THE POLITICIZATION OF ART ON THE INTERNET :

From net.art to Post-Internet Art

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Resumo

Este estudo tem como objetivo apresentar uma breve perspetiva sobre as manifestações socioculturais que se propagaram a partir do surgimento da Web; tendo como principal foco de análise o desenvolvimento da produção de arte para Internet na Europa e na América do Norte ao longo dos útimos 30 anos.

Estruturado em torno de estudos de caso, três conceitos-chave fundamentam a base desta pesquisa: uma breve história da Internet, o desenvolvimento do termo *hacker* e a produção de Internet Art: da net.art até a Post-Internet Art. Em abordagem cronológica, estes campos serão descritos e posteriormente utilizados como guias para um final encadeamento comparativo que visa sustentar a hipótese de uma gradual dissolução do ciberespaço utópico até o distópico cenário que constitui a Internet dos dias atuais.

Abstract

This study aims to present a brief perspective of the sociocultural manifestations that emerged after the Web, focusing on the development of Internet Art and the countercultural movements that emerged inside Europe and North America over the last 30 years.

Under a case study structure, three fundamental subjects will be firstly explained: Internet's history, the development of the concept of the hacker and the Web-based Art transformations: from net.art to Post-Internet Art. Chronologically described, these fields will lead to a final comparison of chained events that aim to sustain the hypothesis of the gradual dissolution of the early cyberspace utopias till the dystopic scene existent in nowadays Internet.

Acknowledgements

Table of Contents

Symbols and Abbreviations

AI	Artificial Inteligence
ARPA	Advanced Research Projects
ACM	Association for Computer Machinery
BBN	Bolt Beranek and Newman
BBS	Bulletin Board Systems
CAE	Critical Art Ensemble
CAN	Campus Area Network
CCC	Computer Chaos Club
cDc	Cult of the Dead Cow
CM	Community Memory
CSS	Content Scrambling System
DARPA	Defense Advanced Research Projects
DEC	Digital Equipment Corporation
DISA	Defense Information Systems Agency
DIY	Do It Yourself
DMCA	Digital Millennium Copyright Act
DN	Domain Name
DNS	Domain Name System
DoS	Denial of Service
EAT	Experiments in Art and Technology
EDT	The Electronic Disturbance Theater
ECD	Electronic Civil Disobedience
FOMO	Fear of Missing Out
FTP	File Transfer Protocols
GPL	General Pubblic License
GUI	Graphical User Interface
HAN	Home Area Network
HBCC	Home Brew Computer Club
HOPE	Hackers on Planet Earth
HTML	HyperText Markup Language
HTTP	Hypertext Transfer Protocol
IAHC	International Ad Hoc Committee
IANA	Internet Assigned Numbers Authority
ICAN	Internet. Corporation for Assigned Names and Numbers

ICCC	International Conference on Computer Communications
INWG	International Networking Working Group
IMP	Interface Message Processor
IP	Internet Protocol
IPTO	Information Processing Techniques Office
IOS	International Organization for Standardization
IT	Information Technology
ITS	Incompatible Time-sharing System
LAN	Local Area Network
LOD	Legion of Doom
MAN	Metropolitan area Network
MCA	Mainstream Contemporary Art
MOD	Masters of Deception
MPAA	Motion Picture Association of America
NCSA	National Center for Supercomputing Applications
Net	Internet
NMD	New Media Art
NWG	Network Working Group
NCP	Network Control Protocol
NSF	National Science Foundation
NSI	Network Solutions Inc.
OSI	Open Systems Interconnection
P2P	Peer-to-Peer
PARC	Palo Alto Research Center
RFC	Request For Comments
RIAA	Recording Industry Association of America
RSS	Really Simple Syndication
SAIC	Science Applications International Corporation
SDC	Students for a Democratic Society
SNAD	Simple Net Art Diagram
SRI	Stanford Research Institute
TCP	Transmission Control Protocol
TDL	Top Domain Level
TMRC	Tech Model Railroad Club
UCLA	University of California Los Angeles
UCSB	University of California Santa Barbara
UK	United Kingdom
URL	Uniform Resource Locator
US	United States

WWW   World Wide Web

W3C   World Wide Web Consortium

WAIS   Wide Area Information Server

WAN   Wide Area Network

1. Introduction

The Internet came as a turning point in the digital revolution. However, society only began to see its extensive impact with the revolutionary invention of the World Wide Web. The Web was officially born in the early 1990s, bringing technological improvement, new policies, and a particular cyberspace[1] utopia to mass society.

The art field also took this novel environment as a medium for experimentation. During the 1990s, artists reflected on the public transformations that have grown along and inside the Web; culture would discuss topics like social dissimilarities, identity issues, and ideals of free information. The early Web seemed to be a libertarian space where everyone could access and share knowledge without barriers.

Being born under those premises, Net Art used the online space as its genuine medium; some artists who joined this web-based art movement had developed a singular form of production, one exclusively made in and for the Web. Net.art, for instance, had characterized a moment in time where artists were driven by a desire to destroy its ties with galleries, having the unique commitment to be true to its belonging space (Internet) and itself.

Being an independent art form, Net Art aimed to achieve a more democratic cultural access; however, this ideal was paradoxically dissolved when the Web became mass used. As civils joined the Internet, corporations started to crave online field ownership, seeing it as an unexplored potential land for capitalist interests. The commercial Web phase, in the mid-1990s, conducted a boom of stores and bias marketing technics to engage online consumerism; content started to be filtered accordingly with financial interest, provoking a political reaction for the side of ideological communities. Battles for power and Internet dominance had already been on some Hacker and countercultural tech communities agenda many years earlier, but Internet's hidden side would be now publicly exposed, being portrayed by some activist-net artists who willed to work in favor of civil awareness.

In the 2000s, the Internet was already an established place (or market) dominated by a few enterprises; besides the previous 'free information' slogan, discussions about surveillance,

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1   'Cyberspace' is a term that appears for the first time in the 1960s, even before the Internet's invention. Here it is used a metaphor for network interconnections. As the Oxford dictionary definition of it: The notional environment in which communication over computer networks occurs.

data stealing, and Web security took place, revealing the upcoming issues of an already connected society. The online space would be naturalized and discussed instead of a been a dreamland.

Nowadays, some theories suggest that we live in the Post-Internet Age, a time where the frontiers of online and offline life have been bundled. The cyberspace – cyberpunk's dreamland - is over, and a dystopic scenario that portrays misleading information, data steals, and surveillance took its place.

In short, this research will approach the transformations that occurred in the last 30 years. Having the Internet world as a primal scenario, we want to list and discuss the prominent acts of ideologists and Internet artists. In a timeline that starts with ARPANET's creation until the more recent Post-Internet scenario, this study aims to trace the political paradigms brought with the Internet growth, using Internet Art productions to portray and comprehend the ever-changing utopias and dystopias of the online world.

1.1 Context / Background / Motivation

Most fields of study tend to look at information based only on its own viewpoints and internal theories; however, research becomes richer when trespassed by plural knowledge. In the Internet Art case, it would make no sense to develop an investigation strictly confined to art-based assumptions; these art form motifs can be better traced under the Web structure. Some of its branches even had passionately embraced the aim to be free from traditional art institutions; not by chance, those artists were often excluded from Art History (Greene 2004).

Combining multidisciplinary questions, Internet-based Art has been long marginalized; the complex traces of its grounds and the ephemeral nature of many artworks guided to vanished data and temporal gaps that intervened in the improvement of this field of study. Whereas during the Internet Boom (1995-1999), many scholars had become interested in this subject, it was not until the late-2000s that this discussion gained voice again. Dieter Daniels and Gunther Reisinger had endured this affirmation; they believe that the lack of interest in tracing early Net Art relates to the fact that it did not become a canon inside the contemporary art field nor part of Networks history.

Early Net-based art (…) is significant mostly from the viewpoint of the history of ideas. For the most part, the figures and artworks of the time have been eclipsed. Current public awareness does not extend to the "Net pioneers" themselves, who entered neither the narrative of an emerging network society nor the canon of art history. Not just fame is at stake here, but also the material (and digital) evidence of one of the most exciting artistic phenomena of the final decade of the twentieth century. (Daniels and Reisinger 2009, 6)

Nowadays, we have tons of publications aiming to retrace Internet Art history; however, some studies tend to comprehend Web-based art as an isolated moment in time; and this is one between many assumptions that we aim to sustain as a historical misleading. Therefore, the motivation to review and expand this subject was driven by a personal curiosity about how the pioneer online politics and cultural procedures are reflected in our current context. Avant-garde art forms, like net.art, seemed to go back and forward in society; net.art, for instance, was influenced by previous tech-countercultural movements (Daniels and Reisinger 2009) and had echoed in the presumed nihilism of the Post-Internet Art scene (Quaranta).

As pointed by Daniels and Reisinger, Net Art was built under an unstable ground; and we believe that the motifs that guided those productions over the years have changed accordingly with the Web structure and policies. Due to the transient nature of the online space, Internet Art also has a changeable structure. Domenico Quaranta (2010) pointed to Internet Art as an expression of the netizens, as to say, an art developed by people engaged in the social prospects of the Net; so, it is vital to trace the place and the habitants of this space as well as its transformation.

Compiling this research inside an engineering institution was a choice precisely due to this necessity to comprehend the computational field's aspects in deep. Regarded by technical knowledge, this analysis aims to mixture poetic assumptions and a concrete historical spine where to sustain the social impacts that technological transformations have brought.

Under a transdisciplinary method, it is assumed that understanding the policies behind the Internet's development can be more relevant than only recur to art theories. The differences and similarities between the two fields - art and Computer Engineering - can lead to more reliable answers about the overall impact of political acts that merge both grounds; in this case, our key to chain those elements will be the hacker mottos.

Some assumed relevance of this research can be listed as the following:

- The strict connection between the fields of Web development and Net Art,
- Lack of technical revision in Net Art studies,
- Lack of material dealing with hacktivist Net Art topic,
- The importance of reviewing Internet-based art linked with today's online scene.

1.2 Methodology

Under qualitative manners, a case of study methodology was used to understand and describe the phenomenon of Internet Art in its complex form. The analyzed events refer to the Internet Art productions developed over the last twenty years, comprising a timeline that goes from the net.art expressions until the Post-Internet Art. We understand that Net-based art labels

have changed over the years but can still be approached as unique case due to their spine based on a strict relationship with the Internet medium.

Case studies are a method of inquiry found in many fields, in which the researcher develops an in-depth analysis of a case, often a program, event, activity, process, or one or more individuals. Cases are bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period (Stake, 1995; Yin, 2009, 2012)

The case of study method is coherent because our object comprehends an ongoing type of art practice that can be better understood by mapping the deeper characteristics of the context where it occurs, in this case, the Internet background and the external influences of the hacker ideologies.

Due to the extension of this research problem, rather than doing a deep analysis of one case, we decided to provide a general overview to point to decisive events and names that had influenced three primary topics: the Internet, Hackers, and Internet Art.

Due to the extension of the temporal line covered, the choice of compelling a case study analysis in a data-gattered instead of in a deep analysis was necessary, as well as other strains that were here applied to guarantee a better appreciation. The subjects used to constrain artists and artworks that were chosen to be analyzed can be listed under the following:

- The object must deal with the Internet context by its structure or ideological motif;
- Artworks that have a political and/or countercultural poetic, act, development;
- Coherence with the Internet tools that arrived or are being developed in a specific moment in time;
- Artists, events, and pieces that relate, mainly, in the geographical context of North America and Europe;
- Objects that are significant in exposing the chronological transformations that occurred under the web context properly.

Driven by the hypothesis that the development of Net Art forms was aligned with Internet politics, it was necessary to use a methodology based on extensive bibliographical revision. The past consulted theories remount the history of three key topics: Internet Art forms, Internet history, and Hacker ideologies. Those motifs pointed to the development of how this study data was collected.

1. Primary Information Collection: non-directional data gathering based on interviews with a previously selected net.art representatives;
2. Secondary Information Collection: based on pre-existing data (bibliography, catalogs, artworks documentation, and videos)

3. Evidential Data: mailing lists archives, old newspaper reports, and artworks online reconstructions were consulted to trace the reliability of some historiographical events.

The methods used in those three instances were developed in different manners. To Primary data (1), the Interview method was used; five exponents of the Net Art scene were inquired using mixed tools; pre-structured e-mail questions, video calls, and telephone conversations were made. The Secondary data (2); relied on a vast bibliography; opposing points of view were relevant in choosing that material. Finally, the Evidential data (3) was conducted as archival research; Internet Art history can be traced inside online archives developed to preserve some of its older memories and art pieces; the data was gathered mainly under platforms like Rhizome's Net Art Anthology, Nettime archive and Internet archive.

Before analyzing the data, we made some procedures to filter the collected content: (1) the interviews were stored in video, audio records, and textual media; due to the extension of this documentation, the interviews were not fully transcribed. Therefore, the gathered information was signalized in notes or quote fragments inside this textual research corpus.

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After collecting, analyzing, and filtering data, the composition of this study was structured in a historical, descriptive manner, listing all the topics that influenced Internet Art and the spread of this art form over the years. Events, ideologies, social contexts, and technical structures will be chained to support - in a comparative manner - the hypothesis that the early Web-based art was driven under utopic motifs and that a social awareness about the powerful instances that command the Internet was led by artists and hackers who depicted the today's dystopic context.

1.3 Structure Notes

The following chapters chronologically portray the aforementioned central topics: the Internet, the Hacker scene, and Internet Art. We will historically review them under a secondary organizational structure that points toward three highlighted moments in time:

- The 1990s: Web and NNetArt emergence
- The 200s: Here called transitional time, as referring to a bridge between Net Art and the Internet's social accomplishment of the Post-Internet
- The 2010s: Post-Internet stabilisement, naming the expansion of network technologies and cultures far beyond the online sphere.

Also, understanding that most parts of the mentioned artworks and events refer to online-based experiences, we have decided to suppress image usage in favor of a text optimized for online reading. Illustrative images were here substituted by the inclusion of external embedded links, a choice made in concordance with the theorist Rachel Green, who understand the depiction of online-based artworks better defined by "(...) links, e-mails, and exchanges than by any "optical" aesthetic. Whatever images of net.art projects (...) out of their networked, social habitats, they are the net.art equivalents of animals in zoos." (Greene 2000)

2. Internet

The Web and the Internet are often referred to as synonyms, but that was largely inaccurate; being the main background for this research, it is also essential to address the policies and protocols that have built the online field since its first years. The following scheme portrays a resume of terms that could eventually be addressed in this.

1) <u>Network:</u> Controlled by one entity that can connect computers. It is used to exchange data between a certain discrete number of users. (Types: Local Area Network: LAN, Wide Area Network: WAN, Campus Area Network: CAN, Home Area Network: HAN and Metropolitan area Network: MAN)

2) <u>ARPANET:</u> Considered the technology that has built the Internet basis. ARPANET could connect remote computers; transferring files, accessing e-mail, and exchanging information between long-distance networks was made possible with ARPANET.

3) <u>Internet:</u> Connects networks worldwide, has no unique entity controlling the system and can attach billions of computers.

4) <u>Web:</u> Standardized system for accessing and navigating the Internet. Thought, it is not the only one; e-mail and mobile apps, for instance, do not need the Web to access the Internet. It was constructed under the Hypertext Markup Language (HTML), which is 'the web language,' and the system that standardized this language, the 'grammar,' is known as Hypertext Transfer Protocol: (HTTP). Under the Web, we can distinguish three different stages[2]:

> **Web 1.0:** 1991-2004 (approx.): It refers to the first steps of the Web, where its structure was more static and less interactive.
>
> **Web 2.0:** 2004-2010 (approx.): The term was coined by DiNucci in 1999 but only became popular by Tim O'Reilly mention in 2004. Also known as *Social* or *Participatory Web*, and refers to a more interactive stage when social media platforms spread inside the Web.
>
> **Web 3.0:** 2010-2020 (approx.): Proposed by the *Times* journalist John Markoff in 2006, also known as *Semantic Web*. It denotes a more structured Webspace, less occupied with its user and more aware of its internal system bases. It marks a 'dissolution of borders' between offline life and webspace instances. It is supported by mobile and personal Web.

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[2]   Those classifications rely on subjective theories; between the mentioned stages, some authors sustained that a Web 2.5 (Mobile Web) must also be included. A prospect on Web 5.0 standards is already being developed; it will be expected to be referred as *Telepathic Web* or *Symbionet Web* phase.

Web 4.0: 2020 - 2030*: It is also called *Intelligent Web*, trespassing the web structure to apply the knowledge shared between data items.

The structure of the Internet and the Web's first years will be illustrated from a historiographical and ideological perspective in the following pages. As an extensive topic, the next highlighted points were chosen by their importance in the development of early Internet Art forms and hacktivist organizations.

2.1 'Lo' as in 'Lo and Behold' – The History of ARPANET and Internet

In the Beginning, ARPA created the ARPANET.
And the ARPANET was without form and void.
And darkness was upon the deep.
And the spirit of ARPA moved upon the face of the Network
and ARPA said, 'Let there be a protocol,' and there was a
protocol. And ARPA saw that it was good.
And ARPA said, 'Let there be more protocols,' and it was so.
And ARPA saw that it was good.
And ARPA said, 'Let there be more networks,' and it was so.

- Danny Cohen

In 1958, President Dwight D. Eisenhower created the Advanced Research Projects Agency (ARPA), a collaborative research center built to ensure the United States' defense and technology front during the Cold War. It was from ARPA - later called the Defense Advanced Research Projects Agency (DARPA) - that the Internet was born.

While officially devoted to improving military command-control systems, ARPA's enthusiastic scientists would also bring a more empirical view for networks and computer technologies, revealing a recurring bond between military demand and scientific idealism that would be recurrent in Internet's development. The initial formulation of a global network idea, for example, was brought to ARPA under the beliefs of one particular scientist: Joseph Carl Robnett Licklider.

In a 1963 memo, Licklider - named the first director of ARPA's Office of Information Processing Techniques (IPTO) - jokingly called his colleagues *Members and Affiliates of the Intergalactic Computer Network*; a pun that would become a symbol of his ideas. Licklider intended to expand the local perspectives of networks to a galactic one, seeing the technological future under the promise of a radical symbiosis between humans and computers intelligence.

Licklider was far more than just a computer enthusiast, however. For several years, he had been touting a radical and visionary notion: that computers weren't just adding

machines. Computers had the potential to act as extensions of the whole human being, as tools that could amplify the range of human intelligence and expand the reach of our analytical powers. (Hafner and Lyon 1998, 44)

With a background in psychology, an unusual formation for a computer scientist, Licklider brought a more humanistic approach for ARPA; his ideas would heavily inspire some of the following IPTO directors. Under Licklider's tenure, from 1962 until 1964, significant bases as the development of Computer Science departments at major Universities, time-sharing tools implementation, and the already mentioned discussion of an expanded network - an *Intergalactic Computer Network* - were established. During the 1960s, ARPA became one of the most important centers for the development of US Computer Science studies; it is estimated that ARPA has sponsored more than 70 percent of US-related researches during the mentioned decade (Jones 2003), and Licklider was on the head of that.

Even leaving IPTO before ARPANET started, the concepts sketched by Licklider remained. Bob Taylor[3], who previously worked for NASA, would become IPTO head office in 1966; highly influenced by Licklider's ideas, Taylor would be responsible for advancing the ARPANET investigation. ARPA had decreased their academic research funds at that time, while Taylor had successfully pushed Charles Herzfeld - ARPA's current director - to invest funds in the project. With a persuasive discourse, he has alleged that research centers were demanding too many computers, mainly due to systems incompatibilities; as those were neither cheap nor small machines, why not connect them instead of buying new ones?

A plan for the network was first made available publicity in October 1967, at an Association for Computer Machinery (ACM) symposium in Gatlinburg, Tennessee. There, plans were announced for built a computer network that would link 16 ARPA-sponsored universities and research centers across the United States. In the summer of 1968, the Defense Department put out a call for competitive bids to build the network, and in January 1969, Bolt Beranek and Newman (BBN) of Cambridge, Mass., won the $1 million contract. **(**Jones 2003, 12)

The first integrated computer network would then start to be developed, with the goal to implement a homogeneous system capable of linking ARPA's related networks. Using the innovative potential of packet-switching technology[4] and combined efforts of names like Larry Robert[5], Donald Davies, and Leonard Kleinrock, in October of 1969, ARPANET would achieve its first host-to-host connection. A team of students from the University of California Los Angeles

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3   Robert William Taylor
4   The package switching concept was explored by Paul Baran at the RAND Corporation in the early 1960s and by Donald Davies at the National Physical Laboratory (NPL) in 1965. This technology consists in the idea of transmitting data by breaking it down as "packages" between a source and destination node over a network channel
5   Lawrence G. Roberts was hired as the manager of ARPA's network project.

(UCLA), headed by Kleinrock, established a remote connection with the Stanford Research Institute (SRI). To log into a computer in SRI, the student Charley Kline must send - letter by letter - the command 'LOG'; while two members of the named institutes stay talking by telephone to assure that the message would be correctly received.

> So we typed the "l," and we asked over the phone, "Did you get the 'l?'" And the response came back, "Yep, we got the 'l.' "We typed the "o." "Got the 'o?'" "'Yep, got the 'o.'" Typed the 'g.' "You get the 'g?'" Crash! SRI's host crashed at that point. So the very first message ever on the Internet was the very simple, very prophetic "lo," as in lo and behold. (Kleinrock, 2009)

After the crash, which was immortalized by Kleinrock's declaration, later attempts done on the same day ended in flawless success, and the two centers were finally linked. In a 2009 UCLA video footage, Kleinrock shows the only written proof of this historical moment: a simple two-lined note, where we can read "Talk to SRI / Host to Host." Despite its early limitations - that only allowed three tasks: remote login, a remote command to printers, and file exchange - many Universities were anxious to become a part of ARPANET. One month after UCLA and SRI network connection, the University of California Santa Barbara (UCSB) received IMP[6] number three; by the end of the same year, the University of Utah School of Computing would also receive one IMP. In December of 1969, ARPANET was officially launched, attaching four entities nodes.

Nevertheless, to optimize ARPANET features, people working on the linked centers must achieve consensual measures about the system's new features and crashes; the solution came when Steve Crocker established a documentation standard named Request for Comments (RFC)[7]. Crocker was a young student at that time and had meaningful participation under Internet's initial features; he became the header of an associated team of students, called Network Working Group (NWG), that stayed in charge of ARPANET's protocols establishment. In 1970, NWG members wrote the first host-to-host one, the Network Control Protocol (NCP), a precursor of the still nowadays used Transmission Control Protocol (TCP).

> After another year of meetings and several dozen RFCs, in the summer of 1970 the group (NWG) reemerged with a preliminary version of a protocol for basic, unadorned host-to-host communications. When the "glitch-cleaning committee" finished its work a year

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6   IMP stands for Interface Message Processor, the gateways first generation that nowadays are known as routers.

7   Steve Crocker had idealized RFC documentation before the first ARPANET test. He had noticed that some network programmers had been struggling with individual problems and unshared ideas; RFC was then thoughted of as a way to organize notes between the ARPANET's researchers. " *I genuinely thought that by the time the network got built in the fall, there would be some formal documentation and that these notes would just become obsolete and be thrown away. But they stuck. And this became the primary mode of documentation. And it persists today, although it has gone through some transformation.*" (Croker 2012)

later, the NWG at last produced a complete protocol. It was called the Network Control Protocol, or NCP. (Hafner and Lyon 1998, 319)

The RFCs and advancing protocols implementations were chief methods for implementing a more robust and responsible network. Quickly growing under the enthusiasm of its developers, in December of 1971, ARPANET was already linking 23 hosted computers. With a growing number of services and applications, ARPANET - which now had Larry Robert as its header - left ARPA's labs to be publicly presented at the International Conference on Computer Communications (ICCC). The release has caused great enthusiasm among the scientific community.

It inspired others to follow the example set by Larry Roberts' Network. International nodes located in England and Norway were added in 1973; and in the following years, others packet-switching networks, independent from ARPANET, appeared worldwide. This passage from a relatively small experimental network to one (in principle) encompassing the whole world confronted the ARPANET's designers with a new challenge: how to make different networks that used different technologies and approaches, able to communicate with each other? (Navarria, 2016)

ARPANET's success has moved the implementation of other networks systems worldwide. Cyclades, for instance, was a European network built by Louis Pouzin in the same period; the French experiment also used a packet-switching technology but, differing from ARPANET, it had the ambition to facilitate internetworking[8] since its beginning. Cyclades started with fewer nodes and scarce financial support, becoming a model for further ARPANET improvements. In 1972, after the ICCC presentation, people responsible for different networks worldwide decided to build a group for international collaboration under networks standards and protocols. Based on the model of ARPA'S NWG, a more decentralized organization was idealized: the International Networking Working Group (INWG), revealing an initial dialogue between US and European Net developers and the increase of private initiatives interest in this technology.

Larry Roberts was enthusiastic about INWG because he wanted to extend the reach of the ARPANET beyond the DARPA-funded world. The British and the French were equally excited about expanding the reach of their national research networks as well. "Developing network-interconnection technology was a way to realize that," said

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[8] Internetworking is the practice of connecting a large number of computers to form a larger network. In the case of Cyclades, Pouzin had the goal to achieve a bigger international network architecture, differing from ARPANET, which emerged under local aims.

McKenzie[9]. The INWG began pursuing what they called a "Concatenated Network," or CATENET for short, a transparent interconnection of networks of disparate technologies and speeds." (Hafner and Lyon 1998, 448)

Networks technologies, which started as a military commissioned communication tool, caught the academic enthusiasm and soon the private business interests. During the 1970s, protests and countercultural movements spread among the US, manifesting anti-war causes and anti-ARPA projects. Independent networks and civil response against ARPA center helped in the gradual fragmentation of network developers' interests. In 1973, Larry Roberts left ARPA (already renamed DARPA) to join a private enterprise inside Telenet[10]. ARPANET was soon transferred to the Defense Department Communications Agency, and the volume of independent networks exponentially grew; between those, CSNET (Computer Science Research Network), CDNET (Canadian Network), BITNET (Because It is Time Network), and NFSNET (National Science Foundation Network). NFSNET would eventually replace ARPANET's importance, becoming the current Internet backbone (Jones 2003).

Under the DARPA instance, smaller nets were working along ARPANET; the radio-based PRNET and the satellite SATNET used distinctive interfaces, standards, and transition rates, making their interconnection difficult. To solve the compatibility problems and build a new standard protocol for ARPNET became Vinton Cerf and Bob Kahn's principal occupation; after attempts and struggles, they would settle the Transmission Control Protocol/Internet Protocol (TCP/IP).

Later, TCP/IP would become the ruling Internet protocol; however, at the time of its implementation, the International Organization for Standardization (IOS) was also working on another method to solve the networks compatibility issue, creating an alternative solution named Open Systems Interconnection Model (OSI). The computational community became divided in a dispute that, between the 1980s and early 1990s, was called the Internet–OSI Standards War, a battle between the Internet (TCP/IP) and the OSI implementation at large.

There was a certain attitude among certain parts of the OSI community whose message was, 'Time to roll up your toy academic network,' recalled one ardent TCP/IP devotee. "They thought TCP/IP and Internet were just that—an academic toy." (Hafner and Lyon 1998, 500)

In 1983, the transition from NCP to TCP/IP was fully applied in ARPANET. In the same year, due to aggregated nodes and fast network expansion, security concerns were a significant worry for the US government; the Department of Defense decided then to split the network into

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9   Refers to Alexander McKenzie, who represented Beranek and Newman (BBN) at INWG.
10   Telenet was an American commercial packet-switched network.

two instances: the already called ARPANET became civil, while another branch, called MILNET, turned into an independent one exclusively dedicated to military purposes.

In the 1980s, personal home computers were becoming popular; as their usage advanced, the network technology also started to spread, enhancing other fields like the corporative one; with the improvement, more set of conventions needed to be applied. A fundamental one arose when Paul Mockapetris received a task from Jon Postel to improve the addresses and names at ARPANET instances. Mockapetris built the Domain Name Services (DNS) to translate Internet names into the IP numbers needed to transmit information across the network; it worked as a hierarchically organized naming system structure and became an essential feature to facilitate later Internet usage.

> DARPA began pressuring people to adopt DNS addresses in 1985. In January 1986, a grand summit meeting took place on the West Coast, bringing together representatives of all the major networks. By the time the summit was over, everyone had agreed that yes, they really believed in the DNS concept. "And yes, here was how we were going to make it work," Partridge recalled, "And yes, we have the technology to make it all fly." (Hafner and Lyon 1998, 515)

Vinton Cerf declared that "The history of the Net is the history of protocols" (cited in Jones 2003, 14); those are rules that have settled the core policies of networks and that had widely been controlled by the US defense forces. However, by the mid-end of the 1980s, ARPANET's fragmentation leads to a gradual loss of this network's central importance. The National Science Foundation (NSF) would coordinate the launch of NSFNET, a network devoted to academic services that had, since its idealization, the aim of an expanded service. NSFNET, during its initial days, has adopted the TCP/IP protocol to collaborate with ARPANET, soon trespassing ARPANET collaboration to become the central Internet backbone in the late 1980s.

ARPANET project discontinuity became official in 1990, highlighting the beginning of a new decade when the Internet would become closer to the civil instance. One year earlier, Tim Berners-Lee would appear.

2.2 The Web

In the 1960s, network systems were conceived to maintain safe military communications. However, the development of this technology took other paths inside academic and private fields, which helped improve the Internet per se. Telecommunication turned out to be a promise for the computational community ideologies and an incoming potential for the liberal market aims; the Web invention pushed both sides to an extended debate and inserted average people in the middle

of a previously bubbled ground. Until the 1990s, those who had factual knowledge about code languages and network technologies composed the users of the Internet; with the Web, the Internet would achieve a much more extensive range of users and functions.

Web's project began at CERN[11], while Tim Berners-Lee worked on an organizing system to enhance local information exchange. In 1980, he wrote a software called Enquire, built to map and link data among CERN people; it was developed as a simple hypertext program under a modern wiki structure alike. While Enquire had marked the first practical step of the World Wide Web invention(Ryan 105, 2010), hyperlink and hypertext were not new concepts. Pioneer notions that inspired[12] Berners-Lee's remount to Vannevar Bush's Memex (1945) and Ted Nelson's Xanadu system (1960).

> He (Ted Nelson) had the dream of a Utopian society in which all information could be shared among people who communicated as equals. He struggled for years to find funding for his project, but success eluded him. (Berners-Lee 1999, 5)

Bush and Nelson's thoughts never gained proper applicability besides in the theoretical field, just as Enquire also somehow failed in its connective goals; people at CERN worked with different computational systems, and the program could not respond to each of them appropriately. In the late 1980s, Berners-Lee was still pursuing a completer structure to distribute and organize informational content in a non-centralized way; when his goal switched from a local perspective "toward a universal linked information system." (Berners-Lee, 1989). He imagined a large hypertext bank able to comport shared linked data, an integrated system that could facilitate information spread.

> HyperText is a way to link and access information of various kinds as a web of nodes in which the user can browse at will. (Berners-Lee and Cailliau 1990)

Departing from Enquire's structure, Berners-Lee wrote Web's first draft in a document called *Information Management: A Proposal*, which was created to convince CERN organization that a global hypertext system would be helpful for the center. However, the response was not very enthusiastic; Mike Sendall - Berners-Lee's boss at that time - considered it "Vague, but exciting." Besides the initial refusal, Berners-Lee, already considered a prestigious programmer inside CERN, understood that it was just a matter of refining the idea. Joining forces with his

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11   Stands for the French *Conseil Européen pour la Recherche Nucléaire.* CERN is the European Organization for Nuclear Research and the world's largest particle physics laboratory.

12   Robert Cailliau noticed "When he went to CERN in 1980, Tim Berners-Lee had never heard of the pioneers of hypertext, but he knew that computers could be used to make up the shortcomings of his brain."(Gillies and Cailliau 2000, 171)". Nevertheless Ted Nelson was the main reference in the first Web draft.

CERN colleague Robert Cailliau, a second document - entitled *WorldWideWeb: Proposal for a HyperText Project* - was created and approved.

The *WorldWideWeb's* initial goal was to facilitate informational exchange among research centers and academic fields, joining hypertext and network technologies. During its development, three primary functions - that remain central until nowadays - were implemented: The HyperText Markup Language (HTML), the Uniform Resource Identifier (URI), and the Hypertext Transfer Protocol (HTTP). HTTP is the communication protocol responsible for data interchange between browsers and servers; HTML stands for a conveyed language[13] for hypertext exchange, and the URI is responsible for identifying and locating information along with the Internet.

