerning the work of ZKM. And not to forget: to set up a "home" for all possible visitors who are not able to visit or who are planning to visit Karlsruhe and ZKM, to get an impression by means of a curated show on the web – like a display window.

I'm very proud of a few wonderful pieces which were realized by wonderful artists. If you take a closer look on the different works of art, you'll notice that many questions concerning core problems of contemporary art find a parallel solution surprisingly through artists working on the web/net. How about sculpture and split reality, the awareness of distance in opposite to holistic experience on which sculpture relies since the Italian Renaissance? Experience then the work of art by fur ("OIS", 2013). The simple RaspberryPi-controlled environment with its light bulb addresses many questions, not only problems concerning telematic presence. Have Dave Eggers's dystopian Fiction ("The Circle", NY, Vintage Books/Random House 2013) in mind and remember the psychological distractions and disruptions of the protagonist named Mae and her contrasting figures

Annie or Mercer and the ideology of a complete transparent networked "life", as she promoted this redemption based way of quasi-religious existence. She'd better experienced OIS to be reminded of her physical and emotional bindings.

Or can one imagine a web as a space of production on the one hand and a space of passiveness on the other? Well, take a look at the special content creation of Martine Neddam's part in AOYS. And one of the most fascinating sub projects was the re-animation of an old macromedia director piece by the sound art pioneer Paul Panhuysen who unfortunately died in January 2015. This piece was re-engineered by a media artist and programmer from Karlsruhe together with me analyzing what does this tiny piece and how. He then wrote the code again from the scratch, authorized by Paul, in HTML5 to make the code open for a future life. That piece addressed the worthily commitment of ZKM to that deadly "progeria" of digital arts. To draw a conclusion from my curatorial work, you'll notice that it has to do with an art historical perspective, on the one hand, and a critical approach to the contemporary on the other.

LC: One of the aims described in the project was to dissolve the boundaries between art genres and to transform the public space by way of the Internet. Was that achieved? During the curatorial process, how was that taken into account?

MK: Not really from a global point of view. But there are steps well done into that direction. Have in mind that performance by Jirka Pfahl. He created a setup, or better, a working environment which combines techniques from the analogue with the digital. His work is a symptom of how digital art/network based art is dissolving into traditional spheres. Think of video technology, adopted in the early years by traditional artists (i.e. Bruce Nauman and others). This tale of Castelli buying a Sony Porta Pak and then lets artists play with it. Than a whole new art genre derived. But today video is used by everybody. This maybe is the destiny of many so called new technologies. Meanwhile, it is necessary to walk a few steps back and take a look at what is the possible work with the internet. But this also was one of my aims: being aware of the history. Therefore, I invited for instance Mark Amerika, just to take him as one example, with his piece "Crapshoot" which is nearby modernist literature but in a completely new way, using the internet and creating an interface especially for tablets and smartphones (although it works in an ordinary desktop browser too).

With regard to the immense speed-up of society via mobile devices, big data plus AI, it seems to be a necessity for committed artists and activists to call into question how public space (and values such as freedom [of speech]) is transformed by these technologies. There is in fact a bunch of

attempts to address these topics. If we are talking about hidden disclosure agreements by secret services and their unlimited, omnipotent surveillance strength, the "Manning Bot" reminds us that artificial intelligence is still based upon limits – until *singularity* has arrived. Machines and the machinic is pre-determined in their range by the strict determinism of algorithmic pseudo intelligence. In comparison to humanistic notions of brainpower, responsibility, freedom, and public spheres one experiences the cold but sad deficiency of today's machinery. Art is a humanistic reaction upon all these issues and endangerments of the agora and free speech to fight against strategies of fear, shock, and awe – and business as a totalitarian regime of a free market based upon unlimited growth. Although these pathetic words will not be found verbally in works like "OIS" – as in every form of visual art – but you might get a notion of what happens if you are in the mighty position to see the other at another place while the other one isn't able to see you! All these intertwining of different dispositifs and interactions of public and private spheres are very often not only metaphorically embedded into some of AOYS's works from the first stage.

LC: AOYS was described as an “innovative online exhibition platform”. How would you say it contributes to the field?

MK: The degree of innovation depends not on the programming tools used to display the work. The business is too fast to follow. This reminds us of the tragic death of many internet works when Google decided to cease Google Earth API! Innovation in the AOYS thinking I described above means first of all sustainability – which is quite a "worn" term, but to respect history it fits perfectly in my definition of innovation. My approach could be read as a statement concerning an integrating concept of internet art I referenced above. To increase the potentials of innovation, I suggest to embed AOYS as a kind of department equipped with its own staff and a fixed and reliable budget. But this is a process, and to discuss these issues again – after the death of net art – is innovative too. Furthermore, Germany is not the cutting edge site, where internet art has its secure home base. ZKM could play THE significant role in that business.

LC: What would you say are the interesting aspects or highlights of this project?

MK: As I mentioned above most of the works have never been displayed in such a context and/or were produced on the occasion of AOYS. And my curatorial goal was to realize a broad range of internet art aspects. My approach to choose these artists was to combine some unique positions. In the future, these first highlights should be developed with other extensions and positions. Besides, some keywords: "Passive" perception, participation and production (Neddam, Ochshorn); cultural

heritage (Panhuyzen); updating traditional genres (fur, Rozendaal, Ochshorn, Amerika); crossing boundaries between different types of arts (Amerika, Ochshorn, Pfahl); addressing contemporary issues of activism, freedom of speech and technological impact (Hershman, fur, and the unfortunately not realised, !Mediengruppe Bitnik, Zentrum für Politische Schönheit).

LC: And what would you say are the constraints and issues of developing such a project?

MK: To be honest: There are issues especially with regard to activist positions which are not able to be displayed in such an institution as ZKM. We had one artist group I admire very much because of their awareness to all these society changing problems, and they worked on a piece which should have randomly replaced every image on ZKM's web site with found footage from Google's "image search" tool. Affected were many copyrights and due to negative and expensive experiences, this project was rejected – unfortunately. That leads to the core question of art today. Is art allowed to address legal issues? Which are the boundaries? Hard and heavy economic interests? Is there a difference between an artistic activism and a criminal violation of law? And where is the right or best place to give space and answers and to experience the results? And furthermore: Where is the place in which we can experimentalise society's future in vitro, if not in museums by the work of artists? But there are limitations, and that was partially frustrating. On the other hand, the dependence of the project based funding was a limitation too.

