VIRTUEEL PLATFORM RESEARCH:
ARCHIVING THE DIGITAL

python
productivity

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archive

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INTRODUCTION

Many arts projects and organisations are facing the challenge of having to procure the longevity of their digital collections. Upcoming preservation initiatives are important sites of investigation, as they both raise questions and offer possible strategies or solutions through which other initiatives can learn.

In May 2009 Virtueel Platform organised Archive 2020, an expert meeting that focused on the longevity and sustainability of born digital content produced by cultural organisations or practitioners.[1] The term 'born digital' refers to "digital materials that are not intended to have an analogue equivalent, either as the originating source or as a result of conversion to analogue form". [2] The aim of the expert meeting was to examine existing examples of these types of archives and determine which issues need to be addressed if we are to champion their growth in the short and long term. Representatives from international museums, organisations and artists' initiatives convened in Amsterdam in May 2009 for a frank dialogue regarding the current state of born digital archives. The meeting provided a unique opportunity for major collecting institutes and small artists' archives to reconsider the ways in which archives of born digital cultural content are created, managed, disseminated and preserved. This meeting of professionals and peers was foremost an inventory of the challenges associated with born digital archives. In this sense, the meeting was notable for the forum it provided for sharing and comparing experiences and priorities. One of the outcomes was the need for a shared knowledgebase that would provide examples of case studies, for example to examine existing archives and how they function, as well as publish examples of best practices and unsuccessful strategies.[3] In an attempt to foster such a learning process Virtueel Platform decided to examine three organisations that are dealing with born digital content.

In this Virtueel Platform Research Virtueel Platform takes the online software art repository Runme.org, the internet based-art commissioning and exhibition platform Turbulence.org, and the electronic art preservation research project AktiveArchive as cases for exploring the different ways organisations deal with the preservation of software and internet-based artworks. The main question we raised was: how does the structure of an arts organisation relate to the issues it faces, and the possible strategies and solutions it uses when attempting to deal with the preservation and archiving of software and internet-based art?

1] Virtueel Platform organised the event in consultation with Digital Heritage Netherlands, The Netherlands Institute for Heritage and Netherlands Media Art Institute.

2] Sourced from the list of Definitions and Concepts on the Digital Preservation Coalition website: http://www.dpconline.org/advice/introduction-definitions-and-concepts.html. (accessed January 2011).

3] A report of the meeting including the discussion topics and outcomes can be read in Archive2020. Sustainable Archiving of Born Digital Cultural Content (Amsterdam: Virtueel Platform). For download or order http://www.virtueelplatform.nl/#2950 (accessed January 2011).

Additional questions that were raised were: does the organisational structure lead to specific strategies, and how do these influence the development of a methodology for caring for born digital artworks? The three cases were chosen because they represent seminal initiatives in the history of media arts, all have different organisational structures, and all approach the preservation of software and internet-based art from different angles and backgrounds:

- Runme.org, an (artists') initiative showcasing existing works.
- Turbulence, an art organisation dealing with commissions and now actively collaborating with the Rose Goldsen Archive of New Media Art.
- AktiveArchive, a preservation research project from the Bern University of the Arts.

In the following the three organisations will be described and analysed. The final chapter gives a comparison between the three and an attempt is made to answer the questions we set ourselves in this Virtueel Platform Research.

The case studies are based on analysis of conversations with key actors from each initiative. The method we used is based on interviews, live where possible but otherwise through email and skype exchanges. Primary and secondary literature was used for the description of the organisations' goals and history and also as a reflection on the significance of the organisations in the wider field.

For the interviews we set up an initial set of questions that we posed to all three of the organisations in order to compare their strategies. Although the organisations are dealing with born digital content, we soon found out that there are quite substantial differences between them, which meant that we adjusted the questionnaire to each specific case. In the end we discovered several topics that were relevant to all three organisations and which also shed light on issues that are important for novices in the field to learn from or at least be aware of. The result is a qualitative study rather than a research paper and un-credited comments are taken from the conversations we had with the different persons from each initiative.

Appreciation and many thanks for their dedication, time and energy go to Olga Goriunova and Amy Alexander (Runme. org), Jo-Anne Green and Helen Thorington (Turbulence), Tim Murray (Rose Goldsen Archive), and Tabea Lurk and Jürgen Enge (AktiveArchive). ←

RUNME.ORG

Runme.org is a repository and platform for software art that has grown organically through close relation to software developers and the ReadMe festivals of software art. Starting in 2003 it has provided a central point of reference and discussion for the development of aesthetics of code, glitch art, activist software, speculative software, alternative visualisation tools, fun examples of hacker software, digital folk culture, and many other kinds of software art. The site is both inclusive of different aesthetic and cultural approaches. What makes the project exceptional is that there is a commitment to allowing the audience to be involved in the selection, as well as in the underlying structure of the online collection – people can add content and they give form to two types of taxonomy; categories and keywords[4], the cataloging of the works.[5]

> *The aim of Runme.org is to create an exchange interface for artists and programmers that will work towards a contextualisation of this new form of cultural activity. Runme.org welcomes projects regardless of the date and context of their creation. The repository is happy to host different kinds of projects - ranging from found, anonymous software art to famous projects by established artists and programmers.[6]*

HISTORICAL BACKGROUND

Runme.org grew out of the Read_Me software art festival (the first edition took place in 2002 in Moscow and a second one in 2003 in Helsinki, followed by the third festival in 2004 in Aarhus and the last festival in 2005 in Dortmund). With the work of two main initiators, eleven people to conceptualise, four people to develop, and one person to code, it took three months until the platform was operational, from the "first mail discussing a database structure until the discovery of the idea of the repository in the air, through discussing, designing, programming, testing and polishing."[7] The main administrative group for most of Runme's existence consisted of Amy Alexander (US), Olga Goriunova (RU/UK), Alex McLean

4] Folksonomy is a term consistently used to describe keyword allocation model; Runme uses both taxonomy with categories and with keywords - folksonomy; so it is important not to conflate the two.