> The idea was that the sharable information would be held on a remote computer, which Berners-Lee called the server. It would be available and accessible to a global audience across the Internet. Other computers within the network would run a different sort of application; these would be known as browsers and could request information from the server. (Wishart and Bochsler 2003, 25)

By the end of 1990, the opening Web server was already running into a CERN computer, and internal users could visualize webpages in the first browser (a textual one) called *WorldWideWeb*. Berners-Lee already knew that the invention could work globally; yet, some features had to be matured. One of the problems was that the WWW was conceived using a NeXT computer; NeXT was a cutting-edge system for that time but had a reduced number of users and consequently compatibility issues. The other obstacle was that CERN did not seem to put much effort into Berners-Lee's idea; he and Cailliau could work full-time on the Web project, but they were not receiving enough financial support to achieve their ambitious goals. To effectively spread the Web, they had to look for collaborators outside CERN, and the easiest way was to start on the Internet itself. The WWW software was then promoted in newsgroups, primarily within online communities developed by hypertext enthusiasts[14].

> For several months it was mainly the hypertext community that was picking up the Web, and the NeXT community because they were interested in software that worked on the platform. (Berners-Lee 1999, 47)

With the support of the Internet community, the next step would be to work on the system compatibility issues. Berners-Lee wrote the NeXT code in objective C language; as expected,

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13   HTML is not a programming language; but is often named as a descriptive language.
14   The first Web announcement was published on 6 August 1991 at *alt.hypertext*, a newsgroup devoted to hypertext issues. Inside the group, Berners-Lee described the project along with instructions for *WWW* software obtaining.

objective-C compilers were rare and would not achieve the desired spread. With the help of CERN student Jean-François Groff, the code was downgraded and rewritten in the more common C language. The result was a library named *libwww*[15], licensed in the public domain in 1993 to encourage non-commercial Web browser development.

> Part of the reason the Web was not being used much within CERN—or spreading faster outside CERN, for that matter—was the lack of point-and-click clients (browsers) for anything other than the NeXT. (Berners-Lee 1999, 55).

For the Web to be disseminated, clients using other systems (like Unix and PC) also had to gain full access to Web features. *Libwww* detachment from CERN was necessary for the browser technology to be explored and developed; in 1993, browsers spread worldwide. Some known names that had led this task were Viola, Erwise, and Midas; however, the pivotal moment occurred when Marc Andreessen's project emerged.

Wishart and Bochsler (2003) sustained that Web's triumph occurred due to the shared forces of those two distinct personalities: Berners-Lee was an idealist mind, while Andreessen was, at that time, an ambitious young student wanting to make the emerging Web a more popular (or profitable) system. Andreessen created the primary mass-used browser Mosaic; Andreessen did its first version with the National Center for Supercomputing Applications (NCSA) support and the Eric Bina collaboration. Even being freely distributed, Mosaic soon became a gamble of a small company[16] that was seeing the Web space as a potential market field; if cyberspace was rising as a free space for shared information, it could also be an open land to lucrative business promotion.

> This struggle between self-interest and public good, between willful individualism and determined collectivism, was the defining conflict at the birth of web-technology. This conflict would set the frameworks for and determine the path of many others in the coming years**.** (Wishart and Bochsler 2003, 29).

Mosaic navigator was launched in 1993; its user-friendly interface helped in the quick popularization of the Web. Besides the extended systems combability[17], another achievement of Mosaic was the pioneering allowance of displaying image and text inline. However, this innovative feature trespassed some of Web's original standards, and when the limits started to be

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15   This public library able other programmers to use Web's browsers and server foundations and develop compatible tools; also, it was the way Berner-Lee found to demonstrate Web's potential. Nowadays, *libwww* is still freely available under W3C Copyright for to be used by anyone — the Open Source community help in managing and improving it

16   Mosaic Communications Corporation, was the sketch for Netscape Communications Corporation; a company founded in 1994 by Jim Clark and Marc Andreessen.

17   It was compatible with Mac, Windows X (Unix) and Microsoft Windows systems.

crossed, the first serious tension between developers and the Berners-Lee was disclosed. The Web globalization would bring many more disputes; it became clear that a competitive row was about to happen. Berners-Lee, already concerned about the possibility of a Web's split, understood that more rules had to be applied; the Web standards had already been released under a public license, which was Berners-Lee's first attempt to ensure the system's integrity; further, to guarantee that a single instance could never fully control the Web and that the emerging dispute between the US and European telecommunication would not eclipse the desired global achievement, he also decided to implement the World Wide Web Consortium (W3C)[18].

> Taken at face value, W3C would give Europe an equal partnership with the United States in the Web, an equitable arrangement between the place where it was born and the place where it grew up. Europe wouldn't seize the Web quite as firmly as Robert would have liked, but nor would it lose it. (Gillies and Cailliau 2000, 276)

In the same year, 1994, Jim Clark contacted Mosaic's head to join the new Netscape company. The initial plan was to develop an interactive online game; However, it soon changed to the idea of a "Mosaic Killer"[19] product. Gathering other members of Mosaic, the Netscape browser was conceived and launched at the end of 1994 as an enormous success. The company was considered the first attempt to capitalize on the Web emerging space and did it very well. In 1995, Netscape IPO was offered and more than doubled its prize on their first day of public trading, marking the beginning of the dot-com bubble and the rush of civil proliferation inside the Web. Netscape became the dominant browser tool, a profitable economic investment, and a switching point for the Web.

> The Netscape IPO was the Internet's breakthrough as a commercial medium. What had been a playground for researchers and idealistic online communities became a dreamscape for entrepreneurs (Wishart and Bochsler 2003, 71)

While Berners-Lee was trying to maintain the original ideals of the Web as a free and decentralized place, Netscape was pushing Internet popularization and private commercial interests. The launch of Netscape IPO was decisive for the dot-com bubble and the commercial Internet hype to start.

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18   W3C is a non-profitable organization responsible for the standards that makes the Web works.
19   *Mosaic Killer* was an internal expression coined by Jamie Zawinski (one of Netscape's programmers), meaning the company desired goal to displace NSCA Mosaic browser in the browsers dominance run.

2.2.1 Browsers and the first Browser War

> The browser is fundamentally a kind of filter. It is a machine that uses a set of instructions (HTML) to include, exclude, and organize content. Its virtue is not diversity but *university*.
>
> - Alex Galloway

In 1990, only 2.6 million people had access to the Internet; within five years, that number has increased to 44.4 million people (Roser, Ritchie and Ortiz-Ospina 2015). The statistics revealed the fast popularization of Internet access, and Netscape was decisive for that. As new users arrive in the online space, prominent market speculation would also grow; Netscape has been looking for ways to capitalize on its web-based product since its beginning. Their prosperous strategies boosted the start of a stock-market event that became known as the dot-com bubble.

At first, everyone could freely use the Netscape browser for non-commercial aims; in 1995, the company stepped back and decided that only non-profit and educational institutions could have free-of-charge access. Netscape's successful journey happened in a combination between its technical advance and market strategies. It is estimated that four million copies of the Web browser were freely distributed before 1995, making Netscape a leader in the field (Johnson and Post 1996). After achieving an incontestable dominance, the company decided to release its Initial Public Offering (IPO)[20] in August 1995; the result was extraordinary. According to the LA Times news of that day:

> In one of the most impressive debuts the Street has ever seen, investors Wednesday frantically snapped up shares of Netscape Communications Corp., the 15-month-old Mountain View, Calif., company that makes software for browsing the Internet. During its first day of trading, Netscape's share price rose as high as $74.25 from the initial $28 announced Tuesday, before settling down to $58.25 per share by market close. (Pitta 1995)

Netscape's IPO miraculous investment quickly influenced 'dot-com' startups to pop around the Webspace; A FOMO[21] was installed among investors and entrepreneurs who were afraid to miss this new dot-com trend. Online stores were promoting their names and entering on the market even before having a product to sell. With Netscape, the Web effectively would turn out to be a global connective tool; but not precisely as Berners-Lee had expected. Behind the free informational flow, the mid-1990s Web was soon turning into a commercial center, where companies were putting effort (and ads) to chase for customers and dominance.

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20   Initial Public Offering (IPO) stands for the first time a privet owner company publicly sell its shares.

21   Fear of Missing Out (FOMO), in trading, means a certain panic of letting a sudden market hype pass and missing the opportunity of investment. This usually leads to more risky gambles in the stock market.

At that time, Microsoft was already running the head of personal-computers sales; Bill Gates' company - which had largely ignored the Web until this point - decided to develop its own navigator after seeing Netscape's success, releasing Internet Explore in August 1995.

Explorer used the code of Mosaic navigator as a base; its first version was not very impressive, but one year later - with features increased and Microsoft's freely including the navigator inside its system's operational package - Explorer usage exponentially increased. Soon, a battle was settled between Netscape and Explorer; Microsoft clients - which corresponded to most of the average computer users - would not have to pay for the standard system navigator, so why bother installing another one?

In 1997, during Internet Explorer 4 launch, Microsoft employees paid a truck to 'deliver' a giant sculpture of the Explorer logo near Netscape's office headquarters. The provocative act had the response of Netscape's employees, and in the next day, Mozilla - their mascot at the time - appeared above the Explorer symbol with the quote "Netscape Now!". This apparent childish play was hiding other interests; Netscape had maintained its leadership in the browser's run for some years, but Microsoft's increasing facilitating tools would quickly change the game. By 1998, Explorer would become the most used browser. Having a large computer company in that position already hinted at how the field of the Web could not remain as a decentralized place much longer. It was never just a joke; the First Browser Wars had highlighted the start of a battle between giants in the quest for online governance.

Still in the same year, a scandal involving possible infringements of the US antitrust law caught the mass media's attention. The court battle, known as the United States vs. Microsoft Corp, had accused Gates' company of monopoly abuse due to its operating systems and Web browser integration strategies. The main lines of this charge had stated that the company used bundling practices by merging its leadership in the computing market with a browser service.

The trial took years; in 2000, the judge ruled that Microsoft had actively tried to crush its competitors, including Apple, IBM, Netscape, Sun, and others, by splitting the company into two different companies. Bill Gates immediately appealed and successfully had the judge withdraw the termination order in 2001, reaching an agreement that maintained Microsoft's Windows operating system intact. The scandal would not affect Explorer's supremacy and, after the end of the trial, Netscape was almost entirely out of the browser contest.

When Netscape saw Explorer superseding the competition, the company decided to open-source their code and launch a non-profitable foundation named Mozilla. The strategy did not immediately work regarding the aims of re-gaining leadership; still, it depicted another conflict of interests that would be recurrent on the Internet history: the computational community-engaged software versus the strict commercial market-based ones.

In the early-mid 2000s, a plot twist would put Firefox - Mozilla's browser - in the run again, and a second Browser War would emerge; this time, inside an already established online scenario and a more aware generation of users.

Without browsers, the Web would be a confusing encrypted space, a place where users could only grab information from terminals, and at least a minimum technical knowledge would be required. Web navigators' history portrayed so not only the Internet's internal policies but also the users-side perspective. As already mentioned, the very first browser (WorldWideWeb) could only display text; then it evolved to Erwise - which in 1992 was the first navigator with a graphical display - until the finally integrated media - image and text - achievement of Mosaic; which was, by no coincidence, the responsible for Internet's mass usage.

> Commercialization on the Web also produced a uniformity of its look, imposed by browsers, themselves, themself based on another design standard, Windows. (Stallabrass 2003, 71)

Stallabrass' book recounts the years when Internet Explorer was dominant. However, a simple look at browsers nowadays can still prove the integrated design mentioned by the author, where colors, fonts, and tabs merge with the desktop interface, leading to an immersive view from the user's side.

> On the Web, the browser's movement is experienced as the user's movement. The mouse movement is substituted for the user's movement. The user looks through the screen into an imaginary world, and it makes sense. The act of "surfing the Web," which, phenomenologically, should be an unnerving experience of radical dislocation—passing from a server in one city to a server in another city—could not be more pleasurable for the user. Legions of computer users live and play online with no sense of radical dislocation. (Galloway 2004, 64)

From desktops to browsers, it is all about Graphical User Interface (GUI). GUI had already been used in some computers since the 1960s, but as those machines became popular, graphical displays also advanced, which dynamized tasks and gave a more passive role for the user. Stallabrass sustains that webpages' visual constructions, during the commercial Web phase, had reproduced magazines' layout tactics; where image, information, and advertisement are smartly displayed to catch viewers' attention, merging manipulative data (commercial advertising) with relevant content (information itself). Users do not have to think or know the Internet's basic principles to go inside its content, which is helpful but also a trap.

In some late Net artworks, some artists refuse to use elegant ever-changing designs, in websites that show a seemingly time-displaced visual while are actually just concerned about security[22] or provoking other forms of interaction. The way content is displayed on a page direct

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22   It is very common to see Internet Artists using a simplified HTML structure or an exaggerated design that remounts to the 1990s Internet aesthetics (e.g. Olia Lialina teleportacvia). This decision can be seen by only an imagistic choice, as a sort of nostalgia, or - as pointed here - a way to go against the more closed structure disposed of by later Web. Internet Art chapter will better address those issues.

influences users' agency: As the browsers became more friendly and adaptable, fewer people needed to deal with complex code structures or put effort into finding a particular content, but also, the core of the webspace became more secretive. Quoting Greek Lovink in 1998:

> Against all expectations, the Internet is creating a new Mass of 'users' that just shut up and click/listen. They are 'watching internet', a phase that would have been impossible to come up a few years ago. This silent majority in the making, which only know the red 'Buy' button, was not envisioned by the early adapters and the visionaries of the first hour. (cited in Stallabrass 2003, 73)

Browser disputes echoed the Internet Boom that occurred by the middle until the end of the 1990s. Internet usage only became possible with browsers, and browsers underlined the rapid incoming of the commercial Web. More than that, they would actively frame the Internet's and its users' transformations over the years. As navigators' interfaces changed, aggregating gadgets and integrated services, the web navigation would become easier and the Internet core control more closed.

2.2.2   Search Engines

> Browsers alone, though they are sophisticated commercial tools, could only give access to the vast data space of the Web, not make it manageable. That task was left to search engines that filter and sort data using quasi-intelligent software agents or human judgment.
>
> - Julian Stallabrass

There was no really easy way to locate content in the Web's early days; static online libraries and indexes were the optimized options while no dynamic tools, such as those known nowadays, were available. Informational access would be difficult to find without a previous notion of where to go; it would only change with search engines development.

The roots of those mechanisms remount to the pre-Web era, when Alan Emtage started to design Archie in 1989. Archie was a program that worked by searching for public FTPs, consisting of a system able to monthly download available files inside the Internet and index them into a local folder where anyone could further locate them. It was a pretty simple project, further expanded with the help of Bill Heelan and Peter Deutsch; by the time of its development, even Emtage was unaware of how this modest archive program would become huge:

> It was only after we made it known that we had the database and got lots of requests to search it that we realized that there was a need for this kind of service. (cited in Ryan 2010, 117)

During the following years, facilitating the online search task became a significant ground for developers. Withing the invention of the Web, Berners-Lee's also launched the WWWVirtual Library (VL)[23], which consisted of an Archie likewise page with the addition of an index that could organize content disposable online by category. Still, data stored in VL needed to be manually compiled, and a few more years had to pass until search tools could be factually automatized.

MIT student Matthew Gray created the first Web research bot in 1993; known as Web crawlers or simply crawlers, those bots act as a sort of spider, traveling through the whole Web and crawling from page to page to grab URL addresses and index them. Gray has designed the first model aiming to measure Web's size; the software was called World Wide Web Wanderer and later would receive an index named Wandex. Still in 1993, Jonathon Fletcher's JumpStation was launched; it was possibly the pioneer program in using a bot for Web's research and was the first program to structure the modern search engine bases: crawling, indexing, and serving. However, Fletcher's project was discontinued due to the lack of investments.

One year later, Brian Pinkerton would recall Fletcher's initial ideas in developing the WebCrawler[24] search engine. The project had an important new feature: a full-text search, meaning that the bot could catch every word of a website instead of only page titles.

> Whenever a search word was entered, WebCrawler counted the number of times that word appeared in every page that was indexed in its database. The more times the search word appeared in a page, the higher it was placed in the list of search results delivered to the user. (Wishart and Bochsler 2003, 82-83)

In 1995, the Digital Equipment Corporation (DEC)[25] sprung Altavista, an engine that stood out due to its high-speed service and robust database. Altavista was also the first one to implement a Boolean[26] search feature and a multilinguist option. With additional implementations, search engines development sprouted between 1993 and 1998; Infoseek, Worldwide Web Worm, Aliweb, Lycos, and Yahoo! were some of the firstborns. Those programs had similar bases and purposes, but not the same manners: Yahoo! and Aliweb avoided the crawler bot usage, while the others have adopted the automatized system since the beginning.

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23 VLibrary It is still working nowadays, and can be accessed at: http://www.vlib.org/
24 WebCrawler is considered the oldest search engine, being the only one that is still active nowadays. WebCrawler can be accessed at: https://www.webcrawler.com/
25 DEC became well known for its early actuation in the computational market, having created the first interactive computer, called the PDP-1, in 1960 and many of the so-called mini-computes.
26 Boolean search is a type of search allowing users to combine keywords with operators (or modifiers) such as AND, NOT and OR to further produce more relevant results.

(...) webmasters of participating sites post their own index information for each page they want listed. The advantage to this method is that users get to describe their own site, and a robot doesn't run about eating up Net bandwidth. (Sonnenreich, 1997)

However, as the Web - and consequently the webpages numbers - rapidly increased, manual compiling would require hard work and more expenses. Those factors had forwarded crawlers' bots technology to become a standard, even when aligned with manual compilers. To search is to separate relevant information from useless ones; before the user's placement, search engines do their own trial to serve - and rank - content, using different algorithm criteria and human judgment to define the hierarchical relevance of a given list.

Besides the users' favor, search engines service turned to be a great business ally in finding ways to catch consumers. Soon, corporations understood that their names must appear in the 'top ten' list to be seen. Some reasons behind Google's success was precisely its innovative algorithm potential aligned with an optimized market advertising.

Google history begins in 1995, when two students, Larry Page and Sergey Brin, collaborated in a project to optimize online searches; both had developed a tool engine sketch, launched as BackHub and renamed Google in 1997. Page and Brin tool had stood out by its technological advance, and clever online ads feature improvement.

In the late 1990s, search motors pages displayed confusing layouts full of banners, spans, pay-per-click ads, and linked tags, in a way to get corporative financial help and business cooperation. In a different manner, Google decided to target ads in the search results, enriching users' experience and presenting a cleaner design without banning the marketing side. Google features also took the placing rules to another field; companies could not pay for the best ranking; they must 'deserve it.' The algorithm developed by Google was called PageRank, being supposed to order results accordingly with quality.

Understanding search engines' elementary functions is essential concerning the politics behind those structures; they facilitated the organization and location of webpages and inserted a judgmental strand in what is seen on the Internet. Nowadays, if a page is not indexed in a search engine bank, it is basically outside the Web.
'

Although search engines are programmed to rank websites based on their popularity and relevancy, empirical studies indicate various political, economic, and social biases in the information they provide. These biases could be a direct result of economic and commercial processes. (Seymour, Frantsvog and Kuma 2011)

With manual gatekeepers, the process of being indexed takes time; under given tabs and descriptions, the pages were reviewed by humans, mostly content specialists, that were appointed to judge if a webpage is coherent with the directory or not. "As a result, you may have your page

rejected (without notification) and would not know what to do to get it accepted" (Introna and Nissenbaum 2000, 6). With bots, the webpage should be caught and indexed by a spider that is constantly mapping the Web; it is essential to know something about the procedures behind a search engine algorithm to gain an advantage. The rank criteria hide questionable practices and bind techniques. Bots work in different ways; some use popularity score, others word frequency, but the exact measure to valuates pages is a mystery. Many designer strategies were made to understand and trick these algorithms; even a new knowledge field was dedicated to improving website structures to get the best rank position.

> On the other end of the spectrum some schemes allow Web designers to manipulate, or trick, the heuristics—schemes such as relevancy (or keyword) spamming, where webpage designers' trick' the ranking algorithm into ranking their pages higher than they deserve to be ranked by means of keyword stuffing, invisible text, tiny text, and so forth. (Introna and Nissenbaum 2000, 14).

Moreover, search engines ranking criteria is a secret instance under search engine structure; some of those algorithm features are hidden to prevent fraudulent tactics. Still, tips on how those algorithms work are often easy to find, and contracts between higher companies and search engines are not exactly a secret.

> Amazon Books, for example, has a comprehensive arrangement with Yahoo and Barnes & Noble with Lycos. If a seeker submits a search to Yahoo with the term with 'book' in it, or a term with a name that corresponds to an author's name, or book title in the Amazon database, he would get the Amazon banner (and URL) on his search result screen. This is also true for many other companies and products. (Introna and Nissenbaum 2000, 16)

In the 1990s, *Favored Placement* was a common practice, consisting of a tactical agreement between privates and search engines. Using the *Favored Placement*, a webpage owner could pay to gain up position, or for additional keywords tag in order to be higher ranked in general online searches. The practice was not illegal at first, but it led to scandals and other hidden practices.

The general bias of search engine ethics, since its beginning, led to many controversies and discussions about how a webpage 'score' could directly influence social instances. Battles between organizations who willed to find the best strategies and positions were expected, but those results also directly affect the seeker, who receives a content meditated by previous instances without even knowing about search engine's metrics and its compromised results. Machines are supposed to be neutral, but humans conduct them; thus, control over information - which was once an effective war tool - became a commercial one. Knowledge and data would

gradually acquire a commodity value, and mechanisms showing what people are 'looking for' became precious instruments to gather them.

2.2.3   Network Solutions and DNS Problems

In the first decade of the Web, everything was about webpages; they were the online content per se, distributing all sorts of information that goes from governmental content, online sales, personal pages even until artworks.

As already mentioned, the Domain Name System was created by Mockapetris in the 1980s to facilitate the communication between humans and machines; it is a method to map computer names and numerical addresses used inside the Internet. Though, DNS gained another level of responsibilities under the webspace. Every URL has a domain name as part of its structure; in a Web address like 'www.mypage.com,' 'mypage.com' refer to the unique Domain Name segment; 'mypage' is the registered name and the '.com' the Top Domain Level (TDL) reference. As the Web increased, the interest in Domain registrations grew and reformulated some of the DNS rules.

> Anticipating the commercialization of the Internet, the NSF issued a solicitation in 1992 for bidders to perform 'network information service management', which would include issuing URLs of websites (i.e. the name rather than numeric IP of a website: www.yahoo.com instead of its IP address 209.131.36.158) (Ryan 2010, 102)

To help manage new DN entries, Network Solutions Inc. signed a sub-contract with the US Defense Information Systems Agency (DISA). In 1992, the company was named by the National Science Foundation (NSF) to become the sole bidder in charge of Domain registrations; NSI, at that time, was working in cooperation with the Internet Assigned Numbers Authority (IANA), which was in command of TDL regimentation.

In 1993, DISA privatized DNS; still, NSI was registering domain names at no cost. In 1995, the company was acquired by Science Applications International Corporation (SAIC), giving NSI the power to charge for Domain Names registrations and raising another level of interest. With the incoming of the Web boom and the corporative interest in the online market, DN battles became often, and NSI was an almost centralized instance for controlling the first steps of these disputes.

> To everybody who own a domain name (...) this rarefied political drama had real relevance. At stake were bot the quality of the service provided by Network Solutions and the robustness of the system itself. Most important, the outcome of the battle would

determine how disputes between big-brand, trademarked corporations and individuals or organizations that owned near identical domain names would be resolved. (Wishart and Bochsler 2003, 115)

Besides listing and selling available domains, NSI was also responsible for name censorship, control, and charge of DNSes. Many webpages owners started to accuse NSI of simplifying DN disputes for the benefit of big companies, alleging that a corporation with a trademark could easily request the removal of similar page addresses without more explanation. (Wishart and Bochsler 2003). Besides, NSI was, at that time, the only instance able to register and charge for five of the most used TDLs: .com, .net, .org, .edu e .gov.; a monopoly that was seen under ethically doubtful manners. As domain names political battles increased, NSI and its managers became a target; Donald Telage, who was president and Chief Operating Officer of NSI in 1995, would be suspiciously seen by the engineering community, while "his greatest crime (...) was to control the A-Root, the key to map the Internet" (Wishart and Bochsler 2003, 115).

Other serious rumors, like a supposed relationship between the company and CIA, spread; those were pressuring suggestions, which aligned with the lack of the company's technical strength to deal with the increasing DN requirements, ended up in the NSI overflow. The Web traffic became slow and unstable, NSI instances did not have enough resources to deal with that high demand, and "at one point, and employee's technical error accidentally shut down whole sections of the Internet." (Wishart and Bochsler 2003, 116)

Other companies tried to offer Domain name registration services at that time, as the UK-based NetName; however, NSI higher alliances and the centralized control of the most required TDLs would not open space for competition among NSI and others. In 1997, New York-based PGP Media Inc. opened an antitrust lawsuit against NSI. The National Science Foundation joined the battle taking the NSI side, which gained the dispute. But internal and external pressure increased, as well as the Internet community's anger. Postel, one of the DNS creators, proposed adding more generic international names to the TDL, like .web or .info, and an International Ad Hoc Committee (IAHC) was created, under IANA's control. However, Postel's attempt was not enough to calm down the community.

One particularly adversary was domain name entrepreneur Eugene Kashpureff, who had sought to establish a substitute and independent Domain Name System, Alternic. Angered by Network Solutions' unbroken authority, Kashpureff hacked its web-site, diverting all its traffic to his own, on which he placed an open letter of protest. Kashpureff's digital hijack was a political gesture that landed him in Toronto's Metro West Detention Center for fifty-five days and forced him to apologize to Network Solutions. (Wishart and Bochsler 2003, 120)

Again, Web's service decentralization and monopoly interests were struggling; the Kashpureff act was fruitless in their initial goal but had achieved enough media attention to put the problem under larger instances of awareness. In 1997 NSI "had been solidifying its hold on the domain name space (...) But its monopoly had yet to face its greatest threat. The US government would intervene in full force in an attempt to pursue Network Solutions to yield control of the A-Root and change the Dispute Policy. In the meantime, the domain-name owners were forced to deal with crude dispute procedures and the imperfect world of courts." (Wishart and Bochsler 2003, 121).

Pressured by private interests and civil complaints; In 1998, the US Department of Commerce proposed a non-profit corporation to be in charge of DNS regimentation. The Internet Corporation for Assigned Names and Numbers (ICANN) was founded to take the previous Postel role of TDLs control and settled as the responsible for DN higher issues like new policies, accessibility, protocols, and fair competition assurance. One year after the ICANN foundation, NSI was forced to separate registry and registrar functions, demarking a decentralization of the DN services and again the effective impact of hacking aims.

3. Hackers

In a general sense, the term hacker would refer to computer criminals or, in a bit more accurate approach, to Internet experts who can access unauthorized information. Both are very simplistic definitions that do not make a reasonable contemplation of the extensive manners, groups, and attribution that this term can evoke. Over the years, many theorists tried to revert this generalization, demonstrating that, in its roots, the term hacker emerged to define some idealistic young minds that used to cross MIT's halls to sneak into private computer rooms and 'break' those new technologies codes. Obviously, some hackers - understudying the amplitude of their genialness - engaged in malicious practices; still, most of them depreciated unethical activities, engaging in favor of decentralization and creative means of technological usage.

Steven Levy was one of those who, in 1984, came in hacker defense; he wrote an ode to the first computational hackers by telling their histories and postulating a list of Hacker Ethics that until today guide many members of this community. The hacker ethical aims were listed as:

- All information should be free.
- Mistrust Authority—Promote Decentralization.
- Hackers should be judged by their hacking, not bogus criteria such as degrees, age, race, or position.
- You can create art and beauty on a computer.
- Computers can change your life for the better.

(Levy 2010, 28-38)

With another assumption, McKenzie Wark took the term hacker from the computational field and inserted it into the contemporary world; what the new hackers do is "hack the new out of the old" (Wark 2004, 18). Wark's hackers became part of a new system, where the physical value was already substituted for the abstraction power. Information, intellectual property, and other kinds of immaterial commons would become the leading contemporary commodity; Hackers form a new social class that knows how to deal with the current data, has access to them, and can propose alternative means by breaking the controlling codes.

> Hackers come to struggle against the particular forms in which abstraction is commodified and turned into the private property of the vectoralist class. Hackers come as a class to recognize their class interest is best expressed through the struggle to free the production of abstraction, not just from the particular fetters of this or that form of property, but to abstract the form of the property itself. (Wark 2004, 21)

While this study is guided mainly by Wark's definition, it is possible to say that every artist is a hacker. But our main point is to comprehend which kind of hacker actions are behind some of the web-based activist artworks that will be listed.

(...) if one looks at the world's biggest corporations these days, a lot of their power and property is in vectoral form. Many of them do not actually make the things they sell. They control the production process by owning and controlling the information. (Wark 2019, 115)

Wark sustains that we are living in another age of Capitalism, a place where the most valuable thing is intangible. We can fit this theory into our days while briefly looking at events like the Facebook-Cambridge Analytica scandal, when millions of Facebook users have their data stolen to aims of political advertising manipulation and illegal engage publicity. The roots of this episode remounts to the already mentioned development of search tools algorithms in the 1990s, when information started to be bubbled and controlled in the online market aim to gain more customers; corporations started to develop data practices not only to be seen on the webspace but also to understand Internet users profiles and behaviors. Personal and data traffic became an abstract commodity, a treasure for commercial aims and political battles; these would be more tangible in the 2000s, as online and offline life became a unique instance.

Most Web users are still unaware of the powerful connections that dominate the online space and how destructive they can be. However, we have an extensive historical background to understand how the Net was politically conceived. Before naming Wark's new social class, hackers were behind the Internet and computer history as its builders.

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In the previous chapter, we briefly pass through the timeline of the Internet. In the following pages, we will structure the importance of the hacker community, reviewing some points of the computational history through their approaches and ideals. The so-called 'original hackers' evolved with tech expertise - rather them factual political manners - and have a communitarian sense of spreading ideas freely. Software must be free to be improved; computers must be accessible to people and far from bureaucracies; pranks are a way to show expertise under systems; those are some strands that ruled the first years of this community. Under the Levy concept, the Hacker wave passed to different groups along the temporal line from the 1960s till the 1980s[27]; approaching distinct manners, all these groups have the common belief in computers as their Gods and a flag under the Hacker Ethics lines.

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27   Steven Levy's book was launched in 1984

HACKER [originally, someone who makes furniture with an axe] n. 1. A person who enjoys learning the details of programming systems and how to stretch their capabilities, as opposed to most users who prefer to learn only the minimum necessary. 2. One who programs enthusiastically, or who enjoys programming rather than just theorizing about programming. 3. A person capable of appreciating hack value (q.v.). 4. A person who is good at programming quickly. Not everything a hacker produces is a hack. 5. An expert at a particular program, or one who frequently does work using it or on it; example: "A SAIL hacker". (Definitions 1 to 5 are correlated, and people who fit them congregate.) 6. A malicious or inquisitive meddler who tries to discover information by poking around. Hence "password hacker", "network hacker". (Raimond 2004)

3.1 1960: Inside MIT and Machines

The first hacker community has its core in the 1960's MIT halls. It was there that a group made by young midclass male students became obsessed with the computational systems, wanting to figure out the inner mechanisms of that new machines far from the standard rules. Levy considered them as the 'true hackers'. They were members of an MIT internal association called Tech Model Railroad Club (TMRC), where students spend hours and days in their *bunkies*[28] willing to improve The System[29] and sneaking into the EAM room[30] in-between times. Under their internal jargon, the term 'hack' started to be used as a synonym of creative tech expertise.

(...) a project undertaken or a product built not solely to fulfill some constructive goal, but with some wild pleasure taken in mere involvement, was called a "hack." (Levy 2010, 10)

In the late 1950s, the Computer Science field of study did not even officially exist inside MIT. TMRC boys had the opportunity to explore cutting-edge technology under systems like TX-0[31] and PDP-1[32], where they soon learned how to program. The early 'hacker' attitude was about combining curiosity, tech expertise and a humorous juvenile approach, not only about computers. Alan Kotok, Peter Samson, Steve Russell, Jack Dennis and others, were some of the tech-kids

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28   "(...) little rolling chairs they called "bunkies" (Levy 2010, 8)
29   It was a Club dedicated to model railroading; one of the club sections was called "Signals and Power Subcommittee", the technician part dedicated so to create the circuits that made the trains run and also where the hacker emerged.
30   Electronic Accounting Machine, a punch card tabulating equipment. It was the mainstay of data processing for more than 70 years following the advent of Hollerith's card system for the 1890 census.
31   Transistorized eXperimental computer zero; an experimental high-speed digital computer for testing transistor circuitry and very large magnetic core memory.
32   Programmed Data Processor-1 was the first commercial computer that focused on interaction with the human user rather than the efficient use of computer cycles; it was launched in 1960 by DEC

mentioned by Levy that composed the first generation of hackers. Their acts evolved phone lines hack, PDP-1 music, game development, and more complex projects like the Incompatible Time-sharing System (ITS)[33].