LC: How can these issues be solved? And what could be an impediment for the implementation of these changes?

MK: Spend more money to foster internet art. Institutionalize these approaches and hire special art historians and scientists who are able to overlook the business without diving too deep into the sea of technical fascination. One doesn't have to be seduced by all these new fancy flickering possibilities. Sensible and serious artists start their work beyond shiny boxes and their features. Internet art, as I understand this special way of artistic expression, is not the mirror of Silicon Valley's output.

And with regard to activism from the society's point of view: Never ever. The battle is lost. Artists remain in their position as institutionalized aliens or outsiders. The law makes it clear with a simple imperative: 'Dear creative mind, stay out of the real life!' Although this is a contradiction from the art historian perspective, which records the differences between painting/sculpture and the (activist) work on the internet: the strict boundaries doesn't exist anymore – and the law still insists on it. This

is the core paradox. And you better forget relying on the generosity of the copyright business.

LC: And regarding its online platform format, what would you say should be the main characteristics of an online exhibition space?

MK: It must be an integrative one which mediates between online and the analogue world. Besides a historical and a critical awareness concerning the art history of internet arts, as there's a need for continuity. So I would suggest to embed such a project within a wider focus based upon goals and aims of digital heritage. Therefore, such a platform must be open in many ways: not only as something like a showroom and, hopefully extended by participatory elements in the future, but also based upon open standards, such as HTML5. Also, the source code should be preserved carefully for the future – programmers should write documentations.

Annex C: Interview with Clara Herrmann (Akademie Schloss Solitude: *Schlosspost* and Web Residencies)

[The following text is a transcript of an interview conducted on the 23rd of May 2017 via Skype with Clara Herrmann on the Akademie Schloss Solitude's *Schlosspost* and Web residency]

Lia Carreira (LC): Akademie Schloss Solitude has been supporting artists through residencies and fellowships since 1990s, and in February 2016 a new residency format running exclusively online was launched. How did the idea of the Web Residencies come about? In which context was it created?

Clara Herrmann (CH): The history of this program actually is linked to a broader context. In 2014, when I was a fellow for art coordination at Akademie Schloss Solitude, I started a little blog project (because my expertise also lies in online journalism). There was so much content at Solitude that it became quite obvious after we started this blog (where we communicated content such as interviews, essays... with various multimedia formats about what was happening in the house) that there was a huge target group for it and that we should use the Internet in another way. And based on this, Mr Joly, the director of Akademie Schloss Solitude, had the idea, that we could actually establish a bigger online platform (which is now *Schlosspost*), and which could come with new Solitude fellowships for people who work in the digital field, people that would actually come to Solitude to influence the house and the artists here to work on more digital projects, together with me and other colleagues, to publish online, use digital story telling, work on experiments...we didn't know back then what the new fields would be exactly.

Then, at the end of 2014, the idea for web residencies was born. The logic of Solitude is, of course, to support artists with stipends and free space to live and work. So it was clear that this principle should also be part of the online platform *Schlosspost*, that it should have its own funding program, in its own logic. But it should not only function as a platform that mirrors what happens offline, it should really be there for finding and supporting new artists/works in the digital field.

The next step was, after that idea was born, to do some workshops with a few people to discuss what it actually means to have residencies online. We didn't use the term "web residencies" at the start, it was still "online residencies". We didn't discuss the differences between digital, online, web and net at that moment. And the ideas we had in mind at that time, which was one year before we

actually started to think about what kind of platform we needed, was that it should be open for all art disciplines. There wasn't actually a focus on digital arts. It was just clear that we should open up to a new community and new formats – but whatever that was, we didn't know.

In 2015, when we developed that new platform, it was clear that there should be a little bit of curating but it also should be very open to all of the content of the Solitude network – a good balance between consistency of design and artistic experimentations. And so that platform was born and launched in November 2015.

And then something really interesting happened, because we announced at the same time a new fellowship for this Digital Solitude program (how we call the whole program in the end, that wraps up all the components like the web residencies, the platform and the fellowships for people who actually come to Solitude), and people from the web art scene applied, which was Netro – Kim Asendorf, Ole Fach and Jana Lange. They are artists and web developers,...The principal of Solitude is that you let the house, its content and also the online platform to be influenced by the people who are part of the network, by jurors, by Solitude fellows... So when those fellows were here, we still didn't have a clear concept of what it should be, but it was clear that it should be open to an online community to open up to the digital scene. That was the start of this project.

Then with Netro we developed a new format. We understood that the main difference between applying for a normal fellowship program at Solitude and applying for the Web Residencies started with the topic given by curators, because we never did that before. We actually wanted the curators and jurors for this call – which lies within the existing logic of the house where one juror decides for one of the many disciplines – that they have the responsibility and also the curatorial freedom for the topic and concept. Because we thought they would know who they would like to attract with their topic (which was *Decentralization of Internet Art*)...so we trusted them completely. In the end we just added an image, a text and some guidelines for applicants, and not much more. Surprisingly it worked, and that is how it started.

LC: And what changes with the Web Residencies? How does the dynamics between the program, the artists and the curators shift with this new platform?

CH: We actually didn't have anything like this before. Because jurors before then were not really curators. The only person from the jurors to ever set topics on which the fellows would work on would be the main juror, which is at the moment Kaiwan Mehta from India. He sets topics for

symposia we organize and, now with this new platform, also online issues that we publish. But apart from that, having curators to make calls for us was completely new.

How does it work: we wanted to give complete freedom to those curators. They set the call in discussion with us of course, explaining why that topic and what is the *tone*. I mean, this plays a big role: how a text *sounds*... if there is a special language, if there is a special community we want to address with the call...

How the curators work with the artists: very differently. It depends on what they are interested in concerning their own practice. Netro, for example, they had a very clear idea of what they want to say, on how web culture works and why that topic is now necessary to talk about. The whole call, and how it was made, worked so well because they had a very specific language which they used, which attracted really interesting people – net art people that work beyond institutional frames...but also visual artists who work with web-based practices, also hackers, coders, designers...and from there on we understood that this is a completely new field where actually disciplines don't really play a big role anymore (although disciplines never really played a big role in Solitude anyway...of course you apply for a discipline, but nowadays it's quite clear that people work in so many fields, and especially for Web Residencies that was the case)

It is a very quick process and the dynamic is incredible. Because when you have a topic and a certain time frame that people apply for and work within, it has an incredible dynamic for projects and the communication...at a certain point, the discussions between the curators and the artists was not so vivid any more. But I know from talking with some of them, that most of them are still in touch after the call, through social media. So that kind of network lasts...

