

Mapping the Cross-Over between the Arts and Technologies

Ana Alacovska, Peter Booth, Christian Fieseler, Ida Schyum



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Mobilising the Arts for an Inclusive Digital Transformation

Mapping the Cross-Over between the Arts and Technologies: The Establish- ment of the Art-Tech Field in Europe

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Mapping the Cross-Over between the Arts and Technologies: The Establishment of the Art- Tech Field in Europe

Executive Summary

This report is a part of Artsformation's efforts to map existing European arts initiatives and interventions that operate at the intersection of artistic expression and digital transformations with a view to outlining the basic mechanisms of interdependence between the arts and digital technologies. In the face of the wide variety of artistic genres and media that tackle digital transformations (Gansing and Luchs, 2020; Graham and Cook, 2010), the great geographical distribution of artistic initiatives as well as the rapidly proliferating diversity of digital technologies (Lambert, 2003), all of which may frustrate efforts at rigorous reviews, we have opted to conduct a scoping, rather than systematic mapping of the intersection between the arts and technologies in Europe. Mapping a field through a scoping review of evidence allows for an in-depth assessment of the scope and quality of connections between discrete elements of investigation rather than a quantitative and sweeping overview of the general state of affairs (Munn et al. 2018). At the same time, a scoping study allows for focusing on the investigation of more substantive connections such as 'what', 'how' and 'why' rather than on elucidating 'who', 'how many' or 'how frequently' (O'Flaherty and Phillips, 2015). The goal of the scoping review is thus to summarize qualitative evidence of the interrelationship between the arts and digital technologies, and in this way reliably identify relevant research case studies that would merit further systematic investigation (O'Flaherty and Phillips, 2015). Accordingly, our scoping study has focused on the ways in which digital technologies and the arts have co-evolved as a separate complex field of art-tech practice, expression, commentary on and even intervention in social, cultural, and political issues relating to digital transformations of European societies. The questions that propelled the scoping study were: What are the historical trajectories of the art-tech crossover? What are the concrete examples of the crossover of arts and technology? Can the arts make subtle but meaningful interventions to advance conventional knowledge about the effects, impacts and effects of digital transformations? How do the arts engage technological issues? How are technological issues expressed in the arts?

For the purpose of our scoping mapping study, we have identified the transmediale festival as one of the oldest and most influential arts-tech festival in Europe, and one that represents a key public platform for distributing art engaged with the digital condition and technologies. We have thus treated the transmediale Festival as a field-configuring event. Field-configuring events such as festivals, fairs, trade conferences not only represent a microcosm of larger organizational, institutional, and cultural fields but they also have the power to solidify such fields by gelling together diverse agendas, actors, views, ideas and disparate developments (Moeran and Strandgaard, 2011). As Anand and Jones (2008: 1037) have argued, festivals function as field-

configuring events because they ‘allow disparate constituents to become aware of their common concerns, join together, share information, coordinate their actions, shape or subvert agendas, and mutually influence field structuration’. Members of the field, by participating in spatio-temporal events, such as festivals or trade ceremonies, invest intellectual, economic, philosophical resources into building cognitive representations of the salient operational mechanisms of the field alongside the construction of an evolving idea about their own positions in such institutional entities, all of which establishes and perpetuates the perceived legitimacy and credibility of the field (Lampel and Mayer, 2011).

In this scoping study, we thus approach the transmediale festival as a miniature version of the larger arts-tech field in Europe where it not merely reflects the art-tech dynamics but also plays an active configurative role. As such it plays a role in maintaining, establishing and solidifying, that is *con-figuring*, the art-tech field by impinging on the actual relationships between artists, intellectuals, technologists and arts educators in Europe and their views, definitions of and approaches to the interplay between the arts and technologies.

Initially founded as VideoFilmFest thirty-three years ago, transmediale festival has become an annual event focusing on art and digital culture. As such transmediale has brought together international artists, researchers, activists, and thinkers with the goal of developing new outlooks on our technological era through the entanglement of different genres and curatorial approaches that span both the arts and digital technologies. As the curatorial visions are the main driving force that holds the festival’s different actors together via the provision of discursive, material, and visual artefacts, we have analysed the curatorial statements of each year’s theme with the goal of studying the scope of the festival in providing the frames of reference, legitimacy and credibility of an emerging art-tech field poised at the intersection of the arts, technology, and society.

The curatorial statements have been thus treated as manifestos, that is discursive artifacts that are geared towards adding meaning to emerging institutional formations and delineating the meaningful boundaries of a field in its infancy. The boundary defining quality of the language and labelling has been noted in the development of other emerging fields, such as ‘new Nordic cuisine’ (Byrkjeflot, Strangard Pedersen and Svejenova, 2013). We have thus approached the curatorial statements as annual discursive and material efforts at negotiating, establishing, maintaining, and dissolving the boundaries between arts, technologies and society. Empirically, we have thus examined in detail of each of the curatorial statements, including the introductory texts to the exhibitions, symposiums, and film programs, that underpinned the annual edition of transmediale from the inception of the festival in 1988 to its latest occurrence in 2021. We have also taken into consideration the changing self-definition of the festival which is also indicative of the flux and uncertainties of the art-tech field. We do not analyse though the particular artworks, talks, or films at the festival, since this is a study of how the festival provides an overall framework for the discourses on art, technology, and society. Thereby, our scoping study represents a textual analysis of the curatorial written statements – not the total curatorial work. We have thus summarized the main textual patterns of the festival over its thirty-three-year-long history, including evolving definitions of art-tech, different artistic modes of approaching technologies, significant artistic discussions about the role of the arts in solving societal challenges

arising from digital transformations, and emerging arts-based criticism about the societal, cultural and economic impact of new technologies. In so doing we have identified the main patterns of the interrelationships between the arts and technology that were observable throughout the festival's history. We have consequently clustered the different ways in which we could trace the changing relationship between the arts, digital technologies and society as contained in the microcosm of the transmediale festival. On the basis of our scoping study, we present a detailed overview of the art-tech interrelationship and identify three basic mechanisms of interrelation which have actively piggybacked on general and popular tech optimistic or tech pessimistic discourses about technologies and have performatively shaped the art-tech field and its main trajectories of discussion around art and digital technology.

We first give an overview on the protracted definitional struggles to delineate an art-tech field as distinctive from yet cognate to, the contemporary artworld; we proceed to elaborate on the ways in which an art-tech festivals can be approached as field-configuring events that predominantly orient the definitions of art-tech field in Europe and shapes the understanding of the intersection between the arts and technologies. Subsequently, based on the analysis of the curatorial statements accompanying each edition of transmediale (1988-2021), we identify three mechanisms in which the arts, technologies and societies are entangled in a web of interdependence that gives rise to accepted definitions of and approaches to studying, thinking and enacting the intersection between the arts and technologies, which in turn consolidates the emerging art-tech field. We thus elucidate the following three principles of the ever-shifting relationship between the arts and technologies:

1. From technology as a medium of artistic expression to the arts as a transversal reflection on tech development
2. From tech optimism, via utopianism to full-blown art-tech criticism
3. From ignorance to self-reflexivity about art-tech exclusions

At the end of the report, we present a detailed analysis of transmediale's thirty three curatorial statements.

1. Art-tech festivals as a field-configuring event

1.1 Definitions and vocabularies of technology-based art or 'new media art'

The art world and its more broadly disseminated ideas and forms are no strangers to the challenges of vocabulary for describing artistic practices, critical concerns, medium, techniques, and so on. In particular, art after post-modernism tends to eschew definitions, as more recent critiques of attempts to define art attest to (e.g. McIver Lopes, 2008). Despite art's tradition of linguistic flexibility over rigidity, the art world and subsequent media interest seems to have been particularly challenged by the vocabularies of technology-oriented art practices. Since the late 1960s, and the 1990s in particular, various art practices have been described as cybernetic art, generative art, New Media art, digital art, generative art, computer art, electronic art, Net Art, Art and Technology, in addition to other descriptive terms. While we do not intend to provide a survey of the development of technology-oriented art, nor provide definitions for the

above-mentioned artistic genres, it is nevertheless useful to identify some key concepts that have been proposed to characterize and delineate some technology-oriented art practices.

Reflecting a period of mainstream interest in technology-oriented art in the early 2000s, a number of critical texts and debates date from this time period. Starting with 'digital art', McIver Lopes (2003) suggests the term can describe any of three qualities: making art through digital tools; art that reflects the digital palette such that it is produced in line with a set of recognized digital practices; and computing creativity through digital generative techniques. Twenty years later, the ubiquity of digital tools means any making of art through digital tools is of little meaningful relevance to a specific category of art. However, the latter two qualities potentially remain sufficient to identify a separate art genre. In later writing, McIver Lopes (2010) draws a distinction between digital art and 'computer art' based on the implied interactivity of the latter. Affirming this quality, Lambert (2003) suggests there is a rupture between computer art and other art forms because the computer can have a level of interaction with the artist and the viewer, and it can even act as a creative agent to the extent that programming permits it. Computer art is also held to be distinct from digital art through its immaterial quality. Whereas digital art needn't cease to employ conventional artistic materials in a resulting art object, as in the case of the paper prints of early computer generated art, computer art avoids limitations intrinsic to a physical medium through its orientation towards manipulation of information (Nick Lambert, 2019). In this categorization of computer art, medium is significant. Despite this relatively neat categorization, one often needs only consult another art historian or institution to be back in the muddled waters of vocabulary. For example, the Victoria and Albert Museum cites Frieder Nake's very material plotter drawings and early print-outs from the 1960s as early examples of computer art (Victoria and Albert Museum, n.d.).

New Media art has not fared better in clarity of vocabulary. New media art can be approached as a studio tool, in the form of the technology and media employed by the artist in making. It has an affiliation with medium to the extent that new media art is often immaterialized in its realization (Graham & Cook, 2010). At the same time, with an emphasis on process rather than outcome, new media art is characterized by an artistic freedom to choose the necessary media to carry out the project aims. New media art is then hybrid in its approach, method, and form – qualities often associated with post-modern art forms. The immaterial and hybridic qualities create a challenge for navigating the concept of what media art implies, as captured by historian and curator, Andreas Broeckmann:

'Media art' is, however, such a problematic term, exactly because it is imprecise; it can refer to work that deals with so-called "new media," or work that is simply made with such media technologies; in the latter case, however, a distinction from contemporary art is impossible to draw, since all art uses some sort of a medium, and many modern and contemporary artworks have used media technologies without qualifying as "media art" in a narrower sense. (Broeckmann, 2005).

Trying to understand new media art according to the physical properties of artworks is akin to 'chasing a vapor trail' (Graham & Cook, 2010, p. 35) because of the ever evolving nature of new media art forms. Stepping back from medium, one might suggest that new media art is con-

cerned with the digital protocols, systems of control, or standardization. While this may be useful in identifying a range of practices that can be labelled as new media art, it limits new media art to that of studio tool (Graham & Cook, 2010). Rather than medium or tool, Graham and Cook suggest it is more fruitful to consider new media art as a networked system for making, for informing the artist(s), for distributing the artwork, and for involving the audience. Because it is well suited to co-opting traditional modes of distribution in art (museums, galleries, art fairs, etc.), new media art is also associated with the tradition of institutional critique (Graham & Cook, 2010).

Adding the challenge of grasping the terms used around technology-oriented art, the vocabulary has its own temporal longevity. For reasons that will be explored further below, the term 'new media art' lost favour by the late 2000s, and art that might have previously used this label now employ 'media art', or simply 'art'. Under the perception that the ubiquity of digital devices renders term 'digital art' without specificity, the well-recognized the Lumen Prize for Digital Art became the Lumen Prize for Art and Technology in 2018.

A challenge that manifests itself in the evolution of these terms, as well as being a product of the terms usage, is that technology-oriented art and practices are often bound to the concept of newness (Graham & Cook, 2010). Technology-oriented art, and new media art in particular, has been susceptible to "overenthusiastic glorification of its novelty" (Frohne, 1999, p. 11). While curators of technology-oriented art have not always sought to highlight newness of the art shown, Graham and Cook bluntly state, "It is hard to downplay newness when that is all anyone else is focused on" (2010, p. 23). Borrowing from the concept developed by Gartner Inc.(n.d.), Graham and Cook argue that technology-oriented art follows a similar 'hype cycle' as the underlying technology that the art employs or references. Consequently, a 'technological trigger' that enables new use of technology leads to a 'peak of inflated expectations'. This followed by a 'trough of disillusionment' when the technology's limitations become apparent. Finally, there is a slower upward 'slope of enlightenment' if the technology becomes more widely accepted. Writers and curators and artists all have an incentive to remain when the public's interest lies, which in the case of technology-oriented art happens to be whatever technology or interpretation of it is currently at the peak of inflated expectations. While newness is a fundament of originality in art (Maleuvre, 1999), the perception technology-concerned art being "in an almost constant state of emergence" (Graham & Cook, 2010, p. 284) can undermine a broader interest in the historicity of technology-oriented art practices. Artists working with technologies have then had to avoid the moniker of relying on 'gee-whiz-technology' and have pushed back against the need to employ cutting edge technologies (Graham & Cook, 2010).

Taking a cue from the above characterization of new media art, technology-oriented art is more concerned with processes and systems than the object focus of traditional art genres. These properties naturally lend technology-oriented art towards open and collaborative arrangements with other peers, co-creators, and audiences. In contrast to the tradition art's closedness (intermediation, specialist production, individual production/authorship and consumption, enforcement of property, linear distribution), technology oriented art can be characterized by an openness' (decentralized, mobilization, interaction, audience feedback, autonomy, self-organization, and collective production) (Graham & Cook, 2010). Unsurprisingly then, technology-oriented art, and net artists in particular, are aligned with broader social movements

such as open-source communities. With its concern for processes and systems, technology-oriented art also places emphasis on what art 'does' rather than 'is'. While many of the above qualities can also be used to describe socially engaged art, there are some key differentiators between the two which typically reflect technology-oriented art's less politicized emphasis. For example, where the collaborative and open practices of socially engaged art present a clear challenge to dominant economic and power structures of the art world and beyond, technology-oriented processes may employ the same tools utilized by proponents of the 'Californian business model'. Graham and Cook (2010) suggest the terms 'alternative' and 'embedded' are useful for distinguish between the two approaches. This does not mean that new media and other technology-oriented art forms lack criticality towards the modernist tendencies of technology (Graham & Cook, 2010), but not unlike the embedded war correspondent its position and that which it communicates is more complicated. Another important difference is technology-oriented art's interest in (networked) interaction at a distance, something that socially engaged artist might be concerned would lead to distance from audience and face-to-face interaction. A third difference and challenge for technology-oriented art is that 'understanding of its "backend" will always remain a fringe culture (closed system) that won't be integrated into the mainstream' (Paul, 2005).

As the above discussion attempts to draw out, technology-oriented art has and continues to struggle with its own vocabulary. While this is often a challenge in the arts more broadly, the issue is amplified for technology-oriented art by internal and external pressures that celebrate newness and render its practices in a constant state of emergence. Additionally, it's 'embedded' quality has complicated development of a critical vocabulary that sets out its position in relation to the broader political and economic power structures founded upon technology. Rather than weaknesses of technology-oriented art, these qualities should be read as the outcome of a decentralized and fluid cultural and social response to digital society that represents a significant break from traditional art forms.

1.2 Tensions between technology-oriented art and mainstream contemporary art

To understand the emergence and contemporary role of the art and technology festival format, it is useful to examine some of the underlying tensions between technology-oriented and more mainstream art forms. We briefly survey key tensions that have led to partial separation between the two, and propose that this has been instrumental in the development of alternative dissemination channels for technology-oriented art.

On an epistemological level, the different approaches to meaning that derive from a technical or positivist understanding compared to a poetic and metaphysical sense of meaning become a tension where the former seeks to 'reject from the area of valid knowledge whatever has no chance of technological application' (Kolakowski, 1989, p. 1). Technological advance, Polmeer (2019) argues, reflects a broader historical movement that encapsulates the development of rationalism, secularizing changes of the Enlightenment, and attitudinal changes to knowledge and meaning. This is not, according to McLuhan (2013), the preference of one system of knowledge over another. 'To behold, use or perceive any extension of ourselves in technological form is necessarily to embrace it... to undergo the "closure" or displacement of perception that

follows automatically' (McLuhan, 2013, p. 39). Following McLuhan, technology-oriented art could then be perceived to emphasize a kind of detachment that results from closure. To the extent that art carries the torch of poetic meaning for 'reflecting the dynamic, spiritual nature of being... that would be otherwise lost in the technological ideas of the future, and of the reduction of humans to technicality' (Polmeer, 2019, p. 51), much mainstream art has a relationship to digital technology that Bishop (2012) describes as 'disavowal'.

A second tension stems from standard metrics of social and economic performance of intuitions that present and support art: audiences and collectors, in the main, find it easier to 'consume' mainstream contemporary art compared to technology-oriented art. While more recent development of non-fungible tokens (NFTs) has created a developing market for computer art, the immateriality of much technology-oriented art has historically challenged the idea of the commodifiable art object. Compounding the challenge of commodifiability, new media and technology-oriented art events have a tradition of being spaces for demonstration rather than exhibition of prototype, which translates to a reputation for 'unfinished work' (Graham & Cook, 2010). When embracing collaborative, multi-authored or open modes of production, technology-oriented art disrupts the economically-bound tradition of the single authored artwork. From the perspective of audience experience, mainstream art audiences are more familiar with relating to an art object (how it looks) than a participative system (what it does), and so there is a risk that lack of understanding of the invisible systems at play results in a perception an 'opaqueness' (Graham & Cook, 2010) that results in a poorer visitor experience and lower visitation.

Despite the clamouring of the participatory turn in museology (Elffers & Sitzia, 2016; Simon, 2010), the participatory museum remains a 'mythic' ideal (Kidd, 2016), and one challenged by several properties particularly observable in technology-oriented art. Beyond the catchall term 'participation', it can be helpful to consider levels of participation ranging from 'interaction' (acting upon each other), 'participation' (to take part in), and 'collaboration' (working jointly with) (Graham & Cook, 2010). The first challenge is that higher levels of participation are often premised on audience knowledge of participatory systems (Graham & Cook, 2010). Differences in participatory quality can easily lead to curatorial censorship, and anxiety over participatory quality can be amplified by online participatory artworks, where distance means less control over who participates, and the immateriality of the participatory artwork complicates presentation. Furthermore, audiences don't necessarily want to participate, which is problematic for an institution when receptive success of a work depends on it. Finally, a lack of mainstream awareness of a critical vocabulary or 'aesthetics of participation' is considered a challenge to the integration of participatory technology-oriented art within art institutions (Graham & Cook, 2010).