5] As Graham and Cook state such collaborative projects raise questions about authorship and ownership in interesting ways, however interesting this topic goes beyond the aims of this research. For more information see Graham and Cook (2010: 248-279).

6] See the "About" Section on the Runme.org website: http://runme.org/about.tt2 (accessed 31 May 2010).

7] The two main initiators of Runme.org are Alexei Shulgin and Olga Goriunova. Together with nine people the idea was conceptualised; Amy Alexander, Florian Cramer, Matthew Fuller, Thomax Kaulmann, Alex McLean, Pit Schultz and the Yes Men. Four people developed the plans; Amy Alexander, Olga Goriunova, Alex McLean, and Alexei Shulgin, and Alex McLean did the coding. (Goriunova and Shulgin 2006: 246).

(UK) and Alexei Shulgin (RU). Most of the people who worked towards the conceptualisation and development of Runme. org and those that operated as administrators are involved in the media arts community and have a background or current practice as artists, curators or theorists.

From its place as a submissions database for the Read_Me 1.2 festival, Runme.org developed into its own stand-alone repository. Initially it was thought to be used as the online submission form for the Read_Me festival, but following a larger trend of software repositories it was decided to create a permanent repository. Runme.org became a de facto archive of software art where people could upload software art projects, offering a rich and important site of the history and development of software art. Furthermore it also started to inform and influence the content and presentations for the festival. As of August 2007, 420 works had been submitted and approved on the Runme.org site since its inception.[8]

Although Runme.org is still functioning, it is not actively and regularly updated anymore, so its existence as an active living project was relatively short-lived. As Amy Alexander noted this is not only due to time availability on the part of the Runme group, but also refers to the kind of projects that were submitted, as she states: "Artists were becoming more sophisticated programmers. We were getting submissions that required the instalment of libraries, or running specific operating systems, and often it would still be difficult to get it to work. Moderating the projects became very time consuming. At the same time fewer projects are submitted and more of these get rejected".

CONCEPT

Runme.org operated as both a community platform for artists to share their own work, and a space for other software art enthusiasts to contribute to building a collection, and participate in a dialogue that explored the development of software art. As Goriunova and Shulgin explain, Runme.org operated as a space where software art was pulled together, reflecting on the history of programming from which software art emerged and transformed.

Officially launched in January 2003 Runme.org aimed to be an "open, moderated database to which people are welcome to submit projects they consider to be interesting examples of software art."[9] The organisation behind the website was regarded a "collaborative open project" both to the inside as well as to the outside. This was necessary

8] Goriunova (forthcoming 2011).

9] See the About section on the Runme.org website: http://runme.org/about.tt2 (accessed 31 May 2010).

because Runme.org emerged at a time when online open source backend did not yet exist - whereas now, in 2011 there are many. From the ground up they developed a system that enabled one to upload, categorise and store any type of software artwork. The website intended to "create an exchange interface for artists and programmers which would work towards a contextualization of this new form of cultural activity."[10] Considering some of the key characteristics and qualities of software art, Runme.org took the online software repository, a common place where software is found, as a metaphor. Runme.org was purposefully modelled in this way because an "online database is more relevant to the nature of software art and easier to be accepted [*ed.*: by developers outside of the artworld] and get active."[11]

Rather than reducing software art to several categories, a taxonomy open to user modification ensured the enlarging of the field. Modelling the category and subcategory structure of the database after software repositories was also a playful attempt at parodying the category format that is found with festivals and award ceremonies. To organise the repository around only a few categories would go against Runme.org's aim of showing the sheer variety in software art. A basic set of categories was offered to start off with, and left open for users to modify therefore allowing the subsequent inclusion of emergent practices that do not necessarily fit into any category.[12] Furthermore it became a sorting system without hierarchical classification, making it practically impossible to point to "the best" software art.[13]
Runme.org never intended to present software art history or shed light on trends in software art, their aim was to bring recognition to the "folk cultures of programmers and users that inspire software art" amongst others.[14] Hence, the repository is more "about techniques, and approaches, themes and motifs".[15] Moreover it provides a context in which software art has developed. In this sense it is important to realise that next to the issue of documenting or preserving the works in the repository, it becomes important to think about ways to document the context in which software art was developed, discussed and used upon.

WEBSITE: THE REPOSITORY,
AN ALTERNATIVE ANTI-INSTITUTIONAL FRAMEWORK

Runme.org has a user identification system with a login and password, and web upload mechanism for those who want to submit projects:

10] See the About Section on the Runme.org website: http://runme.org/about.tt2 (accessed 31 May 2010).

11] Goriunova and Shulgin (2006:253).

12] The limits, challenges and problems of categorisation are clearly explained and exemplified by Bowker and Star (1999).

13] There is a general critique on awards and prizes as often the work selected will not necessarily be the best work, but will fit best the needs of the media and marketing purposes, or wishes and demands of the sponsors or funding bodies. Oftentimes the honorary mentions show the better works.

14] Goriunova and Shulgin (2006:258).

15] Goriunova and Shulgin (2006:258).