It should also be the main goal of this program to foster the discussion between web residents a lot more, but it is not so easy, because there are always different people who are differently engaged. Some curators were very interested in the projects and were part of all the Skype calls we had with the artists to understand the needs of the artists, which was beautiful, to have that engagement and exchange.

The question was also, how we could connect the Solitude fellows in the house with the web residencies. Like, could it be a google hangout, a live stream, or a Skype talk? Would it be external or internal? ... If it's online, should it then be live, should it be open to everyone? Probably the questions that occur when you deal with the Internet...

LC: For each open call, the Web Residencies invites a new curator. How would you define the role of the curator in this new context?

CH: It is actually the most important. Because that curator is chosen based on the question of who do we want to attract and who would know best on how to do this. So it starts with a relationship of trust with someone we know would be happy to work in that context, and who has a general interest in our program, and who would also be in touch with people, bringing topics out that he or she is working on. Someone that has an idea on what is a contemporary question within web culture, not only technical questions but also related to net culture, politics & society. So this role of the curator who defines the whole call is very important...and we can see that it actually works. It is not the format that someone as a curator is asking for (that was maybe different with the VR projects), but mostly it is really the topic and how the text is written...and maybe not even by whom (the who is only a question if someone wants to invite artists from their own network) and that happens quite often...like with Apparatus 22, we were super surprised on how many visual artists would actually take this adventure and work on web residencies. And these were beautiful projects. We were super happy with it...so we thought, ok, so it's not only net art, there is also an interest by other people. And I don't know if they would be interested in the call without these specific curators (probably it made that program trustworthy for them).

And I think with this very playful and informal format, it functions as a statement for the importance of this kind of funding system. Of course, we think carefully who we choose and why to also show interest in different web cultures.

LC: The Web Residencies are already in its forth intake, now in partnership with ZKM. Looking back at the projects developed within the program so far, what would you say are the major challenges in promoting and exhibiting online-based practices?

CH: I can only speak for this program. Because I think there are many issues around this, concerning the logic of presentation, the audience, the opportunities you have with the Internet, but also all of the challenges that it provides.

It is about integrity, isn't it? If you want to do something online, you have to show that you understand *why* you do it there and not offline, *why* these opportunities are there, and that you are able to use them in a way that it is good for the arts and the artists, and that it makes sense. So I

think that it is actually the biggest challenge – not only to put it there and say “it is online” and you have a new audience, but to really think about what does it have to offer.

And in that sense, with the Web Residency program, I would say that the artists defined it themselves. And that was a very big part of the whole program, giving freedom to curators, but also freedom for artists to say “I define for myself what a web residency is”. Because, of course we were giving them space and time in the form of a platform, with a stipend they could use in whatever way...but apart from that, the format was more or less open, whether it is a website, a social media intervention, writing, coding...what ever they wanted it to be.

We leave it open for the artists, because this program also started as an experiment, an experiment that should be open to the influence of its participants. Our hope was that, by the end of the year, or now by developing a program with ZKM, that we learn... that we see what it means.

But to be more precise concerning your questions...the challenge that we could see so far is definitely concerning the topics and on how you communicate it in a way that your regular audience, which normally might not be so engaged in the digital, understands what the program is about...so that they understand what it means to show/support the web residency projects online. Because the projects are so diverse... that is why we always were publishing talks with all of the artists. That is quite important: that we work at the interface between art and communication.

LC: Schlosspost also sets to establish a network of contributors, including artists, curators and partner institutions through the online platform. What is the importance of such a network in our field and how does it develops further with the open calls?

CH: That touches many questions...the Solitude network itself was always pretty diverse..There were already many people working in the web scene... like activists, hackers, and researchers...

And now with the Web Residencies, there is of course a new community, but you also see that there are actually some similarities. So people who applied for the web residency would also apply for the Digital Solitude fellowship program...people that come to the house would inspire the others, and vice-versa. And with the new web residencies, the network is definitely...well, it develops from call to call, and in new directions...you always find new audiences and communities with people you would probably not have attracted before with other topics...for example with the call designed by curator Claudia Maté the field and the people were pretty new for the network, not the chosen

web residents in the end maybe, but her community in general, which would probably not have been interested in the call that was set up by Tatiana Bazzichelli before at the start of this year which was for artists, researchers, technologists, activists who work with art and whistleblowing. That is so interesting to see. Of course we learned years ago that there isn't something like this, "online community", this doesn't exist. But to really see that this is as diverse as normal, real networks...whatever real means...was super interesting.

Annex D: Interview with Matteo Cremonesi (Link Art Center: *Link Cabinet*)

[the following text is a transcript of the notes made during an interview conducted on the 16th of March 2017 via Skype with curator Matteo Cremonesi on Link Art Center's Link Cabinet]

Lia Carreira (LC): In which context was Link Art Center created in 2011? Why then?

Matteo Cremonesi (MC): We wanted to create a specific institution which could support “new” media art forms (which we then referred to as “art of the information age”, a much broader term, that didn't fall into the debate regarding “new” media art). We, therefore, wanted to fill a certain gap, a need in the field for institutions like these in Italy.

We aimed to support, first of all, the Italian art scene, but also work within the European context. We then established a nomadic structure, which was mostly because of our geographical context (as we are mainly located in the small city of Brescia, in Italy – although there is a strong connection with Milan). We, therefore, relied, from the beginning, on an international network of actors, but mostly within Europe.

LC: On the webpage, Link Art Center is described as a “curatorial platform”. What does it mean by this concept?

MC: By “curatorial platform” we understand the collaborative aspect of our curatorial projects, which are developed by a team of people from different backgrounds and interests. Some of the projects are created and curated by all of us, or by just one or two.

LC: The Link Art Center has no physical space, and yet it often creates physical exhibitions in temporary spaces, functioning as an international nomadic structure where its online platform works as its main venue. How does it integrate and mediate the relationship between these two spheres, both physical and online?

MC: Each project has its own specificity, that is why some are physical exhibitions, others are done online or as a publication. We focus on a specific format for each – different media for different projects. It depends on the context and the availability of funding as well.