> Hackers believe that essential lessons can be learned about the systems—about the world—from taking things apart, seeing how they work, and using this knowledge to create new and even more interesting things. They resent any person, physical barrier, or law that tries to keep them from doing this. (Levy 2010, 28)

Besides the young hackers, there was also a goal-oriented strand at MIT. They were not under ideological lines but engaged with the belief that "computers can make life better". Levy called them *Planners*, meaning those who worked under long-planned projects; they were concerned about "getting the power of computers into the hands of more researchers, scientists, statisticians, and students." (Levy 2010, 57). Planners group refers to many MIT professors; some of them will be later recognized between the greatest names of the computational theory. As students and teachers, those groups were not enemies, but they often competed. While Planners were conservative, Hackers were constantly chasing new challenges, rejecting close or bureaucratic computational systems; which they call "IBM-ism" (Levy 2010, 113)

MIT's 'true hackers' begin to split by the end of the 1960s, leaving their *bunkies*; some were hired for Californian companies at Palo Alto, others moved to the Stanford campus. As previously said, this first hacker generation was highly romantic and juvenile; their sense of community was raised in the hours spent together and in the belief that computational knowledge must be free and between shared. Nevertheless, they were not criminals; some 'subversive' acts were sustained only by cleverness aims; they were not worrying about money, just knowledge; they constructed a new way to approach computational technology. However, this first wave was soon to be dissolved; ironically, this happened as the network and computational studies advanced; with the raising of 'serious' projects, the closed hacker circle was not gathering funds and stimulus to work in their experimental plans. Mike Beeler, who was a part of this generation, mentioned:

> With all these changes, some of the hackers sensed that an era was ending. "Before (in the sixties), the attitude was, 'Here's these new machines, let's see what they can do.'" hacker Mike Beeler later recalled. "So we did robot arms, we parsed language, we did Spacewar . . . now we had to justify according to national goals. And (people pointed out that) some things we did were curious, but not relevant . . . we realized we'd had a Utopian

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33   ITS was an revolutionary time-sharing operating system; it was developed by the Artificial Intelligence Laboratory at MIT, with some help from Project MAC. The ITS name was a joke with the Compatible Time-Sharing System (CTSS); which was one of the first time-sharing operational systems, also developed inside MIT.

situation; all this fascinating culture. There was a certain amount of isolation and lack of dissemination, spreading the word. I worried that it was all going to be lost. (cited in Levy 2010, 147)

The primary reason behind those changes pointed by Mike Beeler was politics. In 1973, ARPA joined the Mansfield Amendment, which restricted defense research capital, directing money to proper military applicable projects. The decrease of funds led to a mass migration of young computer scientists who left academic instances to join private research laboratories and startups. Also, on the civil side, there was the uplift of against-war movements that rejects all kinds of military interventions, including research projects that somehow received ARPA's sponsor.

For the marchers of the Free Speech Movement, as for many other Americans throughout the 1960s, computers loomed as technologies of dehumanization, of centralized bureaucracy and the rationalization of social life, and, ultimately, of the Vietnam War. (Turner 2006, 28)

The Free Speech Movement and other countercultural militances were rising around the United States (in Europe as well). Free Speech Movement was led by the student Mario Savio; the group claimed freedom to propose political activities under the Universities instances; they joined forces with other activist voices like the Civil Rights and the Anti-Vietnam War organization. Those militants sustain that all the academic centers doing research under ARPA, or any other branch of the US Defense, support were doing it under Vietnamese blood. Hackers also have their free movement, but it was about software freedom. Although many inside the hacker community cared about the war cause, they were so centered into line codes that it is almost impossible to join street activism.

During the late 1960s, a planner named Robert Taylor was in charge of ARPA funding, and he later admitted to diverting funds from military, "mission-oriented" projects to projects that would advance pure computer science. It was only the rarest hacker who called the ARPA funding "dirty money." (Levy 2010, 105)

It is true that the military instance fundamentally aided this community, mainly until the late 1960s. Still, many computational centers tried to argue that they were not acting in war favor (even if receiving ARPA's money), but genuinely trying to build a more conscious society as the computer will mean the rise of information and communication. Many public letters were published under this subject, but none of them seemed to calm the militant's fury.

3.2 1970: A Plural Community

From the late 1960s until the 1970s, conjoined factors ended in more aggressive protests led by the Students for a Democratic Society (SDS) and its collaborators. In California, Ronald Reagan - a very conservative politician - was elected governor in 1967; his campaign gained popularity in claiming the end of anti-war protests when he promised: "to clean up the mess at Berkeley". Another tense point recalls ARPANET; after ARPA's first Internet message test, made between UCLA and SRI nodes, some SDS members claimed to become aware of a confidential document, written by Licklider, that revealed an MIT-Harvard-ARPA joined procedure that planned to dissolve counterinsurgency acts.

> Once complete, it (the project) would allow any intelligence analyst or military planner connected to the ARPANET to upload dossiers, financial transactions, opinion surveys, welfare rolls, criminal record histories, and any other kind of data and to analyze them in all sorts of sophisticated ways: sifting through reams of information to generate predictive models, mapping out social relationships, and running simulations that could predict human behavior. The project emphasized providing analysts with the power to study third-world countries and left-wing movements. (Levine 2018, 111)

Some SDS students even distributed a small book exposing ARPA's spy plan; the publication was called "The Cambridge Project: Social Science for Social Control" (Levine 2018, 123). Again, the computational community faced a battle with the left movements; the University campus became a nervous field. Seeing the tension between hackers and socialists, Stewart Brand wrote an article enduring that the researchers receiving military support were under the management of trustable hippie hackers.

> They were cool, they were passionate, they had ideas, they were doing something, and they wanted to change the world. They might be stuck in a computer lab on a Pentagon salary, but they were not there to serve the military. They were there to bring peace to the world, not through protest or political action but through technology. (Brand 1972)

Steward Brand was a well-known exponent of the countercultural North American community during the late 1960s and 1970s; besides being a 'hacker' aims enthusiastic, he worked under the voice of technological development. More than that, he was not a great fan of the left social movement:

> His diaries from the time show a young man deeply attached to his individuality and fearful of the Soviet Union. His nightmare scenario was that America would be invaded by the Red Army and that communism would take away his free will to think and do

whatever he wanted. "That my mind would no longer be my own, but a tool carefully shaped by the descendants of Pavlov," he wrote in one diary entry. (Levine 2018, 181)

The libertarian wing of the US counterculture was not joining the social causes that drove SDS movements; they believed in the shape of a 'new world' in isolated communities. Fred Turner (2016) called them *New Communalists.* This countercultural string believed that looking for old political tactics is useless; the best would be to get far away from the power centers and renew the social scope under small communities free from top-control and hierarchical structures. This group members are into garage cybernetic devices, LSD trips, oriental spiritualism and countryside sustainability, a very eccentric manner that gathered some computational hippies.

Brand created The *Whole Earth Catalog* (WEC) inside one of these communities; WEC acquired a lifestyle guide importance publishing a wide range of topics that goes from articles written by the communalist group to book suggestions and life tips.

Between the movements that took place in those years, we can divide two general categories: those against computers and those who are thrilled with them; the second branch refers to the Communalists and Hackers. In the middle, there were the Yippies. In a hacker-aligned wing, some remarkable members of the Youth International Party (YIP) were Abbie Hoffman, an early phreaker, and Al Bell; both were responsible for the *Youth International Party Line* publication, which became one of the most famous manuals for phreaking techniques in the 1970s.

Levy called 'Hardware Hackers' this second tech-ideal wave that proposed new strands at Stanford and Palo Alto under the core of Hacker Ethics. Leaving the protective space of the MIT AI Labs, their knowledge switched to a more socially aware and countercultural instance. One shared thought between those new hackers was the desire to be completely independent of traditional and powerful IBM monopoly in developing their own computational tools; outside the University, they also became aware of some people's bias on computational technology. They wanted to show that the problem is about centralized instances of power; computers can help society instead of being a war tool.

Community Memory (CM) was the first public computerized access to a Bulletin Board System (BBS); its first free terminal was installed in Berkeley. The machine consisted of a doubtful-taste cardboard box where anyone can send and receive messages; it has a terminal, a keyboard, and instructions attached to the user's facility. CM was developed by an independent organization named Community Memory Project, that have Lee Felsenstein, Efrem Lipkin, Ken Colstad, Jude Milhon, and Mark Szpakowski as fellow members. When personal computers were just a dream, this machine has the inner hack code of decentralized power, reinforcing hacker maxima against bureaucracies. *Computer Lib/Dream Machines*, a book written by Ted Nelson, was a remarkable reference for the members of the Community Memory Project; some of the

hacker ethics lines were also depicted there, which is considered one of the first publications about the incoming personal computers revolution.

> Community Memory was not the only ongoing attempt to bring computers to the people. All over the Bay Area, the engineers and programmers who loved computers and had become politicized during the antiwar movement were thinking of combining their two activities. (Levy 2010, 183)

Intel microprocessor chip[34] and Altair 8800's[35] launch were decisive for the spread of computer access; those components proved that affordable machines and systems detached from the great market were possible. It was Altair 8800 that also drove the Homebrew Computer Club (HBCC) start in 1975. Idealized by Gordon French and Fred Moore, the club was first located at a small garage, where techno hobbyists reunite to discuss, trade and improve DIY construction of personal computers devices. Later, the reunions became better organized inside a Sandford auditory; Felsenstein was responsible for grouping and organizing it. HBCC had a live forum role; as their member's number grew, hackers, gamers, geeks and tech enthusiasts formed a bigger open-space core to share projects and bugs. It was there that a hacked Altair 8800 was first presented as a musical instrument; when Steve Dompier could turn that very simple system into a functional tool, computer engineers - who were dreaming about a new computational world - became thrilled. Computers could also be creative machines.

> This involved no less than a major rewriting of computer history, and somehow this simple little music recital by Steve Dompier's Altair seemed the first step (Levy 2010, 206)

Altair catches not only the hacker's eyes but also some less idealistic exponents. Bill Gates was a young and ambitious manager based in Seattle, driven by technician and business-oriented ideas. Seeing the increase of the computer market and the decrease of its prices, Gates, with his friend Paul Allen, decided that selling software could be a profitable new business. Altair BASIC, which was an interpreter for the BASIC programming language that ran on Altair 8800, was created; this would be the first product developed by Microsoft. Inside MIT, Gates distributed some of his BASIC software; the program should be bought for 150$ / 300$, according to the version. However, many copies were suddenly circulating around the Bay Area; people at the Homebrew Club were copying and distributing it for free. When Gates discovered it, he wrote a flaming letter accusing the Palo Alto community of stealing his product. There was no such

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34   Intel 4004 was launched in 1971, it was 4-bit central processing unit (CPU); becoming the first general-purpose programmable processor available the mass-market

35   A DIY computational kit launched in 1975, the microcomputer - which had no monitor and keyboard - was based in a 8080 Intel processor (the predecessor of 4004). It became known as the first commercially successful personal computer.

software industry at that time, and HBCC was well known for sharing codes and content among them with no costs.

Entitled an "Open Letter to Hobbyists," it explained that while he (Gates) and Allen had received lots of good feedback about the interpreter, most of the people praising it *hadn't bought it*. The letter got to the heart of the matter quickly:

Why is this? As the majority of hobbyists must be aware, most of you steal your software. Hardware must be paid for, but software is something to share. Who cares if the people who worked on it get paid?

Gates went on to explain that this "theft" of software was holding back talented programmers from writing for machines like the Altair. "Who can afford to do professional work for nothing? What hobbyist can put three man-years into programming, finding all the bugs, documenting his product and distributing for free?"

(cited in Levy 2010, 233)

At that time, many programmers were not caring about money; they had a sense of community and free exchange. However, Gates brought a new way of thinking to some of those members. In those shifting times, also IBM started to look at the personal computers field; the company launched its first portable computer - IBM 5100 - in 1975, surprising the hobbyists. IBM was trying to spread their machines to a civil instance, and the hacker community understood it as a sign that the computers will soon be a mass-oriented market.

Many of the first DIY computers resulted from HBC encounters and other computer hobbyist organizations of the 1970s. One remarkable example was the creation of Apple; Steve Jobs and Steve Wozniak founded the company; Jobs was interested in design, interfaces and display, while Wozniak developed the whole computational structure for fun. The idea, which started as a garage project among friends, built a powerful and innovative system.

(...) they began selling Apples for the price of $666.66. Anyone in Homebrew could take a look at the schematics for the design, Woz's BASIC was given away free with purchase of a piece of equipment that connected the computer to a cassette recorder, and Woz published the routines for his 6502 "monitor," which enabled you to look into memory and see what instructions were stored, in magazines like *Dr. Dobbs*. The Apple ad even said, "our philosophy is to provide software for our machines free or at minimal cost. (Levy 2010, 258)

Apple was conceived under hacker aims, in a junction between Jobs, the marketing developer, and Wozniak, who was attached with early hacker's idealism. Wozniak used to sell blue boxes[36] while in college; he had a strong hack background gained with the aim of 'having fun' while construction and improving tech apparatus. After the Apple I limited and tech-centered edition, Apple II arrived with an upgraded visual and became one affordable and successful option inside the personal computers mass-market. The perfectionist design - that still characterizes Appel products - was due to Jobs' high preoccupation with the aesthetical part.

Gates started to change how computer hobbyists saw the incoming computational spread; some of them switched to a more self-oriented position that will be improved during the eighties. Also, the Communalist utopia collapsed, besides staying under the conceived non-hierarchical one; abuses and structural problems started to ruin the community dream; under some instances, people saw that it was dangerously becoming a sort of cult. After this failure, Brand, with his wife, decided to move to California, where a more entrepreneur approach will guide their subsequent computational beliefs. In the 1970s, personal computer developments started, and hackers took a vital role in their construction, revealing the start of a new industry and competition that has nothing to do with the Hacker Ethics aims.

3.3 1980: Personal Computers and the Mass-Cyberspace

In the late-1970s, computational hippies became entrepreneurs. After the New Communalists' failure, Steward Brand went back to Silicon Valley to organize the first Hackers' Conference. In 1984, the event reunited old and new generations, tracing the hacker history while giving the future strands of this community.

> The Hackers' Conference was a big moment in the cultural history of Silicon Valley. It helped introduce computer programmers to the public in a totally different way. These were no longer engineers working for big corporations and military contractors but "hackers"—geniuses and rebels bucking the system. Although Brand was an important figure driving this change of perception, he was not operating in isolation but represented a bigger cultural sea change. (Levine 2018, 194)

The change came with the spread of computational technology through civil instances; personal computers were available in the market and the hacker community gathered other grounds outside academic fields and garage clubs. Also, the countercultural radicalism chilled; 1980s US

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36   Blue Box was an equipment developed by John Draper (Captain Crunch) in 1972; it was largely used as a phreak instrument. Equipped with a tone pulsator, the device was formerly used to place free, illicit long-distance telephone calls, it worked by mimicking the tones sounded when operators routed such calls.

presidential elections showed the return of a more conservative and consumerist way of thinking. On the other hand, technological advance was in its finest years.

Xerox's Palo Alto Research Center (PARC) was a fundamental piece for the development of GUI interfaces in the personal computers market. Though PARC was more oriented to internal research, it guaranteed the success of companies like Apple and Microsoft. Apple's Lisa - which was considered the first commercial computer with a GUI interface and a mouse - was heavily inspired (if not stolen) by Xerox Alto[37]. Computers were now available, becoming a toll for a larger public instead of only a hacker toy.

> But did you really benefit from your computer if you did not program it?
> Still, in the early eighties, everyone with a computer had to delve into the hacker mentality to some degree. Doing the simplest things on your machine required a learning process, a search for gurus who could tell you how to copy a disk or find the proper connecting cables to hook up the printer. Even the process of buying ready-to-run software had a funky, hacker feel to it. (Levy 2010, 314)

Home Computers were offered, but non-experts were not sure about what those machines can do. That was why many companies' advertisements explored the entertaining side of computers; showing educational content and games combability, they aimed to achieve the mid-class US family target. The image of a computerized society was successfully bought along with the mass culture, and a new hacker image was part of it. Inside pop references, two examples are: *Neuromancer* (1984), a novel by William Gibson; and the movie *War Games* (1983), directed by John Badham. *Neuromancer* popularized the cyberspace term and helped to build the cyberpunk urban tribe; at that time, the Internet was just a bunch of networks connecting a few people, although this romance was already predicting organized societies inside cyberspace. John Badham's movie disseminated the image of hackers as a tech-genius, giving another perspective away from the 'awkward nerd' stereotype. Specialized magazines also took place in newsstands, advoking the bright future of computational technology; which enhanced as a thrilling tool for the young 1980s generation.

> Third-Generation hackers influenced not so much by Robert Heinlein or Doc Smith as by *Galaxian*, *Dungeons and Dragons*, and *Star Wars*. A whole subculture of creative, game-designing hacker-programmers was blooming, beyond the reach of executive head-hunters. They were mostly still in high school. (Levy 2010, 287)

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[37]   The first GUI and desktop computer designed; first introduced in 1973. They were available at Xerox research centers, not commercialized.

For Levy, the third generation of hackers - that emerged in the same year that his book was written - refers to the 'Game Hackers'; those who already have their own computers and are being influenced by the cultural sci-fi trend. Their tactics happened in another layer; if in the 1970s hackers were working in the physical structure of computers, in the 1980s, the focus was on developing programs, piracy, and software components adulteration. While still driven by technological expertise and a prankster spirit, the new hackers were self-taught gamer kids who founded a rare field where computational knowledge and artistic approach merged as something profitable. This point could be sustained by the sprout of game developers in the 1980s and also by the emergence of a subcultural art movement like Demoscene[38].

"Cyberspace" was the term used to describe this "other world" created between computers. It was coined by the novelist William Gibson in his cult classic Neuromancer, in which he described the new place as a "consensual hallucination experienced daily by billions of legitimate operators, in every nation." Gibson's dystopian future saw an alternative space, in which people would interact. (Wishart and Bochsler 2003, 37)

The commercial launch of Hayes Smartmodem[39] in 1981 was the initial path for a 'true' cyberspace construction; in the pre-Web age, they made private networks accessible and influenced the growth of BBS platforms. BBSes were the Social Media predecessor; they connected people among specialized groups in topics that included music, games, art, cracked software distribution and new hackers organizations.

The first (or most well-known) e-zine, called *Phrack*, was launched by Taran King and Knight Lightning in 1985; it was released onto the Metal Shop BBS. Most of the early subjects discussed inside *Phrack* were about breaking dial security techniques and other phone-line hacks. Gaining fame among the community, *Phrack* added more collaborators; security, anarchism and cracking modes also appeared in debate. Another prominent hacker magazine was launched by Emmanuel Goldstein in 1984, *2600: The Hacker Quarterly*. The publication, often mentioned as the 'hackers bible', aimed to echo hackers' voice under 'ethical lines'. Some of its organizers will be later responsible for promoting conferences that headed discussions among the community and the general public.

In mid-1980s, the number of self-claimed hacker organizations substantially increased. Masters of Deception (MOD) and Legion of Doom (LOD) were influential crews of that period. Inside LOD, an agent known as The Mentor wrote a text called *The Conscience of a Hacker* (or Hacker Manifesto), which became an icon for the incoming generations.

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38   A computer subcultural art that emerged during the 1980s, mainly in Europe; the scene was made of artists and *crackers* who compete among them; whiling to produce the better 'demo'. "They started to produce *demos*, a jargon name for demonstration programs. Instead of cracking software, members of this subculture were interested in making multimedia presentations that explored the boundaries of hardware capabilities as well as presenting the artistic talents of programmers" (Wasiak, 2012)

39   Smartmodem were the predecessor of modern modems; though they were not an 1980s inventio; they only became affordable and publicly available in that decade.

Yes, I am a criminal. My crime is that of curiosity. My crime is that of judging people by what they say and think, not what they look like. My crime is that of outsmarting you, something that you will never forgive me for.
I am a hacker, and this is my manifesto. You may stop this individual, but you can't stop us all... after all, we're all alike.

Hacker culture spread to other directions and perspectives. The Mentor herself, actually Loyd Blankenship, was not a computer expert; as professed by Levy, he was a gamer.

> The Mentor wrote for PHRACK, and also ran an underground board, Phoenix Project— but the Mentor was not a computer professional. The Mentor was the managing editor of Steve Jackson Games and a professional game designer by trade. (Sterling 1992, 307)

Cyberspace utopia reached a large public; from WarGames movie fans, game developers, new media artists, computational pirates and even the appearance of early hacktivist organizations like the Computer Chaos Club (CCC) and the Cult of the Dead Cow (cDc). Cybercrime awareness was also brought to the surface in this decade. 'Cracking' was not exactly something new; policy never really cared about the phreakers who used to disturb telecommunication companies for free calls. Nevertheless, with the personal computer revolution and the extended approach of network systems, history changed.

A case that was crucial for those new concerns referred to the 414s trial. In 1983, the FBI investigated and identified a 'hacker gang' named 414s. The group was formed by male teenagers who broke into some high-profile computer systems, including the Los Alamos National Laboratory one - a nuclear weapons research site that produced atomic bombs used during World War II. No bomb was dropped; the boys claimed that their purpose was only a 'computers game' and that the system was really easy to break. Media frenzy around the trial brought fear for general society and a national awareness concerning online security. After the event, different anti-hacking bills were implemented, including the Computer Fraud and Abuse Act.

In the final years of the 1980 decade, a student called Robert Tappan Morris launched a program, known as the First Internet Worm, in 1988. It became the first crime convicted under a bright new US law named Computer Fraud and Abuse Act.

> The "Internet Worm" of November 2-3,1988, created by Cornell grad student Robert Morris, was to be the largest and best-publicized computer-intrusion scandal to date. Morris claimed that his ingenious "worm" program was meant to harmlessly explore the Internet, but due to bad programming, the Worm replicated out of control and crashed some six thousand Internet computers. (Sterling 1992,195)

With the incoming of acts that could disrupt the national system, US governmental laws were improved. Internet attacks gained media attention and caused concerns that will increase - and sometimes be misled - in the following years.

3.3.1 The Last *True* Hacker

Richard Stallman, the prophet of the Free Software movement, is a long-recognized hacker who remains faithful to the 'original ethics' until nowadays; his history aligned with some of the already mentioned transitions that the US academicist hackers passthrough. Stallman joined the MIT Artificial Intelligence lab in 1971, when the savvy-tech youngsters were sharing software and ideas driven by the 'true hackers' purism. However, in 1984 he decided to quit the job, understanding that the community was becoming fragmented and that the hacker ideas (and freedom) were losing ground by market-oriented programs and projects.

> So I looked for a way that a programmer could do something for the good. I asked myself, was there a program or programs that I could write, so as to make a community possible once again? The answer was clear: what was needed first was an operating system. That is the crucial software for starting to use a computer. With an operating system, you can do many things; without one, you cannot run the computer at all. With a free operating system, we could again have a community of cooperating hackers—and invite anyone to join. And anyone would be able to use a computer without starting out by conspiring to deprive his or her friends. (Stallman 2002, 17)

Under Stallman's writings and speeches, the constant maxima sustained that knowledge should never be surveilled, interrupted, enclosed or kept; information must stay free. As a 'true hacker', Stallman left MIT to pursue a way to assure that the freedom of this field of knowledge will prevail. First, in 1983, he sketched the development of an operating system called GNU (a recursive acronym for "GNU's Not Linux"). This ambitious project needed other bases to be sustained as a wholly free and expansive program. Following his aims and motivated by GNU, still in the 1980s, Stallman launched two important ventures: The Free Software Foundation (FSF) and the Copyleft license (also GPL).

The Free Software Foundation is a non-profit venture built to promote the universal freedom to study, distribute, create, and modify computer software; it is the instance responsible for the regiment of the movement directrices. To implement a genuinely free software, the programmer must be aware of the following list:

- Freedom Zero is the freedom to run the program for any purpose, any way you like.

- Freedom One is the freedom to help yourself by changing the program to suit your needs.
- Freedom Two is the freedom to help your neighbor by distributing copies of the program.
- And Freedom Three is the freedom to help build your community by publishing an improved version so others can get the benefit of your work.

<div align="right">(Stallman 2002, 163)</div>

Again, those are principles; to make it work, Stallman also had to find a license that could guarantee the liberty of modification and distribution rights, according to Free Software aspirations. Copyright, BSD, and Patent licenses did not fit; in the late 1980s, he decided to develop a new one: the Copyleft. The name is an obvious joke with the Copyright; under the Copyleft license, only following the above listed 'Four Freedoms' could the software be truly licensed and considered free.

It is important to explain that free software does not mean free of charge; programmers have the liberty to charge what they think is a fair, or circumstantial, cost for launching or improving programs. However, they have an obligation to maintain the documentation, protocols and manuals updated. The most precious value, under Stallman's beliefs, was the gained and shared code knowledge.

As one might expect of the last true hacker, Richard Stallman has most emphatically remained true to the ideals of the MIT Artificial Intelligence lab. His company, the Free Software Foundation, is, according to *Wired*, "the world's only charitable organization with the mission of developing free software." Stallman has also been an instrumental force in the League for Software Freedom, a group reflecting his belief that proprietary software is a pox upon the digital landscape (Levy 2010, 461)

During the 1980s, hackers changed in many ways. The term itself started to be propagated under distinct social instances, acquiring other meanings and the community previously guided by principles shared among MIT students, spread to other instances and aims. Stallman remained loyal to the 1960s hackers' dreams, showing a technological resistance; he believes that computers still can make like batter, not in a commercial way.

3.4 1990s: Web Criminals?

The Internet finally became public; cyberspace utopia reached the imagination of those who are just arriving in the network world due to the personal computer industry and the Web invention. Most of the new 'netizens' are unaware of the political background that evolved hackers, politics, corporations, governmental and military instances. The first Web users bought

the promise that the online world would bring more equality to society in a globally connected democracy.

> Personal computers and information networks were supposed to be the new frontier of freedom—a techno-utopia where authoritarian and repressive structures lost their power, and where the creation of a better world was still possible. And all that we, global netizens, had to do for this new and better world to flower and bloom was to get out of the way and let Internet companies innovate and the market work its magic. This narrative has been planted deep into our culture's collective subconscious and holds a powerful sway over the way we view the Internet today. (Levine 2018, 17)

The free land that was once a hacker idealism became part of average people's desires; on the other hand, some hackers soon understood that the Web could represent the beginning of their dreams destruction. That does not mean that the community will disappear; 1990s hackers composed a larger society made of small groups, each one with proper concerns. The Web technology engaged hackers in different organizations and issues.

> The result has been an explosion of "hackers" of every type, from teen and preteen kids to old-school hackers in their forties and fifties. This explosion has been the source of a clear divide — between those hackers who consider themselves a subcultural elite and those who want easy answers to sometimes difficult or dangerous questions. (Thomas 2002, 81)

The Dutch zine *Hack-Tic* was a physical hacker publication distributed from 1989 until 1994; its organizers were also responsible for promoting encounters, like the *Galactic Hacker Party*, in 1989 and the *Hacking at the End of the Universe*, in 1993. Those events encouraged plural discussions about hacking tactics, cybersecurity, cyberfeminism, and social computer access. Rop Gonggrijp, *Hack-Tic's* founder, became a governmental target in Holland and US due to his underground organizations and publications; however, Gonggrijp genuinely believed that the hacker's role is about turning computers into an social accessible tool. *Hack-Tic* changed its subversive image when the XS4ALL project was founded in 1993. They promoted computer and Internet access to the general public, becoming one of the oldest public Internet service providers in the Netherlands. At a talk for Annaliza Savage's documentary *Unauthorized Access* (1994), Gonggrijp stated: "We provide access to the Internet, public access Unix. And it is becoming more than that because Holland does not have any Internet providers that cater to... ordinary people."

The *Galactic Hacker Party* also inspired later conferences like *Hackers on Planet Earth* (HOPE), organized by *2600: The Hacker Quarterly* magazine in 1994. As those meetings spread,

some became open to the general public, even inviting corporative cybersecurity experts. Jesse Dryden (aka Drunkfux) decided to organize the first HoHoCon after the war between DOM and LOM; *HoHoCon* was one of the first conventions in reuniting a while range of cybersecurity members, among hackers and corporations. Drunkfux did not support anti-law hacker actions and neither wanted to be screwed by the media. He was also engaged with the cDc group, which understands that diplomatic politics and self-image are essential to stimulate great marketing with the mainstream media instead of feeding the hacker persecution. *HoHoCon* molded the structure of modern hacker conferences, like *DefCon*.

> Organized by Jeff Moss (Dark Tangent), DefCon is a three-day meeting that brings together hackers, security experts, law enforcement, and industry specialists to hear lectures and engage in discussions about computer security. (...) Part of what makes DefCon unique is that it openly invites industry and law enforcement to the gathering. (Thomas 2002,94)

Some hackers did not agree with those shared meetings, while others understand that they are important to 'clean' the hacker image; there were still those who saw it as an opportunity to gather corporative material. Getting information of any kind is the basis of non-virtual hacker tactics that were very common in the 1990s; 'Social Hacking' or 'Social Engineering' is one of this kind that consists in collecting data through social manipulation; another one is 'Trashing', which consists of sneaking search for archives, paper and documentation; the name came from some hackers that actually used to dig through company's trash bumps in the search for material.

Those non-virtual hack tactics were at the core of Kevin Mitnick's acts. At the age of sixteen, he gathered unauthorized access to a DEC system called *The Ark*; only using the manipulative communication technique and having the name and telephone of *The Ark* administrator, he smartly got to know the system's password. This event leads back to 1979; in the years to follow, Mitnick would head of many actions, including phreaking, system security break, stealing credit card numbers, and cellular phone cloning, which leads him to recurrent jail stays.

In the 1990s, hackers gained mass attention, mostly under law prosecutions. The media coverage reflected a distorted social image that attributed hackers as a synonym of dangerous criminals, who are always ready to steal personal information and invade computers with malicious viruses. As Stallman predicted, the hacker community - that once had its knowledge and idealism free from commercial instances - is now dissolved, aggregated and distorted by the power. The 1990s arrived with a history of arrestments, court battles, society fear, development (not always for legal uses) of cybersecurity, surveillance, and new hacker aims.

Mitnick's case became the header of news and informal conversations during that period; Mitnick never exploited the data he gathered; his aims were about getting into or disturbing

systems, not actually to cause damage, and that was why his arrestment evolved many controversies. One of the most noticeable was John Markoff's cover for The New York Times. Markoff declared that his reports were impartial and only trying to clarify the case terms; however, many saw his writings as a way to portray hackers as 'hype' criminals, inducing the vilify of Mitnick's image and the hacker community as a whole. In the same year that Mitnick was pled guilty, The New York Times was invaded. During some hours, the newspaper's Web page stayed under the control of a group called *Hackers for Girlies*, a Mitnick's supporter.

> The hack of the New York Times Web page did demonstrate a number of things First, and most important, hackers were becoming activists. The hack of the Times was not just a prank to show the hackers' skills or for bragging rights; they had a message. Second, the movement that was unifying hackers was harking back to their early roots in the underground. (Thomas 2002, 231)

Mitnick's trial happened at the end of the 1990s decade; many things changed in the Internet field over those ten years. The security is trying to understand cybercrimes and new laws were created - like Operation Sundevil. Hackers started to be recurrent figures in court - as we can also see in the L0pht Heavy Industries member testify in 1998, and activism became part of some hacker's agenda. Examples can be traced at the FloodNet action, promoted by the Electronic Disturbance Theater in 1998 to sustain the Zapatista cause; and in the cDc The Hong Kong Blondes that helped to allow Chinese people to access the Internet.

cDc was considered one of the oldest' hacktivist' organizations; they are even attributed as the responsible for coining the mentioned term. The group emerged in the 1980s and had an essential role in molding later well-recognized groups like Anonymous. cDc members used to play with the propagated criminal hacker stereotype, taking advantage of it.