In addition to participation-derived tensions, art organizations struggle with the rapidly evolving nature of technology-based art for a variety of curatorial and conservational reasons. The typical curator's training in art history falls short of what is required to understand technology and digital society. The adjunct curator, better versed in art and technology, may be able to address this knowledge gap but typically lacks the institution power to counter resistance towards more avant-garde methods and practices used in technology-oriented art. Furthermore, experts in technology-oriented often face the unwanted characterization of being uncritical, utopian and technology-led (Graham & Cook, 2010). The collective result is often a time lag for arts organizations to catch up with a quick moving avant-garde, meaning that vital historical,

documentation, and collection of work occurs too late, and that the type of work may disappear before it is fully understood (Graham & Cook, 2010). Awareness of these risks and that media arts' history is one of "regular false dawns" (Graham & Cook, 2010, p. 38), arts organizations may only intermittently work with technology-oriented projects, compounding the problem of technology-oriented arts' poorly documented and understood history.

A related tension stems from the core museological function of collecting and categorizing artworks. In comparison to the object qualities of technology-oriented art, traditional art categories often fail to adequately capture the process. At a basic level, the museum predominantly categorizes in nouns while the technology-oriented art generally requires categorization in verbs (Graham & Cook, 2010). In striking a balance between openness to new experimental art forms and historical continuity with existing collections, a lack of adequate categories and a conservatism toward the creation of new ones means the most interesting technology-oriented art may be passed in favour of lesser but more easily categorizable artworks.

At a fundamental level, significant tension between the mainstream contemporary art and technology-oriented art stems from the latter representing a distributive system that circumvents that of the traditional artworld. Certain technology-oriented arts practices, particularly computer art and net art, distribute themselves without requiring sanction of artworld institutions and its gatekeepers. A more controversial position may be that by spanning popular culture, activism, science, design and technology, technology-based art is not art or may not wish to be integrated into the artworld. In doing to latter, technology-based art would have the autonomy to create its own vocabulary.

1.3 Distribution of technology-based art/new media art and the role of art and technology festival format

Framed by the above-described tensions between mainstream contemporary art and technology-oriented art, the art and technology festival has emerged as an important dissemination channel for the latter. To position art and technology festivals such as transmediale, is it useful to briefly outline the structure and logic of various dissemination channels used by technology-oriented art since the 1960s.

Contextualized by a climate that was particularly interested in advanced technologies and experimentation (Burnham, 1986), the 1960s witnessed some large and well-funded exhibitions of art and technology. These large budget events included Experiments in Art and Technology (EAT) at the New York Armory in 1966, 'Cybernetic Serendipity' at the Institute for Contemporary Art (ICA) in 1968, Pepsi Pavilion at Osaka in 1970, 'Software' at the Jewish Museum NYC in 1970, and 'Art and Technology' at LACMA from 1967-1971. By the early 1970s, audience, artistic and financial support for large scale art and technology project had all but vanished. So too had its avant-garde status. Jack Burnham, curator of the *Software* exhibition, claimed "the results [of these project] have fared from mediocre to disastrous" (Burnham, 1986, p. 232). Reasons cited for these projects' failure include inability of the computers to produce a new aesthetic experience (in the case of generative art), a required level of corporate funding that inevitably exerted political control over artists, an inefficient means of swaying the masses towards the benefits of

technology, technical and aesthetic incompetency, and a fundamental differences between art and technology in human semiosis (Burnham, 1986).

From the 1970s through to the re-emergence of digital art in the form of new media art and net art in the 1990s, there was only sporadic interest in technology-oriented art and without the previously seen level of financing. One format that emerged during this financing and interest 'lull', was the small-scale grassroots exhibition practiced by groups such as the Computer Arts Society (CAS). Anticipatory of the hybridity to come, CAS was open to the arts rather than solely art, and so their first exhibition in 1969 included sculpture, performances, computer-generated films and other generative art (Lambert, 2019). Reflecting an absence of corporate sponsors and a very modest funding drawn from members and public arts bodies, artists typically provided own equipment and expertise in setting up and maintaining the exhibitions (Lambert, 2019). Another development during this period was the inclusion of exhibitions within technology-related conferences and trade shows. As occasions where large sums of money were often exchanged, trade shows had the means and interest to act as the more traditional patron (Benthall, 1970), while the arts offered a counteract to the "carnavalesque commercial exhibits" (Bolter & Gromala, 2003, p. 144). Occurring within the preeminent SIGGRAPH computer graphics trade show, the SIGGRAPH Art Show became a significant exponent of computer artists from the early 1980s through to the early 2000s despite the emergence and growing importance of art and technology festivals (Lambert, 2019).

While the late 1990s through to the mid-2000s saw a brief return to mainstream museum interest in technology-oriented art through 'new media art', the festival format has proven to have had greater longevity as a format suited to the needs of technology-oriented art, artists, and audiences. Graham and Cook (2010) offer several explanations. Having a greater degree of freedom from the curatorial and conservatorial traditions of the collecting institution, festivals have a natural emphasis on exhibiting the new. Responding to rapidly changing technologies and its impact on society, the compact festival format is conducive to conferences and talks where a critical mass of ideas can develop and document some understanding of these changes. As a way around perceived 'curatorial invisibility', the festival format enables artists working with specialty art forms such as technology-oriented art to gain critical attention. The art and technology festival can be a useful branding mechanism for a city aiming to transform its image from industrial to information age and cultural hub, and so may suited to attracting public funding. Because it occurs outside the museum and its object tradition, and because technology-oriented art is often a process, the art and technology festival is more accommodating of demonstrating work in progress. As a more collaborative form, the social networking aspect of the trade show and art biennale is better captured by the festival than more formal institution-based exhibitions. Beyond the more narrowly defined 'art and technology' arts festival, the often hybrid nature of the arts festival lends itself to new media and other technology-oriented art projects than may span art, art making and participation, education, sharing and so on. From an economic perspective, maintaining complex installations or facilitating participatory projects over the typical 3 months museum exhibition period can be prohibitively expensive. The shorter-run festival format is then an economically appealing alternative for less resourced organizations. More in line with design thinking, the short-run format also favours technology-oriented art's preference for prototype and interaction over finished object.

2. Art-tech festivals in Europe: Configuring the art-tech field

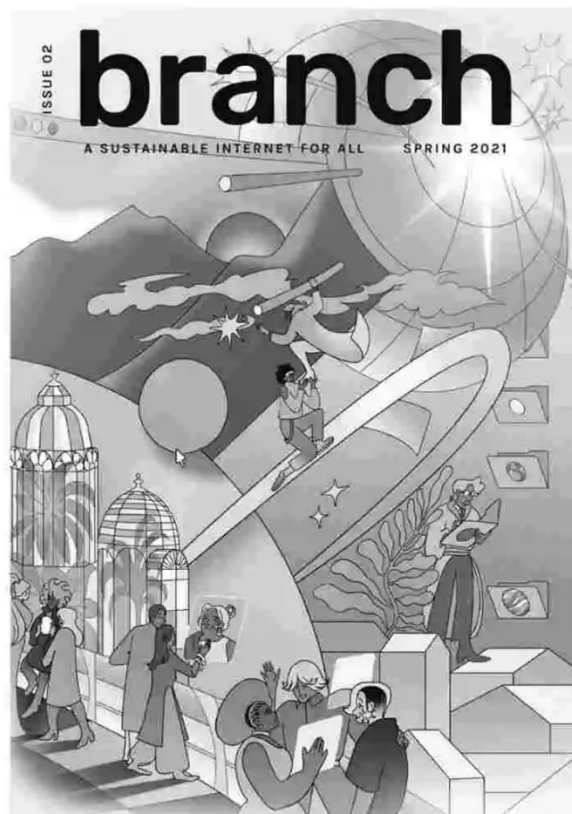
In what follows, we give an overview of the art-tech festival and event scene in Europe. Collectively functioning as institutional stakeholders in the European art-tech field, these events give both symbolic and material underpinning to the cross-over between art and technology. Functioning as such the art-tech festivals and a range of events organized by art-tech institutions configure and stabilize the boundaries around and legitimize the field of art-tech in Europe. Having a seasonal rhythm, the art-tech festivals thus cyclically re-confirm and re-new the validity and legitimacy of the art-tech cross-over.

Ars-Electronica, Linz, Austria

Founded in 1979, Ars Electronica works with artists, scientists, developers, designers, entrepreneurs and activists, “to shed light on current developments in our digital society and speculate about their manifestations in the future.” (Ars Electronica, 2021). The festival and broader organization aims to mediate and interconnect art, technology and society by encouraging and sometimes facilitating new forms of networking between local and global communities (Petroni, 2020)

Ars Electronica is most well-known for its annual Ars Electronica Festival. It also awards the annual Prix Ars Electronica for ground-breaking projects concerning questions of digital society. Since 2009, Ars Electronica has run the Ars Electronica Center in Linz, a 3500 square meter exhibition space dedicated to exhibitions, events and educational programs. Housed within the Ars Electronica Center is Futurelab and Ars Electronica Solutions, an in-house R&D facility and arts-science thinktank that facilitates an international and interdisciplinary team of artists and scientists in researching the future. Futurelab consists of smaller research groups, namely, CitizenLab, SecondBodyLab, MaterialLab and BioLab. CitizenLab’s research addresses questions of what it means to be a thoughtful citizen, and how citizens and communities can be involved in society and shape it. Second, BodyLab is concerned with prosthetics as both a human aid as well as how it alters our image of people. MaterialLab is concerned with sustainable material production, what future materials will look like, and the potentials of shifting from ‘out of the box’ products to ones that give greater design agency to the user. BioLab is concerned with issues of AI, genetic modification, cultivation of cell cultures, and offers visitors the opportunity to explore both the underlying technologies and the ethical issues they raise (Ars Electronica, 2021).

Of its relationship to technology, Ars Electronica states, “We never ask what technology can or will be able to do, but always what it should do for us. And we don’t try to adapt to technology, but we want the development of technology to be oriented towards us. Therefore, our artistic research always focuses on ourselves, our needs, our desires, our feelings.” (Ars Electronica, 2021). From a public facing perspective, Horst Hörtner, director of Ars Electronica Futural, emphasizes how Ars Electronica functions to open the black box of technology, “If science gets accessible, it will most likely be through the arts” (Hirsch, 2019, p. 28).



Branch Magazine: A Sustainable Internet for All. Winner of the 2021 Ars Electronica Award for Digital Humanity. Branch is an online magazine written by and for people who dream of a sustainable and just internet for all.

Art is Open Source, Bologna, Italy

Art is Open Source (AOS) was initiated by Salvatore Iaconesi, an artist, designer and engineer in 2004, and joined in 2007 by Oriana Persico, a communication scientist, writer and cyberecologist. The pair have conducted a series of projects, including creating various rituals and cosmologies for our technological hyperconnected world (Art Is Open Source, n.d.), as well as participated in various conferences.

In 2011 they created a cultural research centre named “HER She Loves Data”, which is centred around “mutations of human beings and of their environments in the times of ubiquitous technologies” (Art is Open Source, n.d.). The centre involves collaborations with technologists, psychologists, data scientists, network scientists, architects and designers, amongst others, and employs the use of data and computation, such as AI and algorithms, to create a “cultural acceleration processes through arts and design” (HER: She Loves Data, n.d.).

Spanning the intersection of the arts, hacktivism, and cultural and technological research, Iaconesi presents some of the initiatives philosophies towards the arts and technology. “What we propose is to bring up new scenarios in which poetics are deeply interweaved with politics, in a way which is inspired by Surrealism and Dada, and in which public space is a willing social construction...[and where] emergent creation of additional layers of reality which can sit on top of the existing ones, creating free practices which people can use to freely express themselves

and operate along autonomously, collaboratively defined directions.” (Saviotti, n.d.) Furthermore Iaconesi argues that information is spectacularized, which is to say that due to the volume and complexity of data now available through technology, information about culture, the environment, or innovation is ‘designed’ to help us think, act, express ourselves, perform and so on. AOS’s philosophy is to promote models that are alternative to the dominant designs (Saviotti, n.d.).

Arts Catalyst, Sheffield, England

Founded in 1993, Arts Catalyst programmes exhibitions, events, residencies, performances and publications, often in collaboration with national and international partner organisations from the fields of art, science and academia. Frequently working with non-traditional art spaces, Arts Catalyst’s productions span art, science and technology with a view to producing ambitious new projects that critically engage with our changing world. (Arts Catalyst, n.d.)

Since its inception, Arts Catalyst has commissioned artists to produce exhibitions and events that span a range of art forms such as Live Art, artists’ film and video, installation, media art, performance, and bioart. In addition to commissioning artists, Arts Catalyst is involved in education, research and artists’ professional development. To date this has been achieved through symposia, school projects, participatory projects, workshops, microgravity flight experiments, family days and conferences.

As captured by the organization’s name, Arts Catalyst is founded on the perceived potential of artists and cultural organisations to be active agents of change, challenging how culture, science and technology are defined, valued, and understood. The organization is very clear about their values and ambitions. Of relevance to how the organization approaches art and technology, its ambitions include: expanding the potential of arts organisations as active agents of change through working collaboratively; working in a manner that is both hyperlocal and responsive to planetary challenges and changes; using the arts to tackle climate change; valuing all forms of knowledge equally; and using the artistic programme to expose structural inequalities, systemic oppression, and to resist racial prejudice. In a 2015 interview, founder of Art Catalyst, Nicola Triscott, further clarifies the original intentions of the organization, which she argues were still relevant in 2015. “It seemed to me at the time that an interdisciplinary approach - including science, technology, art, humanities, philosophy, politics and sociology - could be beneficial in understanding, and beginning to address, the impact of human activity, particularly technological, on the planet. I was also interested in exploring how science and technology move between the laboratory and society, and in exploring art’s potential as a means of broad enquiry, experiment and opening up participation in ‘expert’ knowledge domains.”(Jach & Triscott, 2015)

Bioart Society, Helsinki

Founded in 2008 at the Kilpisjärvi Biological Station in Northern Finland from a group of fifteen artists, scientists, and curators, Bioart Society ran for the first decade without a permanent space. Bioart Society now has a dedicated space in Helsinki that functions as gallery, forum, workshop, library, and production office. The organization describes itself as an association that

develops, produces and facilitates activities around art and natural sciences with an emphasis on biology, ecology and life sciences (Bioart Society, n.d.). Bioart Society currently has 127 members from Finland and other countries.

Bioart Society runs SOLU Space, an artistic laboratory and platform for art, science and society in Katajanokka, Helsinki. SOLU Space hosts various events from exhibitions to workshops, talks, and residencies. In collaboration with the Kilpisjärvi Biological Station of the University of Helsinki - Ars Bioarctica, Bioart society also runs an art and science program with focus on the sub-arctic environment.

Bioart Society Director Erich Berger suggest the relationship between the arts and technologies at Bioart Society is connected to the latter's perceived transformative power. "... Artists interested in technology have experienced the transformative power it can have... So if you have even a little bit of an idea about biotechnology, it is easy to extrapolate what an immense transformative power it will have over the next twenty years." (Roggers & Berger, 2019) Rather than offering a critique of scientific institutions or biotechnology, Bioart Society embraces a range of practices and subjects and is orientated toward the subjects of science, technology, and the environment (Roggers & Berger, 2019). Participation in the Bioart Society is not restricted to specific artistic mediums. Rather the society seeks to be a platform for emerging artistic practices, and those interested in the contemporary biological condition (Roggers & Berger, 2019).

FutureEverything, Manchester, England

Established in 1995, FutureEverything is an annual festival and an innovation lab for digital culture. FutureEverything (n.d.) describes its core functions as: exploring the meeting point of technology, society and culture which lies at the heart of the digital debate; connecting with a global community of thinkers, artists and policy makers; pairing large-scale cultural events with human-centred critical thinking; questioning the future of technology through collaboration and play; championing the role of grassroots innovation; creating opportunities through new art commissions; advocating for citizens and communities in the future of digital culture; unlocking innovation through research and development; and learning through doing and sharing best practice.

FutureEverything's festival, Festival As Lab, utilizes the living lab concept whereby research is taken out of the laboratory and ideas and prototypes tested in real-life situations. Festival As Lab approaches the festival format as a way to transform a city into a pop-up laboratory for new ways of living, playing, governing, new forms of citizenship. This enables artists and designers to working in new ways, and with systems and technologies they could not otherwise access. Furthermore, it enables researchers a testing ground for prototypes and access to participants and stakeholders, it offers the host city an international platform to test new ideas, and for audiences it offers a place to play and a step into the unknown. The 2021 festival titled, 'You and AI: Through the Algorithmic Lens' brought together artists, researchers, and artworks to challenge perceptions and fantasy visions of autonomy and intelligence about AI.

FutureEverything's approach to art and technology is founded on an art-led philosophy which champions the transformative role of art in non-art domains. This creates opportunities for art-

ists, designers and creative technologists through regular commissions and innovation challenges. This is conducive to FutureEverything's second pillar of having a people centred approach that prioritizes participatory design and practical workshops. The third pillar of FutureEverything is the notion of being technology aware. Demos, hack days and festival as lab seek to question the cultural impact of science and technology, and find ways to test new ideas in real-world situations.

GLUON, Brussels, Belgium

GLUON is a Brussels-based platform for art, science and technology. GLUON facilitates collaborative projects between artists, researchers and companies that give rise to artistic and philosophical outcomes or innovative ideas, services and products in sectors such as education, healthcare, ecology, cultural diplomacy and community building. The results of these alliances are disseminated via lectures and exhibitions.

GLUON's primary activities occur through its 'Art&Development labs' and its educational program or 'GLUON Education'. Via Art&Development labs, GLUON supports residencies of artists in the R&D departments of companies, research institutes and universities. Through its Scientist-in-Residence program there is a reversal of the traditional artist-in-residence in science/technology organization. In its place, renowned artists host a researcher in an independent environment to collaborate on artistic projects that question our relationship with science and technology, and which may lead to innovative ideas, products or services in non-artistic sectors (GLUON, n.d.-a). GLUON Education aims to give students and teachers a closer understanding of technological innovation through educational projects that focus on technological, scientific, and artistic experiences. GLUON Labs take place during school holidays, Pop-Ups at schools, cultural centres, festivals and as teacher refresher courses for teachers. The workshops introduce young people to the opportunities and challenges of new technologies in society, and encourage participation through interactive mini-demos and critical discussions about the use of these technologies (GLUON, n.d.-b).

Founder and director of GLUON, Christophe De Jaeger, holds that the interaction between the arts and technology is linked by a need for societal change systemic economic change. "Scientists are very good at finding exact data and solutions. But we also see that the value system in our society needs to be adjusted. Systemic economic change is necessary." (Brokken, n.d.). Benefits for the artists often include inspiration for new works of art, while for the scientist it is the ability to have a fresh perspective, and have access to a new form of communication.

HMKV Dortmund, Germany

The HMKV Hartware MedienKunstVerein was founded in 1996, and functions as a platform for production, presentation and communication of contemporary and experimental (media) art (HMKV, n.d.). For HMKV the term 'media art' is not intended as a definition of a technological genre, but rather it encapsules how contemporary artists deal with media and technology's influence on contemporary society. Situated in a 2200 square meter former warehouse, HMKV

stages, amongst other things, exhibitions, film programs, performances, workshops, lectures and conferences in Dortmund itself, as well as other German cities and internationally.