Any registered user can submit a project through a number of steps, including providing a title, names of authors, text and visual info, providing URL or uploading a file, choosing a category/ subcategory, or suggesting a new subcategory, attributing keywords. Submitted projects are queued and wait for the administrators' approval.[16]

Runme.org has an open submissions policy, this means that anyone can submit any project to the repository, albeit their own, or someone else's, and both famous and unknown projects can be accepted. However there are some restrictions, the website's description of project submission specifications states that neither Flash or Demo projects are appropriate for the site, but should the submitter feel strongly that the work still fits within Runme.org they are invited to submit it.[17] A number of works in the repository are obtained as "objects trouvés", found works, sometimes without permission of the developers or artists. As Alexander recalls: "We asked for consent if we were actually copying the software into the repository - as opposed to just linking. Since projects on the Internet are linked and reviewed by other sites routinely, I did not feel it appropriate to request permission." And even if authors did not reply the work was linked by the repository – up until now no one has objected.[18] In other words, anyone could put a work forward by stating why s/ he thought it would be a good addition to the repository. This method of submission was important for the initiators in order to generate "a fuller understanding of software art, its roots and qualities".[19] For Runme.org it was important to show where software came from before it passed through media art, or before it got infused in mainstream culture, or disappeared into oblivion. After submission, projects are reviewed and assessed by administrators for inclusion within the site. At some point external reviewers, people with high involvement in the field, were asked, but their involvement was brief.

This context for project submissions was purposefully designed because the traditional curatorial model of asking specific artists to contribute would not work with this type of project.[20] One of the reasons is that it was difficult to find these authors or works. Some of them were not interested in being put into an "art context", others had made half legal or illegal work which made it difficult to come forward, let alone get them to send in their work. Moreover, it allowed for an open and non-institutional context for software art that reflected the nature and use of the work.

16] Goriunova (forth-coming 2011).

17] See the FAQ on Runme.org website: http://runme.org/faq.tt2 (accessed 31 May 2010).

18] Goriunova and Shulgin (2006:253).

19] Goriunova and Shulgin (2006:253).

20] Goriunova and Shulgin (2006:253).

The administrators proposed some initial categories on the website which could be added on by submitters. These initial categories were designed with a sense of irony and were not consistent. Most of them referred to the field where the project came from, for example Perl programming, gallery installation, or political activism, but among the most popular ones were the humorous categories, or the negative and impudent ones, like beautiful crash of the system, jodi plagiarism, and hard to use software.[21] In the end the user was the one who decided which categories survived. As was mentioned on the FAQ page of the website:

> *Authors here perform the active role of context developers, and not the passive role of acting as objects of classification, description, and curation. That is why those categories that don't get many remarkable entries might be deleted (not the projects they contain!), those that are not appropriately names will be renamed, and new ones will be created according to the needs of software art community. Categories are meant for software art development, rather than for its storage. Keywords elaborate the description of the project further, open up its meanings, and, most importantly, contribute to the software art discursive field.*

Since the categories, as well as the repository, are continuously added to they are contextually changing. This dynamic situation reflects the instability and evolving nature of software art, which in a traditional art system would be very difficult to maintain.[22] What is also interesting is that the naming of categories and keywords was explicitly not meant to facilitate a (future) archive. This further emphasises the anti-institutional approach of the administrators. This attitude also resonates with their system of merit and reward. A certain system of filtering was needed in order for the repository to work, otherwise people would stop visiting it, lose interest and would not be enticed to submit. A filtering mechanism can also entice discussion. An additional method used by Runme.org to stimulate responses was to ask several experts from various backgrounds to select their favourite works from the repository and write short texts about them. Afterwards these would be put into the "featured" section of the website. Featured artwork would also be presented at the Read_Me festivals.

The playfulness of both the categories and of the projects submitted is what still particularly resonates for Goriunova in her recollection of the process and working on the

21] For more examples see Goriunova and Shulgin (2006:249).

22] The emergent status of the project was also alluded to by Steve Dietz (2008:79).

project: "The whole fun of it, the more time passes the more I understand how humorous the selection was, how full of joy. It was a process which probably does not go very well with many institutions."

MAINTENANCE

Runme.org is loosely structured in terms of its organisation and the moderation of the site, with strategies and methods for communication and administration changing over time. Selections and changes to the site were initially communicated between members via email. Administration of the site went through various stages. At first, Shulgin and Goriunova moderated the projects for the site, getting feedback from McLean and Alexander. After this stage, the four administrators worked together to moderate the site using an internal mechanism system to log and vote on submitted projects. After it became too much work for every person to vote on a number of projects, the decision was made that administration members should take turns in being lead moderator on a rotational schedule. An automated process was set up for the current lead moderator who was emailed every few weeks. An internal wiki was also set up to discuss submissions if the lead moderator was uncertain or wanted other administrators' feedback. However as time continued other priorities and interests took over for some administrators, leaving them less time to dedicate to Runme, and thus the regular rotation of moderation became dismantled. Communication persevered somewhat through the internal wiki, using it as a space for the geographically dispersed members of Runme.org to discuss issues related to the repository. Only Amy Alexander devoted her time to the project most consistently. Projects submitted to the site have also become more of a challenge to add to the repository, as programming has become more advanced, with projects often necessitating the installation of libraries or running them on specific operating systems to get them to work - if at all, - requiring more time dedicated to site moderation. Although the website and new project submissions are less active now, and there are technical issues with the functioning of the site, there is still a small level of uploading and moderating of new projects that takes place, and maintenance related to fixing broken links etc., when the administrators have time to do this. But as all admin members have had less time to dedicate to Runme and have received almost no remuneration for the work, this is largely done by Alexander and very occasionally by Goriunova and focussed predominantly on the archiving and functionality issues of the site, and sometimes adding new content. Fewer submissions are being made to Runme,

and projects are uploaded when Alexander has time, but it appears that more submissions than before are not being accepted. Alexander also takes care of assorted technical items such as maintaining the name server setup for the site, email addresses etc. Currently, McLean takes care of the website by hosting it on his server, and maintains its code, contributing to most of the technical work.