The *Dadaclub.online* project is a good example. We first proposed an online platform for the project, where artists were invited to use digital copies of Dada artworks and magazines made available by Link Art Center in collaboration with the Collezione Campiani. The project was launched on the 100th anniversary of the Dada movement, which took place in Zurich on February 5th, 1916, and ran for a year, reaching around 148 artworks published by a variety of artists. And now in March 25th we will do a physical exhibition at the Spazio Contemporanea in Brescia, with all the artworks featured on the web platform, together with some of the originals from the collection.

LC: *Link Cabinet* describes itself as an “online exhibition space”, where a single web page hosts solo shows of single site-specific artworks. How did this concept come about?

MC: *Link Cabinet* followed the model we had with Link Point, a physical exhibition space we conducted for maybe about 3 years or so in Brescia. The space was a small white cube structure where artists were invited to install their own work. Each solo show, presented in an one evening event, was encouraged to transform the exhibition space. This concept was then translated to the web format with *Link Cabinet*.

Link Cabinet was thought as a white cube structural metaphor (and not in its economical model). It was thought as the ideal starting point to display web-based art, through an artist point of view. At the time, there were already other similar platforms online, and even before that with well known projects such as Bubblebyte (2011) and Orbits (2009). But most of what existed at the time followed a curatorial model of physical exhibition spaces. From an artist point of view, this framework was disturbing and the platform was, in the end, not really necessary. So *Link Cabinet* was thought as a space with the least possible interface, with no framework, just the work in full screen (there is only an arrow, a very big one actually, which directs the visitor to the platform where they can find the additional information). But there is no explanation before.

This was done thinking of a public that can be as broad as possible, including people that are not internet savvy. That's why the interface, even if minimal, needed to be very easy and intuitive. And for the artist, it had to be like a white page, where they can “install” the work themselves on our server. In this way, every work transforms the space, bringing artists with different approaches which work with this web specificity.

LC: What is the usual time span of the shows?

MC: Usually a month, but some exhibitions, such as Morehshin Allahyari's, which was developed in cooperation with the Fotomuseum Winterthur, the format had to fit the institution's timeframe.

LC: How is the selection of the artists and artworks done? Are there any criteria? Any underlining themes?

MC: There is no specific concept or idea for the exhibitions. The selection and invitation of the artists are usually made through our network, sometimes through our own research – when we find interesting artists and artworks online. But in general, we prefer more emergent artists. I enjoy working with artists that have a different perspective than me, to be able to collaborate with them in different ways.

The online platform has made this contact with artists and other institutions easier, especially because of our geographical context – we can be much more flexible. The platform can then be used as a tool to work and collaborate with a broader network.

LC: Why the decision to make the artwork unavailable on the platform after the exhibition period was made? Are the artworks archived in any internal database? How is the documentation and archiving process done?

MC: The first idea was to have no archive at all – just the essential information, as you would have in a regular exhibition space. And like any other exhibition, after it is over, you cannot access the artwork anymore. Now we want to change the existing format for the archive. Now that we have had several exhibitions on the platform, we would like to expand it with further documentation, with videos of the artwork and of the exhibition.

LC: What about regarding the preservation/conservation of the artworks?

MC: *Link Cabinet* doesn't own them, the artists are still the owners. *Link Cabinet* can act as an intermediately, in case anyone is interested in the artwork. But most of the artworks exhibited at *Link Cabinet* are available online through the artists web page. Due to our current structure, we are not able to maintain the artworks in our archives and preserve them, or even to commission certain artworks. Although this would be great. I like to establish a dialogue with the artists, follow their production.

LC: How would you say *Link Cabinet*'s exhibition space differs from the artist's web page or his/her own online portfolio/archive?

MC: Artists still need a venue to exhibit their works. As an artists myself, I think exhibiting in such a format is different from the artist webpage, because it feels like really presenting the work. These initiatives also supports and promote the artists. At *Link Cabinet*, we invite the artists to work within our institutional network. Some of the shows on *Link Cabinet* are produced as part of events that are organized as collaboration with other institution and museum and, in these cases, we are able to properly "produce", get some funding etc. In other cases, the shows are just one of the first step of a collaboration between the artist and Link Art Center that can lead to the involvement on other bigger projects.

Annex E: Interview with Christiane Paul (Archive of Digital Art: CODeDOC exhibition)

[the following text is a transcript of an interview conducted on the 8th of May 2017 via Skype with Christiane Paul on her participation in the Archive of Digital Art's (ADA) exhibition CODeDOC]

Lia Carreira (LC): ADA's online exhibition revisits two installments of the CODeDOC exhibition within a new platform (a digital archive). How was this process done? What are the fundamental differences between these formats?

Christiane Paul (CP): I would say there were no differences between the two installments of CODeDOC, but of course there are differences between the exhibitions and their presentation within an archive. I saw the two parts of CODeDOC as one continuous exhibition. The reason for continuing the CODeDOC exhibition — originally commissioned by the Whitney Museum for its *artport* website — and doing a second installment simply was that the Whitney Museum of American Art is, by its mission, devoted to American artists. European artists were not able to participate in the show and that of course gives a kind of skewed picture of software art practice. Ars Electronica wanted to open the exhibition concept to participation by European artists and invited me to curate that second installment. To me this was a continuum, I saw no difference between launching the exhibitions within the context of a festival vs. a museum. I would also suspect that the audiences for both installments were very similar, or that there was at least a significant overlap between audiences. The exhibitions attracted a community of people that was interested in net art in the first place. The general audience of the Whitney Museum is not necessarily the audience that visits the *artport* website or is interested in online art. The point I am trying to make is that net art still has a core audience, and that it is challenging to introduce a more traditional audience to it. That being said, there are some crucial differences between the installments of CODeDOC and ADA's documentation of the exhibitions: the later puts the two installments in context by showing them together on one platform and can be seen as a preservation process.

LC: Regarding this “preservation strategies”, the archiving of the exhibitions within ADA's platform proposes an “expanded concept of documentation”. What does this process entail and what kind of relationship does it establish with the curatorial process?

CP: I think we have to make several distinctions here. You can consider documentation as an

aspect of preservation, but it is not synonymous with it, the two can't be equated. What has been accomplished at the Archive of Digital Art is a documentation process. A few of the CODeDOC works documented in the archive are not functional and shown as documentation only. They would still need to be preserved. What we are looking at is video documentation of the work and therefore "expanded documentation", but it is not the project itself, which would need to be emulated or preserved in a different way, which is a task we will tackle in the future. Documentation is a very important step in the preservation process since it captures what the work was intended to look like. What the Archive of Digital Art has done is not preservation *per se*, which will be conducted by the Whitney Museum at some point, but an important step in the process.