Some of HMKV's aims are to explore contemporary topical issues, and to include a wider public in these explorations through educational work. It aims to open up public understanding of "multi-layered social, political, economic, and ecological conditions prevailing today. In a globalised world based on the interaction of these systems and accelerated through technology, this approach fosters a new perspective on contemporary life that enriches individual perception and makes it easier to understand complex connections" (HMKV, n.d.).

HMKV has presented several projects that relate to technology, including the exhibition Afro-Tech (2017) which presented Africa as a continent of technological innovation, and Computer Grrrls (2018) which was centred around the relationship between women and technology in the past and present.

IRCAM, Paris, France

IRCAM (Institut de recherche et coordination acoustique/musique) was founded in 1977 by Pierre Boulez as part of the Centre Pompidou as an institution dedicated to promoting collaborations between researchers, engineers, and artists. It is now one of the world's largest public research centres dedicated to both musical expression and scientific research.

IRCAM has three principal activities — creation, research, transmission (IRCAM | Ircam, n.d.). In its research activities, IRCAM seeks to encourage productive interaction among scientific research, technological developments, and contemporary music production. A core area of research is concerned with modes of representation and extended manipulation of sound and music. Drawing from model and prototypes in information technology (e.g. languages, human-computer interaction, real-time, and databases), signal processing, acoustics, auditory perception and cognitive psychology, and musicology, IRCAM's research has led to the development of software tools for musicians, composers, performers, and musicologists.

In its creation activities, IRCAM offers an experimental environment where composers can enlarge their musical experience through the concepts expressed in new technologies. To facilitate this function, IRCAM provides classes to train composers in music technology and can provide composers with a technical assistant for realizing the technically intensive parts of a piece. IRCAM has run an artistic research residency since 2009.

IRCAM's transmission activities are oriented towards the dissemination of its research, know-how, and technologies. To achieve this, IRCAM runs various educational programs for music professionals, artists, scientists, and students. Also critical to realizing this activity is IRCAM's annual festival, Manifest, that features concerts, installations and exhibitions, and curated talks. In addition to the three core activities stated above, IRCAM launched Ircam Amplify in 2020, a spin-off for the commercialization of the institute's audio innovations.

Summarizing IRCAM's aims of the interactions between the art and technology, IRCAM seeks to encourage productive interaction among scientific research, technological developments, and contemporary music production, the renewal of musical expression through science and technology, and to expand our knowledge of music-related issues (IRCAM, 2009).

Kersnikova Institute, Ljubljana, Slovenia

Kersnikova Institute, founded in 2000 as K6/4 Institute and renamed in 2014, is a non-profit and non-governmental cultural organization established by the Student Organisation of the University of Ljubljana. Kersnikova Institute is hosted in the building of the Student Organisation of the University of Ljubljana on the Kersnikova Street, and it serves as an institutional frame for three progressive spaces: Kapelica Gallery, the hacker space Rampa, and the laboratory BioTehna.

Kapelica Gallery is an exhibition space running a programme of spatial installations, performances, sound research and theoretically-reflective lectures that respond to profound changes in society and which challenge scientific and technological applications, biopolitics and urban phenomena, addressing both professional and general public. (Kersnikova.org, n.d.-a)

Rampa, started in 2013, is a laboratory for hacking science, art and society aimed at youth and with an orientation towards creative research of new and obsolete technologies. Rampa functions as a platform for the incubation and production of art projects by individuals, groups and various communities. Rampa also develops programmes and workshops that encourage research on the intersections between art, science and technology based on do-it-yourself and do-it-together methods, hands-on approaches, transdisciplinary work, open source hard- and software, and the free sharing of knowledge, ideas and skills. (Kersnikova.org, n.d.-b)

BioTehna (2012) is a wet-lab for artistic research of living systems where artists and scientists undertake research on co-dependency between animals, plants and robots to merge living systems with electronic technologies. The research aims to encourage thoughts and awareness of the digitalised life which awaits us in the near future. As an interdisciplinary educational, experimental and research platform, its participants are scientists and artists, but also children, students and others. Exhibitions, workshops and lectures organized within BioTehna are done under the philosophies of inclusivity, active do-it-yourself experience, connecting living materials and robots, learning from the extreme world of plants and animals. (Kernikova.org, n.d.)

Kersnikova Institute's aims and approach to art and technology are based upon the principles of hands-on participation (do-it-yourself and do-it-with-others), the demystification of bio-technologies, and intertwined reflections on art, science, technology and politics. Kersnikova Institutes also seeks to be a platform for youth to express creative energy, sharpen it with educational activities and assess it with the help of the audience. (Culture.si, n.d.)

LABoral, Centro de Arte y Creacion Industrial, Gijon, Spain

LABoral Centro de Arte y Creación Industrial (Art and Industrial Creation Centre) describes itself as a multidisciplinary institution, which produces, disseminates and fosters access to new forms of culture rooted in the creative use of information and communication technologies (LABoral Centro de Arte y Creación Industrial, n.d.). LABoral functions as a platform of resources available to designers to facilitate the development of projects in the fields of visual arts, design and architecture, while its programming is targeted at a wide public base with the goal of generating and sharing knowledge.

These broad functions are captured by four inter-related activity areas within LABoral: exhibitions and diffusion; production/research; training and cultural mediation; and communication.

Occupying 14,000 square meters of the old Universidad Laboral's workshops, LABoral's exhibition and diffusion activities showcase work by artists, experiment with new ways of experiencing art, and carry out collaborations with major international institutions. Production/research activities occur through LABoral's Plataforma Cero production centre which houses several labs. These include fabLAB Asturias, which works with applications of digital manufacturing for artistic and industrial creation, designing devices and tools and making them available to the public following the open-source philosophy. Sound LAB is a space for experimentation in the various practices of contemporary sound art through residencies, exhibitions, courses and workshops. Also situated within the LABoral's Plataforma Cero production centre is the service of providing artists and creatives equipment loans and production space. LABoral's training and cultural mediation activities include talks, workshops, courses, meetings, conferences, symposiums and the provision of an educational offering directed towards schools and universities. LABoral's communication activities draw on numerous communication channels, and involve publication of videos, photographs, catalogues, brochures, flyers, and invitations.

LABoral's artistic director, Karin Ohlenschläger, provides various perspectives on the organization's perspective on art and technology. "Since the 1960s, artists and art institutions have contributed to critical thinking related to new technologies and their humanisation... Art has also raised highly critical reflections on the growing concentrations of power, making visible the new monopolies, the current mechanisms of control and surveillance, the loss of privacy, manipulation, and converting consumers into a market product. Today more than ever, we need art and the contemporary art institutions to make these bad practices visible, promote critical and creative thinking, and generate new horizons in the collective psyche and new narratives and participatory dynamics in the evolution of techno-scientific development." (Prendes, n.d.)

Makery, Paris, France

Founded in 2014, Makery is an online information media (newsletter, website, social networks) founded by Digital Art International in June 2014 and hosted by Magazine des Cultures Digitales in Paris. Makery aims to give out information on the creative communities and the scene of labs, fablabs, makerspaces, hackerspaces, medialabs, living labs, biohacklabs, and artlabs.

Services offered by Makery include a workshop for initiation to new technologies (internet of things, 3D printing, drones, electronic textiles, etc.). Makery offers advice/consulting on events related to the maker and fablab movement, in relation to selection and possible applications of technological tools for a creative agency brief or a product idea, and in relation to strategy, launch and running of a company or institution lab. Makery offers a show-and-tell platform for presenting maker projects around selected themes (energy, transport, health, urban planning, insurance, communication, etc.). Makery also offers help in prototyping/proof of concept for the rapid creation of a prototype to test the relevance of an idea for a new product or service, and it arranges conferences and round-tables for discovering makers and dissemination of key issues related to the fablab movement.

Oriented more towards the maker community, but nevertheless intersecting with societal and technological concerns of digital arts audiences, Makery asserts its activities are "aimed at a public of makers, amateurs, innovative companies, information professionals and scientists,

for whom it will develop in particular an API allowing access to open and original data, data visualization applications, or networking between researchers and information specialists thanks to data.” (Makery medialab, n.d.) Makery frames its research and editorial project as founded on three complimentary areas: an imagine area, a make area, and an transmit area. Collectively these spaces are “dedicated to scientific and societal reflection and debate, to experimentation and the realization of innovative projects, and finally to training in new technologies.” (Makery medialab, n.d.)

Medialab Prado, Madrid, Spain

Medialab Prado was created in 2000, and is located in the previously industrial building of the Serrería Belga (Belgian Sawmill) in central Madrid. Medialab Prada describes itself as “‘a citizens’ laboratory that serves as a place of encounter for the production of open cultural projects” (Medialab Prado, n.d.). Medialab presents itself as fulfilling four key functions. Firstly, it has a community/mediation role whereby it aims to guide, embrace and interconnect citizen users and projects situated between art, activism, technology and science. Secondly, it offers a space devoted to prototyping where Medialab Prado’s infrastructure can facilitate the knowledge and skills to overcome collective problems. As such, there is a strong emphasis on collaborative prototyping processes that strengthen community. Thirdly, Medialab Prado promotes the development and use of free and open-source hardware and software tools, rooted in the philosophies of free access to knowledge and collaborative work. Online content is published under free licences. Fourthly, Medialab Prado works locally and internationally to scale or adapt projects, and to collaborate with other institutions and leverage the knowledge and expertise of networks.

Medialab Prado runs six laboratories. DataLab is concerned experimentation, production and dissemination in connection with the open data culture. PrototipaLab works with creative programming, creative hardware and digital design and manufacturing using free and open-source tools. ParticipaLab applies technology to develop collaborative projects around hybrid democratic participation. InCiLab connects different stakeholders in experimenting with prototypes of learning communities as well as building connections between those that already exist to rethink life in the city. CiCiLab promotes participation in or develop of scientific research processes to ensure scientific research is more democratic and transversal, ensuring it encompasses a range of perspectives. Finally, AVLab is a space for creative experimentation involving sound art, visual art and performance art based on open and collaborative processes.

Medialab Prado’s approach to art and technology is anchored in the democratic ideals of the maker philosophy. Stated aims include building, promoting and sustaining learning and hands-on communities, open cultural projects and technology based commons, to advance collaborative work methodologies, and to open spaces for critical reflection on digital technology and its impact on society (Medialab Prado, n.d.).

Project Atol, Ljubljana, Slovenia

Founded in 1992 by Slovene conceptual and new media artist Marko Peljhan, Projekt Atol is a hub for research in arts, transdisciplinary production of art projects, tactical media, situation building, publishing, education, and community platforms. Project Atol's functions include connecting non-profit art organizations, internationalization of new Slovenian art, facilitating collaborations between artists, scientists and engineers, establishing European art research networks, and facilitating cooperation between non-profit art research institutions and the commercial sector.

Of its various activities, Project Atol co-organizes PIFcamp, a 7-day summer hacking camp set in Slovenian nature, where participants engage in workshops, practical field trips, theoretical lectures and on-site briefings where they actively participate in the development of various DIY projects. Projekt Atol is a key collaborator within the Arctic Perspective Initiative (API), and non-profit group promoting the creation of open authoring, communications and dissemination infrastructures for the circumpolar region. Projekt Atol is one of three non-governmental cultural organisations that established the exhibition space Osmo/za in 2017. In addition to an exhibition space, Osmo/za includes two residency studios for international artists, a well-equipped workshop, and it provides educational and discursive content for broader audiences (lectures, round tables, workshops, open laboratories) intended to promote an inclusive and critical society, technological literacy and offer support for various communities and organizations.

Framing Project Atol's approach to art and technology, one can look back to a 1993 manifesto Marko Peljhan wrote for establishing Project Atol. Peljhan writes, we are "living the dawn of utopia which has been substituted with the experience of the white noise of communication. The insight into future is lost in the channels of the eternal present." (Peljhan, 1996) While the arts are an imperfect solution to this crisis, "Only freed and creative individuals can produce new objective conditions for a small leap into the future of human relationships... [where individuals are] capable of walking on the edge of globally controlled communication, without losing its integrity." (Peljhan, 1996)



Makrolab on the island of Rottne in 2000: "What if we could build a kind of stage machine that would be completely immune to war, that could be powered by wind and solar energy, be completely autonomous, and could survive any kind of difficult societal conditions?" © Projekt Atol

RIXC, Riga, Latvia

RIXC is an art, science and cultural innovation network that was founded in May 2000 by three cultural organizations in Latvia: E-Lab - Electronic Arts and Media Centre Riga. Key people involved in developing RIXC and its program - Rasa Smite, Raitis Smits, Ieva Auzina, Normonds Kozlovs and the team at Locomotive International - are active media artists, theorists and curators in the Baltic region. It is broken up into nine main components: projects, center, exhibitions, festival, conferences, artworks, books, journal and an artbase.

One of RIXC main activities is the RIXC Center for New Media Culture. It was established in 2000 on the foundations of the previous E-LAB (Centre for electronic arts and media), which had been running since 1996. It is a centre for new media culture, an art gallery and an artist collective centred on art, science and technology. Amongst other things, it organizes the annual RIXC Art Science festival, publishes the Acoustic Space journal series, and is also a key founder of Art Research Lab & New Media Art education program at Liepaja University. Its aim is to introduce new and topical issues in digital art by "performing innovative experimental projects in art, science and technology in Latvia and internationally" (RIXC, n.d.-a).

Another key activity of RIXC is the annual RIXC Art Science Festival, which has run in various formats since 1996, and which was known as Art + Communication until 2014. The 2021 version of the festival, named PostSensorium, is centred around "the immensity of our virtual and real-life challenges that demand a renewed focus on sensory perception and embodied experiences" (RIXC, n.d.-b). It consists of a physical exhibition, live concerts and performances, artists talks,

keynote lectures, an online WebVR exhibition, a screening program, and an conference (Open Fields Conference). PostSensorium aims for artistic practices and discussions on virtual sensing technologies, science and aesthetics, centred around “the relations between the actual and virtual, organic and artificial, natural and techno-social, human and ‘more-than-human’...” (RIXC, n.d.-b).

On its relation to art and technology, RIXC describes itself as a platform that fosters cultural exchange and promotes new forms of cultural and artistic expression where new media is approached not only as a new field of artistic and cultural practice, but also as an infrastructure to support other forms of art and culture. Additionally, RIXC Art Science Festival mentions its role in “critically interrogating transformative potential of arts” (RIXC, n.d.-b).

Sonic Acts, Amsterdam, Netherlands

Founded in 1994, Sonic Acts is an interdisciplinary arts organisation that provides a platform for new developments in electronic and digital art forms. Sonic Acts is most well-known for its biennial international festival – an intensive art, theory and technology gathering that occurs over multiple weeks and which is motivated by changes in the ecological, political, technological, and social landscape. Sonic Acts also runs the more condensed Sonic Acts Academy biannually in the years between Sonic Arts Festival. Sonic Acts Academy is a condensed three-day research-oriented festival that sits at the intersection of innovative audiovisual and performative art and critical thinking, and is motivated by changes in the ecological, political, technological and social landscape. (Sonic Acts, n.d.-b)

In addition to these biannual events, Sonic Acts is a leading platform for international projects, research and the commissioning and co-production of new artworks. It functions as a hub for a global network of artists, curators and critical thinkers, it facilitates artist residencies, publications and year-round activities, often collaborating with independent and institutional cultural incubators, universities and kindred festivals.

Since its beginnings, Sonic Acts has aimed to function as a site for experimentation: a platform to exchange, think, create, learn, and act. Presenting artistic investigations and research that spans the arts, technology and society, Sonic Acts aims to advance experimentation and facilitate perspectives that aid the discovery, growth, development, and emancipation that are vital to understanding contemporary society. (Sonic Acts, n.d.-a)

V2_, Rotterdam, The Netherlands

V2_, Lab for the Unstable Media describes itself as an interdisciplinary centre for art and media technology which presents, produces, archives, and publishes research at the interface of art, technology and society. Founded as an artist collective in 1981 from a squat in Rotterdam, V2_ transformed from a do-it-yourself multimedia organization to a publicly funded centre for art and media technology in a central Rotterdam location. Reflecting changed public funding arrangements after 2012, V2_ was forced to scale back a number of seminal projects including the Dutch Electronic Festival, and reorganize around local networks, smaller scale community

events, and engage with new and younger audiences. Reflecting these changes, V2_ changed its name from Institute for the Unstable Media to Lab for the Unstable Media.

Today, V2_Lab organizes events such as the Test Labs, where new developments in the field of artistic research and development are demonstrated, tested, presented and discussed with a low entry threshold. The 3x3-series offers three artists the resources to develop three experiments which can be witnessed live on the first Friday of the month. V2_ facilitates workshops such as 'Crash Course in Art & Media Technology', a series of public events that provide a comprehensive overview of augmented reality, artificial intelligence, smart fashion, and biotechnology. V2_ also arranged many community events and lectures which reflect on current developments in art and technology. V2_ also publishes books and offers residencies to emerging artists through the Summer Sessions-network.

Summarizing their perspective on the intersection of art and technology, V2_ perceives art and design as play an essential role in the social embedding of technological developments. As part of this process, V2_ creates a context in which issues regarding the social impact of technology are explored through critical dialogue, artistic reflection and practice-oriented research. (V2_Lab for the Unstable Media, 2021). Michel van Dartel, Director of V2_ elaborates of the specific role of arts in technological developments. "The artists who we work with reflect on the meaning and implications of technology. I would like to see makers and thinkers coming out of their workspaces and laboratories more often, so that they interact with people who live where certain technologies will have an impact. ... Art is a great way to develop experiences and make sense of things. The use of objective, scientific facts isn't enough for that." (View: Michel van Dartel - Next Economy, n.d.)

Werkleitz Festival, Halle, Germany

Werkleitz Festival has run annually since 2008, prior to which it ran as a biennale (1993-2007). Its initial aim was to "link spheres of art equally" (Werkleitz, n.d.), with specific emphasis on spheres of film, music, performance, fine art and internet art. It was based on the possibility to "reflect social phenomena through art", and in addition to invoking discussion, they have also explored different formats and forms of organisation (Werkleitz, n.d.). In addition to the festival, they amongst other things run an exhibition space for video and media art, publications, a series of grants and a non-academic Media Master Class.

Werkleitz Festival a flexible format which encompass curated exhibition and film programs and annual thematic co-operations. It also exhibits works produced with the aid of stipends through international exchange programmes. For example, the 2021 festival consists of lectures, films and podcasts concerned with socio sphere, ecosphere, body data sphere, examining how art can "provide for the societal, ecological and technological dynamics of the future in an age of global transformation" (Werkleitz, 2021). It features works produced through the European Media Art Platform (EMAP) residency programme, and the Werkleitz Festival is also a "correspondence location" of the 2021 Ars Electronica.

Werkleitz Festival's webpage does not specifically outline an organizational philosophy towards art and technology. Rather, the festival presents an exploration of various contemporary

social experiences, including the digital and technological experience, where arts practices functions as a contribution to further discourses.