FINANCES

Runme itself was not directly funded or a recipient of subsidy grants. It received only very minimal and indirect administrative financial benefit through its function as an online project submission repository for the Read_Me festival. The latter sister initiative was funded by various national regional agencies and international cultural organisations, and through support funding of various 'experts' who wrote texts to feature specific projects included in the Read_Me publications.[23] None of the people involved in Runme. org obtained direct payment or fees for their work relating specifically to Runme.org and its technical and/or curatorial maintenance, although Alex McLean did receive a minimal fee for the entire coding of the project. Others received small fees relating to work for the Readme festival and subsequent publications, but not in terms of their work and time related to developing Runme.org or the following continuous filtering of projects, technical upkeep, or other Runme. org work and decision-making that ensued.[24] Although the absence of funding would normally be perceived as a hindrance, it allowed for a financial autonomy and lack of institutionalisation that provided Runme.org with the freedom to develop without making concessions or being accountable to funding partners.[25]

ARCHIVAL APPROACH

Runme.org was asked to present their case at the expert meeting Archive2020, organised by Virtueel Platform in May 2009. This meeting focused on the longevity and sustainability of born digital content produced by cultural organisations or practitioners. The aim of the expert meeting was to investigate current examples of such archives, and analyse which issues need to be addressed if we are to champion their growth in the short and long term. The questions that were addressed specifically to Runme.org included;
• In what way can a community establish its own archive beyond an institutional structure?
• Can a community driven approach with social software help develop innovative strategies for group archiving?[26]

23] Goriunova and Shulgin (2006:247).

24] Goriunova (forthcoming 2011).

25] Goriunova (forthcoming 2011).

SUSTAINABLE ARCHIVING OF BORN-DIGITAL CULTURAL CONTENT

26] For more information see: http://www.virtueelplatform.nl/archive2020/ (accessed January 2011).

Runme.org is of course the lively example that a community of people can establish its own archive beyond institutional structures. Also its methods showed that an open community approach can lead to innovative strategies.[27] Many years ago when Runme had just started, Goriunova responded to the question of what she would do when Runme ages with: "things should be allowed to die, particularly to counteract the fascination within Western culture of solidifying and maintaining a canon, which is largely antithetical to the way the Runme.org project operates". More recently however when faced with the possibility of Runme going offline she changed her position drastically:

> It is so much work by so many people, which just can't disappear. It is almost like killing a library. In a country's history you need to think about certain periods and have a memory of them, you can't leave the blind spots. And if this for example goes, there will be a blind spot because nothing remains. […] So it becomes quite political. What is the context it is displayed in, should we keep it, do we have an obligation to keep it alive, and how?[28]

Runme.org was born at a moment that fostered its role as a major player in the support of software art and operated to bring its community together. Its place as depicting a very key moment in the history of software art's development, illustrating pivotal players and the transformation of programming, is a significant reason for its archiving. As Alexander explains: "What was once considered an elitist arena of software art is now commonplace throughout mainstream media and popular culture. The once distinct practice of software art will be subsumed within popular culture, threatening the loss of its history and identity." Documenting Runme and the projects on it, allows a space to procure not only the individual works, but the individual history of this artistic practice, to illustrate the place of its emergence as separate from, or as Alexander calls: "the mish-mash of generic definitions of 'pop culture'."

DOCUMENTATION

Ideas to archive Runme.org surfaced when the administrators attempted to use the repository for teaching purposes, but were unable to access some of the content. Categories revealed empty and links were broken. For Runme.org it is not necessarily a question of finding the right technology to run the software upon which the works work, because they do

27] This is exemplified by the mentions of Runme.org in various publications on new media, applauding its innovative approach with regard to non-institutional initiatives (for example Goriunova and Shulgin, 2006), audience collaboration (Dietz, 2009), and curation (for example Graham and Cook, 2010).

28] Goriunova, interview Annet Dekker, Rachel Somers-Miles, Eindhoven.

not own the works, but it is important to Runme.org to secure the accessibility to the software art works online and as such protect their existence. They argue that this can be done by maintaining accessibility through the Runme.org interface to the works on the web. A challenge to this is the technical vulnerability of the website and the investment of people to maintain this. It could also be possible to find an institutional location for the repository to be cared for. But since Runme. org began as an independent initiative and was in its structure, organisational form and content specifically conceived as counter institutional, it is within the mind of the members to steer clear from this arena for the management of an archive. As Goriunova stated "I thought if Runme.org was born in such a way, such a manner, it should probably also be archived in a manner that is very autonomous from these traditional ways, for the good or the bad." Furthermore, because Runme.org does not own the rights to the works available on the site, they cannot offer these rights to an institution that would potentially take over the maintenance and upkeep of the archive. First of all there is the need for the creation of a proper database. At the moment almost 50% of the metadata about the works is missing. What is needed is information about which software and platforms are used, what copyright issues are there, and how to keep the contextual information alive. As Goriunova stressed, it has already proved difficult to obtain this information from the start, because a large number of the people who created and provided work do not consider themselves artists, and they do not see this information as important. Others have left the field and no longer have an interest in it.