LC: The project recontextualizes artworks that were exhibited 15 years ago. A lot has changed since then, especially in web culture and discourses. How does the project respond to these changes? Looking back, and in light of today's context, how would you describe the previous projects and their developments in the field?

CP: The recontextualization of the CODeDOC works within the current environment never was the explicit goal of ADA's exhibition. Any piece of net art from the 1990s that you are experiencing today is obviously perceived and understood in a different way. Over the past decade there has been a development from purely net-based works to projects that are much more "transmedia" in their approach, as they combine different elements ranging from an online component to an installation or an app. Net art has diversified more. I think what is most relevant in the changes we have seen in net art or networked art over time is the language and vernacular it uses. Any exhibition of net art from the 90s or early 2000s highlights differences between the online vernacular of that time and the language of what we currently call post-Internet culture. The social media age uses a very different language and vernacular, from interface and navigation conventions to terminology. In the documentation of the exhibition at ADA, it never was a mission to think through these differences or highlight them *per se*. I think the awareness of these differences just comes with the territory whenever you are experiencing net art from different times.

LC: The present thesis also addresses shifts in curatorial strategies, especially in light of new and upcoming initiatives using algorithms and artificial intelligence (such as *Curatron* and *MuDA*). You have, in the past, addressed computer-aided curating (in your article for the book *Curating Immateriality*, 2006), using examples such as C@C and Runme.org, where human input was still very present. How do you see this new generation of curatorial softwares?

CP: First of all we have to keep in mind that there is nothing new about the approach of using AI to make selections *per se*. Since the Turing test and the creation of the first chat bot, ELIZA, in the 1960s, artists and computers scientists have been thinking about the use of AI in the context of communication, human expression and aesthetics. But the technology simply wasn't, and to some extent isn't, sophisticated enough yet and, as you pointed out, computer-aided curating in the past involved the human element. Another project one should look at in this context is *Kurator* by Joasia Krysa, originally a software aided curatorial system proposed in her dissertation in 2004. The Runme.org archive took a different approach in that it was an open, moderated database and exchange interface for artists and programmers. There was a human curatorial process behind it, a process of selection. The database incorporated tagging, but I wouldn't position it in the area of automated curating. Right now we are witnessing endeavors in machine learning that are geared towards letting machines make decisions about aesthetics, selecting successful photographs, etc. I am highly skeptical of that approach. You may have seen some of the softwares that classify photography. Their aesthetics are typically pure "National Geographic" style. I find it very interesting to test software's potential for curating, but software is always biased. Whoever wrote that software and created that algorithm for a specific purpose inscribed a certain kind of bias into it. I find algorithmic approaches to making aesthetic choices more interesting as a conceptual proposition. Most of the time I find the outcome to be highly problematic.

Annex F: Interview with Cameron MacLeod (Platform Stockholm: *Curatron*)

[The following text is a transcript from an interview conducted on the 19th of March 2017 via Skype with curator Cameron MacLeod on the curating software Curatron]

Lia Carreira (LC): In which context was *Curatron* created? When did it all start? What inspired you to create it?

Cameron MacLeod (CM): It goes back to my artistic practice. I started a specialized degree called Art in the Public Realm, in Sweden, which had to do with trying to develop artistic pieces that somehow reflected on infrastructures or communal infrastructures. But my particular interest was in open source, systems and shared production methodologies and on how to use those in order to produce work.

One of the fundamental examples of my approach into this field was the idea of building some sort of feedback loop where I crowdsourced the strategies on how to make a calculator in the woods with no tools, and that became a community resource and then that resource gets better...we moved large scaled production techniques from industries, particularly the computer industry, into a kind of community based production.

Soon after that project, I founded Platform Stockholm – a large scale studio collective and gallery. Which was an attempt to expand this community based work, and I didn't know exactly how, so I started using certain online strategies to decrease hierarchies within the administrative structure of this new organization, such as using online voting for studio vacancies and online voting for monthly budget...a multitude of different strategies that we used. Some of them have survived, some of them haven't. But the similarity between them was using crowdsourcing to make administrative decisions or outsourcing part of what would be traditionally my own decision making process to a community that benefits from participating in them.

And then we tried to apply that same sort of thinking to the gallery. Initially, the people in the collective voted on people that applied to show in the gallery, but then we found out that the participation from people of the collective wasn't as high as expected, for many different reasons. So then I decided that I would flip it and create a feedback loop where the artists applying can vote for the other artists applying – and so we had *Curatron*.

LC: What are the advantages of such a system for institutions? And for artists?

CM: There are multiple different advantages. But when people think of *Curatron* and its benefits it's usually a shallow approach. You need to take into consideration the entire ecosystem, from a very fundamental shift within a pre-existing standard. Most open calls require one person or a board to select, so *Curatron* would facilitate this. But *Curatron* has the ability to create a completely alternative process to the selection process. Which means you need to take into consideration every aspect of this method and how it changes the context for everyone that is involved in it: the artists, the people that view the exhibition, the curators, the programmers, people selected from the selection process, people that are applying...through each step of the application process there is a fundamental change that happens. Which means that what we are dealing with, on a larger picture, is a fundamental shift in infrastructure, something that completely reconfigures the relationship through the methodology.

So, for instance, there are different examples I can give...one would be that it becomes a kind of exhibitionary online process which happens at the beginning of the selection process with *Curatron*, which is something we consider as a benefit not only for the artist, but also for Platform. We actually don't know exactly what are the ramifications of it, if it's good or bad. But it is an exploration into what this exhibitionary online process may be, which is quite different than other online exhibitionary processes. You can, for example, look at a multitude of profiles online, such as in Artsy...but when you look you are not looking with intention and you are not strategizing immediately in order to have a direct impact on your own practice. So when you look at the profiles in *Curatron*, you look at them with the intention of being selected at the end of the exhibitionary process – I would suggest that the majority of the people applying are doing that – which means they are looking for people in a closer way.