WAAG, Amsterdam, The Netherlands

Waag describes itself as *is a Future Lab for technology and society*. Operating from the philosophy that technology is not neutral, Waag's collective activities aim to promote critical reflection on technology, develop technological and social design skills, and encourage social innovation (Waag Society, 2011). Spanning the fields of art, science, and digital technologies, WAAG's work focuses on emergent technologies as instruments of social change, and is guided by the values of fairness, openness, and inclusivity. Waag is a middle-ground organization composed of research groups that work with both grassroots initiatives and institutional partners within the city of Amsterdam, in the Netherlands, and across Europe. The collective has a shared attitude of public concern and civic activism, which is manifested in their public research agenda. Working with emergent technologies, Waag conducts research in both imaginative and practical terms, addressing its fellow citizens from a position of equality and collaboration.

Waag's activities primarily take place in research labs, of which there are twelve, that conduct research on various themes related to technology and society. Research labs with a more discernible arts cross-over include an AI Culture Lab which explores the role and potential of AI in our shared futures, a Co-creation Lab which researches the development and improvement of co-creation and related methods, a Commons Lab which works towards the understanding of present-day and new forms of communing, a Future Heritage Lab concerned with heritage as an in-flux concept and where individuals give own meanings to heritage objects, stories and associations, a Maker Education Lab, and an Open Wetlab for bio-art and biodesign. Other non-research activities include Waag Open, a weekly public programme for presentation and discussion of current themes around technology and society, and Waag Academy, which offers courses and workshops for young people and professionals to develop skills in new technologies and manufacturing methods.

Waag's approach to art and technology might be summed up by the title of a 2011 book they published, 'Users as designers'. Through this title Waag sought to convey the idea that the development of technology must proceed from a user perspective, where empathy, subjectivity of interpretation, personal intuition, human interaction and trust is integrated in the development process (Waag Society, n.d.). From this perspective, much of Waag's work with technology emphasizes ideals of openness and inclusivity.

ZKM, Karlsruhe, Germany

ZKM was founded in 1989 in city of Karlsruhe and the state of Baden-Württemberg with the mission of continuing the classical arts into the digital age through uniting artistic concepts with future-oriented technologies. Referencing how Bauhaus re-aligned the arts from the craft perspective to the machine perspective, ZKM describes itself as the 'electronic Bauhaus' (ZKM, n.d.-a). ZKM combines research and production, exhibitions and performances, collections and archives, mediation and events. More specifically, ZKM elaborates on its aim by stating, "Symposia

and other formats of theoretical discourse between art, philosophy, science, technology, business and politics complement the ZKM program to examine the effects of medialization, digitization and globalization on society" (ZKM, n.d.-a).

Today, ZKM consists of a curatorial department that develops the exhibition program at ZKM in cooperation with the artistic, academic board and an international network of guest artists, academics and curators. This area also works with international cooperation projects to disseminate ZKM's exhibition content to an international audience. ZKM founded the Hertz-Lab in 2017, which focuses on artistic production and media technology research. The laboratory is concerned with contemporary artistic-scientific concepts, including extended reality in AR and VR applications, artificial intelligence, immersiveness or sensor-supported environments, and research into artistic options in the electromagnetic field. The 'Wissen – Collection, Archives & Research' department was set up in 2017 to bring together the major parts of the collection – contemporary art, media art and video art – which had previously been managed by a number of different departments.

Describing its philosophy towards art and technology, ZKM states, "[it] uses digital technologies to present the arts, without falling into blind media euphoria in the process... It not only preserves art in archives and collections in the classical museum tradition, but actively helps in the production of art". (The Digital Bauhaus, 2014). Stating that contemporary art is no longer self-referential, ZKM asserts that art has a role to play in how we understand digital society where technologies are increasingly invisible (ZKM, n.d.-b)

3. transmediale as a field-configurator

In what follows we zoom in on transmediale as a field-configurator given its position as one of the oldest, more established and more prestigious art-tech festival in Europe. We aim to learn how the art-tech cross-over evolved by reading the curatorial and promotional statements of transmediale throughout the years.

3.1 The ever-shifting boundaries of the art-tech field -- FilmFest, media art, digital culture, and the postdigital condition

When the transmediale festival started (1988) it aimed to display electronic media art productions excluded from mainstream film festivals by creating a platform for, in particular, video culture including video installation. In what seems like an attempt to grasp the future of video, in 1995 the festival turned towards multimedia as a prolongation of its video focus, since the home computer, and thus the internet and CD ROMs, were gaining traction. Back then, the digital existed as a concept, but it takes a decade from there before the festival calls itself a festival for digital culture. Thus, the festival was a platform for multimedia and new media art until 2006, where it changed its focus to shed light on how the digital affects our culture and art. Slowly, this made the festival more academic, which in the end resulted in discussions of the post digital beginning in 2014, while simultaneously seemingly giving up on utopian ideals and enhancing its

criticism of capitalist-led digital technologies and their societal impact. This can be seen partly due to the curatorial visions, and partly due to the digital transformation of society – from emancipated visions of the new media, and democratic possibilities of the Internet, to the consequences and reality of a highly commercialized, surveilled, and populist online infrastructure. Furthermore, as a consequence of the dissemination of digital technologies, the festival increasingly, year by year, sharpens its focus on varying specific socio-political or technological topics, since the topic “digital culture” or “multimedia” becomes too broad of a frame itself. In all its editions from the inception to the present day, there is however one underlying premise, which is indeed a premise of refusal, a refusal to accept that ‘new’ technologies develop at a neck-breaking speed that prevents the efforts at reflected, critical and productive engagement with technologies. As such the festival represents the most propitious site on which to examine proleptically the ways in which ‘new’ technologies were approached, celebrated, imagined, contested, refused and reformed in and through artistic engagement, cultural interpretation and experimentation. Perhaps more recent incarnations of transmediale - which have touched on themes of algorithmic bias, tools for communication and data protection, technologies and care, echo chambers, filter bubbles, AI, cyberneticization – align with Graham and Cook’s (2010) idea that new media art is really about networked systems that can be used for making, distributing, and controlling. Whereas a Romantic version of art was built on a false but performed denial of economic forces, the arts-tech field has always been clearer (or less dishonest) about its entanglement in the technologies that it uses and comments on. This reflects what Graham and Cook (2012) term its ‘embedded’ relationship, and is close to what transmediale 2021 had referred to by ‘entanglement’.

In what follows we try to disentangle and elucidate the complex, ‘entangled’ and ever-shifting interrelations between the arts and technologies as ‘embedded’ in the art-tech field, as inferred from the analysis of the curatorial statements of transmediale over a thirty-three-year’s period.

3.2 The (co-)dependence of the arts on ‘new’ technologies

The relationship between the arts and technologies, as emerging from the curatorial statements of transmediale, appears predominantly one-directional. Technology-oriented art, its outlook, ethics and aesthetics, has been heavily shaped by technological advances, the ubiquity of digital technologies, and technologies’ broader socio-political impact. Tech buzz, tech hype, the latest craze about technological advancement has explicitly inflected each new festival’s edition. The art-tech field seems to feed off the tech field with the arts trying to grapple often optimistically and uncritically with the latest business promise and utopian hype surrounding the ‘new’ technologies as propagated by tech entrepreneurs, startup owners, media giants. The arts seem to have developed a parasitic relationship to the latest buzz with which ‘new technologies’ such as, for example, interactive technologies, self-tracking technologies, artificial intelligence have been publicly greeted by tech evangelists and media proponents as technologies pushing the boundaries of democracy, health and business in the near future. Paradoxically even when, as it is the case in the latest years, vehement criticism has been levelled at the common fears about tech-

nology's corrupting power and the corrosive, exclusive and discriminatory logics of new technologies, the art seems to latch on common academic fads and fashions of tech criticism such as 'surveillance capitalism', 'network capitalism', 'network society' and similar. The art criticism, shored up by academic critical discourse, may ironically, reify and inflate the very same grandiose claims about technological advancement and power—a development that is not lost on the festival, that in recent years also self-reflexively pondered upon such ironic art-tech co-dependence. The tech field, in other words, seems to largely dictate the flows, aesthetics and ethics in the art-tech field irrespective of whether the art optimistically or pessimistically engages with 'new' technologies. In later years in particular, there has been a storytelling imperative to flip between deeply critical and more positive takes on the state of digital society. transmediale, like the digital society it reflects on, has to ride the crest of attention capture and staying relevant, vis-à-vis the inexorable technology proliferation.

The reverse—the arts shaping technological development, does not generally appear to hold. It is hard to estimate, based on the curatorial statements, the extent to which the festival's self-avowed goal of providing 'alternatives to the technological solutionist thinking and centralized business models of Silicon Valley' (transmediale.20) has been fruitfully achieved. Some instances however, as previously noted, seem to gesture towards an increased self-reflexivity about the festival's own positioning in the structures it otherwise opposes, which may also indicate an increased acknowledgment that the arts may have had some role in propagating technology-based capitalism, as was the case most notably with the nostalgic look at the DIY workshop in transmediale 2014. At the same time, the festival, as manifested in the latest years, had to also self-reflexively get to grips also with the fact that the massive and fast growth of tech giants such as Google or Space X have appropriated some of the techniques, logics and practices of speculative and expansive research and development immanent in advanced art-making as part of their fundamental business practices, rendering the art-tech convergence ever-more fraught with tensions and imbalances.

The ability to talk about and respond to pre-defined medium-specific has increasingly become problematic as technologies have become ubiquitous, highly diverse, layered, commercialized and inseparable from human culture and economy. This has rendered labels initially promulgated and championed by the festival, such as 'new media art', 'digital art', and so on, somewhat meaningless and even superfluous. transmediale originally responded to this diversity of technology by adding multiple curators to its annual program, but this was never going to be adequate, and so the solution was to shift transmediale's focus on thematic perspectives on technology, and a 'transversal definition of art-tech' a definition that casts the art-tech crossover as a matter of multifarious cross-cutting entity which pierces through and across technological materiality, ecologies, planetary concerns, human and non-human materialisms, social inequalities. The rapid digitalization of society since the early 2000s means that art about technology is art about and art in society. The festival thus has increasingly embraced the notion of 'the post-digital' as a means to shift an earlier focus on digital media as technicist tools of cultural/artistic production of 'new media art' towards a contextualization of the new technologies as inextricably embedded in contemporary cultures and societies. At the same time, the spatio-temporal coordinates of the art-tech has shifted from an individual artist's studio-based engagement with the past via media technologies towards collaborative labs of artistic experimentation

with near and distant futures, in which artists actively collaborate with engineers, scientists, startup entrepreneurs and policy-makers to affect the trajectories and use of 'new' technologies.

In line with the above shift towards annual thematic perspective on technology, the curatorial distance between transmediale and the contemporary art biennale has narrowed. Both are typically curated around pressing socio-political issues of the day, and it's hard to remove the important to technology in any such discussion. Without considering differences in the way that artworks function, this shift may threaten the distinctness of the art and technology festival.

Art's relation to and technology in earlier versions of Videofest/transmediale was closer to 'innovator', 'disruptor' or creator of 'viable alternative realities', whereas the relation in later versions is better described as 'mirror on society', 'watchdog' or 'agent of inclusion'. This reflects a steady realization that much of the utopian promises (plurality, democratization, alternative realities, marginal voices, commons) of technology captured in early new media art/net art/computer art was not only unfulfilled, but that the structural parameters of technology mean these promises never had a chance in the first place (particularly apparent in transmediale 2020, transmediale 2014).

In what follows we identify three basic mechanisms of the ever-shifting art-tech interrelationships that appear to structure the wider social and artistic dynamics of the art-tech field in Europe.

From technology as a medium of artistic expression to the arts as a transversal reflection on tech development

The initial editions of transmediale reveal a tendency to draw a distinction between the arts and technology as a method or medium to produce art. As such, the arts initially sought to retain a level of autonomy from the underlying technology whereby the technologies were largely hailed as an innovative and novel medium of artistic expression rather than content. At the beginning, the festival was created to embrace the emergence of video culture as a new media of artistic exploration. The initial arts-technology crossover was largely limited to exuberant, experimental displays on sculptural monitors and interactive installations, all of which were the latest technological developments at the time. The subsequent curatorial visions however gradually shifted towards a recognition that an investigation of art and technology via media-based categories that ignored broader technology-induced social and cultural change was an untenable position. For example, such a shifting position is evident in the festival's gradual reluctance to embrace the sheer technology qualities as a primary factor for the assessment of the quality of the artworks, and in the festival's decision to decline some works that "were only playing with electronic tricks" (p.45). From around transmediale.06 onwards, a steady shift away from art *using* technology to art *about* technology is readily observable, a trend that stretches unhindered also to this date. Most clearly from around transmediale.15 onwards, technology became content and not necessarily the medium. The following editions then feature art that explicitly thematizes the cultural, social and economic consequences of technological transformations.

As various technologies have become more ubiquitous, diverse and dispersed, the definition of the intersection between arts and technology that the festival initially hinged on medium specificity was pushed towards broader socio-technological and transversal orientation. This was particularly apparent in Videofest '96's realization that the boundaries between multimedia and tv/video were fading and expanding into the transmedial. Such a shift in the understanding of evolving boundaries between the arts and technologies was reflected in the change of name from VideoFilmFestival to transmediale. transmediale thus started to define itself as an 'International Media Art Festival'.

The newly redefined interdependence between the arts and technologies was also apparent in the need for devising an annual curatorial theme, a tradition started in 2001. When digital and new media art was narrow enough and the mediascape was uniform, there was no need for an overarching conversational framing, and hence the festival ran without a curatorial vision. As the media started to diversify, the festival invited several curators to frame, legitimize and promote a specific thematic blueprint for each year's edition. Yet it was not until 2006 that the festival shifted from using the new multimedia platforms for artistic and creative production to an artistic exploration of the general digital condition of the society. This change partly reflects a perceived public awareness that digital technologies were being integrated into everyday lives, and that this needed to be reflected in the festival's identity and its vocabulary. It was in 2006 that the festival self-defined as a 'Festival for Art and Digital Culture'.

Since 2006, the festival redirected the medium-specific definition of the crossover between arts and technologies towards an artistic exploration of and engagement with the environment, social and political issues and human subjectivity contingent on pervasive and ubiquitous digital transformations of social, political and economic life. Such reformulation also implied the development of an understanding of the arts as a 'transversal force', a force that cuts across and pierces through a plethora or 'an assemblage' of tech-induced environmental, social, political and human problems, all of which necessitate novel, radical even utopian arts-based solutions. The festival thus redefined the arts as social mediator and an instigator of cure and care in the face of digital transformations.

From tech optimism, via utopianism to full-blown art-tech criticism

The redefinition of the cross-over between the arts and technologies can be also observed in the continuing oscillation of the definitional pendulum between technological optimism and dystopian arts-based criticism of the role of technology in society. The artworld's political position towards technology has travelled from an initial celebration of the democratizing and pluralistic potential of media technologies (Videofest '88 – transmediale.01) towards a tech optimism that explored and experimented with commercialism (transmediale.01 - transmediale.07; transmediale.10), in order to veer away towards a playful critique of the social and cultural worlds created by new media technologies (transmediale.08) and a utopian call to arms for the arts to get politically and socially engaged in the creation of better and more liveable social and environmental worlds (transmediale.11 – transmediale 2014), in order to culminate in a care-oriented intellectualist critique of tech-led capitalism (transmediale 2015 – 2021). For example, the early optimism about the radical potential of video culture and digital technologies can be

seen in the festival's celebration of user interaction and the DIY culture as veritable self-empowering tendencies of digital culture. The concepts and consequences of *interaction* and the rise of the *user* are especially discussed during the early years, as they display interactive video installations and a belief in the active user – before the findings that most users on the internet are actually passive users. At the turn of the century, the festival's close ties with the Fab Lab movement in Europe pushed the artworld to develop open affinities with the Open Design culture and in this way demanded the arts active engagement (or hacktivism stances) in making technologies more accessible and more comprehensible to wider swaths of the population. In contrast, the latest years have seen the artworld developing a scathing even obscurantist rather than merely utopian or hands-on criticism of the social, economic and political orders imposed by digital capitalism and digital corporate behemoths. In this period, festivals have amongst other things critically reflected on the non-neutrality of digitization, datafication and data control, technology augmented social instability, echo chambers and filter bubbles, and the social impact of digital infrastructures. Beyond critical debates about the negative impact of digital technologies, festivals during this period can also be characterised by their reflections on how technology can be redesigned from positions of hope and care. For example, the curatorial theme for the 2021 edition of the festival, namely 'for refusal', points to 'no' as potentially both critique of the status quo and as method for reimagining more caring power relations.

Table 1 offers a schematic overview of the historical changes in the ways in which trans-mediale - a microcosm of the art-tech artworld in Europe, has conceived of the shifting interrelationship between the arts and technology in each year's curatorial statement and vision.

<p>1987-1994 Video culture: Technological celebration</p>	<p>Video was seen as a democratizing tool decentralizing the production and distribution of audiovisual material, as well as a separate art form. There is a clear optimism at play, highlighting how video as a medium provides a critical angle at society and disrupts conventional visual rhetoric's. Art in this period was displayed via latest technological advancement such as video installations at the festival location, visual projections on objects, gam animations and interactive installations.</p>
<p>1995-2000 The rise of the home computer: Tech optimism</p>	<p>In the mid 1990's the festival begins to explicitly stress the development of video culture towards multimedia, which refers to a digital mixture of different media intersecting in front and inside of a computer via a CD-ROM or at the Internet. The festival provides an upbeat view on the potentials of new technologies alongside a critical re-imagination of multimedia use. Following such developments, the festival changes its name to reflect the newly found interest in multi- and trans-media (1997) as the latest tech trends while defining itself at the end of the 90s as an international media arts festival responding to the new media trends.</p>

2000-2003 Dalliance with commercialism

In 2000-2003 transmediale explored and experimented with the possibilities of commercialization of digital media and the Internet, while the discussing its own role within it – should they collaborate or be a counter event to the commercialization? One of the curators in 2000 argues for a close collaboration, while others argue for the festival to be an arts-oriented platform away from commercial influence. In 2003, they have chosen their side as a counter event that would support non-commercial critical artistic engagements with the internet, internet surveillance, and the distorted digital public spheres that are the upshot of the workings of digital or computational capitalism represented by a handful of internet corporations.

2003-2008 Artistic exploration of the realities produced by media-technologies

The growing critical engagement with the negative social, economic, and cultural consequences of digitization have given rise to a shifting understanding of the role of the arts vis-à-vis technologies. The arts are no longer conceived as experimental arenas to showcase the radical or innovative potential use of new technologies. The arts are casted as a critical exploration of the social, economic and cultural realities, which were rendered into 'pseudo public spaces' or spaces that are distorted, impoverished and rendered unfair by the growing ubiquity and pervasiveness of technologies. The arts are conceived as a social commentary or critical means to explore, artistically and playfully, digital consumer cultures, simulacra created by online advertising, and senseless worlds engendered by sensors, microchips and similar.