While more information about some of the works can be gained, this will not document the way Runme.org evolved, and how it was built around the excitement of the burgeoning of software art. In line with this is that software art and Runme.org grew from the involvement of people from different fields and generated a lot of fervour – through experimenting programmers and other non-arts contexts – and thus questions about how to preserve and present Runme.org as a place of juncture between these fields, and how to capture the excitement are also important issues. Similarly, while software art projects may continue to work, they may also alter in appearance and functionality over time, for example, those that process images from the web operate differently because images from the web change, works that use plug-ins behave differently as plug-ins are updated, and screen resolutions are improved so works built using lower resolutions may have a different appearance. In order to save or represent the character of the software the

idea was launched to capture performances of the software
as it is performed on the server, and turn it into an embedded
video format. It is useful to document projects from the outset
with photographic stills and video and audio capturing,
and if this has not been done, to retrospectively create an
environment as close as possible to the original technical
setup to run and document the work. While it is the feeling
that all works would be treated equally, if a selection of works
to archive had to be made, for example, those selected
could be modelled after the selection of "featured projects"
that was created at the beginning of Runme.org for the
Read_Me festival.

CONCLUSION

With a project such as Runme.org, organisational challenges
come in various forms. In particular, an ongoing project
such as this with frequent submissions from participants, and
ephemeral and changing material such as URLs, updated
software needs, and browser upgrades, requires continual
maintenance for the website to function properly and for
the works to remain accessible. An asset to Runme.org was
the organic organisational structure, with each admin sort of
"naturally" moving in to the role that best suited them. As stated
by Alexander, "early attempts to plan who did what weren't"
as useful," and living in the same geographical location
could have made some things easier, but also could have
led to internal conflict due to close proximity. The organic
development of Runme.org as a massive repository and de
facto archive ran parallel to the organic development of
the admin group's organisational structure – an asset to the
project because the dynamic of the administrators acting as
"volunteers" created the project out of a "labour of love," a
developing set of relationships that would have differed if the
group was hired, or being paid for the work.

With all of these issues faced, Goriunova is not very positive
about procuring funding for archiving Runme.org, especially
at a time when there are so many cuts on arts and culture.
An additional problem is that Runme.org is not a national
project, it exists internationally on the internet that has no
specific geographical tie, dissuading nationally-based funds
from investing in a project that does not have any borders,
pointing towards a need for transnational funding. It would be
necessary to see art and cultural projects like Runme.org as
part of an ecology in which each part of the system is reliant
upon the other for growth and continuity; ignoring archiving is
therefore like cutting off an essential organ without which the
objects and practice it archives can never evolve. ←

TURBULENCE

Turbulence is a project of New Radio and Performing Arts, Inc. (NRPA). Now celebrating 15 years of service to the new media field, Turbulence has commissioned over 190 works and exhibited and promoted other artists' work through its Artists Studios, Guest Curator, and Spotlight sections. As networking technologies developed wireless capabilities and became mobile, Turbulence remained at the forefront of the field by commissioning, exhibiting, and archiving the new hybrid networked art forms that emerged.[29]

We are both artists. Out of financial necessity we became administrators, and now we have to become archivists as well.

HISTORICAL BACKGROUND

Turbulence was founded in 1996 to commission a diverse range of web/net art and networked performance projects. After fifteen years of operation in the midst of the Internet's rapid development, it can be said that the Turbulence site reflects the technical and cultural evolution of the Internet. Turbulence is a project of New Radio and Performing Arts, Inc (NRPA), a not-for-profit organization with offices in New York and Boston. It is directed by Helen Thorington and Jo-Anne Green who research, organize and raise funds to commission artworks for the website. It has facilitated the development of over 190 works since it began; all projects commissioned through Turbulence are exhibited on http://turbulence.org. Turbulence works have also been included in a number of important exhibitions and festivals, such as: the Whitney Museum of American Art's Biennial (2000, 2002 and 2004), as well as its Bit Streams and Data Dynamics exhibitions; Total Museum of Contemporary Art, Korea; C-Theory, Cornell University; Ars Electronica, Austria; International Festival of New Cinema and New Media, Montreal; European Media Arts Festival, Germany; and the Sundance Film Festival, amongst many others.[30] In the past two years,

29] Turbulence also initiated two world-renowned blogs, Networked_Performance (2004) and Networked_Music_Review (2007), and commissioned chapters for its groundbreaking project Networked: a (networked_book) about (networked_art) (2009). Finally, it has run multiple conferences and speaker series, including Floating Points (with Emerson College), Programmable Media (with Pace Digital Gallery), and Upgrade! Boston.

30] Thorington and Green have also partnered with other organizations and galleries, such as Pace Digital Gallery (NY), Issue Project Room (NY), Harvestworks (NY), Art Interactive (MA), Huret & Specter Gallery (MA), and Greylock Arts (MA), to exhibit and perform Turbulence works.

preservation activities related to the commissioned works have become part of Turbulence's main activities.

For the current archival project at Turbulence, a consortium was formed with the Rose Goldsen Archive of New Media Art.[31] Communication between Turbulence and the Rose Goldsen Archive was facilitated via email and telephone, and was aimed at building a working method and plan for the project that was agreeable to both parties. Once this method was solidified, Thorington and Green began collecting and organizing the data, and, in discussion with the artists, trying to find the best way to capture the works. In September 2011 The Rose Goldsen Archive will host the Turbulence Archive. While the project is rooted in two organisations, it is dependent on the enthusiasm and work of three individuals, Jo-Anne Green and Helen Thorington (directors of Turbulence) and Tim Murray (curator of the Rose Goldsen Archive), for the sustainability of the project.

CONCEPT

For the first thirteen years of its history Turbulence was focused almost exclusively on its commissions and on the development of new online artworks. This was part of its institutional mission; in the process it played an important supportive role for new media artists by providing funding and a highly visible exhibition venue.