> They were the first hacker group to take media representation seriously, and in doing so they are also the first group to work as critics of the mainstream incorporation of computer culture and incorporate the notion of political dissent into their history and identity. (Douglas 2002, 94)

Their actions were pivotal in many instances. First, they were one of the first organizations to have a clear involvement with political issues; the idea of Civil Disobedience was in some sense amplified with them; second, they wanted to be a part of the mainstream society, using hacker subversion to gain attention. The conscience that cDc brought broke with some past hacker issues; they proposed another tactic that understands visibility as a way to get attention and get inside the circles that they aimed to disrupt. Becoming a part of the system to subvert its codes is a sort of thinking related to McKenzie Wark, who coined the theory that

hackers are a social class of the new post-capitalism rules, agents that can make the difference acting from inside the power instances. cDc was a precursor to that and merging hack, politics, hacktivism, and art.

...

Since the late 1980s, the mass media engaged the image of hackers as dangerous agents; this happened due to the increase of cybersecurity concerns and, also, unfamiliarity with the history behind hacker practices that remained in a private circle for many decades. As the online society grows, hackers also spread through other fields and aims, including the criminal one.

However, that was not the only instance; some hackers became cybersecurity mentors, others started to work for big corporations, others choose to become a political or technological resistance... As the Web opened cyberspace for all sorts of people, computational terminologies also started to be used in a larger sense of meaning. Some new hackers emerged from outside of the computational field.

Internet Art, mostly Net.art, aligned with the dot-com golden years, emerging in the highest period of Web speculation, when capitalism started to flirt with computational technologies. We know that countercultural movements, in a historical recurrence, usually occur as a response to repressive times or when a powerful instance increase as to impose its dominance shamelessly. During the 1990s, the Internet highlighted an unreturning break in social structures. When the world started to 'be' on the Web, the corporative power became interested in being the 'owner' of that space, which once was a communitarian - not to say anarchical - land. The hackers, who created and dreamed about the Internet, lost their autonomy and natural environment, responding with movements and technological development that represented a spirit of resistance. Some members were also coerced by the market, but others stayed truthful with the early aims, toking the political activist field to expose and crack powerful instances.

Many artists that became interested in the Web were also trying to escape from oppressive fields, more exactly the art market; they became aware of the technological ideologies and brought the old cyberspace dream back to the surface, this time in a 'public' way. It took a very short time for them to realize that the Web was not a free land, but the opposite of that; even being so young, the Web was already a market. Understanding that, the new net art community also changed its approach to become a sort of hacker child. Most of net artists were not experts in the technology, but had an ideology.

4. Internet Art

Internet Art refers to the art done in and for the Internet, but the Internet is not a static medium. When we say Video Art, it is possible to understand it as a video piece composed by a set of frames displayed on a screen; However, Internet Art is more complex. It can refer to the creative usage of codes, a flash website animation, a hacked webpage, and even acts that occur under a network system connection. There is no close strand besides its principal subject: The Internet.

According to Domenico Quaranta, Net Art (short for Internet Art) terminology is tricky because the Net prefix is often approached as a medium, like in the Video Art case. "The Internet is not a medium; it is a place. Thus, the term Net Art does not describe a medium, but a citizenship (...) Net Art is made by Netizens" (Quaranta 2010). He understands the Net as a place with its own local cultural strands, like "American Art" (Quaranta 2010). From the author's point of view, what defines Net Art is the people creating in the webspace at a specific time. For people, it is to say the social strands of a given group, background, technological awareness, and political aims. Sustained as a cultural strand, the Internet is an ever-changing place; if the Net space improves, it does relate and affects its netizens[40] as well, and the opposite. Internet Art deals with its 'place' by reflecting on the past and predicting its future.

Over the last 30 years, the webspace has grown to acquire a new relationship with 'general' life; the Internet revolution was not only about devices, software, and plugins (the medium), but about how it influenced the communal structure. More than ten years have passed since Quaranta's quote; the previously computerized society became a smartphone-based one. From smartwatches to smart homes, the insurgence of intelligent devices makes clear that online and offline life cannot be seen as separated fields anymore; the Internet and its citizens merged. When asked about how those transformations could change his previous statement; Quaranta explained:

> That of the Internet as a specific place and of net Art as a citizenship was – and in part still is – a beautiful metaphor in 2010, when internet awareness was still something to

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40   A jargon created in the 1990s and attributed to Michael Hauben. Netizens stand for a junction between the words 'Net' and 'Citizens'.

affirm; but maybe not that functional in the age of planetary scale computation (and planetary scale pandemics). I never thought about it in these terms, but maybe, now that the Internet and connectivity have become an experience shared, in one form of another (with smart homes and cars and high frequency trading on the one extreme and coltan mines and electronic graveyards on the other extreme of the spectrum), by the vast majority of the human species, we should start thinking about the Internet as a global ecosystem, and net Art as some kind of environmental activism. And yes, net Art *is* an ongoing art form – although even more dispersed and hard to be defined according to a specific set of media and practices than usual. (Quaranta 2021)[41]

Understanding this vast environment of perspectives and labels, we choose to highlight the transitional points of this art form accordingly with the technical structures and politics at a given time. While many papers still use the terms Internet Art, Net Art, and net.art as synonyms, those are distinct terminologies that will be used here to highlight singular 'places' of the Internet environment. Paraphrasing Quaranta, Internet Art term will be used as the major 'environment', where other labels emerged to detail characteristics and issues of a given place and time. They will be listed as:

- Internet Art: Will be used here as the highest instance, an umbrella that comports all the following mentioned categories: Net Art, NEEN, Surfing Clubs and Post-Internet Art.
- Net Art: names a set of movements and artists that emerged in the 1990s decade; web-based art mainly used webpages as their informational vehicle; the Net Art aggregated a great variety of issues that goes from data aesthetics to activist approaches, existing inside the Web 1.0 environment.
- Net.art: a Net Art branch. It was an art form made by a group of European artists considered the Net Art pioneers; net.art was an avant-garde approach that existed during the Internet boom period, from 1995 until 1999 approx.
- NEEN: was a specific self-claimed movement that emerged in the early 2000s; it refers to a period when Internet Art started to approach Web 2.0 and the creative potential of Social Media platforms.
- Surfing Clubs: A blog-based practice that combined online curatorial, storage and web-content search practices. Its trending point date to the early and mid-2000s
- Post-Internet Art: an artistic development that started in the mid-2000s and endures until nowadays, a hybrid form of expression that uses Internet devices in an expanded way, also a renewed contact with the art system that marks the return of the physical object as to 'materialize' some current digital issues.

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41   Domenico Quaranta, interview by author, Porto, June 3, 2021

4.1 Between New Media and Contemporary Art

Some precursors have deeply investigated the Internet years before the Web invention: e-mail Art, Telematic Art, and even a group called E.A.T.[42] are few of a longer list of names that impacted the creative usage of new technologies. For Christiane Paul (2003), new media Art is a later review that grouped Computational Art and Multimedia Art; she uses Digital Art as an open nomenclature and investigates it by distinguishing the practices that use digital technologies as a tool and those which uses it as a medium. Paul made a great timeline with this methodology, putting every tech production (since the 1960s) under the same umbrella would not be accurate for our case.

This study will focus on Internet Art, so we must pass through theories that can help us understand the Internet in its tinier characteristics. For Paul, Internet Art is under the new media art group; other theorists, like Quaranta, considered it a distinct art production that gained plural classifications and fields over the years. For Quaranta, Internet Art made a bridge between new media and contemporary art fields possible.

New media art investigated new technologies and interactive systems; we can say that it started as a split from traditional artistic media such as painting, sculpture, drawing; in priority to technology and computers. Those experimentations later became a structure field:

> In seeking legitimacy, NMA (new media art) has not only tried to place its practices within the theoretical and exhibition contexts of MCA (Mainstream Contemporary Art) but also has developed its own theoretical language and institutional contexts. The former attempts generally have been so fruitless and the latter so successful that an autonomous and isolated NMA art world emerged. It has expanded rapidly and internationally since the mid-1990s and has all the amenities found in MCA, except, of course, the market and legitimacy of MCA. (Shanken, 2015)

This Art form established its own cultural scene that grew separated from the mainstream art world. According to Edward Shanken, this happened because of contemporary art institutions' hesitancy in adapting to the digital; on the other hand, Shanken sustains that NMA often focused on the technological tool proprieties instead of offering deeper analysis on the digital media. The lack of exchange between those two fields shows double deficiencies; NMA loses critical approach while staying in a sort of machine elegy, and MCA becomes outdated by neglecting the digital debate. The mentioned Shanken's article named *Contemporary Art and New Media Digital Divide or Hybrid Discourse?* is a clear reference to the famous paper of Claire Bishop, *Digital Divide: Contemporary Art and New Media*, that was written three years early. In that work,

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42   E.A.T = Experiments in Art and Technology, was a 1960's artistic organization that promoted a larger collaboration between artists and engineers, wiling to effectively increase the new technologies creative potential. Billy Klüver and Robert Whitman founded it.

Bishop criticizes the scarcity of digital discussions inside contemporary art and somehow rejected new media art, by calling it a "specialized field (that) rarely overlaps with the mainstream art world" (Bishop, 2012). In response, Shanken sustained that what Bishop did was to reinforce this distance.

> Many works of art that employ the tools of new media and have gained mainstream acceptance generally are not acknowledged by MCA as works of NMA per se, just as the artists responsible for them often do not identify with the NMA artworld as their primary peer group (Shanken, 2015).

Shanken's and Bishop's questions, by the middle of 2010s, lay on the surface of a long-term discussion. In the 1990s, incipient artistic experimentations introduced those issues to a deeper level with the emergence of an art that used the Internet as a tool, medium, theory, and even as exposition space, the so-called Net Art. This art form has its most significant years aligned with the mass-used browser Netscape, breaking barriers as a unique moment for the world and the artistic field. Some Net artists engaged with the belief of an independent territory that does not fit inside the mainstream art system nor into new media art.

4.2   The origins of Net Art

Net Art arrived with the Web, aiming to be created and seen in the online space. The fundamental nature of early Net pieces absorbed the incoming Web inner structure, in codes, issues, and aesthetics. As foreigners arriving at an unexplored land, 1990's Net artists exalted the non-predictable nature of this medium, and that is why images and even textual descriptions will never fairly constrain Net Art.

> (...) a form of Art which may be presented *only in the Internet environment* (it has a non-material nature), and deals with computer networks and subject matter which is mainly the medium itself, the testing of its boundaries, and experiences with network and computer aesthetics. Net Art is subordinated to the rules of cyberspace and it may be understood only in this context. (Meixnerová 2019, 41)

Aligning with Marie Meixnerová's sentence, it is possible to look at _Simple Net Art Diagram_ (1997). This Net artwork, done by the duo MTAA, shows two computers connected by a line where a label stands "art happens here". The diagram became a Net Art icon (or meme), that testify this art form's function and development. Being largely revisited by other artists and anonyms along the years, MTAA later registered the diagram under a Creative Commons license so that anyone can freely alter and use it.

Simple Net Art Diagram piece is an effective metaphor for how artists managed Internet medium in the 1990s; Net Art would be something that "happens" instead of "is". In that decade, a global connection became possible; the Internet, which stayed many years stricter to small circles, was finally accessible for everyone who has a computer and a network connection. The 1990s Web was a new ground that headed exponential change in the social field; Net artists who arrived at that time became Net Art per se by their pioneer actuation. While in some previous new media art approaches, the technological potential was guided by collaboration between different fields, like in the EAT case, artists and engineers. The first Net artists usually avoid subordinate functions; they wanted to program, understand the inside codes of net systems, and create a new independent art community.

By their sense of autonomy and belief in a disruptive future, artists who composed the 1990's decade can be referred to as a generation that sought to be a Net Avant-Garde. In a simple definition, avant-garde refers to a "(...) temporal difference and artistic dissent to what already is or has already been established." (Daniels and Reisinger 2009). In the Net Art case, artists abandoned their previous mediums to be fully dedicated to cyberspace experimentations, believing in its innovative potential. A close tie between Web emergence and life changes stated this art form as a fulfillment of earlier avant-garde aims; Daniels and Reisinger affirmed it as evidence of a "pivotal moment in digital culture and of a paradigm shift in media society in general, (that) goes far beyond art history" (Daniels and Reisinger 2009). They considered it a way to classify ideas grounded in a socio-technological transformational time instead of a terminology that comes from the Art institutional field. A combination of factors like Net Art resistance in becoming a commodity, the originality of its roots and the later disappearance of many Web-based artworks contributed to the theorist's hypothesis. They pointed to three distinctive periods where net-based practices were founded:

- In the1980s, performative, temporary experiments and interventions in "foreign" (meaning already existing) networks using old and new telecommunication media.
- In the early 1990s, artists built, designed, and operated their own permanent structures for simultaneously social, discursive, and technical networks. Even more important than the technological innovation involved was the integration of these networks into the participants' everyday lives and the communities that emerged within the projects, as well as an international exchange among the projects.
- In 1994–95, projects started on or migrated to the Web, where they reached a larger audience and were made permanently accessible to the public via URLs.

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(Daniels and Reisinger 2009, 22-23)

Daniels and Reisinger refuses so the statement of the Internet Boom, in the mid-1990s, as the major impulse for Net Art productions. Instead, they believed that the combination of

technological curiosity and collaborative artworks embraced by Net artists started to be developed in previous decade's ideologies that arrived, primally, inside early online communities. Thus, a sense of collaboration, medium discovery and uncensored content sharing started.

A 1982 action called *Die Welt in 24 Stunden* (The World in 24 Hours), for example, utilized a network of telephone, fax, slow-scan TV, and the ARTEX online conference system. Initiator Robert Adrian X summarized the purpose of the project in this way: "The project tries to provide individual access to telecommunications media, and to develop strategies for using them in Art. However, the artistic dimension of the whole project does not consist of creating special objects—artworks (via fax, for instance)—but in producing relationships through dialogue, meaning, and special relationships among the participants, who 'produce' communicative events, not works of art". (Daniels and Reisinger 2009, 21)

The World in 24 Hours (1982) was pioneering in the usage of telecommunication technology in creative ways; it consisted of a massive 24 hours communication where people from around the world sanded informational content to the project center in Linz. An act that suppressed the physical object (artistic and machine) for the benefit of the emerging technology power in connecting people. To place these incoming desires of long-distance connections, Bulletin Board Systems (BBS) were crucial.

A BBS is consisted of a PC software that allowed users to exchange messages and data through a dial-up modem or Telnet connection; by the 1980s, that technology was responsible for remotely grouping people and forming specific platforms of interests. One of the most relevant ones inside the New Media scene was ARTEX (Artist's Electronic Exchange Network); it existed from 1980 until 1991 and worked as a small network dedicated to internationally exchanging artistic ideas; Roy Ascott's work *La Plissure du Text* (1983) used it as to call for collaborations. Ascott's project was constructed as a collective narrative where long distant participants - linked by fourteen nodes around the world - were invited to produce pieces of a story under a set of instructions, "The result was a huge Joycean collage, entirely unreadable of course, but the process of telematic collaboration was the real content of the piece." Adrian X and Ascott's works had their bases under ARTEX platform and brought the aims of long-distance communication, collaboration, and the suppression of centered authorship. Elements that will also be revisited for later web-based artists.

BBS systems are called Internet before the Internet or, in a more accurate way, social media before the Internet. Another example of Art collaborative BBS platform is THE THING , which is considered one of the first Net Art pieces. THE THING was launched by the artist Wolfgang Staehle in 1991; initially, with New York nodes only, that quickly spread to bases in Europe. While being at a late BBS age, it used The Bread Board System (TBBS), a robust private software, with no calls and download limits for its users. THE THING was important as an

advanced network for sharing art theory, political aims, and projects; it had a more practical/experimental nature that influenced and hosted some Net Art first pieces. Also, it was idealized as a communitarian artwork itself, as said by its founder:

> What matters to Beuys was the social sculpture, an artistic production made jointly by a group or a community. *The Thing* is just such a sculpture: it realizes the Beuysian idea of direct democracy, of a political community as a social structure. At the same time, it represents an expansion of the notion of what constitutes art (cited in Daniels 1994).

Under THE THING, the very first online artworks were shared and even sold. Peter Halley created *Superdream Mutation (1993)*; with this piece, people were invited to download the digital file and print it at home; Halley wanted to make an edition created and distributed solely by digital means and which was only materialized when printed by the purchaser. The work had a cost of 25$ and was not a great success, but it showed how multiple the Net Art aims are. In 1995, Staehle's project transitioned to the Web; BBS communities were losing space by the incoming mass Web usage. The THING seemed to mark this transitional moment; it became a pre-historical art's social media were to exchange works and ideas.

Under ARTEX, THE THING and similar platforms, artists started to effectively work inside the Web space and one of the favorite topics at that time seems to be: communication.

Douglas Davis made *The World's First Collaborative Sentence* (1994), which consisted of an interactive Web system where people around the world are invited to contribute in a never-ending sentence. The idea was simple, as well as innovative for a time without social media and blogs. Davis's work also has similarities with Ascott's *La Plissure du Text*, but is different in the context of pure collaboration, as this proposal does not have previous instructions and neither censorship. Another example is Heath Bunting's piece *Communication Creates Conflict* (1995), where users could send messages that will be delivered in different media formats (like fax and postcards) through a Web platform; the messages would be received at a Tokyo subway station. In Bunting's case, the Web mediated offline communication and predicted the later online important role in live social interactions.

The skeptical postmodernism aims that favorited the medium was trespassed by the early Net Art productions. Entirely evolved with the incoming technologies of the 1990's decade, this art saw the Webspace and platforms to detach from the new media and contemporary art Institutional established norms. Not every artist that worked under the Web is ideological, of course, but the returning of some modernist lines was evident. Daniels and Reisinger listed them as:

- A critique of the "bourgeois" concept of Art, of the commercialization and institutionalization Art.

- A kind of "art for all" that would reach its audience directly, bypassing the gatekeepers of the art context
- Collective authorship, or anonymous works, as a critique of the idea of "genius."
- The transition from Art to life and politics
- Art that does not want to be recognized as Art
- Art as an effect or shock of the real
- Internationalism or non-nationalism.

(Daniels and Reisinger 2009, 44-45)

One of the most prominent artists in the net.art group, Vuk Ćosić, once declared: "... in a way we are Duchamp's ideal children". Web-based Art done in the '90s also mirrored DADA and Fluxus movements; reviewing radical groups of Art History, they wanted to achieve beyond mere technological exploration. In 1995 an e-mail[43], headed as 'net.artists', Pit Schultz claimed that Net Art (net.art) productions were going beyond:

> This school has already aroused passionate discussion. Net Art can in no way be considered a systematic doctrine; it does, however, constitute a school, and the activists who make up this school want to transform their www artworks by returning to first principles with regard to online inspiration, just as the media.artists - and many of the net.artists were at one time media.artists - returned to first principles with regard to interface composition. (...) In the monumental appearance of compositions that go beyond the frivolities of contemporary Art, the public has refused to see what is really there: a noble and restrained art ready to undertake the vast subjects for which postmodernism had left media artists totally unprepared. (Schultz email message to *Nettime*, 24 May 1996)

While some Media artists, like Douglas Davis, were already established names exploring the Web, the insurgence of net.art was divisional by the aims that constructed the group. Most of them are unknown artists that became passionate about the cyberspace idea and decided to transform it into art. Net.art will be recognized as the most well-known and passionate moment of Net Art.

4.2.1 Net.art: Utopic Pioneers

Net.art was neither a movement nor a collective; the first exponents of this art form emerged under a listserv called *Nettime,* which became remarkable for reuniting artists and intellectuals who shared an anti-Silicon Valley approach of the Web. Created after a series of

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43 Pit, Schultz, email message to *Nettime*, 24 May 1996

meetings and smaller art festivals that occurred in Venice, Budapest, Amsterdam, and Ljubljana (Wark 2016), in 1995, *Nettime* was <u>launched</u> as a "temporary experiment" (Schultz 1995), headed by Geert Lovink and Pit Schultz.

> (To) bring together different disciplines and practices such as electronic arts, computer science, media theory, IT-journalism and media activism. Topics have been the canon of net.art, foundations of media aesthetics, tactical media aspects of protests against corporate globalization, the fight against censorship and the politics of Internet domain names. (Lovink 2009, 91)

As a consequence of a period when the Web is gaining more social awareness, *Nettime* shared the interest of a new net critique. Schultz was responsible for reuniting the first members of this listserv, which start as a small community for intellectual shares and presential events organization. *Nettime* was a pioneer in structuring its own micro-politics; there, people were encouraged to produce critical texts, intellectual content and exalted debates occurred. Being against the dominant productive view propagated by the US Web-technocratic, the list was idealized as a new online territory, not exactly as a place to group paired-thinkers.

> The debate between techno-libertarians and net critics was going to dominate Nettime. It gave the list the reputation being one of few places of exchange between the European and US-American intelligentsia. (Lovink 2009, 100)

As we briefly discussed in the previous lines, mailing lists and BBS servers played a meaningful communitarian function in the 1990s. They were non-moderated spaces where people can relate to common topics of interest. With the Web popularization, BBSes get out of the scene; previous boards - like *The Thing*, which migrated to a website in 1995 - understood that there was no more reason to stay inside closed forums-alike places. Listservs became the preferable way to organize internal debates, while webpages turned into the standard medium for artworks, online exhibitions, and shared media content.

> Listservs were a sort of intermediate stage in the evolution of social media. To give you some idea of how different they were from today's social media: when it started, Nettime.org was not moderated. Spam was too rare an occurrence to worry about. (Wark 2016, 400).

Without moderation, the lack of control[44] eventually could lead to a messy amount of content. However, this place that Schultz called a "dirty channel" was about the proliferation of

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44   When the list started to increase, moderation was required. In 1998 Ted Byfield and Felix Stalder became Nettime moderators.

free ideas, even if chaotic. It was rooted in counter-institutional points that aimed to assure the open politics of the online space; they had gone against copyright instances, producing such unfinished essays, open artworks, changeable content and embracing against institutional flags. The list started with less than ten contributors and in five years achieved some thousands. (Wark, 2016).

> (...) various aspects of technology culture and industry were discussed constantly, in great detail, and often in political terms. Though rarely focused on art, Nettime was an invaluable network for the emerging net art community. (Greene 2003, 52)

While Greene sustained that *Nettime* discussions[45] were not focused on the art field, the sentence must be understood as referring to mainstream art. Under *Nettime*, the focus was to explore multiple subjects that arrived with the Web technologies, passing through technological, commercial, political and cultural instances as conjoined fields that globally affects society and art.

> Nettime was less interested in the theme of "virtual life" than many other online avant-gardes of the time. The focus was more on the interaction between two kinds of collective experience than on the vicissitudes of personal "identity." (Wark 2016).

Nettime's initial aim was to motivate offline encounters and content production; the online space was not seen as a new land where people would dematerialize, but mainly as an instrument to form a new collective intellectual corpus, from where smaller critical branches would spread. The listserv members would found their pairs and establish more specific organizations; one of Nettime's most notorious 'child' was net.art.

Prominent names that headed the net.art group are the artists Vuk Ćosić, Alexei Shulgin, Olia Lialina, Heath Bunting and the duo Jodi (Joan Heemskerk and Dirk Paesmans). Their motifs were very heterogeneous; each one has a particular language or niche of interest while sharing the desire to inhabit the online space using the Web as a critique medium force. Some of those artists started to sketch collaborative projects in 1994, but it was under *Nettime* that net.art has been officially affirmed.

The 'dot' in net.art term was also mythicized inside the listserv. At an internal discussion entitled <u>Net.Art - the origin,</u> Alexei Shulgin would span the tale of a mysterious anonymous e-mail addressed to Ćosić, where a wrongly decrypted message would turn the textual content into an "unreadable ASCII abracadabra" (cited in Stallabrass 2003). Between glitched characters, 'net.art' would be the only readable term, catching Ćosić's eyes who decided to adopt it as a name

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45   At Nettime.org archive, it is possible to remount old exchanged e-mails as a valorous documentation that can help in the understanding of which topics used to flow between Nettime participants

for his artistic practices. Demystifying it or giving an even more glamorous approach to this history; Vuk Ćosić, in an informal e-mail interview, explained:

> That Nettime post by Alexei Shulgin (from '97) is one of the best pieces of net.art. It is much more than simply false - it is a far echo of the (fake) story of Jesus that is the basis of true belief of billions of humans. It was a beautiful and poetic fake that served the purpose of creating a myth and avoiding the prosaic story. In reality what happened was that our friend activist and artist Pit Schultz decided to make a net.art exhibition and needed a name. He proposed this idea where .art is like a file extension - you know like a Word file ending with .doc - and we all liked it. So he was our Apollinaire. That show was the first ever exhibition of our net.art stuff and was also a very smart reflection on the impracticality and other paradoxes of showing net.art outside of the Internet. (Ćosić 2021)[46]

As Ćosić said, the 'dot' reflected their desire to be recognized - more than as a "file extension"- as a Web extension. Combining humor and political tactics, maybe the best way to describe net.art is by classifying it as a specific political Web-art form that happened within a short period. Inside Alexei Shulgin and Natalie Bookchin's work/manifesto *Introduction to net.art (1994-1999)*, net.art life was dated between 1994-1999 and the term was defined as a "Movement from impermanence, immateriality and immediacy to materialization".

Shulgin had a vast actuation within the group; he worked as an artist, curator and festival organizer; from the romanticized 'dot' narrative to writing most net.art manifestos. Shulgin brought strategies and self-consciousness for the net.art group, while dealing with different webspace subjects in his individual productions. In *Form Art*(1997), he used a minimal webpage design full of buttons and boxes; the work suggested another meaning for interaction, displaying a provocative 'useless' webpage where nothing happened and where the click interaction conduct to nowhere. In an extremum oppositive aesthetic, Shulgin conceived the work *FuckU-FuckMe* (1999); where a fake website simulates a product that could make remote sexual interaction physically possible. This piece criticizes the number of commercial websites emerging as well as the highly profitable online porn industry. "Shulgin echoes Duchamp's remark about the readymade that they should reflect a total absence of good and bad taste" (Stallabrass 2003, 27)

Shulgin was very aware of the general quick modifications under Web's structures and policies; his works - as seen in the above examples - passed from a softer critique about the excess of senseless point-and-click interactions[47], till a very explicit mock of the dot-com corporative

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46   Vuk Ćosić, interview by author, Porto, May 5, 2021
47   I don't believe in interactivity, because I think interactivity is a very simple and obvious way to manipulate people. Because what happens with so-called interactive art is that if an artist proposes an interactive piece of art, they always declare: 'Oh, it's very democratic! Participate! Create your own world! Click on the button and you are as much the author of this piece as I am.' But it's never true. There is always the author with his name and his career behind it, and he just seduces people to click buttons in his own name" (Shulgin in Stallabrass 2003)

hype, in the late 1990s. websites were not just platforms were net.artists created and exposed their pieces; their political structure, informational display and code construction refer to the highest instance where net.artists poetic - under different styles - merged.

The Dutch-Belgian couple Joan Heemskerk and Dirk Paesmans started to explore the Web in 1993, during a residency at San Jose State University, which is placed in the core of Silicon Valley. One year after their first contact with the Web, Jodi would be created. Jodi's artworks evoke a cyber anarchist aesthetic, highlighting 'bugs' and 'hacked' interfaces. One of their most famous pieces is their own website, JODI.org; where a combination of simple HTML designs shows scattered images and messages . By an impeccable fusion between concept and form, Jodi has often been exalted as one of the most iconic net.art projects; between the oddity of their coded images, there is a simulacrum of the old dreamed cyberworld. Domenico Quaranta postulates their creations as the 'divine' start of net-based art as a whole: "In the beginning [there] was Jodi, and Jodi was within the Internet, and Jodi was the Internet" (Quaranta 2010); he understands the poetic of this duo as a prevision and anthropology of the Web structure itself, in subverting the standard way to navigate through a webpage. Julian Stallabrass also sounds enthusiastic while writing about Jodi; the author emphasizes how the duo "subversive formalism" (Stallabrass 2003) largely represented some early Web anxieties like viruses and hack attacks.

In a more lyrical approach, there is the Russian artist Olia Lialina. She developed an interactive hypertext narrative in *My Boyfriend Came Back from the War*(1996), an artwork that became famous due to its formal precision. The piece is a non-linear narrative where - under a dramatic silent atmosphere - the users conduct a confusing love history by point and click interaction. Lialina's works show a new and paradoxical form of storytelling, one that did not fit and at the same time stay in between cinema and literature. Using the Web's basic language: HTML and structure: Hypertext; text and image were displayed in a very purist manner, preserving the structural spine of webpages. Lialina believes that "If something is in the net, it should speak in net.language." (Lialina in Connor, 2016).

'Net.language' flows in the universalism of code, and the Web was supposed to be an open worldwide connection; however, that does not happen in a simultaneous way. In the mid-1990s, Internet Art was a growing culture in some European countries, while the North-American centrism was more occupied with the business side and online users expansion; outside the mentioned centers, many countries were barely aware of the Internet existence. Nationality is one strand that is supposed to be blurred under the online space utopia. However, it is essentially important to understand how the Internet movements, culture, and technological development occurred. For the Net Art foundation, the English language predominance was also an influential aspect.

The importance of the English language should not be underestimated, and may be one of the reasons for the prominence of Net activism and culture in those European countries

where English is most widely and effective taught - Germany and the Low Countries. (Stallabrass 2003, 52)

Stallabrass remembered some of the Internet Art geographical centers; the United Kingdom was also very active in developing the intellectual side and content of the early Web. According to him, the common language with the US was one facilitator, aligned with the rapid national take up of consumers technology and a strong IT sector.

Tracing the nationality of net.art group exponents, Eastern Europe (Ćosić, Shulgin and Lialina) is surprisingly representative. The early-mid 1990s was a period of pluralism and media openness with the dissolution of the Soviet Union and the Berlin Wall fall; net.art thus reunited western and eastern artists under a desire to be independent of labels and nationality, and their origins influenced the net.art discourse.

During this period, for Eastern European artists and new-media types, the Internet had a utopian halo. George Soros's Open Society Institute and other NGOs had funded media centers—such as Ljudmila in Ljubljana, Slovenia, an Open Society initiative where Vuk Ćosić still works—and software and computer education programs, making it relatively easy for motivated enthusiasts to participate in the brave new world of international communications. (Greene 2000)

The rejection of North American digital culture was another factor that influenced this group. Nettime - the mail list where net.art was born - was settled under the aim of constructing a more subversive digital critique that goes against the artificial-techno lifestyle propagated by the US and Californian postmodernism. Pit Shultz, while referring to the US digital theories and movements, would question: "Where is the dirt?" (cited in Lovink 2003, 99). Greene reinforces this regional counterculture approach, remembering that those artists who worked in Eastern Europe and Russia by coming "from cultures in which the promises of marketed 'democracy' and ideology were unwelcome" (Greene 2004), helped to mold a more radical branch inside net.art discourse.

In the mid-1990s, net.artists were aware of the quick commercial turn of the Web. Equally, they were driven by a certain naive sense of justice, believing that with a decentralized Net culture, the Web could still maintain an underground side where political and institutional resistance preserves. For Ćosić, the beginning of net.art:

(...) was deeply romantic and naive, of course. In short, we have decided to believe in the possibility of a hybrid between the avant-garde heritage on one side and of the emancipatory potential of the new medium that fell on our heads. So, the vast majority of our exciting discussions was about new ways to create, and about the freedom to make

work and reach an audience without the interference of the art system and so on (Ćosić 2021)[48]

Heath Bunting always sustained a very political attitude toward Web-based art; he believed in the exchange and union of different subjects of idealism but was against the point of a complete dematerialization into the online space (Bunting 2021)[49]. Differing from some net.art medium centrists - like Jodi - his works pass through online and offline instances, using the Web as a political way to organize and aid in social causes.

With a background based on graffiti, public performances and social activism, Bunting's relationship with the streets never changed. One of his earlier conjoined actions was _King-Cross Phone In_ (1994), which consisted of a street event where people were invited to simultaneously call for 30 public phones located at King's Cross station (UK); the numbers of the public telephone was published in the Cybercafe website, as well as a set of instructions. The result was a culture jamming act of a telephonic symphony. In _King-Cross Phone In_, the online role was to gather participation. In another work named _CCTV-World Wide Watch_ (1998), Bunting employed four webcams used for the surveillance of public spaces, where Web users can access images being live broadcasted from different cities around the world; in the guidelines of this artwork, participants were asked to interact with it by notifying the nearest police station if any crimes were committed in these locations. _CCTV-World Wide Watch_ was not a mechanism to help the police; it brought questions of control and agency, with a taste of irony in asking for netizens to took the role of 'surveillors'. Again, the webpage acted as a tool that connected people from variable places in the background of urban streets.