2009-2013 Utopian worlds: Hacktivism and open source movement

An increased interest in open source and hacktivism arises against the backdrop of an impotent tech critique of the previous years. In the era of 2009-2014 – the same years as the economic crisis, the Arab Spring, Snowden's breakthrough, and Occupy Wall Street – the festival creates a platform for open source workshops and hacktivism. The artworld has thus hailed arts-based hacking, for example, as practised through process-based collective art workshops, as a political and collective arts-driven endeavour in the reconstruction of more liveable and habitable technical and societal systems.

**2014-2021 Obscurantism:
Academic criticism of tech-
driven capitalism**

From 2014 to 2021, algorithms dominate the technological focus particularly paired with themes such as artificial intelligence and networked infrastructures. Against a backdrop of an increased awareness of algorithmically-induced cultural anxieties, social inequalities, marginalization, discrimination, political polarization and economic meltdowns, the artworld casts the arts as a loudspeaker for the social and cultural critiques of the tech-led capitalism. Thereafter, the role of the arts in the digital transformation is shrouded in high-minded academic criticism and even obscurantism as pundits and philosophers of technologies and capitalism provide the ready-made discursive templates to shore up the criticism of tech-led capitalism.

Table 1: Historical Topics of the transmediale Festival

From ignorance to self-reflexivity about art-tech exclusions

The interdependence of the arts and technologies does not happen in a political vacuum. It is neither a value nor ideology-free entity. The art-tech artworld has steadily become aware of its own role in supporting dominant structures of power and exclusion in digital society. Given the medium-specificity and the tech optimism that underlie the early editions of the festivals, the curatorial statements accompanying the early editions of the festival were queerly reticent about political or social implications of media technologies (Videofest '88 – transmediale.03). In the extreme, for example, Videofest '96 featured a separate program for world region featuring representative selected screenings from different places around the globe – the Middle East, Asia, and Latin America, while close to none from the African continent. transmediale.01 purported a view that DIY and software doesn't affect social structures, while transmediale.03 Play Global was represented by a primarily white lineup of artists and speakers.

However, as the recognition of the social and political implications of technologies was steadily growing so did the artworld's recognition of the technology's role in exclusion, global tech disparities and unequal access to digital infrastructures. Meanwhile, the art-tech search for a common ground has developed from a more universal search for utopias towards an admittance of heterogeneous worldviews. From the curatorial statements analysed, one can infer that the curatorial concepts shifted from a reliance on universality and the quest for achieving a common and uniform understanding of the co-dependence of the arts and technologies towards an embracement of pluriversality, a unity of the contradictory and heterogeneous which often also includes indigenous and queer perspectives on art-tech. The curatorial statements of transmediale.04 – transmediale.08 all touched upon, in various ways, on the exploration of the exclusionary, discriminatory and corrosive effects of technology-led infrastructures and the consumer and political realities they engendered. Such critical self-reflexivity culminated in a thematization of the art's failings to beneficially tackle the social and economic disparities arising from the digital transformation (transmediale 2014 and 'nostalgic' DIY workshop). A pessimistic

even defeatist stance permeated the vision of the art-tech cross-over in the most recent editions transmediale.18-Transmdiale.20) as evinced in a resigned acknowledgement of the implication of the arts and artistic modes of expression and extermination in the same structures of power and domination immanent in the global digital capitalism.

However, hand in hand with the growing accent on social inclusion and multiplicities, the themes for transmediale have become increasingly complex, theoretical, and obscure with long-term collaborations established with leading philosophers, public intellectuals and theoreticians of care, neuroaesthetics, post-digital condition, actor-network-theory, post-humanism, net cultures and etc. (e.g. transmediale 2021 'For refusal'). A discernible shift happened around transmediale 2012. Perhaps it was always the case, but transmediale seems to have positioned itself for the cultural elite at this point forward, and thus it seems to perpetuate the very same wider social inequalities brought about many digital technologies.

In Table 2, we illustrate via examples drawn from the analysis of the curatorial statements, the shift from ignorance to self-reflexivity.

In 2002, the festival discussed the notion of the public space in relation to new media and commercialization, and referred to a mediascape that became increasingly homogenized and akin to a pseudo private public sphere predicated on surveillance. New democratic online forums and creative content-creation arise side by side public surveillance leading to 'the development of a global info-sphere with both new borders and new room for manoeuvre'. The curatorial statement in 2002 states that the 'global public sphere' became visible in the wake of 9/11 where a bond was created 'between the global public as a result of such a terrible event', and discussed uncritically the Western mediascape in terms of 'a global public sphere' in its potential possibilities and disruptions.

In 2006, the festival demands the creation of alternative realities and subversion of the existing realities. However, the modes of achievement of such alternative visions are not fully elaborated, while marginalized peoples or demands for multiplicities are either carefully omitted or neglected.

In 2008, the festival mentions the global network of the internet, without addressing its territorial outset in the West. This is in contrast to 2009, where the festival made space for marginalized voices, but without mentioning the dominant culture silencing them (or, for example, the word 'colonialization').

In 2012, the festival debated how convergent technologies are actually creating divergence, but still posits the divergence as both fruitful and problematic.

In 2013, the festival explicitly taps into the heterogeneous and conflictual so as to imagine truly diverse media environments, but does so without stating what this encompasses or needs in order to exist.

In 2014, there is just a very uncritical and unelaborated demand for a social change for the public good.

In 2015 there is no inclusion of marginalized voices other than a small hint to the global south.

In 2016 the festival highlights how it wants to welcome different voices and directs its main theme towards the festival's power structures and inclusivity, admitting it needs to recognize multiplicity. But in 2016, the festival states that there is no longer a common ground, instead of stating that there was never a common ground.

In 2018 the festival addresses how we devaluate gender, class, and race, and underlines black radical thought, feminist theory, and decolonial methodologies, and admits then, that there never was a utopian internet (and thus no common ground).

In 2019, the festival criticizes political polarization, which can both be seen as a critique of the eco-chamber-like infrastructures online, and as an underlying quest for reconciliation of multiple voices and views.

In 2021, the festival openly embraces multiplicities and artistically enacts a coexistence between marginalized groups through refusal of dominant, colonial and prevalent normative ideals and theories. The postcolonial lived experience takes the centre stage.

Table 2: *Curatorial Statements over the Years*

4. The cross-over between arts and technologies: a historical overview

In the following section, we will take a deep dive into the historical development of the cross-over between arts and technologies as unfolding in the manifold editions of transmediale festival (1988-2019)

VideoFest '88

Even though videos had been a part of the International Forum of New Cinema at the International Film Festival since 1973, MedienOperative got its own programme under the name VideoFilmFest. It was decided in 1987 that VideoFilmFest would be established in 1988 as a platform for the minoritized video culture in all its diversity.

Technologies in focus and the definition of technology

For temporal and spatial reasons, the festival became a separate part of the Berlin International Film Festival with the intention of making space for the "new media". Consequently, we can

interpret the prevailing view to be that video was new media, along with experimental displays on sculptural monitors and interactive installations. At the same time, organizers did not embrace the multimedial as a primary factor of quality in the works. Underlining the importance of concept and narrative, they rejected works that were "mere electronic tricks". Likewise, they had only one interactive video installation.

VideoFest '89

In only its second year, VideoFest had become the largest European video festival. Video was defined as a young art form "of the highly technical mass societies with all their computers, nuclear power stations, destroyed landscapes and lonely individuals. Thus, video is not film; it remains bulky, playful and vulnerable. And it is left outside from 'high' culture... a culture for a small minority". Showing videos ranging from artistic, documentary, high-tech, political and innovative forms, and investigating and challenging the conventional visual culture, the festival stated that, "video has what film has long been unable to do: to break the boundaries of all cinematic genres through richness in expression - and to tell of realities that others are not worth considering due to the lack of commercial exploitation opportunities." The festival highlighted how video gave people a voice, functioning as a collective medium for a new generation "in the age of permanent technical innovation...", and that the festival was a platform for the diversity and potency of this new culture.

Technologies in focus and the definition of technology

With the rise of the video medium along with the computer, there was a clear optimism at play, highlighting how video was a medium for providing a critical perspective on society and disrupting conventional visual rhetorics. Thus, even though the festival mainly focused on video, one can decipher a general optimism towards the acceleration of new technology for democratizing the means of communication.

VideoFest '90

Within a short time, VideoFest had become one of the most important international video festivals and, indicative of its growing reputation, the festival had applicants from over 36 countries. The program consisted of works covering the field of video art and documentation, where the intention of the latter was "to point out video-specific realisations of documentaries". The festival sought to investigate "video language", it focused on USA as one of the leading countries in video culture, it ran two video workshops that provided insight in the unknown East German video culture followed by a panel offering a critically discussion the West's video morale, and it presented "sophisticated French" videos.

Thus, the festival attempted to focus on the visual rhetoric of the technology of visual culture and its societal impact.

Technologies in focus and the definition of technology

The focus was primarily on video, and it is clear that the festival had not yet changed its focus to transmedia. The festival was yet to focus on the digital image, computer animation and so forth,

as would be done in the later years. This can also be seen in festival statements that mention the curators declined some works due to a lack of “conceptual strengths, only playing with electronic tricks”.

VideoFest `91

In 1991, VideoFest organisers were worried that the year would be the festival’s last due to lack of funding. The program was already very international, but had become more “angular than before; there are more works that irritate in form and content, more documentaries that try to find an innovative formal language for exciting topics, surprisingly more works that use artistic means to reflect upon social or political topics in an unusual way.” Therefore, a large part of the program was dedicated to the headline: Art Meets Politics, which was summarised by founder Micky Kwella’s statement: “The future is uncertain. But for the time being, enjoy the programme that hopefully raises productive criticism.”

Technologies in focus and the definition of technology

The focus was primarily on video, and it is clear that the festival had not yet changed its focus to transmedia. However, they already had a focus on computer animations and digital images. Notably, VideoFest ‘91 had no exhibitions of video installations. In general, it is hard to decipher what the festival defined as video art. In 1991, they had a special screening called Video Art, but this raises the question of how the rest of the programme was characterised. In a contemporary context, most if not all of these works would likely be classified as video art. Maybe in search of answer to the same questions, VideoFest ‘91 expanded the conference further with discourses on video culture, questioning the relationship between television and video. The symposium was supported by the HdK academy who were at the time researching the artistic fields of digital images and innovative media work.

VideoFest `92

VideoFest ‘92 reflected the development of international video culture occurring in sculpture, animation, and so on, by creating a platform dedicated to video. Not yet defined as video art, video neither categorized itself as film due to its lack of cinematic aura, nor as television due to it not being a mass communication medium. Instead, video was seen as young, “dating back to the works of Nam June Paik in 1963”, introduced new possibilities of independent productions, and created democratic access to the audio-visual medium.

The video installations were not yet explicitly exploring the medium critically, nor approaching socio-political topics. Instead, the exhibition was media-oriented with an emphasis on exploring “the medium of the immaterial video image and the material quality of the monitor as sculptural elements”. The exhibition centred around interaction and the concept of sculpture, object and representation.

Technologies in focus and the definition of technology

Even though the main focus was on video culture, it is clear to see an interest in electronics, machines and in general technology already in 1992. Drawing attention to less-technical themes,

headlines such as: "Computeranimationen", "electronic media art", "Video Data Bank", "electronic cinema", already reveal an interest in art and tech. This can also be seen in a Senator's statement in the introduction of the VideoFest '92 catalogue: "the professional audience has opportunities to be informed about the development in the electronic media and to confront that with the more traditional medium film." Thus, within an institutional frame, the festival offered insight to the novelty of electronic media art, without following it all blindly.

Despite new funding from the Department of Cultural Affairs, VideoFest '92 was presented under a cloud of uncertainty regarding the festival's ongoing financial viability. The curatorial framework was media based and media oriented, but hints towards the democratic possibilities of video revealed an optimistic approach to the future of electronic media.

VideoFest '93

In 1993, the VideoFest presented "Video full up. Different from film, different from television..." Neither this year, nor any other year of the 1990's were installations referred to as video art, even though they would easily be categorized as such today. This reveals that video in the 1990s did not have much presentational space other than as its own medium within its own festival, whereas in later years it would be possible to see how these become part of the larger genres of video art or art cinema.

VideoFest '93 focused primarily French media theory and video culture "as possibly the most exciting in the world" in terms of quality and infrastructure. The festival also examined the high level of cultural acceptance of video as a category of expression France, and whether this translated to social acceptance of the expressive form.

Technologies in focus and the definition of technology

As the festival this year primarily focused on video culture, there is no curatorial framing around the discussions on new technologies, but traces hinting towards the later multimedia and trans-media focus could be found in some of the sub themes called computer animation.

VideoFest '94

In 1994, the VideoFest was mainly focused on the interconnections between video and television through the presentation of uncommon productions and tapes that, "critically speaking, went against the grain of commercial media." This created a platform for reflections and discussions concerning video's social impact, and the festival presented the development of electronic media through to guerilla videos of the day.

In the program, it was already possible to see a focus on multimedia and computer technology. Some of the works were described as multimedia, and there was a specific focus in the screening program on "computer-fiktion." Similarly, for the first time the festival displayed video installations on the festival location, and so the monitor had receded into the background, some using it as a bare relic, others instead projecting video onto objects.

Technologies in focus and the definition of technology

It is clear in 1994 that the festival was not a multimedia festival, but rather a video and television festival. While video and TV were some of the key technologies and had a central role in mass communication at that time, the festival did not focus on broader range of technologies nor the digital as such.

VideoFest '95 (Future)

In 1995, VideoFest used 'future' as its introductory headline to mark out how the festival sought to present both informed visions of multimedia in 1995, and the directions it might take in the future. Since its inception, VideoFest had described itself as displaying forms of electronic expressions. But in 1995, the festival explicitly stressed a development towards multimedia, which was defined as that which happened in front and inside of a computer, through a CD-ROM or at the Internet in a digital mixture of photo, film, video, painting, drawings, graphics, text, language, music, noises, and so on.

It is clear that at this point the turn towards multimedia was seen as a development and prolongation film and video. Therefore, they did not use the digital as a framework for the festival, even though the concept was already well used at this point in time. Instead, it would take a decade (until 2006) before the festival began to call itself a festival for digital culture.

Technologies in focus and the definition of technology

The festival stated that the turn towards multimedia would "only be treated as a topic inviting critical discussion", which could be interpreted as a desire to give additional space to discussions on discourses on video culture. In the vein of what they called a return to the political in the submitted works, the guest-curator of the multimedia foreword stated:

"As with any medium, digital information exists in and of a social context. It is produced, encoded, and interpreted within the social environment from which it takes its form and meaning. Before all else it is an idea. Thus we have regarded the computer, the essential component in digital media, as before all else a machine that works with and is controlled by language; language as a social dynamic, as a poetic form, and as a technical authoring system."

Thus, already in 1995, the festival saw technology and multimedia as products of cultural biases and structures to be critically approached and discussed. The festival wanted to irritate and contemplate against the grain, as founder Micky Kwella also stated in his foreword. The exhibitions and installations experimented with technical possibilities at the time, but also thematized interaction and network culture through the topics of hardware, software, wetware, and artware.

VideoFest '96

In 1996, Videofest was highly conscious about the speed of technological advances involving the digitization of communication, video and cultural products, and thus pronounced that from next year the festival would be renamed 'transmedia'. Likewise, the festival introduced the multimedia category as comprising of both video and television, but wrote that video will forever be important to the festival, which can be seen in the most recent edition of the transmediale fes-

tival where the film program still exists. Introducing the multimedia category, the festival foresaw how computerized editing would take over, and likewise how television would become interactive, virtual and integrated in the computer. Thus, as stated, the boundaries between "multimedia" and tv/videos were fading into the transmedial.

The main focus in the curatorial introductions was the installations and multimedia exhibition. The installations thematized how the fields of "electronic and computer-assisted art" contributed with new standpoints and approaches. Working with the sensory, structural, technical, and social effects of new technologies and the digitization of electronic art, the curation engaged itself within a broader debate on the societal influence of new media. They did so, by investigating artist's creative use of multimedia and how they were creating new forms. The goal for the exhibition was to present the current state of development in multimedia productions and their diverse forms of expression. With a special focus on the internet, which was becoming highly disseminated at that point (approximately 40 million internet users), the festival clarified its position: "Cultural pessimists worry that the network will entrap man like a spider's web, rendering him incommunicative and isolated in front of his computer screen - but this is an opinion that we do not share. We see the Internet as an exciting new means of communication." Therefore, transmedia '97 showed works that inspired a "fruitful discourse about the future development". Thus, they took a clear optimist standpoint, which might have been necessary for the festival, as they were creating a platform for visibility for artists working with new technology. As such, transmedia can be clearly seen in these early days as a tool for technological progress and acceptance thereof, but this should not be confused with naïve use of technologies. By contrast, the festival aimed to engage artists to imagine new discourses of technology while critically engaging with the existing ones. While highly reliant on new technology in terms of both software and hardware, the festival and artists sought to hack it and use it to engage themselves in discussions of what technologies might bring us and what their alternatives might look like.

In the 1990s and 2000s, video curation was often supplemented with a program from the world region. In 1996, the festival displayed new video art from Poland, while other years focused on China, Japan, Latin American countries, and so on. Interestingly there was never a special screening of "American Videos" or "German Videos". Consequently, these special screening points towards the foreignness of these exact geographical areas.

Technologies in focus and the definition of technology

The technological discussions were very much based on the premise that new media would create a transmedial reality once all media become digitized. It is clear that the internet is gaining ground around this time, but that the artists who were creating online works were having troubles with the download speed. The main goal was the self-reflection of the media represented, its influence on us, the restructured networks it created and imaginations of other usage and media. The definition of what an art exhibition and what a video installation was very fluent.

transmedia '97

In 1997, the festival had now changed its name to transmedia. *Media*, as it was for the festival's third time, focused on multimedia, innovative television and video. *Trans* captured a desire to

bring together the different specializations taking place across the media universe. By working with various experts across media fields, the festival created a platform for discussions of technological developments, philosophical discourses, and critical approaches towards media territories. Thus, the 1997 edition was significantly more socio-politically engaged than it would be in 1998. This is also evident in the festival's introduction to the media art installations, where the text described how the new media installations shed light on the development of personal identity into manifold dimensions that can be discovered and reinvented through new technologies and media. Approaching topics such as existence and the divide between original existence and the medially reconstructable, the exhibit clarified its thematic approach as seeking to avoid being media based but instead based on the personal and societal effect of new media. Nevertheless, the categorisations of the works were still media based: CD-ROMs, videos, Internet projects, TV productions, installations, and so on.

The new name brought a drastic change to the festival. Having emerged from the "International forum of new cinema" in 1988, VideoFest had been held parallel to the Berlin International Film Festival for nine years. In the year of its 10th jubilee, it was rescheduled to a later date since part of the financing had not been granted in time. This leading to much confusion, with people thinking that VideoFest had disappeared completely and that transmedia that occurred in May was something entirely new.