WEBSITE:
SUBMISSION POLICY AND CONTRACTUAL AGREEMENTS

As part of their relationship with Turbulence, artists give NRPA the right to premiere the work on Turbulence. org and to archive it on the Turbulence server (http://turbulence.org) exclusively for 3 years. The commissioned work may be shown elsewhere during this 3-year period. The reasoning for this three-year term is that when the works are offered on the Turbulence server only, the organisation is able to monitor the number of visitors to the website, where they come from, and how long they stay on the site, and make this information available to funders when applying for new funds. Following the three-year exclusive and with the permission of the artists, the works remain on the Turbulence site, with some artists choosing to make clones of the work on their own servers after the term of exclusion is finished. Artists hold the copyrights to their work throughout.

31] The Rose Goldsen archive was chosen by Turbulence because Tim Murray, the curator of the archive, showed a sincere interest in the Turbulence collection. In his capacity at the Rose Goldsen Archive, Murray has already archived Doron Golan's "computerfinearts" collection, maintains the new media listserv -empyre-'a soft-skinned space' archive, and the Rockerfeller performance archive.

As a part of the process of archiving the commissioned work at the Rose Goldsen Archive of New Media Art, all Turbulence artists are being sent a letter notifying them of the preservation project, and "requesting an expression of interest and their permission," as a signed contract. Future plans include attaching the preservation questionnaire to the contracts of new commissions so that important technical and contextual information about works is available from the artist at the start. It is in fact a priority of Turbulence to gather this information from the outset.

1 year performance video (aka samHsiehUpdate) by MTAA, 2004

MAINTENANCE

The maintenance and upkeep of works found on the Turbulence website is the responsibility of the artist. Turbulence can ask artists to update and fix broken works, but they are not obliged to do so. After informing artists of a broken work, Turbulence will often check within a few weeks to confirm whether it has been fixed, but as NRPA has only a small staff, follow-up sometimes does not occur until it is accidentally discovered that a work is still not performing properly. Turbulence has found that if they don't test different operating systems for different works themselves, works will often launch with problems. Artists will often fix these issues to make their works perform properly with different operating systems and browsers when they are notified of the problem, but not in all instances.

American Internet by Erik Salvaggio, 2002

FINANCES

> Turbulence funders, characteristically, are interested only in funding new work. They are not interested in funding equipment, and only mildly interested in funding operating expenses (administrative activities, salaries, etc.).

Data Diaries by Cory Arcangel, 2003

Turbulence is financially supported by several sources, by individual contributors, earned income, private foundations and government funders. For many years Turbulence has depended on these sources for its financial stability, but the global economic crisis initiated a decline in this funding, from which Turbulence and many other not-for-profits have yet to recover. For this reason Turbulence decided to take advantage of the NEA's consortium exception – an organization can   apply to the National Endowment for the Arts for only one project unless the second project is a consortium project –

Eclipse by EcoArtTech, 2008

and teamed up with the Rose Goldsen Archive of New Media Art at Cornell University (Ithaca, New York). In this way they could continue applying to the NEA for commissioning funds and start the process of preserving the years of commissioned work already on their server by filing a consortium application.

As a consortium, the organisations were granted $25,000 by the NEA in July 2010. The grant requires that the two organizations match the funds. The work that is done by Tim Murray and the staff of the Rose Goldsen Archive, as well as much of the work put in by Turbulence, is therefore being done in-kind. The archiving of the first 50 works is to be completed by September 2011. The consortium has already applied for a second grant to fund the next fifty works, and will apply again until the whole Turbulence collection has been archived. As Green and Thorington state, while a large number of the Turbulence works are still operating, the precise number and an assessment of the needs of the works will only become known as the work is done and the archive is created and cultivated at the Rose Goldsen Archive of New Media Art.

Turbulence continues to commission new work, but it has also shifted its emphasis from commissioning and presenting to commissioning, presenting and archiving in order to guarantee the works a safer more secure and more accessible future.

ARCHIVAL APPROACH

The tenuous funding situation that arose for Turbulence due to the economic crisis in tandem with the failure of their server sparked NRPA staff to consider what would become of their collection of works if they were no longer able to financially maintain them.

> It is our hope to keep the collection together so that this trajectory of work created in the 'born-digital' field, and the diversity of participants who have played a role in developing its unique characteristics, is evident.

Green and Thorington describe the ideal situation for Turbulence where everything is in place as follows:

> Imagine a large space with multiple computers, screens, servers, etc.; where the 2002 works

Grafik Dynamo by Kate Armstrong and Michael Tippett, 2005

HTML_Butoh by Ursula Endlicher, 2006

Oil Standard by Michael Mandiberg, 2006

Prototype #44, Net Pirate Number Station by Yoshi Sodeoka, 2004

are installed on both a Mac and PC (2002),
running web environments from that year.
Imagine, too, that we can employ several
hardware and software technologists to
maintain all of the equipment and the servers;
and perhaps someone with the expertise to
devise conservation and preservation tools that
do not yet exist; and that the space is climate
controlled. Also included would be: a reading
room (library) and a listening room (for audio
works and interviews).

The importance of archiving became clear when the
Turbulence server in 2007 started to malfunction and
the subsequent struggle to save the work and transfer it
to a new server. Some of the work was lost when part of
the hard drive crashed, deleting a number of audio files
of older archived multi-location musical performances
that had not been saved elsewhere. Fortunately copies
of all but one of these files were found in 2010. When
starting the migration to the new server several of the
other works were found to be not functioning. The
artists, when asked, were not interested in repairing
the work, because the works were made with browsers,
applications and players that were no longer available.
Migrating the works to present-day versions would,
they felt, in addition to requiring that they learn new
technologies, alter the works, creating a different
experience than was initially intended.

Transferring the works from the old server to the new
server took three years to complete. There was little
funding to purchase the new server or for transferring
the work and the time it took to finish dragged on as
the technician hired was not devoted to the project.
Even worse, the technician wrote over several un-
backed up databases. This resulted in the loss of "user
input" from a number of works that had accrued and
stored this information in their databases over time.
Also during the transfer, a number of Turbulence works
were compromised because the new server operated
with updated technologies, not corresponding to the
technologies needed by the works. This was especially
the case with works using databases. Because there
was no funding or other financial back up available the
artists could not be compensated for the maintenance
of their work.