And that creates the ability for us to do a multitude of different things: you can create connections between artists through the open call process, which is generally not possible with normal open call process, as it is a sort of a black box. So it reflects and changes the psychological position of the artist through the application process, as they are thinking about their own practice, they are thinking about others, and they are thinking about how their practice relates to others, which changes the psychological thinking behind the work they are doing, becoming more and more the paradigm of artistic practice. The speed in which you can apply to *Curatron* increases as well, so you don't have to spend too much time applying to exhibitions or residencies. And there are a couple of other factors... but we are just dealing with the open call process. And these factors also

continue this shift in thinking and relationships on the other steps, and there is something that is extracted from this process, which is the final group and this group is somehow a result of this different methodology for selection. But then what happens is that their social relations are also transformed in relation to the group shows, because this group has somehow participated in the creation of itself. Whereas on a normal open call process you would have, unless you have an artist as a curator that is having a show with a bunch of their friends (which is also a different methodology for bringing together people)...the group is independent of curatorial authorship, from an individual curator.

And the allegations or the social relationships between who that group is and who ever is managing the execution of the exhibition also shifts. Which also has the possibility to transform the process and change the contact in the way the public uses the work, not only due to the shifting of relations, but also due to the fact they were selected through an algorithm, which aligns artists and practices as closely as possible. And then those shows are supposed to reflect some form of current trend that exists within the applicant base. So then the context of the show also departs from there.

To sum it all up, it is a complete transformation in relation to the curatorial process. It's something different, it's a methodology that is being explored and the relationships that happens between people is one of the fundamental interests within the work and also in artistic practices.

LC: *Curatron* executes part of the curator's role in developing an exhibition (selection and grouping of artists). But how does this first selection influence the following curatorial process?

CM: In a way, the artists have been selected through a voting process, so they have the right to the show and the structure offered, and in that why it reduces the authority of the managing body somehow. So, right there is already a difference in the relationships. But how we generally manage it is to decrease the role of the management even less, without putting unnecessary burden on the artist of having to do it themselves.

Some of the strategies we have been using are, for example, when the artist gets selected, they also receive a fund to hire a writer for their exhibition. And that writer looks at their work and writes a text that becomes the official exhibition text. It also becomes the point of departure for the artists to develop the work for the show. So there we have a second feedback loop. So *Curatron* produces multiple feedback loops in the system: one is application of the artists, then there is the selection of

the artists by other artists, and now a writer that feeds back into the group and solidifies the connections between these people.

And then we have a certain amount of time that we tell the artists we have and they receive a certain budget for production. But what generally happens, that we found out through this process, is that usually the artists that gets selected have similar practices. The algorithm doesn't work like that all the time, but it happens enough and it is obvious enough when it does happen. And what happens quite often is that this group has a much better idea or they exist within a very similar mindset, which means that, as a curator, it becomes an almost impenetrable surface. Which becomes like an educational process, where you can't really make suggestions as a curator, because they have a very specific idea of how the exhibition comes together as their practice are so closely related. So they are going to make the decisions themselves, which is much better suited than me just being handed a bunch of people that I'm not that familiar with. So what happens is that the artists end up having more curatorial control over the final show. And it becomes more a product of an artistic authorship rather than a curatorial one.

But there is perhaps two interesting examples regarding the selection process, on bias processes that we don't think about when we do the selection of artists traditionally. One was a group of artists selected that had a very similar practice, to the point that it was difficult for us to know who was making what. Everything was getting lost, who's stuff was where...And then this guy walks in our studio – and the oldest artist that were showing were like 30 something years of age – and this guy walks in and he was about 55 years of age, and I went to him and asked, "hi, can I help you?". And he replied "oh yeah, I'm showing at the exhibition". And his practice was the same as everybody else. And then it hit me that I was thinking of this show as part of a show of new, young, emerging artists. So immediately there was a transformation in my head. Would we have classified his work as belonging to another generation if the process was done without the software? That would be probably what would have happen. Since the guy had no images of him online, it was impossible to tell from what generation he was from...And in the same show, there was a guy from Canada that was selected which had also work that I completely would have connected to Scandinavia. And this guy was not showing at all in Canada, because his work was completely outside of what other people were doing there. That show, which was the second show we did, exposed to me to two things: age bias and a form of geographic aesthetic specificity, which was fractured by this access to this online selection format.

LC: In practice, how diverse are these groups? What other factors may influence this

diversity?

CM: The system sets out to find an artistic significant trend. So what we are trying to do with this system is bring together a group of artists with similar practices, that are somehow representing a particular, emerging, or significant trend.

LC: When we talk about the use of algorithms in curatorial strategies, people tend to get a bit suspicious and shocked about the idea that the curator's role has shifted to the side and that the algorithm itself can arrange these groups. But in the end, they seem to be very useful, because the trouble with curating web-based art, for example, is that nowadays it is really hard to find these trends and where the artists are. So do you think the software actually facilitates this process of finding these trends and similarities?

CM: I do [laughs]. I mean, I don't know what the argument is, but here is the thing: generally I get a lot of interviews about algorithms, when really an algorithm is actually an extremely broad thing. So it is really hard to specifically say "algorithms do this", you know? Algorithms is a set of cause and response, and can be more...and if you shift the algorithm slightly, you change the composition drastically, especially with *Curatron*. If we change the number of artists to be selected, then it completely changes the way the algorithm works. So it's actually a very delicate and complex thing and it can swing in a multitude of different ways.

But I guess there are tendencies that people can fall into in using traditional methodologies in relation to algorithms. If you use Google to search for an artist for your exhibition, for example, you will end up with a tendency where you will be continually fed the same thing, and you would have a specific idea of what that art practice is... but *Curatron* is a very different process. Because every time we launch an open call, we somehow reboot the system: we will have a whole new set of applicants, and they go through a completely different selection process... and all we know is the selection between artists, we don't fact in any data from the website, we don't do image recognition, we don't do data clustering, market targeting...

But the obvious big shift in curatorial strategies for us would be having both the physical and the digital. We want to drive the physical through the online in a very obvious and apparent way. It is also an exploration into other industries and life in general, on how can we interact with net based protocols to make online decisions and actually transform public life or our lives outside the online.

We are also interested in crowdsourced computer aided process. If you take the iconic history of AI,

where you have the example of the AI beating a chess player. And a lot of people know that story, but they don't know what happened after that, where there was a computer vs human, and after computer *and* human vs computer. And the computer *and* human beats out the computer, you know? And this is a little bit like the ability to take the best of both worlds in decision making. So the best way for us to be able to deal with AI without something going bad, is somehow to work with collective control with AI...