Technologies in focus and the definition of technology

Transmedia '97 underlined how new media technologies was impacting our self-perception and the imagining of new societies, and it consequently approached new media as something based on our norms at the same time as breaking with them. The festival did this, for example, by discussing the discourse of future scenarios in relation to new technologies. Likewise, the festival included philosophical and scientific discussions such as brain research and nanotechnology, emphasizing the ubiquitous impact of new media on society.

transmediale '98, 11. VideoFest - Bestandsaufnahme Sehen

For the first time in its history, the festival had a motto: Bestandsaufnahme Sehen meaning "Stocktaking Vision". Thus, transmediale '98 sought to take stock of where television and media had taken the world so far. The fact that the festival is called transmediale '98 11. Videofest, shows that there is still a huge focus on tv and film media. However, the festival included a range of new media, and therefore, for the first time, the festival tried working with guest curators, since, as the festival stated, one person cannot keep up with the speed of media development.

The different curatorial subthemes was exclusively based on mediums, and the curatorial framing thereof also focused a lot on the mediums and their artistic use, and less so on the socio-political changes and challenges it brought along. There were nearly no explicit statements on socio-political topics related to new media in the curatorial texts, even though they wrote that they attempted to talk about the power and implications of new media. The only socio-political factors mentioned were the development of the user and interactivity with the computer and net.art, and that they chose works underlining the inherent characteristics of their medium and

their communicative aspects. The socio-political contextualization and criticism was more evident in the introduction text of the television curation, as it wrote about the effect of television on society's norms, structures and diversity. This may indicate that the novelty of the other mediums made their socio-political consequences difficult to comprehend.

In the socio-political contextualization of television, the curator mentioned how it can be a "progressive contribution toward modernisation". This displayed a western linearity and hierarchical conception of the world that would only be rejected in the most recent editions of transmediale.

Technologies in focus and the definition of technology

The view on technology was inherently focused on its characteristics and technical and sensuous possibilities. With only the exception of television, the festival did not promote – or at least does not represent – a view of technology as socio-technical and implicated within our cultural structures. This may reflect a perception of the new mediums being strange and rare, and thus the human cultural bias was not as visible within them.

The mediums in focus were all related to cultural production – the internet, CD ROM, computer animation, music videos, video players, and so on. In comparison, later editions of the festival focused on topics such as data streams, IoT and other topics not oriented towards art creation, but which were instead reflected in art to shed light on technical developments within society.

transmediale '99

In 1999, transmediale defined itself as the "international media arts festival Berlin" to be "able to respond more quickly to emergent media trends". Reflecting this shift, the festival also changed the rules of the student competition from being restricted to video, to permit works in any media. Meanwhile, club transmediale, a venue for artists' video in a club/lounge setting, commenced as part of the festival. Thus, the year was game changing in that the festival no longer defined itself a filmfest.

The 1999 festival stated that it would investigate digital worlds and beings in films, video and games. Nevertheless, a specific framework or angle on new media was not yet part of the programme, as it would become in later editions. This can be seen in the context of the changing role of the curator, whom around the millennium became more of an author and less a preserver of art, and the still narrowness of new media as a theme itself.

Technologies in focus and the definition of technology

In the introduction to the media art installations, the curator sheds light on the diversity and constant evolution surrounding the concept of media art (sound, laser, etc.) as a field investigating the sensoria of the virtual. Through media art, the festival wrote that we can transfer ourselves to a "datacosmos" experiencing electronics as a "consciousness expanding drug". These statements reveal, together with the lack of critical texts on how present technologies affect society, that transmediale held an optimist gaze towards new technologies. This is shown to be a gaze that co-joined naïve hope with a euphoria of technological speed, which was evident in the text relating to the CD-Rom exhibition which points to working with a medium that would

be replaced, and that this was a premise of working with new media. A naivety was also expressed in the introductory texts of the talks focusing on virtual worlds, beings and communities in speculative manners, through the suggestion these would extend our brains and the influence of artificial intelligences. The present was not an emphasised topic (in contrast to later years that would focus more critically about how technologies are affecting us today), but rather the orientation was that electronic media would overtake and change everything. This lack of criticism can be seen in the light of the festival's aim to define itself as a media arts festival that was a radical alternative to Berlin Film Festival.

The specific technologies in focus were those based on the bodily and virtual experience, such as VR, interfaces, tactility, interaction, 3D, the joystick, eye-tracking, the mouse, and the keyboard.

transmediale 2000

In 2000, transmediale becomes a separate event from Berlin International Film Festival, with separate dates.

In the futuristic feel that accompanied the turn of the millennium, transmediale focused on the digitization of the world, documenting the changing artistic practices within this media-technology oriented culture. The festival acknowledged insecurity of future upheavals and crises due to the new millennium, while one certainty was made clear: technological advances would continue rapidly and change the world. With art as a mirror on the future scenarios, transmediale curated 'multimedia art installations' and displayed non-commercial websites. In the talks, the digitization of art and films were discussed in terms of 'Interactive media art', net.art and the virtual, where the meaning, origin and difference of these concepts was investigated. Thus, the festival focused more on the new mediums and technologies the artists could use, compared to the later editions where the works and talks focuses critically on the post-digital as a general condition in society reflected in artworks. Likewise, this was the final year of where transmediale did not have a theme, since the digital and new media art was a narrow and specific enough headline in itself. Nevertheless, the 2000 festival invited in more guest curators to add colour to the programme, and thus hinted towards there being different angles towards art and new media.

In the programme of 2000 it is clear that transmediale found itself at a crossroad in relation to discussing the relationship between the commercial sector and arts within the field of new media. One of the curators states in the catalogue: "... old dividing lines between art and commerce are beginning to fade and reservations are being overcome." While another curator draws awareness to how "...the task of an institution like transmediale is to search for Internet projects that are unusual, combine initiative with media skills, are more art oriented than business-focused." In the wake of Berlin's emergence as a hub for new media and digital design studios, the catalogue discussed how artists working with new technologies were being headhunted for the commercial sector, and whether transmediale should be a network platform for this development, a discussion that would be dropped in the later editions.

Technologies in focus and the definition of technology

The talks and introductory texts of the 2000 edition indicates that the festival primarily discussed new media in terms of low-key themes such as digital special effects, digital design, digital video cameras, multiplayer features in video games, tv streaming, protection of the creative work of manufacturers. There was a key focus on new technologies influencing the cultural sector (VJs, VR, computer games, DVD, 3D, streaming etc.), while for the first time there was little focus on how the new technologies were influenced by and were influencing our social structures, norms, and society. This was the final year of transmediale with the founder Micky Kwella as director, who was a former film maker unlike the later directors who came with a more academic background. One may speculate that the end of Micky Kwella's tenure as director also played some role in the thematic shift from technology as artistic medium to a focus on art about technologies' influence on society.

transmediale.01 DIY [do it yourself!]

In 2001, transmediale appointed a new director who restructured the programme by shortening it, dividing it into blocs, and creating an annual festival theme. Consequently, we see a slow move towards applying thematic approaches to the field of art and new media, where the subject of new media and the dissemination of new technologies were slowly becoming insufficient and too broad.

The 2001 theme, DIY, focused on how new media culture transformed media consumers into active users and producers, "(e)mphasizing the emancipatory, self-empowering tendencies of digital culture." Under this theme, the festival focused on four key aspects of DIY and digital culture. The first was participation, stating that passive media consumption was out. This reveals the optimism and belief in absolute participation back in the beginning of the 2000s, and stands in contrast to the passive internet usage that has later been acknowledged. In the same vein, the concept of participation and interaction was written as if it extends the virtual possibilities of action in politics, economy and society. The curators went so far as to write: "With many of these projects the basic idea is both the stimulation of the natural creativity of the individual and a political objective which relies on the idea of the Internet as a democratic medium." Based on the 2001 curatorial statement, we can interpret a change of approach to the digital era, where 2001 seems significantly more optimist and hopeful, unlike later editions that frame the internet as a hindrance to democratic processes. In other words, they saw technology as something that opens up possibilities more than as something problematic.

The second key aspect of DIY and digital culture picked up by the festival, 'appropriate', sought to engage everyone in getting to know software and codes for the possibilities of rebuild and modifying others' work. The third keyword, 'produce', also underlined the new do-it-yourself culture. The fourth keyword, 'distribution', was also a topic in the conference that examined the new forms of communication, sharing and downloading in networks online, underlined by its democratic potential. In the same vein and reflecting the same overall optimist outlook, the artworks focused on interaction and participation since the curators stated that interactive environments can create models for behaviour, in a new social network of relationships, which cannot exist without the active participant.

Technologies in focus and the definition of technology

A key topic at the festival was software as something more than a functional tool. As a catalyst of the "possibilities of social and creative human interaction", the festival discussed how software determined technically-based communities. Therefore, the curators wanted to make space for software art defined as follows: "software art is opposed to the notion of software as a tool. Software art has the potential to make us aware that digital code is not harmless, that it is not restricted to simulations of other tools, and that is itself a ground for creative practice." Therefore, like the later editions, the curators saw technology as something not merely mathematical, but culturally embedded and having a major impact on our social lives. But social impact was formulated, unlike in later editions, as limited to the online communities. Consequently one can see how this is a time where software doesn't seem to affect the general social structures but rather only affects those using them.

Besides other already mentioned technologies, the following technologies are mentioned: hardware, global network infrastructure, algorithmic computer software, faster transmission rates, new data-compression techniques, illegal downloading, e-book and micropayment as so far failures, a flash animation, internet platforms, copyright, machines, algorithms, code, and computer virus.

transmediale.02 go public!

In 2002, transmediale discussed the notion of the public space in relation to new media and commercialization, where the media scape becomes homogenized and is a pseudo private public sphere with surveillance. The curatorial statement mentioned how new democratic online forums and creative content-creation arose alongside public surveillance leading to "the development of a global info-sphere with both new borders and new room for manoeuvre." transmediale therefore tried to encourage its visitors to develop new creative ideas "for the design and the use of the public space in the digital era."

It is relevant to compare this festival with the 2016 version which worked with a similar theme. However, 2016 did so in a much more critical manner, trying to address the problems inherent within the festival itself and the power structures of the global networked infrastructures. In contrast, the 2002 curatorial statement stated that the global public sphere became visible in the wake of 9/11 where a bond was created "between the global public as a result of such a terrible event" and it discussed the global public sphere in its possibilities and disruptions while remaining uncritical of the concept of the global and the power dynamics within the global. In the same manner, the exhibition in 2002 wrote that since the artists came from Western countries and Japan, it was international. The festival did not critically address this very Western focus and the inherent problems of the dissemination and domination of technology that it might have resulted from.

Again, the theme of media art was in itself a narrow enough topic in the exhibition, in contrast to festival editions towards the end of the 2000s and 2010s. This is evident in the exhibition title: "Current positions in media art", which aimed at showing the fundamental starting points of

digital art at the beginning of the 21st Century. Thus, the focus on technology and new media was still relatively new since it could be a topic in itself.

Technologies in focus and the definition of technology

Even though the festival seemed to embed a more positive view on the influence of technology compared to later editions, the festival also stated that it had become more critical as the world was "beginning to feel the negative effects of the all-encompassing political and economic globalisation, and the media, information and tele-communication industries, after several years of exaggerated optimism." The critical perspectives raised partly concerned the commercialization of the digital sphere, and partly how computer software needed to be seen as a cultural artefact with political, ideological, ethical and aesthetic dimensions. Thus, just as in the later editions, the festival saw technology as entangled with the cultural codes and vice versa.

Similar to the 2003 and 2004 festival editions, the focus of the field of art and technology was on the interactivity it provided to the experience of artworks, DIY/DIT workshops with free software tools being created in order to think the digital anew through art, works breaking with habitual forms of mass media perception, and net-based artworks and software artworks critically engaging with the media influenced surroundings. Besides these foci, other technologies mentioned were the internet, SMS technology, robots, biometrics, media activist network, and codes.

transmediale.03 PLAY GLOBAL

Play Global! investigated the challenges of globalization through conference topics covering utopias and dystopias of the global, and the contrast between the local and global, as well as artworks in a post-World Trade Center era that were influenced by fear of war and recession. Therefore, the festival stated that the art can "develop cultural counter-weight to economic and military globalisation" and it hosted a partner exhibition in Santiago to underline this. The festival stated that this pointed to the social relevance for art as a form of critical commentary, and they furthermore wrote in the exhibition that artists were using new media to be able to influence "the reality of a permanently changing society of knowledge and information." Thus, the festival appeared to be optimistic of the future possibilities arising from working with art and media rather than reflecting on how also supported the status quo, as we would see thematized in the later editions of the festival in the 2010s.

Even though the theme was the global, the line-up was primarily Western and white, and the references in the catalogue were also very European.

Technologies in focus and the definition of technology

The emphasis of play in the title came from the idea of the global as a game. Thus, the connection between globalisation and play was made through computer games, examining them as entertainment and as cultural signifiers of politics, military and society, as well as the gamification of these fields. Furthermore, the exhibition displayed artworks using new technologies to shed light on virus, and was organized through virus systems. Thereby, the exhibition underlined that the destruction of virus can be inspiring for artists even though they damage the economy,

and thus it framed a slight anti-capitalist criticism. Contrarily, there was no direct criticism of technology used as a tool for military and capitalism, and the definition of the actual technologies the festival addresses was very loose, just like in 2004.

It is clear that a repeated theme in 2003 was that cultural discourses were implied in digital technologies, as exemplified in computer games and software, as well as listening patterns in electronic music. In addition to the technological concepts already mentioned, the 2003 festival made specific reference to interaction, the internet, the digital, network, and hacktivists.

transmediale.04 FLY UTOPIA!

In 2004, the transmediale festival shed light on utopias, making many similar utterances to those expressed in the 2014 edition called "Afterglow." But in 2004, the lost hope in utopias was connected to the passing of 20th centuries grand narratives, together with the insight that technology would not be a remedy. With much more optimism than in the 2014 version, the festival focused on how artists could approach information society by imagining alternatives and thereby promoting a heterogeneity that would fulfil other needs than the standardized ones. The festival thus saw the arts as a tool and method to overcome the problems of technology.

Even though the festival tried to deal with hope rather than hopelessness, it also highlighted pessimist perspectives in terms of use of power, and destruction of cultures and natures. In order to overcome this, the festival stated that we need imaginary places to rediscover the potentials of utopias. Andreas Broeckmann, the artistic director, wrote that the search for optimism in this year's festival came as a consequence of the dominant pessimism at the time, while the conference captured element of this statement by writing that we (in 2004) were in a cultural and political crisis.

Technologies in focus and the definition of technology

Several times in both the 2004 and 2005 editions, there are references to technology's determinativism. This is interesting, since the festival meanwhile noted how technology has previously been communicated as spreading out agency. This culminates in the notion of a lost hope in technology as a "universal remedy".

The 2004 edition wrote a lot on the general condition of technology, but it did not further specify the definition of technology nor give specific examples. Again, this can be seen as a result of the time, where a festival on art and technology did not need a further thematic angle as the technology was not yet seen as existing and impacting every part of society. However, the following technologies were mentioned: bio-technology, mobile communication, video editing, and low tech robots.

transmediale.05 BASICS

Under the theme "BASICS", transmediale.05 looked at the ethical dimensions of working with the digital as an artist in a time rich in technology but "poor in values". As such, the festival illustrated how, in 2005, it took place in a situation where the world was rapidly changing with new technologies, but where the basic ethical questions hadn't yet been thoroughly discussed.

The curators stated that the common political agreements were dominated by new paradoxes leading towards a "general demoralisation" in the confusion made by the rapidly disseminated technologies. As technologies were promising more agency, the festival highlighted how the new infrastructures for this agency were still based on exclusion, and that the new security provided by these developments might also influence individual freedom. Furthermore, the festival discussed biotechnology and robotics through the ethical dilemma of who would be provided the skills to work in this area.

The festival was thus not necessarily pessimist in terms of looking at technology, but rather critical of its current development. Therefore, the 2005 festival aimed to provide a platform for discussing the ethical and aesthetical dimensions of digital technologies, hoping to start a conversation where we questioned the foundations of our actions in the technological realm. Furthermore, the festival looked at housing, health, food, security, mobility and communication in an open dialogical workshop to ask what technology was required to satisfy our basic needs.

Technologies in focus and the definition of technology

The festival was optimistic in paving another technological pathway, and thus it also described the then situation as having "hyper-potential" but where we needed to use artistic practices to look at ethical and aesthetic impacts of technology without turning towards the impossible: old systems in a rapidly changing technology. The festival stated that holding onto the old systems would just let technology cause demoralization, as previous systems did not fit with the coming infrastructures. Thus, the festival foresaw the contemporary (2021) discussions of disruption.

The specific technologies mentioned were: the internet, mobile phones, robotics, and biotechnology. Thereby, the focus was also directed towards the bodily relation with technology.

In 2005, the festival tried to dissolve its media-based definitions of art, to welcome more nuanced approaches to art working with digital culture, but it still defined itself as an international media art festival.

transmediale.06 REALITY ADDICTS

The headline in 2006 was Reality Addicts, defined as someone who enjoyed machines, cultures, humans, and nature. This concept wasn't framed as 'neat' ideas and materials, but rather in a more paradoxical way that brought out their defects and ruptures, since it is these aspects which point to alternative realities. In this way, the festival aimed to make space for social engagement and critique in order to "subvert the technological paradigm of reality". Extending the concept of reality addicts, the exhibition also focused on 'smile machines' which were conceived as things that break with technology and the world, offering new ways to look at social rules and rituals with humour. For example, by showing technology failing to live up to its ideals, we questioned the mass-mediated reality and allowed the same technology to open up other worlds. As such, the conference looked at reality addicts as not "from the perspective of technologies that impose specific perceptions or constructions of reality", but instead "explores ways in which these constructions can be subverted, exaggerated or reduced to absurdity."

Technologies in focus and the definition of technology

When looking at the few and sporadically mentioned technologies – search engines, cctv, computer games, mp3 – it becomes clear that there were no specific technological question investigated in 2006. Rather the emphasis was a broader look at the “technological paradigm” and “massmediated reality”. In 2006, it seems that transmediale had reached the point where it was still broadly possible to investigate art and technology as a specific topic, but where they have started to reflect on this approach. This is done in their statement of the festival in general, where they stated that they would no longer look at media art, but would instead investigate how art and society was changing under the influence of media and technologies. For the first time the curators refer to the transmediale as a festival for art and digital culture, which is a turning point leading to the next phase when they enter the post digital condition.

transmediale.07 unfinish!

This year’s focus was on continuity and change in the digital paradigm due to eternal updates. The artworks, talks, films, and performances tried to reopen artistic practices and fixed social situations, while discussing the consequences of constant updates. Consequently, there arose discussions around time, comparing technology’s reversibility with the linearity of biological time. No other socio-political topics were mentioned besides “the digital paradigm.”

Technologies in focus and the definition of technology

Festival statements from 2007 underly how, more generally, the festival’s curatorial statements were less elaborated as we stroll back in time, both in terms of unfolding the general theme and in terms of elaborating on the notion of technology. No specific technologies were mentioned, very much in contrast to the curatorial statements written under Kristoffer Gansing’s direction (2012-2020). Instead, technology was mentioned briefly as “digital culture” and the festival mainly elaborated on the then artistic approaches to time and defying closure.