Bunting entered in the Web space approaching a poetic of an expanded - and safer - communicational system. He was the founder of two important net.art platforms: irational.org, launched in 1996 mainly as an expanded collective place to organize acts, discussions and projects[50]; and the BBS Cybercafe.org, the forerunner of irrational.org.

Managing to discuss websites' social side and flagging communitarian organizations in preference to individually signed artworks; net.art founders raised online collective platforms and used to work in neighbor studios, exchanging poetics, codes, and dinners together. The image of artists sharing the same ideology and working in front of - and under - computers seem pretty similar to those early hacker communities where tech passionates worked together to decrypt lines of complex code and shared the idea that computers could help people.

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48   Ibid., 75.
49   Heat Bunting, telephone conversation with author, May 20, 2021.
50   Names reunited under the platform included: Daniel Garcia Andújar / Technologies to the People (ES), Rachel Baker (UK), Kayle Brandon (UK), Heath Bunting (UK), Minerva Cuevas / Mejor Vida Corporation (MX) and Marcus Valentine (UK).

The narrow definition (or rather a description) might be that net.art was a short heroic period when a generation of just-about-ripe artists researched the possibility to create medium specific art online. Some of our results ended nowhere but some became statistical firsts and have left trace in art, design and also e-business. (Ćosić 2021)[51]

Just like the 1970s hackers, net.artists were organized under the desire to construct an independent scene detached from the corporative control; in the net.art case, the goal was never to be coerced by the traditional art system. Vuk Ćosić once said: "The net…was an opportunity to emigrate from the realities I didn't agree with. One of them was the art world."

However, in 1997, Net.art productions started to gain media and art circuit attention; conducting a paradoxical relationship between counterculture and institutions. Ćosić's work, _Documenta Done_ (1997), was very accurate in showing this.

The 10th Kassel Documenta[52], which happened in 1997, made reasonable attempts to promote a decentralized and critique-aware exhibition; it was the first time that a Documenta edition was headed by a woman - with Catherine David being responsible - and also one of the first museological attempts to show Net Art in a proper way; artists like Heath Bunting and Jodi were invited to participate. However, the institution was soon revealed to be unprepared to deal with Net artworks issues. First, they had many troubles in placing the show online; Net artworks were exhibited in a room displaced from the primal exhibition and inside a poor structure of local network cabled computers. The second, and crucial, Documenta error was the announcement that the online show webpage would be shut down after Documenta X's end and the net pieces would be materialized on a buyable CD' Room.

In response, Vuk Ćosić made a 'pirate' version of Documenta online exhibition; he copied all the Net artworks to his server (Ljudmila.org) and later announced some fake news, blaming an Eastern European Hacker for the page hijacking. That prank can be seen as a successful critique, a joke, and a hacking act, while that was only by Ćosić's work that people could have extended access to that content and that the net.art was again devolved to its natural environment.

As for Documenta - it was intended as institutional critique. At that time our main discussion (on Nettime mailing list) was about public space online and this gesture of Documenta when they announced that they will take the site offline and sell it as a CDROM sounded very very wrong. So by making the full copy on my server I have performed a Ready Made Detourné - a Debordian reversal of the Duchampian gesture where I took art from the gallery and put it back where it belongs - online. There was no

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51   Ibid., 75.
52   Kassel Documenta is one of the most influential exhibitions for contemporary art. The event take place
            from five to five years in Kassel, Germany.

real hacking involved, just a simple UNIX command, but still it was perceived as a hacktivist gesture. (Ćosić 2021)[53]

Copy-paste actions, like *Documenta Done*, will turn to be a current tactic inside the late-1990s Net Art. Other cases were: Cornelia Sollfrank's *Female Extension* (1997), an action-artwork that tried to flood a net art competition server with hundreds of fake woman artists submissions; 0100101110101101.org's work *Vaticano.org* (1998), which consisted in a copy of the Vatican official page layout; the only elements that differentiate the original website from the fake one is that "...in our version, the Pope appropriated pop songs, exalted free love, soft drugs, he invoked the success of student movements and claimed the Church "duty to civil and electronic disobedience." (Mattes s.d.)

Female Extension and *Documenta Done* are great examples of works that depreciated the Institutional field; Ćosić talked about constraining the online art into the system while Sollfrank criticizes the institutional rules that exclude not only 'true' online artworks but - primally - woman's. However, Net Art does not remained completely marginalized; many recognized media centers and festivals like ZKM Karlsruhe and NTT'S Intercommunication Center, Ars Electronica, European Media Ars Festival and Transmediale, embraced it. If it were not for institutional and academic attempts to raise the net.art issues, it would possibly have stayed in a forgotten domain

Rachel Greene states that 1997 was a remarkable year for Net Art and a point that turns to a gradual dissolution of the webpage poetics of net.art. In 1998, "software, cultural terrorism, radio and the incipient institutionalization of net.art" (Greene 2000) emerged as a trend displacing the early webpage-centered medium. The works revealed a more hybrid and sophisticated design, giving up on the first Web days' purist. In 1997 net.artists were fighting against the Documenta X way of displaying Web-based works and in 1999, net.art's death sentence would be announced into marble craves at the ZKM net_condition show.

4.2.2 Net.art died but is still alive

The dissolved structures of the early net.art was just about evolution, and its disappearance was, in fact, very coherent with its motifs. The names who founded net.art also decided to state its finish by the end of the 1990s. Web's evolution and the inevitable destruction of freedom ideals that guided net.art first years soon proved to be completely gone; as happened with previous avant-garde movements, it is supposed to endure only during a short period in time.

Looking today at the social, aesthetic, and conceptual approaches of the early 1990s, (...) it is clear that most of them (early net-artworks) have come true, if in ways other than

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53   Ibid., 75.

intended. They materialized, but without establishing a new art genre, and they resisted the typical process of commodification met with art institutions. What happened instead was that some of the initial ideas took shape in everyday socio-technological living conditions. (Dieter and Risinger 2009, 6)

Dieter and Risinger's state refers to the development of Net Art, while understanding that the worries and critiques that the Net scene pioneers so often exposed became a reality. Net.art, in its specific characteristics, could not survive to the shift of a commercial and censored Web and neither to the Institutional interest in their productions.

We have actually declared death of net.art in 1998 in order to mark a point in time that to us represented the end of innocence and the realization that our super-broad utopian belief in Internet of absolute freedom is not exactly spot on. Just like with the name - we have decided to call the shots instead of waiting for our theorist friends to tell us who we are and what we are doing. (Ćosić 2021)[54]

In 1999, one of the most profitable attempts to exhibit net.art productions was done at the ZKM center; the show called *net_condition* was curated by Peter Weibel and Timothy Druckrey. Besides being a large and more coherent approach, it already had the structure of a historical perspective, becoming a symbolic transitional point as well as an official funeral for net.art.

Between the pieces shown, Shulgin's and Bookchin's *Introduction to Net.Art* was there revisited; the ironic rules that introduced net.art also proclaimed the end of its period by materializing the text in six craved marble tablets, conceived in collaboration with Blank & Jeron. The net.art games rules gained another perspective while hanging in a gallery wall and affixed into one of the most 'sacred' mediums of traditional Art (marble).

Introduction... was an instruction manual and a moral code for the propagation of Internet Art, the two artists acting as Moses descending with the Commandments. (Stallabras 2003, 125)

On the day of the opening of *net_condition*, Vuk Ćosić went further by arrived with flowers and depositing them in the base of Jeffrey Shaw's work *Net.Art Browser* (1999). The act was a critique of Shaw's work and a clear resignation with Net Art's future.

The stuff (*Net.Art Browser*) was shown offline, like stand-alone works of art. So we called it "net.art Memorial" because it reminded me of this thing of Washington [Vietnam

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54   Ibid., 75.

Veterans War Memorial]. Anyway, I put flowers there at the opening of the show. (Ćosić, 2001)

Some years later, in 2003, the Oslo Museum of Contemporary Art announced the exhibition *Written in stone: net.art archeology*, clearly referencing Shulgin & Bookchin's piece. The show was curated by Per Platou in two separate instances: an online and a physical exhibition. Inside the museum space, it was possible to see some net.art's 'historical artifacts' and artist's private objects, like photos, printed e-mails and a Superman T-shirt worn that belonged to Vuk Ćosić . Platou tried to revive net art's ironic side, even installing a tacky monument where the heroes of dot-com art period bust were exposed.

There is a myth that net art belongs to a small group of artists, heroes. Legend has it they invented net art and then killed it. Or it was just an accident. Or they all died. Or they're already in their 90's... Or they've just retired. Some people say they'll come back. Per Platou erected a monument, a group of sculptures to the myth and its heroes. Six plaster busts. Jodi in the middle, Ćosić and Shulgin in front, Lialina and Bunting on the left and the right. But the artist's heads are not that big, about 20 cm. with a pedestal. You have to come really close to recognize who's who in this vitrine. They're very small heroes. (Lialina 2003)

The "little" net.art group made history in Web-based practices and became part of a very short history that remounts the Web born itself; their path can be traced at server lists archives and authorial platforms, while most of the works done at that time were lost. When asked about _readme.html (1998)_, for example, Heath Bunting said that the work survived just by a matter of luck, while many others have completely vanished from the Web. One of net.art characteristics was precisely this lack of preoccupation with museological strands of preservation; their history was made at a particular time and for that time only.

Many net.artworks were lost because of the predictable technological obsolescence; however, we can also find some organizations that did a hard work in trying to remount and preserve this (im)material memory. Rhizome Net Art Anthology is a concrete example of a database project that has the primary goal of helping us to visualize this chapter of art history; it is a net-based platform where it is possible to access Net Art most iconic productions in its original interface, reviving Net Art history, from the 1980s till nowadays. Rhizome timeline became an effective tool to help us understand the death of some Internet ideals and later paths that Net Art followed; it is also a coherent way to talk about net.art, as being in its proper environment.

Net.art self-claimed dead was somehow a way to preserve the ideals propagated by its pioneers, a way to maintain the ideological coherence with their early utopic motifs. Many of those artists ended up retiring from the art scene, while others continued their production adapting to the incoming Web (or system) new rules. What is factual is that the strands of net.art will still

be many times revisited along with Net Art history; they were a crucial influence for later Web-based art movements. "Real Net art (Net.art) is dead. Long live Net.art." (Lialina 2003)

4.3   From Browsers to (Hack)Activism

Browsers' proliferation increased the Web's mass usage; they became the major tool for Internet access in the 1990s; not coincidently, it was aligned with the commercial browsers sprang that Net Art was developed.

The art collective I/O/D (Matthew Fuller, Colin Green, and Simon Pope) were openly against the private software industry and the manners that online corporations have been using to filter information; they developed the net piece _The Web Stalker_ (1997), in the same year that Netscape and Internet Explorer declared the first browser war. _The Web Stalker_ is a critical artistic-made browser that shows an alternative way for displaying Web content. As Matthew Fuller explained, one of the Web Stalker's aims was:

> (...) to create a way of interfacing with the Web that foregrounded some of the qualities of the network sublimated by other software. We wanted to develop an approach that would privilege fast access to information, and the ability to look ahead of the structures that were presented to users as well as to map the idiomatic structures of sites. We wanted to embed critical operations in software, but by forcing critical ideas to become productive rather than simply being aloof and knowing. (Fuller 2017)

Inside the elegant visual of this net artwork lays a reflection on how standard browser's layout - and other private Web tools - can restrict access to information under friendly surfaces.

> The Web Stalker offered a provocation to artists working with the net, suggesting that to fight back against its emerging corporate monoculture, they must look beyond HTML, and consider other aspects of its infrastructure. (Rhizome, s.d.)

Commercial Web, private software, data manipulation and even social disparities; were issues that, in the late 1990s, reflected a transition on the Net Art motifs. The previous romanticism of the early Net Art gave space for acts and artworks that go beyond the webpage medium to emphasize more politically engaged aims. I/O/D concept mirrored an early ideology propagated by the tech community: the free software movement.

Like I/O/D, the group Mongrel (Graham Harwood, Richard Pierre-Davis, Matsuko Yokokoji, and Mervin Jarman) worked with a hacked interface. They created and offered an Adobe photoshop alike freeware; named _Heritage Gold (1997)_. Mongrel's program worked as any other image manipulative tool, but some of its commands were altered in favor of a racial

discussion. In the given palette of Heritage Gold, the user will not choose a color like red and cyan; instead, the options would be Caucasian, Black, or Japanese.

To spread their program, Mongrel also created a webpage that mocked a corporative software release; in a parodical approach, the 'MongrelSoft™' offered a product where:

> (...)Many powerful ethnic features are yours to command through our new, even easier-to-use interface. With the eight free Heritage Templates just a mouse-click away on the Web from MongrelSoft, there's no end to the fun you'll have with MongrelSof HeritageGold. (Mongrel s.d.)

With the boom of online companies, Net Artists took the corporative image and recontextualized it for artistic aims; some groups actually wanted to 'hack' the market, others to promote a Net piece action or just to gain fame under a joke.

A domain name war was installed between two online companies: Etoy and eToys. Etoy is a Zurich-based art group that founded a satirical company for artistic matters; their actions involved digital hijackings[55] and selling shares of stock as an art piece. Around 1999, a providential coincidence helped the artists to achieve their masterpiece. When eToys - an ambitious company that controlled the American toys market - started to expand their business in online commerce, the "etoy.com" domain was already registered by Etoy group; the name similarity caused a series of misleading's, and eToy decided so to purchase the art website.

At first, the toy company tried to negotiate, facing the artists' resistance; an intense law battle was settled. eToy thought that the victory would be effortless, as they were a profitable company 'fighting' against some young artists; However, online campaigns moved by artists, net.art organizations, cultural agents and even anonymous people sprang in Etoy's favor; the resistance culminated in the artists 'victory' and in the late eToys.inc failure. *TOYWAR* (1999-2000) became an icon and Etoy a symbol for Art vs. Profitable Corporations battles.

> TOYWAR was the most expensive performance in art history: $4.5 billion dollars. a glorious victory for the etoy.CORPORATION which compensated activists with etoy.SHARES (INTERNATIONAL ART MERKET SYMBOLS EYA / EYM - postmasters gallery new york): in march 2000 hundreds of brave TOY.soldiers transformed into etoy.CO-OWNERS with voting rights. (Etoy.com s.d.)

Etoy won the battle due to organized campaigns and online support from all over the world. Structured material that engages people into a particular cause leads us to many similarities (again) between Net Art and hacktivist organizations. Hacktivism does not work by the solitary hacker ideal of one member, but crossing the network and reuniting fellows and people

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55   There are many forms of Hijacking: Credit Card hijacking, Domain Hijacking, IP Hijacking, DSN Hijacking, DLL Hijacking, Clickjacking and so on. It is a way to kidnap something or some information

sympathetic to a particular principle. As postulated by Tozzi Di Corinto at the 2002 book "Hacktivism: La libertà nelle maglie della rete":

> The term hacktivism comes from combining the words hacking and activism. *Hacking* is putting into practice a particular attitude towards information machines that presumes the study of computers to improve operation – through cooperation and free exchange of information between programmers – and sharing the knowledge that comes from it in order to give everyone unlimited access to knowledge. *Activism* in a strict sense is the American term indicating the means of organization and political propaganda of the grassroots movements, and in particular indicates the forms of direct action such as sit-ins, demonstrations, picketing, boycotting goods and consumption, squatting buildings and streets, self-management of spaces and self-production of goods and services. (cited in Bazzichelli 2008).

A closer knot between hacktivism and art can be seen at The Electronic Disturbance Theater (EDT); the group is formed by hackers and artists who advocate discussions anti-US and Mexican governments declared wars against Zapatistas and others in Mexico[56]. In 1998, EDT confronted the Pentagon with an artwork-cyberattack; using a Java applet that could create a Denial of Service (DoS) attack[57], participants were invited to send messages to the Pentagon website to flood the host server with massive requests. EDT did not expect that, besides the action being made as a transparent and even legal kind of cyber-protest, the Pentagon would respond to it with another applet that shouted down the activists' computers.

FloodNet is the name of the program and the artistic proposition, where 10.000 persons joined against the US in favor of the Zapatist cause; *FloodNet* also gained mass media attention, being the first time that the US government launched a cyber counter-offensive against people within the United States. After the reprehension, the EDT founder, Ricardo Dominguez, announced: "FloodNet was not created by hackers or terrorists, but by artists and activists who wanted to create a simple point and click tool that would bring civil disobedience to the HTML community."

FloodNet action was also responsible for the spread of Electronic Civil Disobedience acts (ECD). ECD term was coined by the theorist group Critical Art Ensemble[58], an organization with a long tradition into discussions raised whiting the intersections of art, critical theory, political activism and technology fields. Till the late 1990s, these directrices - that came from Civil Disobedience roots - seemed to be attached only to the theoretical field.

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56   Mostly referring to Chiapas conflict.
57   It is a type of cyber-attack that aims to render a computer unavailable to its intended users by interrupting the device's normal functioning. DoS attacks typically function by flooding a machine with requests until normal traffic is unable to be processed, resulting in denial-of-service to addition users.
58   Critical Art Ensemble was formed in 1984 and is still active. Five members composes this north-American group that aims to construct tactical media manifestos, support media activism and rise discussions about politiques, art, technology, bio art, etc. For further information: http://critical-art.net/

Electronic Civil Disobedience, as a form of mass decentered electronic direct action, utilizes virtual blockades and virtual sit-ins. Unlike the participant in a traditional civil disobedience action, an ECD actor can participate in virtual blockades and sit-ins from home, from work, from the university, or from other points of access to the Net. (Wray 1998)

Since EDT *FloodNet*, the mined camp between activism, art and governments gained force. Actions that disturb the dominant power and induce popular participation among a particular cause are the central guides for "pure" hacktivist organizations like Anonymous.

However, radical acts that do not have a strict political position can also fit in ECD spreads; that is the *Voteauction* (2000-2006) case, an artwork made by Ubermorgen collective.

A website was launched during the 2000s Al Gore vs. G.W. Bush US presidential election; the referred platform has the slogan: "Bringing Capitalism and Democracy closer together" and offered the US citizens an opportunity to sell their votes. As vote trades are illegal, the website soon was shouted down and several states in the US have issued preliminary restraining orders for supposed illegal vote trade negotiations. After the domain of *Voteauction* was blocked, it soon became online again with a simple name variation. The 'performance' gained mass attention by the popular media; even a CNN special program was realized to understand the truth behind the proposals of *Voteauction* "campaign", while... "In reality, voteauction.com was a highly sophisticated conceptual performance-cum-media hoax-cum-experiment that was acted out on the international stage of the Internet, mass media and the American judicial system. The news was real, but the auction was a fake—it was a news fake." (McCarty 2018)

Apolitical seems a paradoxical way to refer to an artwork that provoked the highest instance of political power - the US presidential elections. However, Ubermorgen duo never pronounced themselves as social or politically motivated. In a later interview to Culture Jamming blog, Hans Bernhard (s.d) made this clear:

For lizvlx (co-author) and me it is important to say that we have no political or ideological motivations in our work (...) I do not care about democracy (...) I hate the term "activism", 'cause it is way too political and I really hate the term "hacktivism". For me, the term "actionism" is the best. It is related to art history, especially in Vienna, and perfectly describes the intentions of my work. Actionism also has a political meaning but the people who did it were more influenced by LSD and American drugs… Like us... The most street artists are too serious and are representing a rough and boring kind of activism. (Bernhard s.d.)

Hacker actions were not necessarily an out-of-the-law instance, but more like popular participation and practical attacks that can annoy and discuss the high instances of power or

systems. Ubermorgen, like many others, never took a political spectrum position and even refused the hacktivist term; but their acid-humorous messages of disruption matter.

5. 2000s: A Transitional Time

Artists working during the 1990s Internet boom were becoming aware of the webspace instances of control. The hopes that flourished in the early days of net.art started under a certain unconsciousness about the cyberspace; they were pioneers, many had their first contact with networks in those same early days, net.artists, for a few years, really did believe that a new art form, detached from institutional labels, would be possible inside the Web. However, that concept of autonomy and democracy was soon proved to be a utopia. As the commercial Web rules became evident and the art system's interest in the new Web hype grew, Net artists gave up on the previous naivety to engage in a poetic of resistance. They started to use *hacker* tactics, like page hijacking, DoS attacks and cyber hijackings, and engage in digital political causes. In the mid-late 1990s, Net Art became more aligned with the real issues of the webspace as a whole.

Alex Galloway pointed to 1999 as the year when low-cost productions started to decline, giving space for complex software usage, plugins, Java, Flash, and an interface that reflects a ' entertaining spectacle' of the online world, instead of the older informational Web (Galloway 2004). In the early 2000s, the Web will be participatory, people would be the feeders of the online space; and this new architecture also influenced the development of a new Net aesthetic.

> The first formative period of net culture seems to be over. (...) All art media involve constraints, and through these constraints creativity is born. Net.art is low bandwidth through and through. This is visible in ASCII art, form art, HTML conceptualism— anything that can fit quickly and easily through a modem. (Galloway 2004)

From Galloway's viewpoint, the technical limitations of the early Internet also helped in the construction of a more 'purist' poetic for Net Art. As client-side gadgets improved, the previously static hypertext layout of the 1990s Web opened space for another one, where gifs, images, video, Flash, sound and personalized content would sprout.

Before the popularization of platforms like Facebook, it was under the blogosphere that excited netizens were discovering how to embed all sorts of media under HTML lines; 2000s Web layout would focus on the coexistence of visual and interaction, bringing a new hyperbolic aesthetic to the online space.

Aligned with this new customizable interface , another Net Art branch would emerge and took part in the 2000s Web *Zeitgeist* construction. Neen and Surfinng Clubs were examples of a more self-centered Net Art form that came along with the 2000s Web popular trends. Unlike the previous sense of conquering propagated by the 1990s Net artists, Neen and Surfing Clubs would

be created by 'native' netizens. This new generation would use blog platforms and Adobe flash to explore the Internet mass pop culture.

The political attitude raised in the late-1990s Net Art would still be strong in the early 2000s, in alliances with hacktivist organizations and independent new media art movements. Names like Ubermorgen, Heath Bunting and 0100101110101101.org, would embrace the reactive Net Art wave, representing the artists who had 'colonized' the cyberspace under naive desires and would now take the political resistance language.

Nevertheless, they would coexist with a new Internet Art approach and generation that aimed to show the symbols of the online culture that they were born with. Neen and Surfing Club's productions represented the beginning of 'native' Internet artist's language, signing a transition between Net Art and the Post-Internet Art periods.

To examine their motifs, a quick look at the 2000s Web's context is also essential.

5.1 The Dot-Com Bubble Rise and Burst

The dot-com bubble began with a combination of factors that evolved economic, technological and political currents (Levine 2018). An unprecedented number of start-ups emerged following the Net hype when speculative investors poured high amounts of money in fear of missing the trend. Soon, the risky ventures in online companies turned out as one of the greatest miracles - and subsequent failures - of the stock market.

> People cheered as obscure tech companies went public on the stock market, the price of their shares doubling, even tripling on the first day. What did these companies do? What did they make? How did they make money? Few investors really knew. More importantly: no one cared! They were innovating. They were driving us forward into the future! Stocks were booming, with no end in sight. (Levine 2018, 173)

Netscape's extremely successful IPO in 1995 was the symbolic turning point; this event aligned with the abundance of venture capital funding and the US reduced taxes[59] increased the speculative interest in emerging Internet small companies. With the belief in a new economy, everyone wanted to be part of the Web; people started to quit their jobs to become entrepreneurs, under the promise to get rich overnight. During five years, record amounts of capital flowed in Nasdaq, moved by the technological sector. The collective excitement surrounding the continuously rising prices of dot-com companies has made new entrepreneurs spend money without balancing costs and gains; it was a speculative time that dismissed solid strategies in favor of a tech-utopia.

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59   The *Taxpayer Relief Act of 1997* was signed by Bill Clinton on Aug. 5, 1997. The act reduced several federal taxes in the US.

Even the Y2K[60] tension helped increase the bubble; billions of dollars were invested in the IT sector to prevent a national collapse; while customers feed the computational market by boosting their machines out of fear of a possible disaster. As 2000 arrive and the Y2K worries were dismissed, the federal taxes higher again in an attempt to chill the overheated stock market. However, it did not work; on March 10th of 2000, Nasdaq Composite Index[61] reached its peak.

On 11 March 1999 the Nasdaq index rose above 3,000 points, and climbed above 4,000 points on 29 December 1999. Finally, on 10 March 2000, the Nasdaq peaked. Its value was over 500 percent of what it had been on the day of the Netscape IPO five years previously, and it had risen 75 percent in the preceding four and a half months alone. (Ryan 2010, 123)

As predicted, every time that a bubble overgrowth, it will inevitably soon explode. In the same month that Nasdaq numbers approached its top, news broke that Japan - a crucial tech-trader - had entered in recession; this warning in line with the borrowed prices inflation made economy specialists signalize an emerging danger for the market; some entrepreneurs tried to ignore the red-flags for a while; but without money and profits, a panic selling[62] took place and the dot-com bubble burst.

The collapse, when it came, was rapid. In mid-2000 the bull market collapsed and a bear market took over. Not only did the young dot-com companies begin to fail, but established technology giants such as Intel were forced to announce big layoffs. By November 2000, only nine months after the Nasdaq's peak, CNN dubbed the collapse a '$1.7 trillion lesson'. (Ryan 2010, 124)

Most of the small businesses that emerged in the 1990s online market trend went bankrupt. Those who survived this period were not gamblers, but big companies with enough knowledge to maintain economic stability during the stock market hysteria. After the crises, names like Amazon and eBay proved their long-term dominance, conquering the central instances that control the Web economy.

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60   Y2K = Year 2000 bug or Millennium Bug. It was a possible dated computer bug that would happen during the transition from the year 1999 to the year 2000. Older computer programs could only count double-digit years; with the millennium spin, a global crash in some machines could bring the date 00 to a reference of the year 1900. Locking bank accounts and telecommunications systems crashes were some of the possible problems listed. Plus, 2K2 had spread through conspiracy theories, causing a certain kind of mass hysteria.

61   Nasdaq Composite Index measures all Nasdaq domestic and international based common type stocks listed on Nasdaq Stock Market.

62   "Panic selling is the sudden, widespread selling of a security based on fear rather than reasoned analysis causing its price to drop. Often, panic selling is due to some outside event that causes a security's price to drop, which leads to widespread fear. This fear causes people to overreact and sell the security to try and prevent further losses, but due to the large number of people doing this at once, it pushes the price lower, which results in more panic, leading to a positive feedback loop" (Ganti, 2021)

After the crash of the 2000s, the liberal market had to change its strategies to survive in the online field. In the 1990s, small businesses used '.com' as a marketing strategy for the 'offline' instance; it was just an image, not a proper Web insertion. After the dot-com boom, most speculative start-ups disappeared; people who did not understand the Internet's structure and found a miraculous opportunity under the 1990s IPO speculation realized that to be important under the e-commerce - and inside the Web as a whole - they must first understand its internal rules.

5.2 Web 2.0 Arrival

The following years after the dot-com bubble burst would herald the social age of the Web, a period when new participatory platforms would bring a fresh way of building and dealing with the Internet.

The term Web 2.0 first appeared in a 1999 article written by Darcy DiNucci, but it only became popular due to the US company O'Reilly Media; Web 2.0 should represent a time of change, with Internet users leaving a passive role to become an engaged part of the Web. According to Tim O'Reilly, the 2000s brought an online awareness; the previous computation-based framework proposed in the early days of the Web would be replaced by Internet-based ones. In a simple outline, Reilly listed some differences between the two Web moments with the following comparisons:

Web 1.0		Web 2.0
DoubleClick	-->	Google AdSense
Ofoto	-->	Flickr
Akamai	-->	BitTorrent
mp3.com	-->	Napster
Britannica Online	-->	Wikipedia
personal websites	-->	blogging
evite	-->	upcoming.org and EVDB
domain name speculation	-->	search engine optimization
page views	-->	cost per click
screen scraping	-->	web services
publishing	-->	participation
content management systems	-->	wikis
directories (taxonomy)	-->	tagging ("folksonomy")
stickiness	-->	syndication

Screen scraping[63] was replaced by 'Web services', meaning that the homogeneous appearance of the 1990s webspace would be dismissed in favor of plural online devices. Comparing two notable services from the beginning of Web 1.0 and the new Web 2.0, O'Reilly's related Netscape and Google. Netscape was responsible for the Web popularization; as the first mass-used browser, its structures were built on a set of closed plugins and under a static nature. Google's initial product was a ground-braking search engine; more than that, a fully Web-based service that arrived as a native application and has been improved accordingly with the Web's growing demands. In short, Google would deal with online and user requests, while Netscape was raised under a desktop commodity model.

> Google's service is not a server--though it is delivered by a massive collection of Internet servers--nor a browser--though it is experienced by the user within the browser. Nor does its flagship search service even host the content that it enables users to find. Much like a phone call, which happens not just on the phones at either end of the call, but on the network in between, Google happens in the space between browser and search engine and destination content server, as an enabler or middleman between the user and his or her online experience. (O'Reilly 2005)

As discussed in the Search Engines subchapter, Google's success combined improved algorithms and new ad features; under an innovative interface, there was a careful strategy aimed to enhance the relationship between users, information, and commerce. In 2005, Google had already expanded its services to tools like Google News, Google Books, Google Scholar, Gmail and Google Maps, highlighting an organic pack of integrated online facilities. Most of Google's services were developed under the mentioned browser-based vision; people can do anything - from writing a document to using a GPS - under their Web navigator.

> Not only can web pages be created and edited in the browser without purchasing HTML editing software, photographs can be uploaded and manipulated online through the browser without the need for expensive desktop image manipulation applications. A video shot on a consumer camcorder can be submitted to a video hosting site, uploaded, encoded, embedded into an HTML page, published, tagged and syndicated across the Web all through the user's browser. (Kleiner and Wyrick 2007)

DiNucci, in 1999, had already visioned Web 2.0 as a space where the transformations would be plural and invisibly announced inside the 'Internet DNA' (DiNucci 1999); the refinement of protocols would change Web's structure into a more heterogeneous place where "The Web will

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63   'Screen scraping' is the act of copying information that shows on a digital display to be used for another purpose. Here the term is used as an analogy of Web 1.0 applications and webpages that were constructed in similarity with the static nature of desktop formats.

be understood not as a screenful of text and graphics but as a transport mechanism for information, the ether through which interactivity happens." (DiNucci 1999). She was right in believing that the new Web changes would be internal, structural. However, she visualized them under the pluralism of new devices (like mobiles), not that it would firstly happen under data and collaborative Web platforms.

> The two-way potential of the www was not clear to individuals whose thinking had been shaped by explicitly one-way communications such as television and radio. Web 2.0 would correct this. (Ryan 2010, 137)

In its first decade, the Web was driven under one-way direction; mostly by content publishing and webpages creation; the exchange among users was based on e-mail messages, topic-specific groups and links. With the Web 2.0, two-way communication happened; sharing buttons, reply sections, bookmarks, repost tools, and tag functions had echoed in Web user's participatory agency. Going further, people would now be able to 'feed' the Web; collaborative platforms turned users into an active part of online content creation.

Wikipedia was launched in 2001, in maybe one of the most notorious attempts to revive ideas of democratic knowledge under an open-source project. Being a collaborative encyclopedia edited and created by Internet users, Wikipedia site spread the already existing concept of Wiki[64] for larger instances, using educational purposes to construct an open-shared informational base. Wikipedia became one of the Web's 2.0 symbols, by representing a participative online project that grows over the effort of a volunteer community. (O'Reilly 2005).

Unlike Wikipedia, blogs are usually maintained by a single person or a smaller group; their participatory aims are grounded in comments sections and self-expression posts. While blogs-alike platforms already existed in the mid-1990s[65], it was only in the 2000s that blog usage - due to engagement tools aligned with the dissemination of the 2.0 Web aims - was triggered. Those platforms embraced multiple issues, from personal diaries to political discussions. The blogosphere, which refers to all blogs' interconnections, became another symbol of Web 2.0, shaping a distinct sense of online community.