There is a lot of appropriation or influence on my practice that comes from institutional critique. And this idea has a lot of benefit, because institutional critique helps creates these fundamental feedback loops and existing structures that we use to disseminate work)... You show in a white cube and the white cube gives the work artistic significance, right? And AI has become a real competitor. But we still maintain the significance of these older mechanisms we use in order to display work, which are actually very old. So it is not necessary to see work in a white cube anymore, it is now possible to see it online. And there is a movement, especially in online blogs, away from the white cube. There are a lot of people finding these spaces now. And that trend is starting to expand to people showing in hotel rooms, for example. I have a friend that exhibited in a cruise boat... And all of these things show how the online sphere starts to affect the physical as well. And I think that the way we transmit information online also gives us an idea on how to actually live and work within the real world as well. And I think this is definitely a reaction to the current context, and you see them specifically on online blogs which is as a completely disruptive form of showing work.

And you talked before with me about the shift to machine-machine interaction, and what is interesting about that is that it takes you to the point where you ask “who is going to make the algorithm that makes art?”.

Annex G: Interview with Alexa Jeanne Kusber (Museum of Digital Art: Hal 101)

[The following text is a transcript of an interview conducted on the 9th of May 2017 at the Museum of Digital Art (MuDA) in Zurich with Alexa Jeanne Kusber on their Hal 101 algorithmic curator]

Alexa Jeanne Kusber (AJK): It might be interesting to talk about Hal [our algorithm Curator] and also about the physical space. As this is a new museum, we are very experimental. We are not only dealing with this new medium of digital art, but we are also challenging ways we want to act and function as a museum.

I think this is a very compelling subject, that people should be writing about. I also come from a contemporary art background, so working now 15 years in curating, and this is my first experience working with digital medium. For me, it is completely different, it is like a whole new animal, curatorially. So not only the new aspects of thinking about space, thinking about the technical aspects, what you have to have in terms of power or equipment...I mean, a lot of production is part of the curatorial process now with this genre. Another aspect is that the work is also living, alive... it's never stagnant. So, constantly, the artists are updating the code, they are coming to fix the robotics, etc. So the artworks are never finished, in a sense. And I think that is very thrilling with this genre –from painting to sculpture...it is usually finished at some point. Digital art lives. With these artists, it can be a combination of being satisfied, the work being in a physical space and the technology constantly updating itself – so making changes and updates is part of the work. So you can come at the beginning of the exhibition and come at the end, and your experience could be a little bit different depending how they changed the code. And this is definitely a new way of experiencing art. The best way to describe it is that the exhibition and the artworks are *living*.

LC: It is interesting that, being a curator, you used the word production to describe what you do here and also on the website your name is not assigned as the curator...

AJK: No, that is because Hal is our main curator. That is also different in this museum. Hal is an algorithm that we programed. In one way, we would like to say that it is very democratic. But at the end, all algorithms and programs come from a person, so obviously we have programed Hal constantly looking on the web for a criteria that we set. But the criteria is still quite open. So we are not always looking at if the artists showed here or there, or what is their career. We are more interested in the kind of work they are producing, how they are experimenting.... Hal will be asking

the Internet millions of questions, and then coming up with answers for us. And then we look at the artists that Hal is suggesting and then also collectively deciding. So it's almost like Hal is the main curator, by suggesting, and then collaborates, lets say, with us to realize the exhibition.

LC: Is there a focus on a certain type of artist, theme or art stream? How does this selection align with the museums identity and curatorial aims?

AJK: Yeah, I think again for us – Hal is looking for artists that we find intriguing. So again, Hal is doing some suggestions and looking at artists working now, artists working with programing, and not just digital arts. And this is also what makes us different. We are really obsessed with programing and code. So this is an important part of the artists' work. So they definitely are programmers, coders, who are then creating something physical to be shown. Hal is looking, just as a curator myself would be looking, for dynamic artists who are working now.

But then again, we are looking at new and old. For example, Gramazio Kohler, the current exhibition, they've been around for a while and are quite established in their practice. Whereas with Gysin Vanetti, the first exhibition we had, I would say they may be early career artists. So, I think Hal is looking more at what kind of work people are producing. It has a lot of criteria, but again, just suggesting it. And then...obviously the whole issue with digital and human collaboration... then we are choosing the final artists and we have to work with the artists physically and thinking on how to transform it into a physical exhibition. So, yeah, we become more producers, like you said. And we allow the artists to be more the curators of the space. They get a plan of the space and then work based on their proposal.

LC: How does the museum act as a supportive role, how does the museum work with the artists regarding their curatorial strategies?

AJK: That's where we are really different. For me, this is really a new way of working. Because this is usually where the curator has more of a role of how the exhibition flows. I would say in this museum it is more the artist that has that role. I would say it is more artists as a curator and then we come in more in a supportive role. And when I say supportive I mean we also know the space by heart and we know how visitors engage with the space. So that's where it becomes almost a support/collaboration. For instance, in this exhibition with Gramazio Kohler, in one of the works we thought of putting black long ribbons around the artwork to assist in the experience, and that is a curatorial choice. The best way to describe it, now that I think about it, is that the curatorial practice

here is *collaboration*: with Hal, with the artists and with the people who work here. And it is a really open form actually. It's Hal suggesting, us talking about it, choosing the artists, the artists suggesting what they want to do with the space, then us talking about it and coming to a result that everybody is happy with. So it is actually very democratic in that sense.

LC: And it also ends up also challenging the concept and the role of the curator. How do you see this figure in the art world today?

AJK: Being a curator, I find it actually refreshing here, in a way that the visitor is not really channeled to think a certain way. I think, and I would be bold to say, that unfortunately, in this day and age, the curator (and of course, it depends on the type of curator you are) says "this is what I think, and come on my journey" or "I'm using this artwork and these artists, this is what I think, come experience it". Where other curators are more creating an open space for visitors to come, giving them content, but also leaving room for individual thought. And I'm more on that practice, because I think that is a problem with the arts and the public – unless you are already in the arts – it's this kind of leaving this room that the individual space for thinking is healthy, then people feel more free to think anything, from "I can understand or feel this artwork", "I can't get this artwork", "I can hate it" and all is accepted. Instead of reading something that I should be thinking about this work because the curator said I should. I think this can make the public a bit turned off or uncomfortable, and this is a problem in the arts.