Together with a lack of focus on specific technologies, there was no critical approach to technology presented in the curatorial statements. This cannot be due to an absence of discussion in academia, but it may reflect a change in the identity of transmediale that occurred from 2007-2012. Coinciding with the shift towards art *about* technology that occurs around this time, we speculate that it may have been inconvenient to criticize the development of technology directly within the curatorial statements when the festival’s identity in earlier versions had relied on being an avant-garde platform for multimedia art and later digital art. However, this does not explain the lack of focus on specific technologies.

It might, however, be possible to decode a reference to assemblage thinking by ANT and the Latourian concept Matter of Concern (2004) in the program, since the performances tried to lay bare their construction, and the artworks were described as reopening fixed situations. Thus, the works referred to how technology is constructed and assembled, which was also one of artistic director Andreas Broeckmann’s main ideas when analyzing artworks in his later publications. But this conclusion is based on a very small line in the curatorial statement.

transmediale.08 CONSPIRE...

In 2008, transmediale focused on conspiracies and the operational strategies of conspiracies. Noting Web 2.0's mechanisms for fuelling popular speculation, the curators revealed new forms of expressions in digital discourse that were emerging from "the global network that is the internet". In doing so, they dug into the discussion of whether a distinction between fiction and truth was possible when "many things turned evil" suddenly. They looked at conspiracy as a means to create order in a chaotic world, but also highlighted how conspiracy also functions as an anonymous creative collaboration useful for imagining twisted realities, such as utopias or scifi-scenarios.

Technologies in focus and the definition of technology

As would be the case in 2010 and 2011, the 2008 festival's focus on technologies is very broadly defined, but it did draw some lines to web 2.0, the internet, and wifi as well as "digital discourse." Unlike 2010 and 2011, the discussion has a more pessimistic tone, with the statements such as "many things turned evil" and with criticism of the infrastructure of communication dissemination facilitating polarizations of the debate. In terms of the latter, themes of 2008 edition resonated those of the 2019 edition, which examined the polarizing impact of digital technology in the wake of Trumpism. There does not seem to be as much direct criticism in the curatorial statement as would be the case in later years, and the critique of capitalism structuring the internet and communication technologies is absent – something that would be included in nearly every text of Gansing's curatorial era.

transmediale.09 DEEP NORTH

DEEP NORTH investigated the cultural rethinking necessary due to climate change, and asked how climate change has cultural, societal and philosophical consequences. The festival reflected on the urgency of reading global events in fundamentally new ways, and by critically exploring digital culture they sought to develop new tools to change global awareness. Without mentioning concepts such as colonialization, imperialism and decolonialization, the festival brought marginalized voices to the forefront to rethink our (Western red.) culture anew and focus on our global interconnectedness. Thus, the festival made space for marginalized voices but without directly addressing the colonial legacy of the Western countries and their dominance of global infrastructures as the key reason for why those voices had been silenced. It can be debated whether the festival was taking a forward stance here compared to the rest of the art world, but we should keep in mind that Okwui Enwezor curated documenta 11 in 2002 with a postcolonial approach.

Technologies in focus and the definition of technology

In the 2009 festival's focus, technology was barely mentioned except that it is a part of the general digital culture needed to be re-evaluated with climate change. Furthermore, the festival mentioned the earth as a technological system. Thus, the festival saw technology and the digital culture as embedded within the general global and cultural condition, but did not address technology with specific criticism in the framework.

transmediale.10 FUTURITY NOW!

In 2010, transmediale focused on the future, since 2010 had been a year used in the twentieth century to imagine scenarios of technological utopias and dystopias. Looking beyond the “failed utopias”, the occasion was used both to reflect on the mediated present as a basis for the future, and to investigate the future as a cultural projection. This led to the showing of sci-fi films and the discussion of the man-machine relationship.

It is interesting to see how the introductory texts were notably shorter in 2011 and 2010. The expansion of the text in the decade that would follow may partly reflect the greater focus on curation and the curator as a narrator in that era. The shorter texts in 2011 and 2010 might also reflect that transmediale is more open-ended in these years. A third reason could be that they hadn’t thought as much about dissemination and communication of the themes before 2011. Here, it might also be possible to talk about a distinct before and after Kristoffer Gansig came to office.

Technologies in focus and the definition of technology

The approach to technology was less pessimistic in 2010 compared to the years that would follow. Thus it seems that the festival was more oriented to engaging in open-ended discussions of technology than thematizing it within a critical framework. It furthermore appears as if the transmediale editions of 2010 and 2011 were less focused on new technologies and placed less emphasis on addressing the digital transformation as conceived at that time. Instead, the curators employed the concept of machines and technology as very broad concepts. Compared to the actual technological development of its time, the exhibition ended up using an archaic topic of the camera obscura as its focal point. This would be radically changed when Kristoffer Gansig became the artistic director.

transmediale.11 - RESPONSE:ABILITY

The focus of 2011 was an exploration of how presence through digital media has changed how we are present in communities and society as individuals. It also took up questions of how we relate the body and technology when presence can be virtual and the body can be technically immersed to the degree it disrupts our idea of temporality and physicality. Thinking in these biopolitical structures, the festival addressed how the mega infrastructures of communication technologies erode freedom, and it asked how we might find new forms of societal interaction and communication. The curators approached these topics through a rethinking of the concepts that made up the title, with response framed as politics and ability as competence.

Technologies in focus and the definition of technology

The 2011 festival suggested a disappointment with present communication technologies but asked its participants to develop and engage in finding other technical solutions for society and its individuals. The suggestion is that such systems would be more open to revealing alternative realities. This was at least the goal with the HackaWay zone at the festival, which was a platform for process based and participatory artworks that worked with de- and reconstructing technological and societal systems.

Again, there was a very limited number of specific technologies mentioned, but we observe usage of broader terms such as interfaces, data streams, infrastructures, online presence, and liveness. One specific platform was mentioned though: foursquare. But otherwise no algorithms or artificial intelligence were mentioned.

transmediale 2k+12 in/compatible

In a time of financial, environmental, technical, and political crisis rendered visible by the implicit mediascape, transmediale looked towards the obvious divergence rising from the technologies that promised to promote convergence. Consequently, the festival pointed to how incompatibility is inherent in convergence, as the heart of both network culture and capitalist logics. However, the festival also looked at the productive and critically engaging sides of incompatibility as a refusal to follow the system – especially the dissemination and standardization of network culture. In this oscillation between the compatible and incompatible lies an uneasy technoculture, taking us beyond the polarity of utopias and dystopias of the internet that emerged after the web 2.0. These concepts were held to underline how we were, at that time, in a blurred state of freedom and control, and in an idealistic and commercial technoculture, activating a critical and inventive engagement with technology.

In the festival's 2012 edition, there are no marginalized peoples on the agenda, and capitalism is the main system being criticized. The theme is very much related with the 'for refusal' theme of the 2021 festival, as incompatibility is seen as a productive refusal against systems. Thus, the 2012 and 2021 festivals make a good comparison as they are a decade apart and therefore show the development in the discourse of digital culture.

Technologies in focus and the definition of technology

As one can read above, there were no specific technologies in focus, despite the emphasis on capitalism and network culture – themes which weave their way throughout the whole decade of transmediale festivals. Specific technologies are not mentioned as the focus is rather on the paradigm of the internet and network culture, which in earlier times had been imagined to be either good or bad but now finds itself in an uneasy state between the two. What is interesting here is that surveillance and control was mentioned, but not algorithms and artificial intelligence, which are themes impossible to avoid in the years that would follow.

transmediale 2013: BWPWAP

In 2013, transmediale focused on how things are rapidly changing through technological development, while highlighting the new knowledge paradigms brought about by technology which change our cultural imaginaries. As a classification crises, transmediale opened up for negotiating new ways to perceive things through four streams, evolving around objects in identity crises during the post-digital age.

The exhibition was divided into three shows, focusing on knowledge, education in relation to contemporary media, and how a re-emergence of critical media literacy can escape forces of control and power. The festival stated it "opens up to an expanded and heterogeneous field of

alternative possibilities for becoming an educated media user.... a radical redefinition of what media education is or rather what it can be." This reflected, like in the later years, a search for the heterogeneous and the conflictual, which is considered necessary for the development of "truly diverse media environments." But unlike some of the later years, the statement did not define what truly diverse media environments were, and neither did they explain whether these environments could exist under the current socio-political circumstances. The curator's statement could then be read as a call for a radically opening for the good of diversity, but it might also indicate a blind spot – for example by relying on solely white women in the headlines of the exhibition.

Technologies in focus and the definition of technology

Similar to 2014, there seems to be a nostalgia hidden in the agenda, since the technologies addressed are mainly the ones "that got away" such as the dumb mobile phone, letters, ICQ, Xerox, the early days of YouTube, Fax, Photocopier, paper shredder, and the first MacIntosh. Meanwhile, the 2013-era technologies mentioned were computer games and network technologies, both of which position individuals as users of a consumer culture.

Unlike the later years, the 2013 edition text did not explain how new technologies shape our social life, but just mentioned it briefly. Nevertheless, by looking for a more critical and inventive digital literacy, the festival did not view technology as neutral. However, the curatorial statement seems more optimistic compared to 2015-2021 era since it calls for truly diverse media environments, and thus seeks the utopia rather than criticizing the present.

Given the curator Jakob Lillemose writes that the exhibition tries to dissolve the commonly-held notion of internet art as difficult, the digital is again implied to be the medium rather than the content. This might reflect that Lillemose is a part of the early internet art group in Denmark called ArtNode which used the internet as a platform and an aesthetic mode of expression more than a topic to contextualize.

transmediale 2014: afterglow

The 2014 edition of transmediale focused on the afterglow of the digital revolution, further described as a post-orgasmic state or a hangover after the dinner party. Framed by the comedown, the festival investigated the post digital moment, stating how the hope of digitization had been turned to trash both in terms of e-waste and big data businesses. The curatorial statements expressed a disappointment in the "once utopian promises" of the digital - something that was supposed to be both neutral and immaterial. But unlike the years that would follow, the festival frames digitization as potentially positive, "a still not overdetermined space", arguing how we, in 2014, were in an ambivalent situation between the good and the bad. The festival thus aimed to renew thought and practice speculatively, seeing digitization anew.

By describing the moment as postorgasmic and a hangover, the text seems more nostalgic towards the good that once was, rather than being directly provoked by the problems of the development of the digital sphere. In contrast to this more positivist view, the screening program analyses the nostalgia more critically, stating that the "naïve dreams of a digital revolution, free

exchange and equal participation no longer have a place." By referring to dreams, the screening program underlined that the utopian digital revolution might never have been a reality.

The art program seems to have taken a particularly nostalgic path by staging a DIT workshop that resembled a maker culture, where artists using tech as medium were invited along with hackers using art as their form of expression. Again, in the years that would follow, we see that tech as medium would be steadily replaced with tech as content. The positive approach can be especially observed when the festival states: "As an event it bridges the gap between art, technology and entrepreneurship and expresses a belief in non-utilitarian beauty through technology and its ability to affect social change for public good." In the context of later festivals, one wonders why the word entrepreneurship was used, why the curatorial statement was not more critical toward its own approach, and how the text could state something as broad as "social change for common good" while the programme consisted mostly of white men? Comparing this statement with statements from 2020 and 2016, which argued that there is no such common, one can interpret a gradual movement from 2014 to 2021 where the idea of seeking unity is dissolved, and which culminated in the 2021 edition which underlined friction and multiplicity.

Technologies in focus and the definition of technology

As written above, the 2014 edition of the festival brought to the fore how the hope and utopia of digitization as neutral and immaterial is not necessarily true. E-waste, big data, surveillance, and algorithms were thus in focus. Unlike previous years, where the expression of hope seemed very much dominated by a broad criticism of the new tech as a global infrastructure, the 2014 festival managed to express a degree of ambivalent hope in digitization.

transmediale 2015: Capture all

Under the headline 'Capture All', transmediale wanted to reflect on the datafied future of society in work, play, and life. The festival stated that we now lived in a quantified and automatized algorithmic society focused on optimization and productivity of both leisure and work which emerges as a full circle of mass surveillance through ubiquitous network systems. Value is extracted from every field, blurring the boundaries of work and free time in a precarious time that is shaped by the paradigm of creative work. In this datafied context, we look for constant optimization through pattern analysis and prediction, while gamification is promising to derive value and entertainment from every aspect of life.

The main critical perspective and focus of this festival can thus be characterized as a critique of capitalism, its influence on technology, and how it affects the work life balance and behaviours of individuals. There were no explanations of what constituted sustainable life forms, as the concept was only addressed as an ambition for "something more sustainable". The festival did not address any marginalized groups, and the only hint towards the global south is found in the criticism of capitalist distribution of work hours.

Technologies in focus and the definition of technology

Interestingly, the exhibition program refers to the global societies' turn towards an algorithmic culture as cynical and paradoxical, which is framed to be a result of algorithms being disseminated in an attempt to surveil and gain control. This is problematised by a lack of control of the

algorithmic processes, and a general lack of understanding these processes and procedures. The focus on algorithms have subsequently become a very dominant theme in the most recent editions of transmediale. In 2015, the discussion of algorithms was combined with a focus on the quantified self, image recognition, game mechanics, and bots, all implicated within capitalism's surveillance logics.

Capture All as a theme put technological infrastructures in focus, while aligning it with an anti-capitalist critique of precarious ways of living that results from it. Thus, the conception of technology, in 2015, relied on an understanding of society and technology as deeply entangled, wherein technology was not neutral, but at the foremost ideologically shaped: "the state has incorporated a cybernetic feedback ideology with deep historical root," the festival wrote. But this did not mean that technology was conceived as inherently negative, since the conference speakers and artworks looked for ways to push against these ideals with the technology itself, by overidentifying or repurposing it, in a search for "something more sustainable".

2016: transmediale/conversationpiece

In 2016, transmediale focused on the medium of conversation itself, by rethinking its own format. Following this theme, there wasn't the same separate exhibition and conference program, but the two were melted together under four different thematic streams revolving around late-capitalism's state of anxiety. There were nevertheless dominant themes that concerned capitalism, anxiety and precariousness, as well as the rise of insecurity in relation to labour politics, digital platforms, social media's disruption of world order, and in the underlying surveillance connected to these entities. Illustrating these conditions, the text made several mentions of a post-Snowden era and whistleblowing.

By focusing on conversations, transmediale underlined the need for multiplicities and acknowledged the power structures that can be inherent in global conversations. In doing so, they stated that there "is no longer the stable common ground of a traditional value system but rather the common articulation of many possible grounds", and that we need to recognize this multiplicity. Similar to the 2018 edition's film program longing for modernity's innocence, it is interesting that the festival did not address that there never was a common ground. By hinting towards the existence of a stable common ground at an earlier point in time, a problematic underlying patriarchal eurocentrism in transmediale is possibly revealed - even if the festival text stated that former conversations had been influenced by hierarchies. Adding to elements of a eurocentric gaze, the festival created an architectural framework from which to rethink the mediation of conversations. The reference and inspiration for the architectural elements was Forum Romanum - a Western cultural heritage site from ancient Rome. They called their use of architectural arrangements *temples of conversation*, possibly revealing that the historical notion of the sites, which defined where conversations mattered and where they didn't, was not dismantled. Thus, this curatorial gesture could be interpreted as prolonging patriarchal Eurocentric structures into the framework of trying to create alternative form of conversations. This is also interesting when taking into account that marginalized voices were neither mentioned in 2016 nor in 2017. Instead, the festival chose to highlight activist global democracy and anticapitalist movements from 2011, such as OWS, indignados, and the Arab Spring.

By acknowledging that there was no longer a stable common ground, transmediale ran four streams or topics instead of one common theme for the conference and exhibition. With these four conversation pieces, they aimed at finding common grounds within the multiplicity. This is an interesting and contrasting approach compared with 2021, where disagreement was welcomed and thematized.

Technologies in focus and the definition of technology

The festival displays a small degree of optimism amongst the criticism of the development of the digital technologies: "Conversations are inherently fragmented in what passes for the global public sphere, and within it the privilege of conversation has at least partially been democratized and decentralized. This may seem good on the surface, but rather than bravely facing a radical multiplicity of topics and positions, we are seeing societies return to hierarchical forms of data-fied conversation, where meaning is exchanged for mining, and text for context."

In proposing that conversations have the potential to be more democratized, the festival set up a radically different position to the statements from 2018, where it is proposed that digital culture has mostly paved the way for corporations and the far right. Thereby, even though the recent developments were criticised, there was still significantly more optimism and hope present in the curatorial statements compared to the subsequent festivals. This optimism can also be interpreted in the stream 'Anxious to Make', when the curator criticised the appropriation of maker culture by corporate businesses, but who still seemed fond of the original maker culture. Meanwhile, for the stream 'Anxious to Share', the curator wrote "democratizes with", revealing a more critical approach, which highlights how the festival aimed to welcome different voices.

The festival's optimism might derive from the repeated mention of political activist movements that arose in 2011, though they admitted how the platforms which paved way for these risings have also become a part of the problem. As such, they seem to underline an idea of the internet as a free creative utopia back in earlier days that has been ruined with time, all the while not acknowledging, as they do in later editions of the festival, how this was never a reality.

transmediale 2017: ever elusive

The overall curatorial vision of the program could not be accessed, but the following conclusions are drawn from the press releases, and the statements for the conference, film, and exhibition programs.

transmediale 2017 celebrated its 30-year anniversary by looking at and questioning the contemporary conditions of media. Heavily influenced by post-human and new materialist philosophies (e.g. Rosi Braidotti), the program looked at the relationship and entanglement of humans, technology, and nature. Similarly, the festival questioned agency by interrogating the active subject and passive object dichotomy in the wake of the ubiquity of intelligent algorithms and machine learning which immerse us in technological environments such as Internet of Things. Adding to a questioning of agency, the theories of new materialism and posthumanism gave transmediale further impetus to decentre the idea of human agency.

The title 'ever elusive' referred to the dynamic, ever shifting identities, which was visible in the festival's design that sought to mimic stories. At this time, stories were a new feature on social media that, opposite to fixed posts, were visible for only 24 hours and thus caused a shift in ways of creating identities online.

During this period, the international art world and academia was heavily influenced by new materialism, particularly following dOCUMENTA 13. By making space for new materialism and posthumanism, the 2017 edition of transmediale was clearly less explicit in addressing issues of marginalized voices, such as gender, race, and class, in comparison with 2021, 2019, and 2018. Instead, the festival addressed questions of power, exclusion, and in whose favour the arising new media ecologies align, with topics such as digital populism, sovereignty, and mediation of geopolitics mentioned, while there was no mention of potential marginalized peoples. This possibly reflects that Trump was inaugurated and selected as a president in 2017, after the festival had planned its program, and thus that the latter years more clearly reflected this new socio-political era.