> The "blogosphere" can be thought of as a new, peer-to-peer equivalent to Usenet and bulletin-boards, the conversational watering holes of the early Internet. Not only can

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64   "A wiki is a hypertext publication collaboratively edited and managed by its own audience directly using a web browser. A typical wiki contains multiple pages for the subjects or scope of the project and could be either open to the public or limited to use within an organization for maintaining its internal knowledge base." Wiki. (2021, August 25). In Wikipedia. https://en.wikipedia.org/wiki/Wiki

65   Links.net (1994), is considered the first blog precursor; at a time that the weblog term did not even exist. Open Diary (1998) and Live Journal (1999) were considered the very first two example of blogs; following by the well-known Blogger(1999), which became blogs standard platform after it was brought by the Google company, in 2003. The early blogs needed to be manually updated under HTML lines of code, it was only in the mid 2000s that they became more responsible.

people subscribe to each other's' sites, and easily link to individual comments on a page, but also, via a mechanism known as trackbacks, they can see when anyone else links to their pages, and can respond, either with reciprocal links, or by adding comments. (O'Reilly, 2005)

As a part of blog's history, Tom Coates mentioned the permalink invention. The earlier bridges between blogs were only possible because of them (O'Reilly 2005), being a commonly forgotten invention that was important for a new dynamic Web structure. Permalinks are 'unbreakable' URL links; they are supposed to remain online for many years without crashing and changing; Permalinks are mainly used as a "relatively easy to gesture directly at a highly specific post on someone else's site and talk about it." (Cotes 2003). Without permalinks, a URL posted at a blog, for example, would redirect the viewer to a given website or blog homepage instead of to the desired entry

It may seem like a trivial piece of functionality now, but it was effectively the device that turned weblogs from an ease-of-publishing phenomenon into a conversational mess of overlapping communities. (Coates 2003)

Another popular blog feature was the RSS (Really Simple Syndication), which is basically a Web feed that allows the user's to subscribe and be informed every time a specific marked content is updated. RSS was highly popular in the early 2000s, being later replaced by notification features developed under social media platforms.

One of the things that has made a difference is a technology called RSS (...) RSS allows someone to link not just to a page, but to subscribe to it, with notification every time that page changes. Skrenta[66] calls this "the incremental web." Others call it the "live web". (O'Reilly 2005)

Reviewing some of the mentioned features, it seems clear that the client-side needs had pushed the improvement of the Web 2.0 gadgets. O'Reilly even specifies that in the Web 2.0, "Users must be treated as co-developers" (O'Reilly, 2005). However, those new services and platforms would be genuinely working for decentralized and democratic purposes?

Real time monitoring of user behavior to see just which new features are used and how they are used, thus becomes another required core competency. A web developer at a major online service remarked: "We put up two or three new features on some part of the

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66   Refers to the programmer and Silicon Valley entrepreneur Rich Skrenta

site every day, and if users don't adopt them, we take them down. If they like them, we roll them out to the entire site." (O'Reilly 2005)

The Web 2.0 came to propagate a cooperative webspace, but not a utopic one; in the early 2000s, the belief that the Web could be a dreamland was gone; being replaced by liberal aims. Many of the gadgets mentioned above were developed, refined or brought by the 'Web's giants'. Even been created for different tasks, mainly relies on bases that originally aimed to increase user's traffic and buys. Amazon, for instance, allows its users to post comments since its early days in 1995.

Amazon uses blogs, web forums and wikis to engage its customers actively. These Web 2.0 tools not only function as communication channels through which participation from customers can be elicited, they yield a shared body of knowledge that enables Amazon to remain keenly attuned to its customers' sentiment and preferences. (Chua 2011)

Amazon is undoubtedly one of the most successful examples. The company combined effective engagement tactics and spread to a dominant position that long trespassed its original field of online bookselling. Amazon was a pioneer in developing services and tactics that would engage its clients since its first years; under the Web 2.0 features, the company integrated most of the available system in its favor, from rates and reviews sections, passing through blog communitarian platforms and selling-based RSS feeds. Amazon and Google refined many of the engagement tools and stricter their relationship with users by offering open-source software projects.

5.2.1 Web 2.0 Critiques

The dot-com burst combined with a suddenly positivist vision of a new participatory Web seemed suspicious for many. In the early-2000s, while the Web 2.0 term was spreading hope in conferences and papers, a critical wave also emerged to say that the 'New participative Web' would be a mere marketing buzzword. Most arguments against Web 2.0 imply that there would be no concrete technical innovation; the new improvements would be just part of Web's natural development and the rise of social media platforms - which are trivial appliances - would have happened due to its marketing promotion (Kleiner and Wyrick 2007). Oppositionists would sustain that the concept was propagated to recharge market interest in the Web and the social participation would be a rhetorical discourse.

Tim Berners-Lee was one of those who believed that Web 2.0 would be meaningless. In a podcast interview for IBM, he declarade:

Web 2.0 is of course a piece of jargon, nobody even knows what it means. If Web 2.0 for you is blogs and wikis, then that is people to people. But that was what the Web was supposed to be all along. And in fact, you know, this 'Web 2.0,' it means using the standards which have been produced by all these people working on Web 1.0. (Berners-Lee 2006)

That was his response when confronted with an overshared quote - attributed to Dan Zambonini - that postulates Web 1.0 for connecting computers and Web 2.0 about connecting people. Berners-Lee's statement may also reveal some resigned concern about the Web's future or just a certain apathy for the trending term.

Dmytri Kleiner and Brian Wyrick went deeper in their judgment, considering Web 2.0 not only a soft lie but a Machiavellian way to induce a new type of capitalist labor exploration. They believe that the hype under Web 2.0 would undoubtedly affect online users' behavior, even without any technological innovation. The problem is that the supposedly communitarian Web would be propagated at the cost of centralized interests that monetize value under user's flow and creations. They do not only criticized, but offered a solution for a truly decentralized Web. Distributed and Peer-to-peer (P2P)[67] technologies would be the option instead of server-based ones, an alternative that the Web 2.0 supporters would consciously hide.

The mission of Web 2.0 is to destroy the P2P aspect of the Internet. To make you, your computer and your Internet connection dependent on connecting to a centralized service that controls your ability to communicate. (...) Capitalism, therefore, is incompatible with free P2P networks, and, thus, so long as the financing of Internet development comes from private shareholders looking to capture value by owning Internet resources, the network will only become more restricted and centralized. (Kleiner and Wyrick 2007)

The point of Kleiner and Wyrick lies in technical and political awareness[68]. They emphasized that open-source initiatives like Linux, Apache, PHP, MySQL and Python; would be used by Web 2.0 as means of a capitalist venture that does not want to pay and neither spend in favor of Web users. The open software tools, in this case, would be trickily promoting the idea of freedom when user's autonomy and creations would, in fact, be contributing to the opposite, to the construction of a centralized Web.

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67   Peer-to-peer (P2P) computing or networking is a distributed application architecture that partitions tasks or workloads between peers. Peers are equally privileged, equipotent participants in the application. They are said to form a peer-to-peer network of nodes.

68   Dmytri Kleiner has written *The Telekommunist Manifest* where the Venture communist model is proposed. Under the same book, Kleiner also proposed a reviewed version for Stallman's Copyleft license , coining the term Copyfarleft

Allowing the community to contribute openly and to utilize that contribution within the context of a proprietary system where the proprietor owns the content is a characteristic of a successful Web 2.0 company. Allowing the community to own what it creates, though, is not. (Kleiner and Wyrick 2007)

Many people engaged with the Free Software Movement (Kleiner is one of them) shared similar concerns. They criticize how established online ventures would promote open-source software[69] to satisfy users' needs and autonomy while, for real, they would be just obligating people to 'work' for the dominant ventures of the online system. In a talk with The Guardian's correspondent Bobbie Johnson, Richard Stallman said that the use of Web-based features promoted by Web 2.0 would be "(...)stupidity. It's worse than stupidity" (cited in Johnson 2008)

Members of the IT communities denied Web 2.0 due to its lack of concrete technological improvements; activists and idealists exposed controlling aims behind it and some entrepreneurs were not sure how Web 2.0 excess of marketing could help their business (Scott, 2009).

Among many controversies associated with Web 2.0, also some concerns about reliability and culture emerged. Andrew Keen sees the excess of ordinary content that appeared on the 2000s Web as the imminence of a cultural destruction. He believes that platforms like Blogs and YouTube incentives for authorial shares would eventually cause genialness overgrow in favor of amateurism. Also, the returning of socialist terms used to engage Web 2.0 would promote a fake new social movement, where people would gain an unrealistic sense of protagonism.

Buzzwords from the old dot.com era — like "cool," "eyeballs," or "burn rate" — have been replaced in Web 2.0 by language that is simultaneously more militant and absurd: *Empowering citizen media, radically democratize, smash elitism, content redistribution, authentic community* … This sociological jargon, once the preserve of the hippie counterculture, has now become the lexicon of new media capitalism. (Keen 2006)

Keen believes that if everyone feels important enough to make and share information, the 'true art' will be dissolved, and so the art industry. Accordingly to him, social media platforms could be a dangerous tool where the lack of audience (passive users) would cause a boom of (mediocre) creators.

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69   Open Source Software and Free Software are commonly misread as synonyms. Sometimes Open Source and Free Software Movements sometimes join under FOSS (Free and Open Source Software) projects, but the movements are slightly different. Richard Stallman, the FSM header, has some open critiques about Open Software initiatives, under one of his declarationss: "The terms "free software" and "open source" stand for almost the same range of programs. However, they say deeply different things about those programs, based on different values. The free software movement campaigns for freedom for the users of computing; it is a movement for freedom and justice. By contrast, the open source idea values mainly practical advantage and does not campaign for principles." (Stallman 2003)

Elite artists and an elite media industry are symbiotic. If you democratize media, then you end up democratizing talent. The unintended consequence of all this democratization, to misquote Web 2.0 apologist Thomas Friedman, is cultural "flattening." No more Hitchcocks, Bonos, or Sebalds. Just the flat noise of opinion — Socrates's nightmare. (Keen 2006)

For Andrew Keen, Web 2.0 would be a hypocritical trend. Its propagation of 'empowerment' would effectively lead people to believe that they were the formers of a new cultural branch, causing the excess of 'personalization' and consequently a flattening of mainstream culture.

His statements turned out to be - partially and paradoxically - true; under the sense that Web 2.0 strands effectively brought a sense of importance for Web users, the hyperbolic aesthetic of the 2000s blogs - full of gifs, bars, images - would become early 2000s *Zeitgeist* and the cultural industry was affected, mostly the music industry; but it did not happen because of amateurs who were composing and posting online, more as a consequence of mp3 piracy and the industry lack of preparation to deal with the emerging digital issues.

5.3 Neen Movement

> Neen transcends art. It's more a state of mind than a form or school of art
>
> - Lexicon CEO David Placek

A self-claimed movement emerged in New York by the year 2000, founded by the Greek artist Miltos Manetas in collaboration with the North American producer Yvonne Force. In a brief look, the terms of this new art *ism* may be seen as critical on the institutional approach of Internet Art. However, getting more into Neen's history, we understand that these productions were not about going against the system or raising some political flag; Neen combined creative computational usage and extravagant narratives told by its creator while standing aligned with the capitalist force. In the early 2000s, being a *Neenstar* means joining a kind of lifestyle, which holds similarities with the 1960's Pop Art style mixed with current assumptions present on Post-Internet Art.

The name Neen was bought at the cost of $100,000, a paid service conceived by Lexicon Branding[70], a well-known firm that created successful labels like "BlackBerry" and "PowerBook". Manetas, with the financial support of Art Production Fund and venture capitalist Louis Marx Junior, hired them for this task, receiving a list of possible names that sounded consistent with

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70   Lexicon Branding Inc. - A North-American marketing firm. The main service offered by this firm (that is still active) is to select brand names for companies and products. That is an interesting approach to "found" a movement; the act to contract a marketing service in order to name an Art "movement" can be seen as the ironic motion behind Neen principles.

her description of a new aesthetic; between those, two caught the artist's attention: Neen and Telic.

Noticeably, this act goes against the usual assumption that an art movement's nomenclature must be elaborated by the academy, the art system, or historiographers; However, going against the tradition does not mean exactly being an outsider. Manetas was an already established exponent of contemporary art at that time, having the art system's sponsorship for this deal with Lexicon. As we will later explain, the Neen name acquisition was very coherent on what this movement represents. At an interview with Chiara Moioli for Mousse Magazine (2018), Manetas clarified:

> I had slides with all the Relational aesthetic stuff and contemporary art. I told them, "Look and look and look. I don't want nothing to do with that at all, I showed them the work of Lucio Fontana and I told them the word "screen" and talked about the landscape of the computer screen. All of this was happening inside a wooden antique luxury boat docked in the waters of Sausalito, California, as the office of this place, Lexicon, was a yacht and their workplace a bar. Three months later came a fax. @MaiUeda, went, like, "I want to be Neen. I like this Neen, Neen! I want to be a Neenstar." The Americans were embarrassed; they could not even pronounce it. It sounded as if you were hearing something annoying. We did this presentation at Gagosian Gallery, everybody freaked out completely. From there it started a magic where the computers practically took existence between us. Neen came. (Manetas 2018)

Felling uninterested in the "too scientific" art terms, Manetas - by his own words - wanted something more "cool" to describe visual art experience related to computers, a new description to fits with an emerging generation of creators. The *Neen* palindrome is a non-accidental rhyme with screen and was decisively elected when Mai Ueda (also an artist and the first Neenstar) faced it. The new movement was officially presented on May 31st of 2000, at the Gagosian Gallery in New York, on a conference table constituted by Yvonne Force, Miltos Manetas, David Placek, J.C. Herz, Peter Lunenfeld, Steven Pinker and Joseph Kosuth. Animations, images and other sorts of references were shown to explain the mindset of this new community and so Neen was born.

Like most art movements, it also had a manifesto[71]. The note written in 2000 stated that people who do Neen are 'Neenstars', while the only members that used it - at the time Neen was announced - were Mai Ueda and Manetas. As precisely pointed by Lucia Leão and Vanessa Lopez, "Neen was born as a brand, that only started to aggregate artists and collaborators after its launch"[72] (cited in Gobira 2019, 197). 'Neensters' and 'Neenstars' only gained status after a physical place dedicated to Neen researches was settled. Inside a storefront shop located in the

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71   'Neen Manifesto' had many changes in between years 2000 and 2006; Manetas, at an interview for net.works at 2002, said that he often forget to update the dates.

72   "Assim, o movimento Neen nasceu como uma marca, que só depois de lançada passou a agregar artistas colaboradores." (free. translation)

Chinatown neighborhood, Neen's head office opened its door. It was conceived to be a place for internal experimentations; visitors were not allowed to enter the space but when some neighbor place had an opening reception — as the address was at a passing street full of trending galleries — Neen artworks were projected to be outside seen by the passers. The place's structure was similar to a black cube, a central screen was positioned to hire the daily office configuration and fulfill the space when they wanted to expose some piece; by this simple architectural design, Manetas (2006) wanted people to have the impression of "... looking at a giant monitor". The place was called Electronic Orphanage (EO) and had a short life, active from 2000 until 2004. Those who worked there were called "Electronic Orphans" or just "Orphans", meaning "orphans in terms of an ideology"; EO grouped people from different backgrounds — architecture, design, art, fashion and computers — who did not stand for a unique kind of thought. They mixed Internet references, Flash productions, games, and even painting in searching for a new computational aesthetic. Those who became part of Neen must be careless about serious methodologies, freely exploring the Webspace to find another artistic style that fits in a transitional generation that is starting to see the world through digital screens. The common use of Flash not only reflected the webpagess main visual at that time (as the software became highly popular by the 2000s) but also reinforced this juvenile spirit that Neen pursued; a generation that "does not care if its work is called art or design. (...) is no longer interested in the "media critique" which preoccupied media artists of the last two decades." (Manovich 2002). The orphan's goal was to find Neen material; some researchers gained $8 per hour to do 'nothing' besides playing games and searching for unusual stuff. That was how Neen production was stimulated: "If instead you tried strange visual things with the computer, that was encouraged. So finally, some of the "Orphans" started making what soon became the first Neen pieces, while some other ones started discovering such Neen pieces on the Net and in video games." (Manetas 2006, 37). Neenstars were, in general, very young artists creating colorful pieces to host inside dot com domains; the Adobe Flash technology was their greatest gamble. Manetas's piece jesusswimming.com (2001) is an example of this crew aesthetics, an entirely flash website animation that shows a naïvely painted drawing of a Jesus endlessly swimming. The image became one of Neen's icons, as told by Manetas:

> Neen is not a static thing, we cannot really put it down in words. When we will be able to do so, it will probably become Telic. Like the old miracle of Jesus walking on water: if he came back today and he did it again, it would be a sort of 'déjà vu,' 'Jesus as usual.' Instead, if he started swimming, most people would refuse to believe that he is actually Jesus. (cited in Quaranta 2017)

In terms of definition, 'Telic' and 'Neen' are very subjective concepts; Manetas often said that it is impossible to put Neen into words as it is an almost 'spiritual' thing. By resuming a few aspects, we can describe most computer productions as Telic: meaning serious digital practices - like people's general use of computational tools to achieve a final product; while Neen would be

the unexpected result, the chaos that happened while pursuing a 'Telic' aim. Neen productions were so the desired accident that occurs when "... Telic (...) went nuts" (Manetas 2006). Both were used to describe the relationship between the creative field and 2000's computer screens, aiming to portray a "still undefined generation of visual artists".

Neenstars and Orphans must oppose contemporary art and new media trends to explore an original aesthetic. Names like Angelo Plessas, Andreas Angelidakis, Steven Schkolne, Joel Fox and Nikola Tosic; became part of the movement, as well as Rafaël Rozendaal, who was only about eighteen years old at that time. Manetas curated Rozendaal's first solo exhibition; works like "whitetrash.nl" (2001) and "mister nice hands.com" (2001) were shown and gave the artist a 'Neenstar' status. "He (Manetas) said my work is Neen, but I made work before I knew about Neen. It wasn't like Neen arrived and I changed, I was part of it before I knew about it" (cited in Studebaker 2017). Nowadays, Rozendaal stands between the great names of Internet-based art; he recognizes Neen's importance in the development of his career, attributing the lack of sense proposed by the movement as a key to improving his relationship with the Web and software. "Neen was about incomplete thoughts, and I think the Internet is also a place of incomplete thoughts" (cited in Studebaker 2017).

The movement manifesto lines that "Computing is to Neen as what fantasy was to Surrealism and freedom to Communism. (...). Neenstars buy the newest products and they study how to create momentum. They glorify machines, but they get easily bored with them. Sometimes they prefer just watching others operating them." (Manetas 2006). It is to say: Neen was a hybrid field for experimentations, not an expertise land; while many previous Net Art pieces laid in the Web codes, Neen people do not have the premise to base their works only in the cyberspace and neither seemed to care about deep poetics; by this lack of artistic pretentious and the regular alliance with fashion brands and corporates, we can risk to say that the group was firstly reunited more by a shared lifestyle than as an art collective, it was a crew headed by Manetas. Lucia Leão and Vanessa Lopez pointed that, in this sense, EO shared similarities with The Factory, the studio founded by Andy Warhol in the 1960s that reunited a whole range of creative people and where extravagant parties and non-usual art experimentations were hosted. The Factory was not an office; it was like a creative club. Maybe it was not a mere coincidence that Neen was presented at Gagosian in a room where a Warhol retrospective was also happening. Also, as many representatives of Pop Art, Neen people combined different fields of interest with a mass pop sort of design, reflecting a dual approach between everyday suburban life images (inside the computer screens field) while still attached to institutional art.

5.3.1 A political approach? Whitneybiennial.com story

Another Web poetic present in Neen was about domain name registrations; lists of available webpage addresses are often consulted to host Neen artworks. Sometimes these works are about sonority, like [Mai Ueda's domain name poem](#) *dontcallmeelephant.com* (2002); others

seems to prank the proper references, like in *jacksonpollock.org* (2003), which was an interactive flash webpage that simulates a blank canvas and invite the user to choose dripping patterns while mouse scrolling. In the second case, the URL can trap some distracted user searching for the painter's official site; and that is why many referred to these actions as webpage hijacking or cybersquatting, meaning a hacker tactical that registered common misleading domain names to achieve higher ranks in an engine search.

Whitneybiennial.com (2002) has been conceived under this argument, not to gain users traffic but status. In a casual talk with Peter Lunenfeld[73], Manetas was discussing the incoming 2002 Whitney Biennial and showing doubts on the heightened interest of the institution on Internet art productions; to challenge what he saw as negligence with some Internet-based art forms, like Flash-based ones, they decided to do their own online show hosted in a domain name that was similar to Whitney's official website. Lunenfeld then came with the idea of taking Whitney's biennial address itself, and surprisingly 'whitneybiennieal.com' was available. They quickly registered it and started to call for contributions, gaining vast media attention by this provocative usage of the institutional name.

Many people were asked to contribute, and as we start to search for those who joined it, the story became more complex. Manetas continuously argument that he has nothing against the institution, by Whitney's name being used not as a competition but as a challenge to the museum and propaganda for Neen production. Sustaining this diplomatic discourse, he contacted people that are evolved with the official exhibition, even writing an e-mail to Lawrence Rinder — the chief curator of that year's Whitney Biennial — to propose a "duo." Rinder's response was quick and exciting, so they meet in person to clarify some terms. Manetas said that the curator suggested connecting both exhibitions; an empty Chase bank that was placed crossing the street of Whitney's Breuer building was offered for the Neen project, and monitors could be provided to show the Internet artworks chosen by Manetas. Then the artist refused the offer with a dramatic sentence:

> Thank you, but making a Salon des Refusés 2002 is not exactly our intention. We have our Space: it is the Internet itself, larger and a lot more powerful than the Whitney. (cited in Pinheiro 2015)

For Manetas, the talk with Rinder ended as a clear statement about the curatorial failure in dealing with the 'neen generation' productions; he always chased glamour and will not accept charity. Then, while looking at the curator's office window, he saw a parked U-Haul truck which gave him an ambitious inspiration that would later become the greatest myth behind this project. Before leaving Whitney's building, the artist said:

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73   Peter Lunenfeld is a critic and theorist about digital media. At that time he worked with Manetas, as one of the Electronic Orphanage lab. researches. So called an "orphan".

We are going to use 23 U-Haul trucks […] to surround your exhibition the day of the opening (...) The trucks will be looping around the Whitney tirelessly, each carrying a number of very special webpagess. (cited in Pinheiro 2015)

Whitneybiennial.com ended up representing a group of more or less twenty artists; the selected works were almost entirely Flash animations. A website was constructed in collaboration with the trending name of the designer Carbonatedjazz and Mark Tranmer (GNAC) composed a melody for the page; between the artists, Rozendaal added artworks and made a logo for the event; Michael Rees was commissioned to offer a 'Turntable' flash application, that could mix sound as well as Flash movies, and the media theorist Lev Manovich wrote a text called 'Generation Flash'. All those efforts were genuine, but the evolved Whitney's name combined with the U-Haul trucks narrative was the highlighted publicity. Before the Whitneybiennial.com launch, there was much speculation on the counter-event that will supposably happen at the same time as Whitney Biennial's official gala. On a e-flux press release note (2002):

whitneybiennial.com
The Whitney Biennial will open on Wednesday, March 5th, 2002, simultaneously with the Gala for the Whitney Biennial, in front of the Whitney Museum of American Art at 945 Madison Avenue at 75th Street, New York.
..
A demo of the www.whitneybiennial.com, an online exhibition created by Miltos Manetas and organized by the electronicorphanage.com and michelethursz.com, will be visible on the back door of 23 U-Haul trucks, transformed into monitors. The trucks will surround the museum from 6-11 pm

The media became thrilled with this announcement, calling it a battle between Neen and Whitney; often, the promise of the "trucks' attack" was referred to as a counter-institutional performance and everyone was waiting for it. However, on March 5th of 2002, none of these happened. Manetas later said that the fictional screen-show was sustained till the end because of the mass attention received and to gamble the U-hauls searchers; in the end, the Whitneybiennial.com opening took place at the NY nightclub Bungalow 8, in a private opening reserved for some guests and stayed only as an online platform that hosted a collective exhibition.

Manetas's dramatic narrative and the layers of fantasy and reality gave some fame to the Whitneybiennial.com project. In a 2015 article for Rhizome, Lucas Pinheiro tried to fit some of these story pieces together, contacting the other side people and searching for clues about the actual events behind it. Firstly, Pinheiro (2015) asked for a Rinder perspective about the lines of her encounter with Manetas, the curator simple answered:

None of that sounds familiar to me. I may very vaguely recall him saying something about a project with trucks but can't recall any details...I certainly did not contact the NYT.

The passionate meeting described by Manetas remains uncertain; as Pinheiro excavated deeper, more mistrusts were shown. Marisa Olson also took place in this story, being one of the first curatorial names invited; she accepted the challenge and searched for unknown Flash artists, still under the U-Trucks event promise. On the opening day, Olson could not be there and was surprised when the invited artists complained that none of those things happened, that no U-Truck performance was done. When she asked Manetas, he came with an excuse that it was impossible to make it by the difficulty of renting those trucks. Olson's final statement concluded that everything was a part of Manetas's performance and she felt excluded from the underlines. Hiding the plan even for one of the invited curators seems another Neen tricky poetic; while in nowadays texts about whitneybiennial.com, we often read that the live performance was never meant to be, being just a bluff that gained immense proportions when the media spread it.

One year after Whitneybiennial.com's release, it was materialized in a CD-ROM commissioned by the Italian magazine POSH; still, the works continued to be online for many more years until the obsolescence of some plugins and the more recent retirement of Flash software. To have the final product of a Web-based exhibition storage in physical media was precisely what many net artists used to fight against; again, Neen was a particular moment in time, and the dualist core was a recurrency in its propositions, or in Manetas actions: he incited the name of outsider artists, but often join the highest-social circles; he claimed to believe in the freedom of the cyberspace while honoring commercial software usage; he made direct hoax to art institutions, but ever been a part of it and continuously chased for the great names of this circle to collaborate with him.

In this case, the institutional name was used to catch people's attention, even if Whitney never was genuinely evolved with the project. This can lead to an often studied relationship between Whitneybiennial.com action and RTMark proposal for the 2000 Whitney Biennial. RTMark was a highly critical group, founded in 1991, that worked doing mimesis of the dominant system to subvert it; In the year 2000, they were invited to join the prestigious Whitney Biennial event. The collective accepted it but did not follow the rules: The first act done by RTMark was to sell their Whitney Biennial gala VIP invitations on e-bay , raising a quantity of $8,000 US; at the exhibition space, Whitney's propose was to show the official group webpage, so RTMark again pranked the context, by inviting anyone that wanted to submit a page to be viewed at the gallery. The final result happens after an unadvertised change at Whitney's computer configurations, as to show a rotation set of about 20 random Web pages, displaying content that goes from anonymous artists' portfolios to issues like a Backstreet Boys tribute site, a plagiarized copy of the official New York City home page, a pornography site and Whitney's own home page. RTMark posed a fake corporative brand that acts in humorous and prankster ways to subvert the market; their technique was using culture jamming and media hack; they often cooperate with

their target (as happened with Whitney Biennial) in order to disrupt it. Whitneybiennial.com's goal was kind of oppositive; they were not invited to the event and Manetas (true or not) even tried to collaborate with the institution; feeling neglected, he then decided to use the event name in order to do propaganda of his project.

Pinheiro also sees Neen as an embrace of commercial technology and corporate culture, but when talking about Whitneybiennial.com, he does not exclude the political perspective of the work. He understands that even if Neen is not a militant movement, as RTMark was, the project was against institutional intervention and it combined capitalist marketing strategies to challenge the dominant power; it would not be a mere prank but a consistent critique about Whitney's authority, remembering that at that time the museum announced a growing interest in the Internet Art field productions. Then, RTMark and Whitneybiennial.com were aligned into subverting the centric curatorial names sponsored by the institution, craving space for outsiders while using (hacking) Whitney's prestige.

Domenico Quaranta (2017), on the other hand, believes that comparing RTMark and Neen projects is an error per se, as Neen was a brand-marketed kind of art that used capitalist tools to promote its ideas while RTMark piece showed the utopias of 1990's idealism; that described intense actions of hacking and institutional brakes, never caring about the art label. Looking back at the concepts and acts behind Neen, it is even more evident that this joined forces between the Neenstars style and capitalism. Leão and Lopez (cited in Gobira 2018) stand for Quaranta's (2017) view; they translate this movement as an example of the "capitalism artist", which refers to a sort of production that is aligned with the global transformations of a digital field, a Net art production that abandoned the early idealism of net.art to understand - in a passive way - the strategies of a commercial Net and uses these tactics by its own favor, and that was what Neen made, mixing elements like branding, marketing, strangeness and some commercial sort of seductive game.

...

Neen was a symptom of the transitional decade. This unpretentious Flash-based art approached three essential elements of the new Web interface: desktop simulacra concept, the blog atmosphere and the mass usage of the most trending software at that time Adobe Flash. Besides being largely ignored by many Internet Art historicisms, Manetas movement was remarkable by making a bridge between the Net Art strands and the later Post-Internet incoming.

> In my opinion, Neen was a fundamental step from early net art to Post-Internet in many
> ways. It understood the Internet and digital culture not as something new – a place to conquer
> – but as a layer of a mainstream, shared culture – a place to inhabit. It rejected the distinction
> between a "real" and "virtual" sphere that was still at play in early net art, and understood
> the online as a mirror of the real world. Using dotcom domains, adopting Macromedia Flash

as its favorite tool, and conceiving websites as objects – a framed canvas to be painted and animated – it freed net art from the idea of being something "oppositional" (against the art world, against commodification, against hi-tech) at the same time when other artists were stressing its connections with online activism. It was the brainchild of an artist (at the time) strongly embedded in the contemporary art world, coming from painting, dealing with blue chip galleries, not the outcome of a bunch of outsiders. All this may be considered either good or bad, but it definitely marked a shift that anticipated the integration of digital culture and net based practices within the contemporary art field. (Quaranta 2021)[74]

If Net Art stated the against Institutional and materialization flags, Neen seemed to be a place in between; that wanted to achieve the market but never took their rules too seriously. As Quaranta points out, there were still many radical movements happening in the 2000's Net Art; Instead, Neen aligned with what was happening in the world of art and the Web in a 'trending' way. Besides Neen, other forms emerged in the same united instance with the Social Web directrices and the art system; we can risk saying that the less-political guides of the 2000s Net Art have strict relation with a new generation that was already born inside the Web; the 1990s Web was a place to be colonized, as the 2000s already comes with its own generation.

It was soon to spread a unique aesthetic related to the first native Web generation. They seemed to be very much into the act of recycling things: old trends and already made content, and saw no meaning in coding from zero or working under the Internet bases. Net Artists started to use platforms to spread the already told desires of an 'Amateur culture' where everyone can upload and produce content; the amateurism, that has a depreciative meaning in Andrew Keen reference, was hypothesized by Heath Bunting, in the 1990s, as an easy way to stay faithful to ideals. In the Web 2000s, it will gain another connotation.

5.4 Surfing Clubs

Neen was a displaced movement, but its non-pretentious aesthetics full of gifs and Web mashups was coherent to the motifs of 2000s Web's and with another artistic community that arrived simultaneously: Surfing Clubs.

The Surfing Clubs came aligning with the blogsphere, and the incoming 2000's Web's aesthetics and desires; those 'clubs' took the previous BBS and mailing lists communities to a new format, where instead of textual discussion and tactics, the central point was to be an image archive. 'Surfing' is an old jargon that refers to navigating through the Internet or spending some time online. The 'surfers' would then be the researchers of the Web's content.

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74   Ibid., 66.

This new form of organization began with _Nasty Nets_ (John Michael Boling, Joel Holmberg, Guthrie Lonergan, Marisa Olson, et al.), a collective that popularized the term and the conceptualization of Surfing Club, being considered a Pro-Surfer example. Founded in 2006 and discontinued in 2012, what started there was a simple idea of decontextualized online content; there were no strands, just comments and sharing of the material that those artists found inside the Web. In a 2008 article, Marcin Ramocki states the directrices of the surfer's practices; he summarized:

> 2.2. From the art practice point of view a post is a hybrid act involving both curatorial research and conceptual art gesture. (Ramocki 2008)

Nasty Nets members were artists; each has their own individual practices, but inside the group platform, they do not post authorial works; the art act would occur in the primary process of search, catch and post a particular non-authorial element found in the Net.

> 3.1.1. The immateriality and conceptual potential of the blog/post medium.
> 3.1.2. The communal character of the activity, which generated a dialectical logic and a narrative flow. It also eliminated the question of audience by building it into its own infrastructure.
> 3.1.3. The activity of surfing the Internet and finding material via a plethora of searches within the seemingly infinite information database. (Ramocki 2008)

In a brief timeline, we remember that in the early 2000s, many products were launched: 2002, Friendster; 2003, Myspace; 2004, Facebook; 2005, YouTube; 2006, Twitter; 2007, iPhone and Tumblr. All these services joined in the Surfing Clubs' central motifs; the surfers were millennials who wanted to explore and develop Internet language from the perspective of popular mass-content diffused at social media and similar.