SELECTION AND DOCUMENTATION

The documentation of Turbulence works that has been collected over the years largely exists to help staff apply commissioning funds for new works, or provide funders with information about the work they supported. It includes screenshots, press coverage, exhibition, festival, and awards material and, recently, Quicktime video captures. Turbulence also holds a list of every commissioned work, containing the title, artist name, year, funder, description and the URL. Technical requirements will be added to the list in the future.

For their archiving project Turbulence chooses to select first those works that are most vulnerable and likely to malfunction: i.e. works that employ external sources of data in real time and database works. Other works that do not function anymore will only be documented through contextual information such as images and print information about the works and the artists. At the same time an attempt will be made to collect information on how they might be restored.

The archival project of the Turbulence collection has only recently gotten underway. Since Turbulence does not have a digital arts preservation background, they are dependent on the Rose Goldsen Archive to manage and maintain the materials (hard drives containing the digital information that comprises each work, etc.) they are given and that are developed out of the project. The following has been undertaken so far:

• Research of existing methodologies including the Variable Media Network and DOCAM to help develop a working method.[32] The idea was to develop and use a questionnaire (based on existing ones) in order to hear from artists the preferred state of the work: i.e. what was the original environment, what aesthetic and experiential changes have been made, and what future changes will be acceptable. The questionnaire has now been developed and has been sent to the authors whose works have been selected as part of the first 50 Turbulence works to be archived.
• A problem that affects the archival method is that Turbulence does not own the copyrights to the works. A letter has therefore been sent to the artists, notifying them of the preservation project, and "requesting an expression of interest and their permission," to archive the work. This serves as a signed contract.
• Researching the Internet, using Google or other search engines, for information on the selected works, including

DOCAM

32] For more information on the Variable Media Questionnaire see: http://variable-mediaquestionnaire.net and DOCAM: http://www.docam.ca (both accessed January 2011).

exhibitions and publications; making copies that will then be available to researchers in the future.
- Copying files from the Turbulence server to multiple hard drives, with the intent of capturing the work in as many ways as possible including:
  - digital copies (which without databases will in many cases be essentially useless)
  - screenshots of every level;
  - verbal descriptions;
  - actual code;
  - screen video captures.
- Collecting technical specifications for each work.
- Mirroring the current Turbulence server.

CONCLUSION

Once the technical work of the project is completed (capturing and documentation), the Rose Goldsen Archive will be responsible for the upkeep, maintenance and public access to the Turbulence archive. There are no safeguards written into the archive agreement between Turbulence and Rose Goldsen that the Turbulence Archive should be maintained at a particular level of care. Tim Murray is committed to doing what he can within the limited resources at his disposal. That is, because there are no funds set aside for the maintenance of the Turbulence Archive, he cannot make any promises. The Rose Goldsen Archive of New Media Art is part of the division of Rare and Special Collections in the Library at Cornell University. This means that the archive will be accessible to people using the university's library, both online and in person. Furthermore, the print material collected through the project will be compiled into a PDF book available at the library and on the Turbulence. org website. Green and Thorington hope eventually to give the archive to other institutions, as this will increase the possibility of the archive's future survival. Although all of the commissioned artists retain copyright of their works, they have also agreed to allow the works to be archived on Turbulence.org in perpetuity. The contract they have now been asked to sign serves as an agreement between NRPA and the artists to allow the work to be archived at the Rose Goldsen Archive. However, the Turbulence Archive at Rose Goldsen may not be transferred to a private collector where public access cannot be guaranteed. While the main focus of the project is to create an off-line archive of Turbulence works, Green and Thorington are insistent that as long as the organisation exists, every effort will be made to keep the works functioning on the Turbulence server, and thus accessible to people visiting the website. ←

AKTIVEARCHIVE

AktiveArchive is a research project, concentrating on the conservation and documentation of electronic art. It does not own a collection but makes research and advises collections, institutions or private individuals. In addition applied research projects are conducted. Based on case studies, cooperation and research projects AktiveArchive investigates methods and procedures for documenting, conserving, restoring, preserving and sustaining media based artworks. Beyond stabilising the current state of the work, the intention is to develop active (hands-on) modes of archiving and storing.

> *I guess we're at a point where only now and slowly digital culture and its preservation gets into the public consciousness.*

HISTORICAL BACKGROUND

The prehistory of AktiveArchive dates back to 1998. At that time the Swiss Federal Department of Cultural Affairs (BAK) was commissioned to effectuate the directions on a *Strategy for an Information Society in Switzerland*, which were proclaimed by the Federal Council in 1996 and 1997. One of the results was the SITEMAPPING-project,[33] and another initiative was the preparation of an action plan. Johannes Gfeller, who later became head of the AktiveArchive research group, was commissioned to organise a preliminary expert meeting on care and sustainability of electronic cultural heritage. After two expert meetings in Basel (September 2000) and in Bern (April 2001) AktiveArchive was constituted as a collaboration between the Hochschule für Gestaltung, Kunst und Konservierung Bern HKB (today Bern University of the Arts, BUA) represented by Johannes Gfeller, and the Swiss Institute for Art Research (SIK/ISEA) represented by Irene Müller. The AktiveArchive initiative emerged specifically out of an identified strategic and policy-driven need rather than from grassroots artistic practice, and that the organisational and funding structures that emerged were closely aligned to research and educational needs, rather than being led from artistic and cultural drives.