So what is nice about here, is that even the art speak we use is very different. We are really more creating a platform for the visitor to come in and really to be free in their experience. It's funny, we debate a lot internally about the text that we use, because we use very simple texts, and even not necessarily always saying what the materials are, which is usually not common. We are mentioning it, but in more of a kind of conversational way. And I appreciate it because anyone can read it, understand it, and then if a dialogue wants to be created around that afterwards, fantastic. But we are not going to this dark theory place... which could be debated if that is good or bad. In the arts, we are always creating a context for everything. And we also want to leave a trace or an archive of how digital art or this movement is growing. And that is usually where the art text and theory is coming into play, but we are still experimenting with this...we even had another idea of making another algorithm that would write the museum's text, taking loads of information about the artists, about the artwork and creating this democratic text.

But yeah, we are definitely challenging normal curatorial practice. At the moment, I think it is a

nice experiment. We are still working on it. You can look at our texts – this is our third exhibition – and it *has* changed. And I'm sure it will continue to change, because we are just seeing and trying out – which is really refreshing, because we don't really have any precedents, such as other museums – we go with what works, or what works for *us*.

LC: Going a bit back, where did this idea of using the algorithm come from? What were the issues that influenced this decision?

AJK: From what I know, it was really just frustration with how digital arts, coding and programing were being exhibited and how it was being part of group shows, and not really going to the heart of “the code” or “programing”, “this is not just a digital piece”. I think even MuDA came out of a frustration first, and wanting to fill a need for this genre in a radical and new way. This combined with also a frustration with, nowadays, how museums function, about how artists are chosen....Let's be honest – and I've worked at other museums as well – a lot of artists are chosen based on their career at a certain point – on how many biennales they have been in, what galleries are representing them – who is collecting them – it takes a lot different physical and mental algorithms on how museums choose their artists. And it is not always fair, let's say. And I think they [Caroline Hirt and Christian Etter] wanted to really shake that up – let's really not care if they been shown everywhere... let's really look at the work, and look at what they are doing now and how important that is to the medium.

LC: And MuDA has both a physical and a virtual museum. How do you establish the relationship between these two spheres?

AJK: At the moment – and we are still developing this – we have a physical space, which is an entry point, and then there is our website and our apps that are our exhibition catalogues that you can experiment in a really digital way, by getting into the brain of the artists. So that is one big part. And the other part is us having a digital collection, sharing other digital works, sharing our talks, events, programs and different dialogues that we are creating in the museum digitally. In that way, having both a physical and virtual space for sharing.

LC: MuDA's strategies are aligned with today's practice in regard to the use of algorithm and coding in the arts. So what are your views of this emerging field? What should artists and institutions envision for the near future?

AJK: Obviously the digital is a big conversation right now with museums. But for us the

conversation is different, because a lot of these museums are looking at how to embrace the digital, how to archive, how to share, how to use VR to experience art. We are not really looking at that, we *are already digital*. We are living in that realm. So for us, the conversations are really different. But I do think that what we want to start having is conversations with these other institutions, because other institutions don't seem to understand how it is to experience the digital when it comes to the arts....I went to a conference where we had a VR experience of a museum in Amsterdam. And for me, knowing both worlds, it was done really not to its full potential. I mean it was great in the sense that I could be in that space, yet I couldn't engage with the paintings, I couldn't even see the texture or form...I couldn't really think about the medium and about utilising VR.

Seeing the possibility of both, I would use VR to do something interactive, to bring the artwork more to *life* or to engage in way that using VR makes possible. Not just related to being in that physical space. So I think there should be conversations and crossovers with those who are already working in the digital and with those looking at how to go there or how to merge their already existing collections in that realm. Because we really need to think about the possibilities and to how to do the artworks justice. And, I'm sorry, but a painting or a sculpture virtually is very different from when you are there in front of it...I saw a guy that made a game that you can get into a Kandinsky painting, so his painting was deconstructed and you can see the different lines and shapes...and really engage. And I think that is an exciting way to take an already existing work and use the digital to expand on it.

So I think it is wonderful that institutions are looking at this direction, yet there needs to be more collaborative thought with people who know the possibilities and what can be expanded using both mediums. For us, we are already in it and we will continue doing our thing...We are just not looking at the same things as they are looking at.... Well, making the app as a catalogue, that is how we are thinking in the same way that they are. But again, we didn't just make an app where you would read it as you would read a book. The catalogue is coming to life. The artworks from the last exhibition are coming to life – you click on and then you get a text or a video...so again, using the digital medium, but taking it a step further. And not just looking at archiving through the digital. But thinking on how to use it in a really exciting way... But if their capability is to get the artworks online, that is a great first step.

A good example for you would be the work of a student I am mentoring, and she is very interested in this vaporwave art, which is really online art, and on how to bring it to the physical, besides just having screens. And we were coming up with some great ideas. And again, this is all new territory.

How do we use more than just a screen or a projector and exhibit this online experience? She was thinking, which I loved the idea, of not only how to curate this online museum with online art. And so, thinking of creative ideas, we thought if you could kind of enter one artwork that is a video and then through it you are able to click on different aspects of the video, go into the video and get to another artwork.... But then there is this line between being a curator and also altering the work a bit... Now we are able to go inside the work – I mean, this is a very different thing.... And you have to get the artists involved and seeing how they feel about that.

Another idea she had to bring the artwork into the physical space was to recreate a room exactly like the one in the video. So you have all the online elements of this one work and, in a physical way, you are coming inside the work. But then again, that is almost like being a collaborator in a sense, taking this online work and making it physical. So I think the role of the curator and of the digital artist has to be more of a collaborative, open platform. And it is really depending on if they want it to just stay in this one format or are they open to other ideas. And how best can the curator give justice to exhibiting the work from online using your personal computer in your personal space to a museum. That is the big question. Us, experiencing it online, is very different from coming to an institution and experiencing it on a screen or on a projector...I mean, this is where it is an issue/possibility.

So, everyone has to be really open to this conversation....As a curator and as an artist there are decisions that have to be made, thinking about the public and thinking about the ethos of your work.

Again, that idea of this genre being very living is the most captivating thing, because...I don't know if these artists will ever say “it's finish!” and leave it at that. That is really different for art now in general... And also technology has changed, because think about a work from the 1980's, and now it doesn't even work anymore. Now you have to build an old system so that the artwork works. So artists are thinking about that now...so they are always updating, which then changes the work. Or do we just accept this genre as alive?