> A single post to Nasty Nets, for example, often generated a flood of posts and related imagery by its members, such as Michael Bell-Smith's "The post where ... we share awesome gradients," which collected animated gradients from all over the Web, or Guthrie Lonergan's suite of YouTube videos of users demoing the opening and closing of garage doors. Posts such as these were attempts to draw attention to the artistic merit and value of user content, from the weird to the banal. (Moss 2015, 149)

After - and even previously - Nasty Nets, many Surfing Clubs arrived. Some adopted strands to distinguish research content from factual curatorial pieces, while others were more occupied in the mashup idea.

Kevin Bewerdsdorf is one of the most noted names of the pro-surfer's generation (Quaranta 2011); he and Paul Slocum founded the _Spirit Surfers_ in 2007; they were both contributors on Nasty Nets platform. With Spirit Surfers, they wanted to achieve a higher instance of a 'spiritualized' search aim. Not only cataloging Web's aesthetics in a random way but classifying, organizing and conceptualizing the found content. The group was so constituted by names as Kevin Bewersdorf, Paul Slocum, Marcin Ramocki, Ethan Hayes-Chute, John Transue, Luke Murphy, Krist Wood, Aron Namenwirth, Harm van den Dorpel, Dragan Espenschied, Travis Hallenbeck, Olia Lialina, Peter Wilson, Patrick Armstrong, Patrick Groth, Peter Blasser, Chad Hopper, Rachel Abelson, Petra Cortright; that in a brief look can also attest the bridge between early Net Artists (as Olia Lialina) and the incoming of Post-Internet (Petra Cortright).

The _Spirit Surfers_ manifesto and lines were embedded with humor, attesting to the millennial attitude on the Internet. The default organization of this group content search was divided into categories; the _boon_ and the _wake_, followed by the _frame_. The first would be to filter content that will soon trend; the second was a discovery, a non-expected found that can become a 'boom', and the third is to recontextualize a piece of specific information to become relevant. Jargons and non-serious codes reveal an awareness of the online dynamics. While for the Spirit Surfers, the act of crawling in the Web was also to defy the user's clicks that stayed occupied in buying online stuff; to play as a new non-commercial nor useless content manager was art Web surfers' role.

On the conceptual side, we can say that Surf clubs championed the idea that searching was equivalent to making, a form of craft and online presence. Archiving the popular mass-media Web culture was a reflection of the social media society incoming.

> (...) this archiving strategy as an artistic practice has found expression above all on the Tumblr platform (tumblr.com), which facilitates a form of social blogging mostly based on images. For these collector artists, the American R. Gerald Nelson coined the definition of "image aggregators."[75] (Quaranta 2011)

Inside _Spirit Surfer_ clubs, another prankster concept was developed, also shows how the information is starting to be seen by the 2000's netizens. Bewerdsdorf (2011) classifies people who 'search' around the Web as _INFObrats,_ who are aligned with using the Internet for commerce and entertainment, and _INFOmonks_, the ones who have an _INFOspirit_, as to search for the right 'pearls' of the online space. It is to say that the Surfing Clubs not only recontextualized and gave a framing art status for the ordinary content that people are sharing on the Net; also, that leads to a discussion on how people consider and manage the online information.

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75   (...) questa strategia di archiviazione come pratica artistica ha trovato espressio- ne soprattutto sulla piattaforma Tumblr (tumblr.com), che agevola una forma di blogging sociale basato soprattutto sulle immagini. Per questi artisti collezionisti, l'americano R. Gerald Nelson ha coniato la definizione di "image aggregators" (trad.)

If the 2000s Web-based art represented the incoming of a new Internet mass culture language, on the hacker community side, the new Internet features also reformulated their theories and actuation. In both cases, the transformation would come in their proximity with the Internet's average users and society in general.

5.5 2000s Hackers

> I don't necessarily think it is a counter-culture, I think it's a part of the
> culture. I believe in socially responsible hacking
>
> - Eugene Kashpureff

As already pointed in chapter three, hackers' means have been dramatically changing over the years. During the early 2000s, they would be already divided in various fronts: some would be working in the security ground of companies, others would head free software projects, and least, there would be those dedicated to illegal and harmful acts. As McKenzie Wark would state:

> "To hack" has always been an ambivalent term (...). There have been good and bad sides to it for a long time. The attempt to rename the criminal side "cracking" never really took. (Wark 2013)

This ambivalence became even more clear with the millennium spin, when hacker and hacking terminologies would be no longer exclusively treated under the technological field but also broadly discussed by humanities theories. If academics started to uses' hack' as a metaphorical verb, under the mass media, the hacker would be essentially linked to the cybercrimes. A wave of online anarchy growth and US governmental concerns about cybersecurity would lead to the implementation of harsh juridical laws to break the rising number of online attacks. Even a emend regarding cyberterrorism - a term that would arrive in the end-1990s - would be assigned by US president Bill Clinton.

Nevertheless, the presence of hackers in courts would feed the media to portray them as dangerous agents and, consequently, society's fear about them.

The general prejudice of hackers, which was once a small group, also motivated more open conferences, corporative alliances and hacktivism organizations. Older hackers were guided by their belief in the ideological side of computers; in 1960, their group was composed of students that liked to plays with technologies and proved genialness by subverting the original functions of devices. Back in the 2000s, hacker identity became fragmented; as the commercial interest in the Internet had coerced their freedom and amplified their debates, hackers would also be pushed into a more political debate.

In the independent documentary New York City Hackers (2000), Stig-Lennart collected the testimonial of some well-known old members of the hacker community. Addressing US cyber

court disputes rising in the late-1990s, they will complain about unfair judgments and media persecution.

> Lately, we had to get into political issues because the politics are invading the technology. Ordinarily, we don't like to mess with politics because that kind of adversarial relationship has nothing to do with the pure technical operations and the technical specifications of what we like to play with, the hardware. (Catalyst 2000)

Cheshire Catalyst is part of the old hacker's generation of the 1970s; he remained faithful to the pure joy of breaking devices and the freedom of information. As he declared, with the centralization of technologies control, hackers would engage with political fronts and even street protests.

5.5.1 Copyright Laws disputes:

In the early 2000s, two cases were significant in the claimed hacker persecution and in showing how the decentralized initiates had challenged the law and industries: RIAA vs. Napster and the MPAA vs. DeCSS.

At the end of 1999, 2600 Magazine was sued for publishing an article containing the DeCSS computer software. DeCSS was one of the first DVD descrambles, developed by the teenager Jon Johansen and other hackers. The program allowed users to break the protection system of commercial DVDs, named Content Scrambling System (CSS). DeCSS could then be used for several things: to play DVDs on computers using free or open software operating systems, to dup region codes that would not allow DVDs purchased abroad to work correctly, and enable users to make copies of these (Eschenfelder 2005). DeCSS was launched in October 1999; in November of the same year, the 2600 Magazine was chased for publishing it on their website. Motion Picture Association of America (MPAA) - heading giants of the US film industry - filed a suit against the hacker magazine under the Digital Millennium Copyright Act (DMCA) law. MPAA sustained that the program would infringe copyright licenses of DVD movies; at the same time, 2600 Magazine would defend itself, augmenting that they published DeCSS only as an alternative for those who use open systems like Linux.

> I think that was what the trial ended up being more about, the perception of hackers in the mainstream, how that the legal systems look at them. I don't think it really have focused on what the DeCSS was. Mainly because most people reporting on the history got it completely wrong; they insisted that it was a tool for piracy which if anyone ever used these DeCSS, we know that it's not true. There were more efficient ways of piracy than that. (Goldstein 2002)

The fight that started in 1999 endured until 2002, evolving a lot of controversies and social joins. Emmanuel Goldstein - 2600's Magazine editor - claimed that the DMCA was a problematic act that fails to understand technologies and would only work in favor of industries. Goldstein's case engaged many people and sustaining the DeCSS flag during that period turned out to be a symbolic act of information freedom resistance and FOSS community support.

> The court case, which ran roughly from January 2000 to May 2002, evoked immediate and strong reaction, including the generation of more websites posting DeCSS or containing mirror lists of DeCSS locations. In fact, DeCSS became a sort of cause celèbre among the technorati, especially those in the F/OS community. (Eschenfelder 2005)

2600 Magazine was forced to remove the DeCSS code from its website at the end of the trial, but the dispute brought discussions to public instances. At the 2002 H2K2 conference, Goldstein, Robin Gross, and Macki reinforced their views on the DeCSS story. They sustained that an ongoing media and governmental persecution of hacking initiatives were happening; while also pointing the upside of events, that would be to bring more social awareness about private interest within technology. According to them, the harsh judgments about hackers would not be about piracy and breaking the law; instead, it would reflect how large corporations have enough power to extinguish open initiatives; and people are starting to see that underlines. Robin Gross, which was a member of the Electronic Frontier Foundation (EFF), endorsed:

> The right in line with history in terms on how the industry has responded every time a new technology comes out, that they can't control that interoperates with their works. Back in 1909, when piano rolls first came out, the music industry publishes tried to outlaw piano rolls as tools of piracy. (...) Technologies that the industry does not control and because the power rests in the hands of people it makes them very nervous, and they want that power back into their hands. (Gross 2002)

A battle between Napster and the North-American music industry has begun in the same period. Napster, unlike DeCSS, was not a program for decrypting physical media, but both services had to deal with copyright issues and the anger of the related cultural industries.

Shawn Fanning and Sean Parker released the application in 1999. Napster was idealized as an online exchange facilitator; the program made it possible for Internet users to download music files from other users' computer hard drives at no cost (Rosson and Hall s.d), connecting them under a P2P server. Soon, Napster became the chief tool for mp3 exchange; in its short-term actuation, the program would forever change the way people consume music. On 7th December of 1999, the Recording Industry Association of America (RIAA) filed a suit against Napster, accusing its creators of facilitating copyright infringements. In mid-2001, after long court trials and negotiations, Napster was obligated to cease its activities. Fanning and Parker tried to adapt,

promoting a paid service and installing filters that would block the non-authorized content to be shared, but they failed, and in 2002 the definite end for Napster was finally announced.

Napster was shouted down, but its legacy had already been spread; dozens of similar initiatives would hit on the Web, Kazaa and LimeWire were some of them. As those new applications span, there was no need for a centralized server, making it difficult for RIAA to trace the piracy roots; equally, if a specific program could have been tracked, another one would undoubtedly emerge in the same week. With an expressive decrease in CD sales, the music industry had no choice besides searching for alternatives; some labels tried to promote digital stores, but most failed. However, music consumption has already been changed; in the 2000s, people were not buying CDs, mp3 was the main file for that, and users would have free alternatives that fulfill their needs.

An alternative for the music industry emerged with an alliance between music labels and Steve Jobs. iTunes Store was launched in 2003, proposing an adaptation to mp3 culture that could help the labels in their task to stop illegal mp3 downloads flow. Under the Apple design, iTunes was a successful and helpful initiative to sell individual music files for lower costs; concomitantly, rougher RIAA's rules would endorse the store's prosperity.

By seeing that nothing could stop the advance of open inanities of free music download, some months after the launch of iTunes Stores, RIAA has decided to implement a law that will sue individual sharers instead of only chasing for the closure of P2P gadgets. According to David Arditi, the harsh implementation would help the contention of illegal music download, under customers' fear of being 'watched' by higher instances, even when legally using P2P programs.

> Wheatear or not the RIAA was in fact observing P2P users and whether or not their use was legal became secondary to many users' fear of being caught downloading music. The risk of being seen sharing files illegally, and subsequently being sued, drove a number of users away from P2P programs and onto online retail stores (...) Getting P2P users to think that. RIA was always watching was therefore one important way that. the record labels used surveillance of the Internet to ensure their production and distribution advantages continued on the Internet. (Arditi 2020, 141-142)

The cultural industries that have earnings in the distribution of physical media, in the mentioned cases CDs and DVDs, would face the dissolution of those and the increase of shared information under open software initiatives that they could not completely barrier. Along, RIAA became the target of numerous hack attacks and street protests; there was a lot of public and hacker commotion attesting their opposition with RIAA methods of control against P2P technologies and users.

Under the cases above, some traits became clear: US security and dominant industries were being challenged by incoming issues of the online world. Digital formats, piracy and open software would affect the way people consume culture, turning to be a problem for traditional

instances regulated by the copyright law to face. In the Napster case, it was evident that CDs, in the early 2000s, were already faded to obsolescence, obligating the music industry to find new ways to maintain its business thriving. As Gross has noticed, new technologies brought challenges to old corporations; with the Internet culture in advance, the physical instance of commodities was dissolving.

In the following years, instead of dismissing the online services, the industry would understand that it would be better to adapt. A new form of power, governed by online corporations and market alliances, will become even stronger as well as the idea of abstract commodity.

5.5.2 Hacker as a Class and the aims of Abstraction Values:

> Hackers doesn't just apply to computers. I think it applies to everything, it applies to people who can talk their ways out of situations, it applies to people who can take two different pieces of equipment apart that have nothing to do with one another and make a different piece of equipment out of them.
>
> - Spudz

In 2004, McKenzie Wark wrote the book A Hacker Manifesto. She is not an IT specialist and neither was talking about computers, but actually was prevising new structures of social organization and resistance that would emerge with the incoming commodification of information. Wark used a manifesto structure to emphasize the empirical nature of her political declaration; the concepts of abstraction, vectoralist and hacker would be reviewed as metaphoric keys to classify the new policies of the connected world.

Under Wark's theory, abstraction would be the commodity of a social structure to arrive. Subjective values would overlap capitalist consumption goods; knowledge, information and communication exemplify some of the new 'products' controlled by a vectorial system, that could be only renewed by hacker actuation.

> 029.   Information, like land or capital, becomes a form of property monopolized by a class, a class of vectoralists, so named because they control the vectors along which information is abstracted, just as capitalists control the material means with which goods are produced, and pastoralists the land with which food is produced. This information, once the collective property of the productive classes—the working and farming classes considered together—becomes the property of yet another appropriating class. (Wark 2004)

The forecast profits would not be the technology, which is a capitalist product, but actually what flows inside its cables: the abstract value. By owning information, the ruler instances would implement and mold society according to their interests. Vectoralists would form a class that dominates the abstraction, being named this way because they represent the ones who

control the vectors (networks, platforms, systems) in which abstraction (perception, information, concepts) is created and flows. When information turns into a commodity, its freedom is denied, and information wants to be free. (Wark 2004)

The ones who can produce abstraction would be the hackers. They can create and comprehend the inner codes that structure abstraction; they have access to information but do not privatize it; they are responsible for new forms of abstract production (Wark 2004). In this sense, hackers do not need to be programmers or hacktivists; they could exist on various grounds in art, communication, history, mathematics, etc. They would differ from vectoralist and workers by their capacity to create new things out of already existing data.

In a short list about some of their characteristics, Warks' hackers:

- Can work in the aims of exploited and explorers;
- Are responsible for the creation of new abstractions;
- Have access and are able to reprogram older codes, norms, information, etc.;
- Works under the favor of knowledge, instead of education;
- They hack, and hack is itself a form of abstraction;
- Still, they struggle in searching for representation;

While not everyone is a hacker, everyone hacks (Wark 2004); hackers abstract nature resides in its challenges to not be coerced by the vectoralist class and in its struggle to socialize a portion of the information stocks, flows, and vectors on which the hack depends (Wark 2004). The only form to achieve their freedom would be in becoming the real owner of its owns.

035/036.   The hacker class arises out of the transformation of information into property, in the form of intellectual property. (...) But for something to be represented as intellectual property, it is not enough for it to be in a different location. It must be qualitatively different. That difference, which makes a copyright or a patent possible, is the work of the hacker class. The hacker class makes what Bateson calls "the difference that makes the difference."* The difference that drives the abstraction of the world, but which also drives the accumulation of class power in the hands of the vectoral class. (Wark 2004)

It is not authorship in a literal way, but the whole concept of being the owner of a specific piece of abstraction. Giving a more concrete example, it is possible to look at Web 2.0 arouses of social platforms propaganda and claimed architecture of participation. By posting content under YouTube, users could 'hack' the Internet cultural symbols, producing new languages and forms of abstract meanings. However, who would be the video owner? YouTube or the creators? Even if the Internet user authorship can be preserved under protective laws, by uploading it on YouTube, the platform would be the genuine instance to capitalize, distribute and control that

content. As a corporative dominance in the Internet space, YouTube is a part of the vectoralist level, that would use content creation labor by its own profits, aggregating the new emerging languages as part of its centralized system. On the contrary, the hacker should free their creations from the vector which controls the information.

Another example can be seen in the prosecution of P2P technologies and archives exchange. They are a hacker creation, a vector that promotes a decentralized information flow and brings abstract benefit in the hands of the 'proletarian' class. In response, the vectoralist instance tries to 'buy' this idea by implementing online stores and picturing P2P acts as something illegal.

> 073.   The apologists for the vectoral interest want to limit the semantic productivity of the term "hacker" to a mere criminality, precisely because they fear its more abstract and multiple potential—its class potential. (Wark 2004)

In short, Wark's theory conducts a sort of new crypto-Marxism (Amaral 2004), where the capitalist structure is rearranged and trespassed by the aims of the digital culture phenomena. As the Internet turned out to be part of daily life and the online codes mesh with market interests, a third historical phase - where information monopoly would overthrow the previous values of land and capital - would arrive. A Hacker Manifesto was written in 2004, an era before the power of big data flow, but aligned with the concepts brought by the Web 2.0 apologists. As the Web becomes participatory, and the users could create information, the interests of vectoralist power and the incoming of information tuning into a commodity would be realized. Warks' hacker would not seek to be view as a smart prankster, nor as the heroes of the computational revolution and neither as criminals; the new hacker would stay out of its previous archetype to became an active class that has the knowledge and can access the values that lie within abstraction; as the information creator, hacker are ambiguous agents that could help the ruler forces of vectoralist class or speak for the exploited class benefit.

> 002.   We are the hackers of abstraction. We produce new concepts, new perceptions, new sensations, hacked out of raw data. Whatever code we hack, be it programming language, poetic language, math or music, curves or colorings, we are the abstracters of new worlds. Whatever we come to represent ourselves as researchers or authors, artists or biologists, chemists or musicians, philosophers or programmers, each of these subjectivities is but a fragment of a class still becoming, bit by bit, aware of itself as such. (Wark 2004),

Through its ambiguity, Wark call for hacker agents (she herself is included) to become a factual class - detached from workers and rulers - and to produce the difference in favor of *abstraction* freedom.

At the beginning of the 2000s, the cyberspace utopia was already crashed, but the Web was truly becoming a new social instance, strictly attached to the 'offline' one. Wark has predicted the progressive rise of informational value as the main commodity of the 21rst century, which was reinforced as online life became just 'life.' Since the development of social networks, people would gradually switch to alternative ways of connecting and distributing content. Sharing links and digital archives would be easier than exchanging CDs; organizing events under Facebook would be more engaging than sending invitation cards and reading the global news on the Web would be easier (and cheaper) than buying newspapers.

> 31.   As private property advances from land to capital to information, property itself becomes more abstract. Capital as property frees land from its spatial fixity. Information as property frees capital from its fixity in a particular object. (Wark 2004)

While appearing to be a more democratic sort of communication, the reality - as exemplified in the rise of battles between hackers, users, and industries - is that the online leaders would control all those 'free' pieces of information. Google, Facebook and YouTube would show the 'traditional' industries that they would also need to adapt for the enduring Web instance. To monetize this space, they must understand its codes.

6. Post-Digital and Post-Internet

Post-digital can refer to the present days, a recent past, or even to something that never really existed; theories about this subject were not constructed in a consensual argument. According to Florian Cramer, it would be an ambiguous - and problematic - terminology that is also paradoxically useful (Cramer 2016). One of its characteristics is to describe a cultural trend that mixed past and present media in favor of a new aesthetic.

> The term 'postdigital' strikes me as still being useful—because, from a postdigital perspective, you would no longer consider 'analog' and digital-algorithmic magic to be two different things (Cramer 2021)

'Post' prefix does not refer to the end of digital, but to a phase where technology would be already profoundly integrated into culture; it means to go beyond, to an ongoing and critical period (Cramer 2014). As society became more interested in high-tech devices, some years to follow would paradoxically bring back a new trend in out-of-date devices, like LPs and analog photographic cameras. Accordingly, with Cramer, that would be one of the post-digital main characteristics, the returning of an old media fetishization would be the echo of inevitable high-tech exhaustion. The previous exaltation of the universal machine and the 1990s computer revolution would be broken by the post-digital culture, which relies on variable media, mixing retro and current technologies and proposing a more humanistic approach to technology.

The bug, the error, and the distortion would also be explored. Precisely, it was under an article named *The Aesthetics of Failure* that the post-digital term would be introduced. Written by the electronic musician Kin Cascone in the year 2000, the unprecise side of technologies would be there described as a desired occurrence on the new digital art aesthetics, approximating machines and humans in the aims of being both imperfects.

> The simplest definition of "post-digital" describes a media aesthetics which opposes such digital high-tech and high-fidelity cleanness. The term was coined in 2000 by the musician Kim Cascone in the context of glitch aesthetics in contemporary electronic music. (Cramer 2014).

While mainly referring to the musical field, Cascone's points of machine failures and the 'end' of digital progress would also be relevant for contemporary artistic productions. Accordingly with him; the marriage between high tech and mechanical error - which instead of dismissed

would be artistically explored - molded post-digital aims; it was by recognizing the electronics' core - its dirty and noises - that the digital creation could go further.

> The basic composition of "background" is comprised of data we filter out to focus on our immediate surroundings. The data hidden in our perceptual "blind spot" contains worlds waiting to be explored, if we choose to shift our focus there. Today's digital technology enables artists to explore new territories for content by capturing and examining the area beyond the boundary of "normal" functions and uses of software. (Cascone 2000)

Cascone's article was about music history and creative devices usage; 'digital' word would not be used as a technically accurate term, but in colloquial means (Cramer 2014); the dismiss of a tech-scientific depiction would actually be coherent with the against-formalism and hack aims of Cascone's; he proposed alternative experimentation with digital devices instead of the standard usage of it.

> "Digital" simply means that something is divided into discrete, countable units — countable using whatever system one chooses, whether zeroes and ones, decimal numbers, tally marks on a scrap of paper, or the fingers (digits) of one's hand (...) 'Post-digital' thus refers to a state in which the disruption brought upon by digital information technology has already occurred. This can mean, as it did for Cascone, that this technology is no longer perceived as disruptive. Consequently, "post-digital" stands in direct opposition to the very notion of "new media"" (Cramer 2014)

Post-digital culture would bring a reductionism of terms. Digital would have no more meaning as a mass-used antonym for analogic and the distinction between online and offline life also does not make more sense. Post-digital and Post-Internet - would describe a fulfilled coexistence of those concepts under plural media usage. As Cramer said, new media notion was also blurred by an enlargement of perspectives, as artists started to see the 'digital' medium as something for beyond the technical and in situ perspective, the computer and network creative usage - for example - achieved other fields; including the mainstream art system.

> To summarize: binary juxtapositions of "digital" vs. "analog" (however technically accurate these terms may or may not be) as "new" and "old" media have become problematic if not outdated. Instead, this dichotomy has been superseded by many complex relationships and mutual dependencies between digital, analog, "new", "old" and in-between forms of production and distribution. In some areas such as music, graphic design and contemporary art, this new post-digital condition is widely acknowledged. The traditional boundaries between media design and graphic design, electronic and non-electronic music, contemporary art and new media art are rapidly collapsing. Terms such

as "Post-Internet" and "post-digital" can be used to describe this new situation. (Cramer 2016)

If post-digital were coined in referring to a cultural approach that evolves different art forms, Post-Internet would be one of its branches as referring to an ongoing period under visual arts (Cramer 2014); when a closer relationship between the mainstream art system and Internet Art occurred.

Controversies also surround the Post-Internet concept; some authors consider it an outdated term (Cramer 2016) or an 'irritating trend' (Sotomska 2018). Equally, Post-Internet Art specifies a time where artists would decidedly give up on the purism and utopia of the Web, to go back to galleries and formal discussions. Under the Post-Internet Art - just like in the post-digital - the media would be hybrid; Internet issues would be brought in video, installation and even painting forms; the webspace would not be the primary medium of Internet Art anymore.

Coined by Marisa Olson in 2006 and officially stated in a 2008 interview with the artist, Post-Internet Art describes a production that goes further with the Web medium. At the beginning of 21frst century, mass media announced the dot-com bubble burst as the Internet's "death"; in the mid-2000s, with mobile technology and application advancement, the Web was also declared dead (Anderson and Wolff 2010); over the passing years, Post-Internet Art was raised in the same aura, understanding that the Internet has been spread far along with the Web as actually being an inseparable part of daily life.

6.1 Early Post-Internet Art poetics

Internet is not over, but its old spirit - the idealized one nurtured by net.art - was long gone; a new Internet Art form, named Post-Internet Art, would emerge; bringing concerns about network's impact and languages. Post-Internet artists adapted to the growth of external devices, pushing Internet issues for the offline instance as well.

I think it is important to address the impacts of the Internet on culture at large, and this can be done well on networks but can and should also exist offline.' This is a point that I'd been trying to hammer-home to anyone who cared to listen for the previous 3-4 years. When appointed Editor & Curator at Rhizome, in 2005, my first agenda was to change the organization's mission statement to assert its support of not only Internet-based art, but all art that engages with the Internet. (Olson 2008)

At first, Olson used Post-Internet Art as referring to her own artistic practice. She was a member of *Nasty Nets*, had engaged in curatorial practices for Neen exhibitions and written many

articles regarding the new roles of the Internet inside art. With the artwork *American Idol Audition Training Blog* (2004-2005), for instance, Olson had related a process regarding her subscription into the famous American Idol contest. The project, which begun in 2004, was fully described under a blog platform, where the artist's yearlong preparation for the competition was depicted in constant posts. *American Idol Audition Training Blog* has gained many followers, between users aware of the artistic nature and those who are not.

> I'm interested in the crossover between the tropes or the conventions or the rules that are specific to autobiographical narratives, and those that are specific to writing for blogs. I like to exploit that a little bit. I also feel like blogs are a great place for happenings, to revive an old word, in the sense of time-based performances that are socially specific. (Olson 2006)

American Idol is an artwork based on the Web, in the sense of being shared and documented and in the online space; the blog, as an interactive diary structure, helped Olson achieve a more plural type of viewers and construct a corpus of work that mixed fiction and documental register. The Internet was used as a way to spread informational content and achieve a higher audience far from the galleries, but not as a single-used support. Olson's journey in American Idol was also amplified to a paired video artwork named *The One That Got Away* (2004), which was firstly published on YouTube and later on Vimeo.

> I started keeping all of these diary entries of quote-unquote training exercises. None of them really had to do with singing at all. All had to do with being a star, being more feminine, standing out. In the beginning of the project, I was trying to critique the relationship between fame and talent on the show. (...) This was the first Internet project I ever did. It sent me in an entirely new direction. I was amazed by what happened with it, because of the timing of the election. So I was keeping this over the summer, and leading up to the fall. (...) Friends of mine, family members of mine, people who knew me, who were extremely confused, because this was the first project of this nature that I had ever done. They were like, "Is this real, or is this a parody?" And my answer was just, "Yes." (Olson 2017)

Under variable aims of communication, instant online fame, female stereotype and even content reliability, Olson's works used the Internet as a tool of engagement, opposing to 1990s Net Art, when the Web issues were space-centered. The mix of platforms and subjects reveal a non-fixed poetic that would support most of Post-Internet Art productions.

In another example, Gene McHugh, for almost one year, had maintained a blog titled *Post Internet* (2009-2010). Personal insights and current Post-Internet Art production appointments were shared, constructing an online "critic-diary" later published as a book. McHugh's act of progressive 'live' critical development and the later materialization of an

originally Web-based content into a physical object would highlight the transformative aims of Post-Internet Art. As Domenico Quaranta had poited, the blog would become... "also, in itself, a piece of Post-Internet Art in the shape of an art criticism blog" (cited in McHugh 2011)

Olson's work had a humorous approach, combining social media communication, enduring performance and video footage. While McHugh's blog was itself an "exercise in art criticism and as well as a performative work of art" (Rhizome s.d). Both examples partially show how Post-Internet Art begun: in a wave that took the popular Internet culture and transposed its particular aesthetics, places and languages for objects accepted inside the art system. Post-Internet Art concept development is attributed to McHugh and Olson, as they - in different ways - had emphasized the usage and theories of this new internet Art aesthetic (Vierkant 2010).

Post-Internet Art leaves the Internet world. It goes to the art world and mutates itself to correspond to the conventions of the art world. It is art world about the Internet. A deeper goal, though, is that as the work mutates from the conventions of the Internet to the conventions of art, the work catalyzes the conventions of art to mutate to those of the Internet. (McHugh 2011, 9)

The mutability of this art form would be in continuous development in the following years of the 2000s, reinforcing the ongoing trends of network culture. The Internet was not a bubbled field to be explored anymore, but a part of society's daily life; Post-Internet artists, would be aware (and a part of) that.

Software was converted into prints, videos, installations; performative media hacks were documented and presented in set-ups inspired by the ways in which conceptual and performance art manifest themselves in physical space; and the early adopters of the "post-internet" label. (Quaranta 2014)

Other significant names appeared even before the Post-Internet Art term emergence; artists that were institutionalized due to their innovative ways of mixing network and conceptual issues without renegading the academic and mainstream art rules. In the early 2000s, Olson was well-known under alternative and new media instances - like NEEN and Surfing Clubs - while Seth Price and Cory Arcangel, for instance, were embraced by the mainstream art system since the beginning of their career.

Seth Price's productions relate to means of distribution and image reproduction. At a time when the Internet was slowly turning into a daily life instrument, Price wrote an essay addressed to media and network communications in a critical review about the way artists' pieces are being spread and institutionalized. The paper was called _Dispersion_ (2002), first launched as a simple PDF and freely available on the Web. However, _Dispersion_ was not a single article; it can be understood as part of a whole conceptual body of works that categorizes Prince's poetic; the text

would be itself declared as a piece of art, being reviewed and materialized in plural ways over the following years.

In doing so, he enacted in practice what his "Dispersion" explored in theory: how an artist might exist outside the confines of the art world, tentatively proposing that an answer might lie in the distribution networks of mass culture, which now included the Internet. (Cornell and Halter 2015)

Dispersion assembled website pages, printed publications and even sculptures. The coherence of Price's work over the Internet is on critically formulating and practically exploring the inherent communicational potency of networks; he emphasizes that - for contemporary artists - 'means of distribution' would be a more valuable concept to be investigated than 'production' Price (2002). It is to say: artworks must adapt to a time where variable media and extensive reproduction superpose originality and uniqueness; also, Price claims that the public space - being political or occupied with daily life - had to be understood in coherence with new informative policies and locals that the Internet brought.

An art grounded in distributed media can be seen as a political art and an art of communicative action, not least because it is a reaction to the fact that the merging of art and life has been affected most successfully by the "consciousness industry". The field of culture is a public sphere and a site of struggle, and all of its manifestations are ideological. (Price 2002)

In 2008, the artist exhibited *Essay with Knots (2008),* which consisted in the printouts of *Dispersion* textual archive on framed acrylic bases, reinforcing how the property of a single 'piece' could acquire hybrid ways of diffusion. Price sees the Internet as a new form of public space, where a piece could be properly accessed and intervein in quotidian life.

Remembering McHugh's notes, " the work mutates from the conventions of the Internet to the conventions of art, the work catalyzes the conventions of art to mutate to those of the Internet" (McHugh 2011, 9), which lead to the understanding that the symbolic nature of networks discussed by the mentioned artists was mainly made outside the online world as to acquired right relevance inside the Internet communications metaphors and platforms.

Although *Dispersion* can be read as a critical essay about art and the Internet, reading it as an artwork yields additional insight. The transit of *Dispersion* through the art system revealed certain affordances of that system: its hunger for content; the importance it placed on specific kinds of writing and graphic design, and the sudden awareness of the need for critical writing about the Internet. (Rhizome s.d.)