Technologies in focus and the definition of technology

In 2017, as in the years that would follow, algorithms, machine learning, and artificial intelligence were in focus, along with more material and nature-oriented topics of engineered organisms and plastics. The framing of technologies in 2017 clearly attempted to unnaturalize technology as things, highlighting how they are assembled and constructed in entanglement with human culture. This entanglement is also underlined by pointing to how new technologies such as smart infrastructures, IoT, and ML pattern recognition unavoidably shape our everyday lives, and the festival directly asked us to be critical toward their inherent power structures and exclusion. In the exhibition statement the curators refer to this tendency as "the logic of cyberneticization", a concept that hasn't been followed up on in the subsequent years.

transmediale 2018: face value

By focusing on the word "face value", transmediale 2018 underlined how societies across the world were becoming financialized and dominated by neoliberal logics. By stating the extent to which societies are inflected by capitalism, the festival underlined how we routinely value and devalue gender, race, classes, and nations. Probably in the wake of the refugee crisis and the focus on refugees in Documenta 14 (2017), the festival emphasized how capitalism and corporate authoritarianism mean borders were open for some and closed for others. The festival statement also notes this condition plays out in contemporary media's "current alarming formations" and their infrastructures.

The aim of the 2018 festival was not as much directed towards dreaming of better futures, but rather looked at the world as it is, highlighting invisible structures in a very deconstructivist manner. Interestingly, transmediale underlined how the participants of the festival were also implicated in the problems of class, gender, and race imbalances, which the festival especially tried to oppose in 2018. Instead, they emphasised how the festival would be informed by Black radical thought, critical race and feminist theory, decolonial methodologies, and anticapitalist strategies. Unlike in 2019, where the curators dreamt of better futures with care, transmediale 2018

looked at the unsettling current problems in the world with a very specific scope of unsettling borders.

Unlike the rest of the program, the film program stated that: "The normality of diverse cultural and ideological identities in modern society is increasingly becoming a target of racist and right-wing violence." This could be read as though modernity didn't carry an implied populism and racism, since it is threatened, very much unlike the Documenta 14 (2017), where modernity as a concept was criticized and decolonized, thereby illustrating how Western Modernity was built on racism, and sexism (see also Mignolo). By having such statements integrated in their curatorial visions in 2018, this might serve as a good example of how transmediale has been implicated in the structures they want to oppose.

Technologies in focus and the definition of technology

In 2018, transmediale explicitly addressed how populism and far-right rhetoric's claims to truth dominated the internet through echo chambers and filter bubbles with memes and trolling. Adding to this, the festival stated how the internet was never a utopia, free for everyone to express their creativity, and indicated it saw it mostly as a place for hate, racism and neo-colonial powers. They repeated how problematic the racialized technologies were, which might have been influenced by the discussions around the early 2018 release of Safiya Noble's book *Algorithms of Oppression*. Thus, there was a highly negative view of technology in 2018, probably influenced by the fact that the festival sought to look at the way things were, not what we could hope for them to be. One can see this negativity in the text's reference to "alarming formations" of digital media, but they nevertheless addressed "a need to embrace both unsettling and uniting cultural practices, as well as daring speculative thinking, to promote auto-criticality".

The specific technologies mentioned were algorithmically guided communication practices, and how they circulate, filter, and categorize information valuating or devaluating it, especially into filter bubbles and echo chambers. The festival shed light on the processes of value creation that are involved in the circulation, filtering, and categorization of information. In doing so, the festival sought to challenge the affordances of technologies implied in unequal and capitalism systems.

transmediale 2019: (No festival title)

In 2019, the transmediale festival did not use a thematic title as a gesture towards avoiding the closing down of meaning in an attempt to open up the festival as a place of learning. Nevertheless, the festival had a clear thematic focus on how digital infrastructures govern, affect, and manage the structures of feelings within society. The exhibition chose to display performances in the place of a fixed exhibition, which not only reflected the popularity of performance art in general in the 2010's (fuelled by the Marina Abramovic show at MoMA in the beginning of the decade), but underlined the festival theme as a meeting point for different opinions with the implicit open-endedness of performance art. Furthermore, the focus on performance art underlined the fact that the digital structures of feelings are performative and live.

Addressing how feelings, affect, intimacy and self-satisfaction are often overlooked, the festival seemed to be inspired from feminist theories. This became even more evident when they stated

they were looking for caring solutions, similar to the feminist STS-theorist Maria Puig de la Bel-lacasa's concept of Matters of Care. Building on Haraway and Latour, she explained that care is not an innocent position from which to address technology, but that care as a doing and affect can sustain and repair the complex webs of the world through acknowledgement of the responsibility by one's entanglement within it. Here, care is not to be understood as a pre-existing moral norm, but rather is relational: "thinking with care can never be settled" – a position that fit with the open-endedness of transmediale 2019. Thus, care can be framed as a tool for countering oppressive political systems and digital infrastructures without it needing to address a specific goal, and so it aligns with the openness of transmediale in 2019.

The festival looked to care as an alternative to polarization, and asked: "How to resist the manipulative and polarizing aspects of affect in the digital public sphere as it is expressed through a deadlock of the politics of feeling on the one side and disengagement on the other?" This statement is interesting to compare with those from 2021, where the festival acknowledged polarization by digital media as both fruitful and problematic for democratizing possibilities. In 2019, the festival framed polarization as utterly problematic, but asked for more caring and alternative ways to address political feelings. This was done in 2019 from the view that the social and political were being emotionalized and turned into binary choices of for and against. Instead, they aimed to avoid simplifications through "counter-cultural dreaming." On the one hand, the festival went against polarization to open up for a multiplicity. On the other hand, polarization can also be seen as permitting conflictual opinions and refusal, as addressed in the 2021 edition, fruitful for democracy and an uneasy alliance. Interestingly, the 2019 edition actually used the latter topic as a headline for one of their study circles. Thus, in contrast to the open-endedness and focus on care, via their criticism of polarization, there still might have been a more underlying need for consent in contrast to 2021.

Technologies in focus and the definition of technology

In contrast to the festival in 2020, 2019 did not have as much of a technological focus, but rather a focus on feelings embedded within technology. However, the 2019 festival more explicitly addressed technology compared to 2021, but with fewer specific cases. One can interpret a pattern in the curatorial focus, where algorithms and artificial intelligence were the most mentioned forms of technology, which we assume was much inspired by the affective algorithmic encounters conceptualized by Bucher (2019). Furthermore, the festival addressed digital technologies in society's systems of care. By looking at technologies and how they structure, govern and mobilize feelings, transmediale clearly looked at society, subjects and technology as intertwined and entangled. Here, the festival pendulated between a determinism that runs throughout the curatorial statement, for example writing about how our feelings are structured, and final curatorial remarks on how we can dream up and speculate in alternatives through, for example, artistic visions. However, stripping away the more dreamy language used, there might not be as much agency as is implied.

In 2019 transmediale logged off Instagram and Facebook, stating that their architecture and business models of centralization contradict transmediales support of distributed communication forms and privacy. Rather than technofobes, transmediale took an active standpoint in a very hopeful and risky move towards demanding better, more inspiring, and dynamic platforms.

transmediale 2021-22: For refusal

The latest edition of transmediale was for the first time led by the artistic director Nora O Murchú. Under the thematic headline 'For refusal,' the festival investigated demands for social and political reforms. While acknowledging the advantage that refusal can also stem from, the festival highlighted how refusal as an act against oppression can ask for multiplicity and co-existence between different marginalized groups. While O Murchú mentions that the festival was influenced by Irish historical and contemporary politics and Irish post-colonial identity, the festival also distils ideas of refusal and resistance exemplified in the socio-political environment after 2020 with Black Lives Matter protests in Europe and the US, and political protests demanding decolonization, women rights, and democracy in Hong Kong, Nigeria, and Russia. The festival highlighted friction as one of its keywords, while also looking at the scale of defiance, possibly influenced by the latest focus of critical algorithms studies on Small Acts of Engagement (Picone et. al 2019). A third keyword was entanglement between finance, technology, subjectivity, and the environment from a more-than-human angle.

Technologies in focus and the definition of technology

The curatorial statement mentioned a range of specific platforms and tech problems, which can roughly be summarized as algorithmic bias, different communication tools, and tools for data protection. This unspecific focus on technology is reflected in the festival's self-definition as a "critical reflection on cultural transformation from a post-digital perspective". While the festival gives no definition of the post-digital era, it might broadly be implied that transmediale.21-22 views digital technologies as an integral part of general current socio-political debates, and an undividable part of the political, social, and individual. The lack of focus on specific technologies and their problems also enhanced - according to Nora O Murchú - the optimism and hope in the exhibition, where refusal is seen as a politics of the possible coordinated with and against digital technologies.

Although the technologies such AI and code responded to in the festival almanac, the festival's lack of directly addressing specific technologies thematically was used to illustrate the ubiquity of the digital. But by this, the festival ran the risk of not addressing exact urgent socio-political problems inherent in new technologies. On the other hand, the lack of addressing specific technologies can also be seen as a way, in which the festival refused to tap into patriarchal and Western myths of technology in opposition to 'primitive' analogue technologies.

References

- Anand, N., & Jones, B. C. (2008). Tournament rituals, category dynamics, and field configuration: The case of the Booker Prize. *Journal of Management Studies*, 45(6), 1036-1060.
- Ars Electronica. (2021). *About Ars Electronica*. <https://ars.electronica.art/about/en/>
- Art is Open Source. (n.d.). *WHO | [AOS] Art is Open Source*.
<https://www.artisopensesource.net/who/>
- Art Is Open Source. (n.d.). *Stakhanov*. <https://www.artisopensesource.net/projects/stakhanov/>
- Arts Catalyst. (n.d.). *About Arts Catalyst*. <https://www.artscatalyst.org/content/about-arts-catalyst>
- Benthall, J. (1970). Technology and art 20. *Studio International*, 180(928), 229–230.
<https://www.studiointernational.com/index.php/technology-and-art-20>
- Bioart Society. (n.d.). *Bioart Society | About*. <https://www.bioartsociety.fi/about>
- Bishop, C. (2012). Digital Divide: Contemporary Art and New Media. *Artforum*, September, 435-442
- Bolter, J. D., & Gromala, D. (2003). *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency*. MIT Press.
- Broeckmann, A. (2005). Discussing “Media Art.” *Media Art Today*, ICC Tokyo.
<https://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=NEW-MEDIA-CURATING;9e304ae5.05>
- Brokken, J. (n.d.). *Put the expertise of artists & scientists together, so you can tackle big challenges*. *Media Culture Fast Forward*. <https://mediafastforward.be/en/blog/put-the-expertise-of-artists-scientists-together-so-you-can-tackle-big-challenges/>
- Burnham, J. (1986). Art and Technology: The Panacea That Failed. In J. Hanhardt (Ed.), *Video Culture: A Critical Investigation* (pp. 232–248). Visual Studies Workshop Press.
- Byrkjeflot, H., Pedersen, J. S., & Svejenova, S. (2013). From label to practice: The process of creating new Nordic cuisine. *Journal of Culinary Science & Technology*, 11(1), 36-55.
- Culture.si. (n.d.). *Kersnikova Institute - Culture of Slovenia*.
https://www.culture.si/en/Kersnikova_Institute#Mission
- Elffers, A., & Sitzia, E. (2016). Defining Participation: Practices in the Dutch artworld. In J. Kavanagh & K. McSweeney (Eds.), *Museum Participation: New Directions for Audience Collaboration* (pp. 39–67). MuseumsEtc Ltd.
- HER: *She Loves Data*. (n.d.). <https://www.he-r.it/>
- Frohne, U. (1999). Old Art and New Media : The Contemporary Museum. *Afterimage*, 27(2), 9–11.
- FutureEverything. (n.d.). *About - FutureEverything*. <https://futureeverything.org/about/>
- Gansing, K. and Luchs I (2020) The eternal network: The ends and becomings of network culture. The institute of network cultures, <https://networkcultures.org/blog/publication/the-eternal-network/>
- Gartner Inc. (n.d.). Gartner Hype Cycle Research Methodology, Gartner, <https://www.gartner.com/en/research/methodologies/gartner-hype-cycle>
- GLUON. (n.d.-a). *Art&Research*. <https://gluon.be/category/art-and-research/>

- GLUON. (n.d.-b). *Education*. <https://gluon.be/category/education/>
- Graham, B., & Cook, S. (2010). *Rethinking Curating: Art after New Media*. MIT Press.
- Hirsch, A. J. (2019). *Creating the Future: A brief history of Ars Electronica 1979-2019*. Hatje Cantz.
- HMKV. (n.d.). *Home - HMKV*. <https://www.hmkv.de/home.html>
- IRCAM. (2009). *IRCAM - Research and Development*. IRCAM Centre Pompidou. http://insidemovementknowledge.net/wp-content/uploads/2010/01/IRCAM_handbook.pdf
- IRCAM | Ircam. (n.d.). IRCAM. <https://www.ircam.fr/lircam/>
- Jach, A., & Triscott, N. (2015). *Arts Catalyst. Interview with Nicola Triscott - the anthropocene index*. The Anthropocene Index. <http://theanthropoceneindex.com/article/41-Arts-Catalyst-Interview-with-Nicola-Triscott>
- Kernikova.org. (n.d.). *Biotehna*. <https://kersnikova.org/en/about-us/biotehna/>
- Kersnikova.org. (n.d.-a). *Kapelica Gallery*. <https://kersnikova.org/en/about-us/kapela/>
- Kersnikova.org. (n.d.-b). *Rampa*. <https://kersnikova.org/en/about-us/rampa/>
- Kidd, J. (2016). *Museums in the New Mediascape*. Routledge.
- Kolakowski, L. (1989). *The Presence of Myth* ((trans. A. Czerniawski) (ed.)). The University of Chicago Press.
- LABoral Centro de Arte y Creación Industrial. (n.d.). *The Art Centre — LABoral Centro de Arte y Creación Industrial*. <http://www.laboralcentrodearte.org/en/footer/sobre-laboral/el-centro-de-arte-en>
- Lambert, N. (2003). *A critical examination of computer art: its history and application*. University of Oxford.
- Lambert, N. (2019). Digital Road Trips: The Shifting Landscape of Digital Art Shows. In T. Giannini & J. Bowen (Eds.), *Museums and Digital Culture: New Perspectives and Research* (pp. 147–162). Springer.
- Lampel, J., & Meyer, A. D. (2008). Field-configuring events as structuring mechanisms: How conferences, ceremonies, and trade shows constitute new technologies, industries, and markets. *Journal of Management Studies*, 45(6), 1025-1035.
- Makery medialab. (n.d.). *About – Makery Medialab*. <http://medialab.makery.info/en/about/>
- Maleuvre, D. (1999). *Museum Memories: History, Technology, Art*. Stanford University Press.
- McIver Lopes, D. (2003). Digital art. In L. Floridi (Ed.), *The Blackwell Guide to the Philosophy of Computing and Information* (pp. 106–116). Wiley-Blackwell.
- McIver Lopes, D. (2008). Nobody Needs a Theory of Art. *The Journal of Philosophy*, 105(3), 109–127.
- McIver Lopes, D. (2010). *A philosophy of computer art*. Routledge.
- McLuhan, M. (2013). *Understanding Media: The Extensions of Man*. Gingko Press.
- Medialab Prado. (n.d.). *About | Medialab-Prado Madrid*. <https://www.medialab-prado.es/en/medialab/more-info/about>
- Moeran, B., & Pedersen, J. S. (Eds.). (2011). *Negotiating values in the creative industries: Fairs,*

- festivals and competitive events*. Cambridge University Press.
- Munn, Z., Peters, M. D., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC medical research methodology*, 18(1), 1-7.
- O'Flaherty, J., & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. *The internet and higher education*, 25, 85-95.
- Paul, C. (2005). Tate Online Events: C0dE Of practice: Online Panel Discussion June 13-July 18, 2005. <https://www.tate.org.uk/intermediaart/discuss/codeofpractice/page2.shtm>
- Peljhan, M. (1996). *Project ATOL Manifesto: In searh for a new condition*. Project Muse; Johns Hopkins University Press.
- Petroni, M. (2020). *Ars Electronica: a global journey mapping the new world - Domus*. Domus. <https://www.domusweb.it/en/art/gallery/2020/10/05/ars-electronica-a-global-journey-mapping-the-new-world.html>
- Polmeer, G. (2019). Historical Questions on Being and Digital Culture. In T. Giannini & J. Bowen (Eds.), *Museums and Digital Culture: New Perspectives and Research* (pp. 49–62). Springer.
- Prendes, A. (n.d.). *KARIN OHLENSCHLÄGER, four decades curating media art*. <https://www.clotmag.com/interviews/karin-ohlenschlager-four-decades-curating-media-art>
- RIXC. (n.d.-a). *RIXC Center for New Media Culture*. <http://rixc.org/en/center/0/>
- RIXC. (n.d.-b). *RIXC Festival: POSTSENSORIUM Announces The Dates and Themes*. <http://rixc.org/en/festival/>
- Roggers, H., & Berger, E. (2019). *Possibility Spaces: An Interview with Bioart Society Director Erich Berger*. Art Open Journal. https://artjournal.collegeart.org/?page_id=10982
- Saviotti, A. (n.d.). *Art is open source. A new world created by Salvatore Iaconesi and Oriana Persico*. Digidigit. <https://digidigit.it/news/art-is-open-source-a-new-world-created-by-salvatore-iaconesi-and-orian-persico/>
- Simon, N. (2010). *The Participatory Museum*. Museum 2.0.
- Sonic Acts. (n.d.-a). *About - Sonic Acts*. <https://sonicacts.com/portal/about>
- Sonic Acts. (n.d.-b). *Sonic Acts Academy*. <https://sonicacts.com/portal/sonic-acts-academy-2020>
- The digital Bauhaus*. (2014). Deutschland.De. <https://www.deutschland.de/en/topic/culture/communication-media/the-digital-bauhaus>
- V2_Lab for the Unstable Media. (2021). *About — V2_Lab for the Unstable Media*. <https://v2.nl/organization>
- Victoria and Albert Museum. (n.d.). A History of Computer Art. <http://www.vam.ac.uk/content/articles/a/computer-art-history/>
- View: Michel van Dartel - Next Economy*. (n.d.). <https://nexteconomy.nl/stories/michelvandartel/>
- Waag Society. (n.d.). *Users as Designers | Waag*. <https://waag.org/en/project/users-designers>
- Waag Society. (2011). *About Waag | Waag*. <https://waag.org/en/about-waag>
- Werkleitz. (n.d.). *Festivals | Werkleitz*. <https://werkleitz.de/en/festivals/>
- Werkleitz. (2021). *Werkleitz Festival 2021 | Werkleitz Festival 2021*.

<https://moveto.werkleitz.de/en/>

www.he-r.it. (n.d.). *HER: She Loves Data*. <https://www.he-r.it/>

ZKM. (n.d.-a). *Founding & History* | ZKM. <https://zkm.de/en/about-the-zkm/development-philosophy/founding-history>

ZKM. (n.d.-b). *Our aim is to share knowledge* | ZKM. <https://zkm.de/en/about-the-zkm/development-philosophy/our-aim-is-to-share-knowledge>