More than a Post-Internet artist, Seth Price is a conceptual one. His topics of the online issues are a part of his poetics, not the central point. And that was another common characteristic of Post-Internet artists to rise; the Internet subjects, many times, would be addressed in less-evident ways. McHugh has listed five primally points that the Post-Internet Art could relate to:

1. New Media art made after the launch of the World Wide Web and, thus, the introduction of mainstream culture to the Internet.
2. Marisa Olson's definition: Art made *after* one's use of the Internet. "The yield" of her surfing and computer use, as she describes it.
3. Art responding to a general cultural condition that may also be described as "Post Internet" – when the Internet is less a novelty and more a banality.
4. What Guthrie Lonergan described as "Internet Aware" – or when the photo of the art object is more widely dispersed than the object itself.
5. Art from the Internet world that mutates to the conventions of the art world. As the work mutates itself to become more like art world art, the work mutates art world art to become more like the Internet.
(McHugh 2011)

Cory Arcangel productions seem to achieve all those instances. The piece which was considered Arcangel's debut in galleries is *Super Mario Clouds* (2002); that was first exhibited in 2003 in the Team Gallery in New York. At the museum, *Super Mario Clouds* gained the basis of a video installation, looking like an elementary conceptual video where looping frames of the cloudy background of the Super Mario Bros game is shown. However, the concepts of this work lie in its entire process: Arcangel had physically hacked a Mario Bros game cartridge, erasing every visual element inside the cartridge chip, besides the iconic clouds. The project, which started as a unique physical piece alteration, was further distributed along the Internet, where it could be overshared and freely modified. At Arcangel's website, people could find: a Gif of the game, photos of the modified cartridge, the hack's source code, and even the .nes ROM file, meaning that Web-users could download a tutorial and made their own version of this artwork.

Arcangel and Price were fully embraced by contemporary art; also, their productions have the common aim of starting as a single piece that acquires extensive forms and reproducibility when shared on the Internet. Doing this, they show a diplomatic way to freely circulate in the online space and align with the galleries system needs for the value of art objects.

As pointed by Domenico Quaranta, Post-Internet Art would be the first "Internet related practice to be identified as a trend by the contemporary art world, to be supported by (and sometimes identified with) an international network of commercial galleries" (Quaranta 2014).

Lauren Cornell and Ed Halter would say that Rachel Greene's prevision about the future of Net Art was wrong; according to Greene, Net Art would be thoroughly institutionalized or

faded to the underground (Greene 2004). However, in the early 2000s, artists like Olson, Price and Arcangel were bringing new ways to discuss the Internet, a place in-between galleries and the outsider world. They promoted the openness of Internet content but brought the networks contemporary discussion for inside the art system as well.

> The future of net.art would be the dispersion of the category's legacy into a wide range of practices: open-source sharing, gallery installations, live performances, cinema screenings, talks, and publications. (Cornell and Halter 2015)

Furthermore, this became even more evident when social media giants - like Facebook and Instagram - sprung. The technologies centered in the network of people would size not only the future of art and hacktivist actions but also the whole system of social exchange and communitarian construction.

6.2   Post-Internet Art: Social Media instead of New Media

In the chapter *Between New Media and Contemporary Art*, Shanken and Bishop's viewpoints were examined in the differences between MCA and NMA; this debate enlarged after the 2010s when network technologies were already internalized in life and traditional art institutions.

In 2014, after receiving harsh critiques about her publication *Digital Divide: Whatever Happened to Digital Art?*; Bishop would write an in response article, sharply titled *Sweeping, Dumb*, and *Aggressively Ignorant*! *Revisiting 'Digital Divide*. According to her, the first paper was hyperbolized by Artforum's edition and misread by many; however, the sensationalism would be a glad occurrence that imposed the discussion under different states, even if wrongly deciphered by some (Bishop 2014). Bishop would defend herself in reinforcing that her point was to talk about the art system's struggle to maintain digital artworks coherence; facing the greed of galleries and the art market rules, contemporary artists would be worried about not being related to new media branch; according to her, the long-going rivalry among NMA and MCA would betray the digital issues as the contemporary art institutions could not escape of the digital world at the same time that aimed to maintain its old institutional rules.

> (...) these artists often appear to repress an engagement with new media by returning to outmoded technologies (such as slides and 8mm and 16mm film) and face-to-face encounters, their work is nevertheless underpinned by a digital logic of aggregation, compositing, information management, reformatting, and so on that betrays its presence (Bishop 2014)

Under the NMA side, she would observe artists' ambivalent aims to preserve their own circuit at the same time that they would still be in a chase for MCA acceptance and validation. This paradox seemed to become vaguer as the Post-Internet Art term emerged.

New media feels like a dated category because today everyone is "postinternet," a confusing term that indicates not the chronological end of the Internet but simply its prevalence and banality (Bishop 2014)

Even not favorable to the Post-Internet Art term, the author admitted that a growing conversation was rising under this category exponents. In a final statement, she would propose that, instead of dividing discourses into fields and centered interests, the digital discussion must face the social consequences of new technologies instead of being occupied with trends and labels.

(...) The result is a delirious anthropology of present-day perception exhausted by information. All of these artists are as home on the Rhizome website as they are in the pages of *Artforum* or the short-list of the Turner Prize, and all invalidate the distinctions around which so much of the hostility to "Digital Divide" accumulated. This is not to minimize the tensions that animated so many of the responses to "Digital Divide." Rather, it is to point out that too much of this discussion concerned issues that were peripheral to my argument (questions of territory, authority, and particularly of exclusion from Artforum as an elite journal and organ of the market) rather than the essay's central question: what can art tell us about the phenomenology of our digital regime? (Bishop 2014)

Maybe Bishop's question could be partially clarified by the mid-of 2000s social platforms emergence. After the launch of YouTube in 2005 and Facebook popularization in 2006[76], society languages and interactions would be decisively transformed. Following the trend, Twitter would turn into a short news platform and Instagram in a photo-based diary. They all have much to say in contemporary phenomenology and would gradually mold novel means of interaction, employment, and general social instances. Post-Internet Art would then embrace social media.

In *Drei Klavierstuke* (2009), Cory Arcangel approached viral Internet videos sprung; an unaware observer could appreciate this as just 'another cat video' found while surfing around YouTube. The work underlines the recreation of Arnold Schoenberg's 1909 op. 11 Drei Klavierstücke (aka Three Piano Pieces); Arcangel's edited videos of cats and pianos to recreate the classical piece partiture. The work is not about a sound remix composition, but rather about the complex relationship of a piece that exists inside the online mass-culture 'memes', that

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76   Facebook was founded in 2004 (at that year it was named The Facebook); however, it was only in 2006 that the platform opened for the general public.

transposed an auratic piece of classical music for the current Internet context and also have acquired an art 'official' label under galleries milieu. The way people look at this work is a matter of context and exhibition space. That is precisely Arcangels' biggest goal: to 'hack' the mass Internet language, transposing it to become an art exponent and an anonymous viral content creator.

> In the Post-Internet climate, it is assumed that the work of art lies equally in the version of the object one would encounter at a gallery or museum, the images and other representations disseminated through the Internet and print publications, bootleg images of the object or its representations, and variations on any of these as edited and recontextualized by any other author. The less developed stratagem for pointing to a lack of representational fixity is that of taking an object to be represented (to be more direct, presented) as another type of object entirely, without reference to the "original." For objects after the Internet there can be no "original copy." (Vierkant 2010)

Another well-known example of YouTube platform usage is seen in the pioneering work *VVEBCAM*(2007), by Petra Cortright. Considered one of the first YouTube-based performances, *VVEBCAM* shows a bored Petra self-recording herself while using default video effects in front of a webcam. The piece was posted linked to banal tags like — san francisco, diego, jose, taco bell, border patrol, mcdonalds, KFC, trans fat, and some more provocative as —tits, vagina, sex, nude, boobs. An action that ended up making an expressive number of views and comments and also leaded to the last banishment of the material by YouTube. Cortright's work discusses algorithm values and how those tags can lead to a certain niche of users and interaction with Internet content.

> Produced for YouTube or other platforms, these videos are both a conforming response to and a note in the margin of the culture that these platforms have given rise to. They might be in line to become the next "viral video" but they are also a comment and a critique of the presumed democracy of the "vote for this video" culture and the low level of individual attention devoted to such a vast mass of material. (Quaranta 2013, 215)

Nevertheless, if the new pop language and culture constructed under social media platforms can be mentioned as the main characteristics of Post-Internet period phenomenology, Post-Internet Art would institutionalize Internet pop ethos, as art made by a generation of artists born 'inside the Web'. The native netizens do not want to fight against the mainstream art market or system but rather engage with it. (Meixnerová 2019)

At a talk for Digital Bauhaus Summit 2017, Melanie Buhler would say that one of the main critiques about Post-Internet Art is that some of its artworks can be seen as superficial; a misleading regarding the symbols and the aims, like memes and social media engagement, used

by Post-Internet artist. Buhler would sustain that Post-Internet Art's central political relevance lies precisely in taking the online mainstream culture for institutional discussions.

6.3   New Politics inside Post-Internet Art

1990s Net Art was based on the Internet media direct approach, as an art made 'inside and for' the network, while 2010s Post-Internet Art would deal with the online space in a more subjective and plural means. The Internet concerns would be discussed in an extensive way, not only in between machines[77] relationship. With the fulfillment of the digital revolution, the previous utopia propagated by Net Art would be dismounted by the totalization of the Network issues under life's instance. However, if the 'post' means the Internet subject fulfillment, many authors and artists had criticized this terminology ambiguity, while the congruence of Art, Internet and society would embrace many complex bonds.

> Uses of "post-" appear to contain contradictions: in a time of political upheaval and revolt, we are post-political; in a time of digital domination, we are post-digital; in a time of ever-rampant homophobia, misogyny, racism, nationalism, and transphobia, we are post-identarian. Yet, deployments of "post-" do not simply mean an after, but also illustrate saturation or (pseudo)totalization (...) 'Post-' announces that challenging instances of passage and transformation can only be articulated through what they proceed. But is this enough? Is 'post-' not more of a stylistic convenience that evinces a blind spot, an inability to account for the present in its specificity and singularity? Is it not an easy shorthand for what could be called an impasse to think the contemporary? (Blas 2014, 87)

The sentence above was written by the Post-Internet artists Zach Blas. He addresses the 'queer' culture and the digital surveillance topics, working under the critical verge of contemporary Internet issues. In *Facial Weaponization Suite* (2011-2014), he developed a system to block facial recognition programs; with amorphous masks that were digitally executed and could be worn as a physical object to block biometric facial recognition. The nebulous appearance of Blas pieces was a result of mixing identification data from different people.

Artists like Blas worked with mixed media dispositions, connected society issues and physical objects; in *Facial Weaponization Suite*, mobile devices, software and data were materialized into masks made to deceive algorithmic ways of surveillance. Implementing hybrid means to discuss the social distress that the online world faces.

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77   Referring to aims of Net Art that would be an. art form aimed to be crated, occur and be exhibited only in the online space. See page <u>67</u>.

In the 2010s decade, data breaks and surveillance scandals became the focus under the Internet. News about black-hat hackers' massive attacks, the exposure of personal information (which revealed the lack of security inside some mass used Internet platforms) and the disclosure of social media scandals would become known by general people. Regarding the suspicious aims used by the dominant Net corporations, hackers would engage in active battles to expose bias data commercialization; the advance of mobile technologies and the usage of the Internet for primaly daily communication would put online political discussions on the same path of life. With no more idealization about the network space, Post-Internet Art will abroad online issues not as a way of deconstruction, but about information and social awareness.

The artist Brad Troemel, for instance, would be named as the troll of Internet Art (Chen 2017); he became well-known as the co-creator of _Jogging_ (2009 - ongoing)[78] project. _Jogging_ is a Tumblr-based piece where memes and art borders were mixed. The work was aligned with the blogosphere trend of the mid-2000s period, when Net artists would explore Internet Art's collecting and archivist aims in a transitional time that recalls the beginning of the Post-Internet Art era[79]. Troemel, being much interested in the awareness of Internet artists' role, decided to explore the Web 2.0 aims and wrote essays and manifestos to state how artists were supposed to deal with social media platforms spread actively. The _Free Art_ manifesto and the _aesthlete_ theory were some of his thoughts.

> Troemel coined the term "aesthlete" to describe the type of artist who can maintain relevance today. The aesthlete, he wrote, "produces a constant stream of work in social media to ride atop the wave in viewers' newsfeeds, or else become the wave itself." Troemel has some fifty-six thousand followers on Instagram, and he typically posts a photograph each day at 1 _P.M._, when he finds that user engagement is highest. (Chen 2017)

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Actively searching for ways to develop his art under current Internet tools, he -) in collaboration with Joshua Citarella. - would idealize the _Ultra Violet Production House_ (2015 - ongoing). This piece has its bases in an Etsy store, where art collectors (and the general public) were invited to buy kits and materials to assemble the artwork. Objects like the _GPS chipped polymer chevron ombre surveillance necklace (Watchering)_ and _Dry Erase Protest Sign_ were available for the purchaser to construct their own DYU art; in a critical-aware-joke that combines provocative Web language with an institutional art mock. _Ultra Violet Production House_ can be read as a way to detach from gallerist systems; However, Toemel means would be very distinctive from that one proposed by early Net artists. There is no romanticism in his actions (Chen 2017).

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78   _Jogging_ platform was conceived as a collaboration between Brad Troemel and Lauren Christensen.
79   See chapter 2000s: A Transitional Time.

Troemel gravitated toward artists whose work falls under the label of institutional critique, which takes as its subject the hidden workings of the art world itself. (Chen 2017)

The artist productions show and take advantage of institutional art games while being inside them. Troemel is neither a countercultural exponent nor desires to be an outsider; his critics found field under the system; being a providential example of one between many paradoxes surrounding Post-Internet Art.

One of his favorite strategies is to combine consumer goods that have symbolic value—coins, organic food, political posters, books of critical theory—to create an argument, which is usually opaque until one reads the lengthy artist statements that he writes for nearly all his shows. (Chen 2017)

Troemel pieces fit into a bourgeoise art aligned with a new capitalist system that understands and explores Internet *abstract* values as a new dominant commodity (Wark 2019). Post-Internet artists would take advantage of current Internet tools, using its internal codes to be embraced by institutions or even be an active voice in criticizing it.

The Post-Internet style is, one could say, the negation of the negation. But this double negative points toward a positive; optimized for financial accumulation, Post-Internet art constitutes the value form of digital capitalism, a global visual idiom that conflates the vectors of Silicon Valley commodity space with the strategy space of the United States empire. Revolving around an endless semiotic loop, history itself becomes an 'enclosed space surrounded and sealed by American power. (Frank and Pinto 2016)

Frank and Pinto's point of view would be guided towards the conscience that long-centralized North American control of the Internet, as well as its liberal aims, would be renewed in modern days. They also highlighted a critique about the current Internet Art form productions of letting the online resistance aims to become a triumphant sort of enterprise.

The intensifying alliance between art and finance revolves around this tacit agreement to simultaneously obscure and celebrate this 'curious flip-flop of power and assimilation. (Frank and Pinto 2016)

On the other hand, it is possible to read Post-Internet Art productions as the realization of Wark's description of a new social class of hackers. Instead of working under a unique field and cause, they would propose alliances to renew current systems (Wark 2014). The early Post-Internet names that emerged in the late-2000s were decisive for breaking distinctions between Internet Art and contemporary art fields, inserting online discussions in more traditional

institutions. Also, it was under their practices that the mass pop language of the Internet started to produce new forms of social understanding inside academic instances. We can risk to say that Post-Internet Art would come as a branch of Wark's hackers that will work under the system's rules and distribute this content to recap in new forms of knowledge and communitarian awareness.

7. Review, Comparisons and Conclusion

The Internet arrived as a military tool, restricted to small circles that linked academia and the army instances; bundling US military interests and the technological beliefs of hackers and techno-hobbyists, networks' technologies stayed many years under a secretive representation. The 1960s were factual for its development, and the 1970s highlighted its improvements with the joining of business investments. Computers and networks were not socially accessible at those times, being just discussed by small and geo-specific groups, which often saw those machines under a bit of fear and suspicion.

It was only during the 1980s that computers became factually available for people, leading to the games industry's improvement and a geek science-fi cultural trend. Hackers, AI machines, and connected societies would promote a futuristic place, idealized under the cyberspace view; computers entered into north-American middle-class houses predicting a utopic/dystopic future, a vision that mixed social's previous fear with an incoming fascination for technology. The Hacker would become a 'cool guy' under the pop culture, games would be 1980s *Zeitgeist*, and New Media Art would be established as a particular cultural field; where art, technology, and interaction meets.

Those were the decades that remounts to the pre-Web era; when network technologies were built and improved; the rooting rules and ideologies that had been created at that decades would reflect into later online cultures and politics. As pointed out by A. Galloway: "The development of the personal computer, along with computer networks, has had a profound, stratified impact on the way in which social, political, and economic life is experienced" (Galloway 2004, 13).

	1960s	1970s	1980s
Network controllers and users	US Military Force and Academic Research Centers	+ Private Corporations	++ Society
Medium	Academic Computers	Business and Techno-Hobbits Computers	Personal Computers
Culture	Academic	+Hackers	++Pop Culture

During the 1990s, Tim Berner-Lee would expand Internet aims with the Web creation. The Web, unlike the Internet, was first conceived to facilitate scientific information exchange; its

expansion to the daily life field would forever change the way people interact, communicate and learn.

> Computers might not find the solutions to our problems, but they would be able to do the bulk of the legwork required, assist our human minds in intuitively finding ways through the maze. The added excitement was that computers could also follow and analyze the tentative connective relationships that defined much of our society's workings, unveiling entirely new ways to see our world. A system able to do that would be a fantastic thing for managers, for social scientists, and, ultimately, for everyone. (Berners-Lee 1999, 5)

With computers connected worldwide, people could easily access and understand the context of distant places, changing the way different societies relate and act. Being the portraitists of switching moments in time, artists would enter the Web proposing an avant-garde form of production, an experimental one developed in strict agreement with the online space. Net Art arose trying to comprehend the Web's structure and its new culture; being an avant-gardist proposition, Net Art started as an independent form, apart from the standard art field while at the same time bringing discussions that stayed in between New Media Art and mainstream Contemporary Art. Net artists had constructed their own events, places for discussion (Nettime listserv), online exhibitions (Ada Web), and theories; some Net Art branches that emerged at that time went even further, propagating "a malfunctioning piece of software (...) to break down autonomous disciplines and outmoded classifications imposed upon various activists practices" (Shulgin, 1994-1999).

Working in a collaborative manner to propose a completely new sort of activism and the dissolution of authorship, net.art would be a shared signature of artists like Vuk Ćosić, Alexei Shulgin, Olia Lialina, Heath Bunting, and Jodi. Net.artists would summarize 1960s Hacker's ideals, 1970s hobbyist's aims of accessibility, and 1980s cyberspace dreams, exploring the structure of the Web as a potential utopic blank canvas. Recapitulating the spirit that had nurtured net.art days, Heath Bunting would say that:

> There was a lot of idealism and different subjects at that time; people were going to restaurants together and exchanging ideas... But it was almost impossible - while many theorists tried to name what really happened there - even the artists didn't have a true conscience about what was going on.
> Many people at that time worked with the idea of abandoning the body, the dematerialization of it; I'm not into that subject, to go against biology. The revolutionary point of that time for sure has changed; ideals change by the economic force. (Bunting 2021)

Everything seemed to be possible during the short period of the early-1990s; Net Art embraced a poetic related to the destruction of identity, nationalism, and physical art object values. However, this initial utopia would be soon dismissed.

The growing online battles of the mid-late 1990s showed a growing conflict between private interests and power structures, evoking a response from the side of IT communities that would actively resist the centralization of commercial interests inside the Web. Hackers would reinforce communitarian initiatives to guarantee the freedom of information. Net artists would join them, abandoning their initial naivety in favor of a more provocative poetic that sometimes directly engages with hacking tactics like software hack, webpage, and email hijacking.

If in the early 1990s the Internet had the promise of being free, in the mid-late years of that decade, the rise of controlled private software and copyright battles would show a gradual restriction of information due to financial interests. Movements of resistance and more activist discussion would dominate hacker communities and Net artists that were actuating at that time. Furthermore, the commercial dot-com bubble, which stimulated commercial interest inside the Web, would not last long. Small companies had gone to failure after a miraculous period, and the burst of the bubble in the year 2000 brought a new chapter for the Internet's history.

	early 1990s	mid 1990s	late 1990s
Internet Events	Web income	Dot-Com boom	pre-Dot-Com burst
Art Forms	Net Art	net.art	net.art end and hacktivist Net Art approach increase
Internet Art Issues	Utopic Web	Commercial Web	Mass-used Web and centralized Web companies
Internet's Battles	Free Information	Copyright disputes	Rise of Free and Open Source initiatives
Medium	Webpages		

Seeing the failure of small e-commerce enterprises and the increase of social awareness about the forces which were gaining power in the online space, companies had developed strategies to recharge social faith in the Web. With the 2000s income, the previous static Web, dominated by webpages, would be gradually replaced by platforms and interactive gadgets. A new structure came to evoke Internet users' agency under a collaborative architecture; soon, the Web would be full of authorial videos, images, text, comments, and sharing buttons. Those were the aims of Web 2.0, a period where average Web users would be invited to construct and participate with online content. Corporative strategies would switch to understanding a new form of value-focused on users' engagement and web-based content. It would be the incoming of a new market based on abstract commodities.

Paradoxically, the construction of pre-fabricated platforms of the 2000s Web had also highlighted the increasing closure of information. In a superficial layer, gadgets and new friendly systems had facilitated users' interference and interactivity; on the other hand, its black box structure would show how layout changes could help the hidden aims behind controlling systems. The Web already had its established internal rulers, and the 'architecture of participation also covers a pyramidal online structure that replicates the offline dominant governing system.

Internet Art, in the 2000s, had been fragmented in distinct poetics, just like have happened with the hacker community years earlier. Some Net Artists have just given up on the Internet medium; others would increase their engagement with activist issues. A new generation - born within the Internet - would bring a more unpretentious form of online art. The in-time generation of Internet artists would address a poetic based on popular online culture and platforms instead of fighting against power and institutions. NEEN and Surfing Clubs were examples of this new Internet Art approach, which showed the incoming of a web-aware-based new language and aesthetic.

	2000s
Internet Events	Web 2.0
Art Forms	NEEN and Surfing Clubs
Internet Art Issues	Pop Web culture
Internet's. Battles	Closed Internal battles
Medium	Blogs and Social Media Platforms

For this new generation of artists, the Internet was not a place to be discovered or a political battlefield, rather an inextricable part of daily life. This transitional time, where blogs and Adobe Flash websites usage increased, had highlighted the beginning of the Post-Internet Art period.

In Post Internet, contemporary art and digital issues would merge, echoing the Internet's role in society. Post-Internet artists do not confront the art system; they bring the established Web languages and platforms for museums, sometimes even materializing it under the form of physical artworks or obsolete media usage. The central motif behind it can be read as a depiction of (or coherence with) contemporary life; where the online space does not exist anymore, online and offline are sides of a shared instance. During the 2010s, social media and smartphones would be already established as communicational standards; society had achieved a complete transition to the digital. The mobile Internet took the previously web-based approach for outside computers. Reviewing the concepts of collective intelligence propagated by the 1980s cyberspace, it is possible to say that society had achieved it; not in the sense of a dematerialized collective body, but smartphones would factually turn into a sort of non-fixed extension of humans.

Today, we depend on the Internet. Precisely, it was in this mixture of need and daily life insertion that Post-Internet Art would bring the continuity of Net Art: as a non-combative poetic

that uses the dominant codes to portray the online systems popular culture. In the broad spectrum of Post-Internet Art, it would be an error to call it a non-political expression, as it has expanded contemporary issues to a larger field, even sometimes occupied in disclosing Web's internal layers and governors. To point a knowledge that often escapes unawarded Internet users to the surface is also a political service.

	2010s
Internet Events	Mobile Internet
Art Forms	Post-Internet Art
Internet Art Issues	Internet issues as a part of daily life
Internet's Battles	Social Media Scandals, Disclosure of malicious data usage
Medium	Mixed Media

Many scandals concerning the biased aims of Internet corporations under their user's data have been revealed; these events resulted in increasing discussions about data control and society's awareness about how their information and personal contents have been managed online. Hacktivism, during the 2010s, had fostered a new communal wave; groups like Anonymous would bring together a heterogeneous variety of actors - from coders to average Web users - involved in the disclosure of techniques used by the Internet's controlling organizations.

> What does Google know? What can it guess? Well, it seems just about everything. "One of the things that eventually happens… is that we don't need you to type at all," Eric Schmidt, Google's CEO, said in a moment of candor in 2010. "Because we know where you are. We know where you've been. We can more or less guess what you're thinking about." 94 He later added, "One day we had a conversation where we figured we could just try to predict the stock market. And then we decided it was illegal. So we stopped doing that. (Levine 2018,295)

Internet rulers had successfully implemented their own politics that sometimes even superpose national governmental laws. Yasha Levine reviewed the omnipresence of online laws in a 2018 book named Surveillance Valley, where he would sustain that the Internet's instances of power would actually control society at large. Alliances between governments and private enterprises would depict a long coalition between the major Internet-based companies and the US military force. According to his theory, even 'hacker tools' - like the browser Thor - were created under the US continuous surveillance and financial support. The online rulers would work under

the blessing of powerful alliances that would 'buy' Web users' data to favor governmental and private interests.

> Google didn't just work with intelligence and military agencies but also sought to penetrate every level of society, including civilian federal agencies, cities, states, local police departments, emergency responders, hospitals, public schools, and all sorts of companies and nonprofits. (Levine 2018, 305)

Clearly, the Internet is not (maybe has never been) a free place, and its control - for Berners-Lee disillusion - is centralized in the hands of a few corporations. Internet's govern reproduces and merges with the current capitalist system while sometimes being even more oppressive. Mackenzie Wark has predicted the rise of a new social organization during the 2000s; she stated informational value as the primary commodity that would rule a novel format of capitalism.

> "(...) there used to be material labor; now there is immaterial labor. It's a different kind of labor. it's the opposite! But what this labor produces, and is exploited by, is still only a modified capitalist, a cognitive capitalism. It's not material anymore. (...) capitalism has already been rendered historical but that the period that replaces it is worse." (Wark 2019, 25-26)

Wark's theory seems pretty accurate to nowadays political problems; according to her, the only way to achieve an effective resistance under the unexplicit new arrangement of exploitation that comes with the abstract value would be in the hands of an insurgent social class composed of hackers. Wark's hackers were not ideological or tech experts but rather a parcel of creative members of society that have access to ruling codes and could propose ways to 'decommodify' information. The 'worst capitalist' would be settled under the Internet to achieve society in general, and the hope would be in the hands of the class, which also relate to artists.

Going back to the central hypothesis that Internet Art history had been strictly aligned with the Internet and Hacker themes, it is possible to conclude that a crescent nihilism, which substituted the initial Net Art romanticism, had also happened with other political communities, such as the Hacker one. In reviewing more than thirty years of the Internet's history and movements, recurrent patterns became clear; inside the underlines of the informational networks technology, there is a constant battle between biased economic interests and socially aware motifs. However, those were not factually polarized matters; often, the ideologies portraited by hackers and artists versus the governmental and private interest have chained in waves of flirt and conflicts that highlight an even more complex scenario than previously expected. If the current wave of Post-Internet Art seems to be less combative, for instance, it is actually due to being merged with social organizations at large.

Chaining Internet Art specifications and Internet's technical development, it is possible to recap some few standards under the following:

		PRE-WEB	WEB	TRANSITIONAL TIME	POST-INTERNET
		1960-1980	**1990s**	**2000s**	**2010s**
INTERNET ART					
	Movements	New Media Art	Net Art and net.art	Neen and Surfing Clubs	Post-Internet Art
	Dominant Artistic Support	BBS	Webpages and Listservs	Blogs and Social Platforms	Mixed media, Materialization of online issues.
	Motifs	Technology Exaltation	Online structures and Activism	Web's New Languages and Software's	Internet Pop culture
	Art Labels	New Media Art	Counter-Institutional	In Between New Media and Contemporary Art	Merge with Contemporary Art
INTERNET					
	Dominant Technologies	Networks and Internet	Web	Internet expansion with Mobile and Wireless technologies	Mobile Internet and initial IoT
	Rulers	US military forces and private Initiatives	Private Initiatives	Growing power of Web-based private Companies and its External Alliances	Internet-based companies
	Users' Interaction	Restricted	Passive usage	Dynamic / Active	Active / Controlled
HACKERS					
	Dominant Organizations	Small communities related to IT research centers and Techno-Hobbits	Plural Communities evolving the participation of early Web users	Political alliances and the growth of hacktivist organizations. Less centralized in strictly computational issues	Wark's Social Class
	Motifs	Idealism	Resistance	Socio-Politics	Plural aims, also liked with the offline instance

Internet's transformations could be so summarized in the main topics:

1. A gradual switch from dominant media bases to plural devices services
2. Constant Internal battles that evolved hacker idealism and private interests
3. A losing romanticism from the side of Web users'
4. Insertion of online new languages and policies to the daily life
5. Gradual influences that had molded the social instance as a whole
6. The achievement of a fulfilled merge with daily social life

Similar transformative motifs had happened (and were depicted by) Internet Art. The lost romanticism of the Net Art days did not mean the end of political approaches or resistance; rather, its plural aims and fusion with contemporary context had dissolved a certain romanticism regarding the Internet's potential.

Furthermore, artists like Hans Bernhard had maintained old strings of disruptive engagement. The duo Ubermorgen - formed by Bernhard and Lizvlx - is still very active in proposing a poetic of disturbance. At an informal conversation, Bernhard would say that the Internet is still a perfect place for those willing to provoke; the artist herself claims not to desire a democratic Internet or art system; enduring the motif of chaotic communication instead of choosing a political flag.

> F*** It! I'm an artist! I don't judge, I don't say this is right, or this is wrong. Because I don't know, because I don't care. I just want to make the experiment, I just wanted to find out. (...) We are artists! We don't have this kind of political responsibility. Our job is to go over, to be accepted into a grey zone where you don't really know - nobody really knows - if this is good or bad or dangerous or not. It is an open field; this is our job as artists. (Bernhard 2021)

Bernhard had sustained the same poetic discourse along the years, as he never cared about democratic or utopic aims, rather using art as a way to raise current systems discussions. Other names that were fundamental for the 1990s Net Art had chosen different paths, revealing how the online transformation has influenced Internet Art precursors. Olia Lialina has now focused on budling a solid 1990s Web archelogy, under projects that remount archives, aesthetics, and theories about the old Internet days; JODI is still working with encrypted codes, being now an established name inside galleries. The utopia that once nurtured the mentioned artists has been transformed by the mixture of technological development and systematic control, but they advanced according to the current context. On the other hand, some artists who willed to use the Internet as a socio-political tool for engagement, like Heath Bunting, would choose a quieter life away from computers, showing a certain resignment regarding the transformations that occurred on the Internet.

Revolutionary aspects are finished... It's not so exciting to be an artist anymore. That's why I quit with this idea, continuing my projects only in the teaching field. (...) The most interesting thing that happened recently was the pandemic. It could be very confusing, but there is probably a big cyberwar coming soon, so maybe all of us - retired net artists - can get involved in that. (Bunting 2021)

The factual politicization of Internet Art happened so in the gradual loose of its combative motifs; Net Art and political approaches of Internet issues were not dead, just have evolved accordingly with this space environment and citizens cultures. Activism is an organic field that responds to the issues of a given context and as society at large seems to be facing a less engaged time, so do the online space reflect on that.
Maybe, with the hacker class flourish, a new (even if silent) revolution could again flourish.

7.1 Issues and Results

To reconstruct a long history, we must develop great attention to details and social background, aggregating examples and documentation to better understand the scene surrounding an analyzed case. The present study had the ambition to embrace events under Internet Art and Internet internal politics, which included more than thirty years of complex facts. The founded traces - mainly under bibliographical references, Internet archives, and interviews - had achieved the goal of reviewing some potential moments of Internet and Internet Art history but were not enough to construct a solidly critical revision.

To effectively propose a theoretical amendment, details should be analyzed in-depth and its exceptions; those elements were not handled here due to the nature of this investigation and the time available. The study had pointed to particular moments of the online space concerning Internet Art, hackers movements, and Internet systems; but failed in bringing a more conclusive response.

7.2 Future Work

Pointing only a few lacks that emerged during the construction of this works, it is possible to list the following topics:

- Specific contexts outside US and Europe centers would be highly relevant to make a comparative perspective on Internet policies;

- Due to the amplitude of the theme, deeper characteristics - under the IT and Art side - must be reviewed; for a better historiographical approach, many more years and pages would be. required;

- The Internet field, Internet Art, and digital policies are ever-changing motifs, and their past issues are constantly being revised.

- The 2020/2021 situation is undoubtedly a unique point for every study that deals with the online issue. The pandemic situation obligated social instances to search for online strategies, and its and consequences could only be determined in the future.

- An in locus research about Internet Art festivals and exhibitions during the COVID-19 situation must be done to understand the present-day scenario;

As being focused on the politics of Internet and Internet Art, this study is related to an ever-in-process topic; for a short future, the proposal would be a focal analysis over the 2020 period and the NFTs context as possible breaking-points for Internet Art.

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147

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