At the moment of writing, AktiveArchive consists of Johannes Gfeller (art historian and since 2002 head of AktiveArchive), Tabea Lurk (art historian, 2006-2010), Jürgen Enge (information scientist), Irene Schubiger (art historian), and

33] http://www.sitemap-ping.ch (accessed August 2010).

Joanna Phillips (conservator). Although it is fundamentally a research project, AktiveArchive has strong ties to the museum and cultural sector through, for example, developing a web-archiving tool in association with the technical partner Jürgen Enge, which has been refined for, and used by, the museum sector.

CONCEPT

> We understand the electronic artwork as a unified whole, whose individual electro technical elements, audiovisual components, and those components made of other materials, must remain united. In addition to audiovisual image production and re-presentation, the material complexity of these works extends from the application of all manner of plastic, wood, and metal to the use of various electro technical instruments and electronic elements, to the application of photographic and painting procedures, and even to architectural structures and lighting technology.
> Our goal is to make authentic re-performance possible, which, on reflection, gives this term key significance. This undoubtedly new approach is quite different e.g. from the mere transfer of information to another medium. Of course, digitizing collections is also a crucial subject and area of research for AktiveArchive. Each transfer slightly changes the structure of the image and therefore the original substance, which thus demands the utmost caution in handling the transfer.[34]

AktiveArchive centres on documentation, storage and novel preservation strategies of electronic artworks, which entails the following:
• It carries out research on artworks that have been neglected;
• It restores artworks that are in danger;
• It conserves works that are no longer current but still function;
• It makes registrations and documents works that have recently been created

While initially focused on research via specific case studies, since 2009 BUA/SIK generally centres on three main responsibilities:

- Research on video preservation and their connection to digital technologies (by Johannes Gfeller).
- Research on Digital Conservation of complex digital objects and dynamic web-based content (by Tabea Lurk).
- Long Term Observations on cultural developments in the digital field (all project partners).

AktiveArchive started as a place that specifically looked towards archival, preservation/restoration research and application related to digital artworks. It operates from a research perspective (with funding explicitly attained for the project for these means), looking towards collections and works. In the context of their research AktiveArchive has a strong focus on the technical parts of artworks.

METHOD

For AktiveArchive the sustainability of a project is largely dependent on the ability to work intimately with other institutions. In most cases it is even preferred that questions are directly asked to AktiveArchive from other organisations. In other words, AktiveArchive depends for a large part on a supply and demand mechanism. Although they have also initiated research, especially in the case of born digital material they actively sought partners that could deliver cases that would be interesting for them to research.[35] Instead of looking for individual cases, like artists projects, AktiveArchive is looking for collaborations with organisation that have these works in their collection. Needless to say, organisations that provide some kind of continuity are crucial for their survival.

The work that AktiveArchive initiates includes not only using and developing restoration methods, but also includes "scientific registration and interpretation of the artwork," where they actively merge "technological, art historical, and restoration information," also conducting their self-initiated research within these arenas.[36] At AktiveArchive artworks are researched, secured, and made accessible in the most appropriate format for the work (this can apply to the whole work, part of the work, or its existence as documentation). The resulting cataloguing and inventory processes and access to this information is still to be designed.[37] Findings and results from AktiveArchive's research are shared with institutions such as museums, collections, research institutes and artists, and are distributed through educational and publication means to "restorers, artists, art researchers, and internet-based projects" including relevant student bodies.

35] From the website of AktiveArchive: http://www.aktivearchive.ch (accessed May 2010).

36] From the website of AktiveArchive: http://www.aktivearchive.ch (accessed May 2010).

37] AktiveArchive has an autonomous website separate and distinct from the university, only mentioning the relationship in name. This website is currently out-of-date and is in the process of being redesigned, with usability as a key.

While AktiveArchive has not consciously developed or does not use any specific strategies to facilitate communication with partners, potential partners, or artists, the researchers prepare publications, apply to conferences, and visit institutions to maintain communication or to present the work of AktiveArchive. The major strategy used, and most important part of the job, is based on building and expanding a network of people; to share and exchange with them, learn about their work, and build relationships.

FINANCES

Without a university, school or any institutional context it is very difficult to apply for grants to fund your research. And research, even though it is not necessarily visible production, needs to be done. Otherwise innovation dies.

AktiveArchive's first research phase, after preliminary actions and a pilot phase, was from 2004-2008. The project was co-organised under the lead of BUA in Bern and at SIK/ISEA in Zurich. The second phase for the years 2009-2011 was awarded funding in 2008 with slightly changed funding concepts and management structures. In order to simplify project administration the two partner institutions cooperated more informally and split the budgets and reporting. In addition AktiveArchive was obliged to merge with the BUA and the teaching activities of the Department for Conservation and Restoration, although core subjects were not exclusively connected to the host institution. The focus at SIK/ISEA is more towards art sciences while at BUA there is a clear focus on conservation, maintenance and preservation. At the present day, both project partners are no longer in receipt of 100% government subsidy and need to apply for additional funding. AktiveArchive's aim is to become in the long-term a self-financed operation.
To procure the sustainability of AktiveArchive, Tabea Lurk hopes to produce stable research, but recognises that in ten to fifteen years that the work they produce now won't be cutting-edge anymore. For this reason, in their working practice, they do not use or touch the archival masters (i.e. original carrier of the work), but work towards securing their future accessibility by working with copies etc.

ARCHIVAL APPROACH

We are looking for process-oriented preservation strategies that enable the encapsulation of the

authenticity and integrity of the artwork.[38]

AktiveArchive does not own a collection, or has its own archive, but executes research on issues of electronic art preservation and conservation, and advises collections, institutions and private individuals. In the context of this study it is the applied case-based research of computer and internet-based artworks instigated and investigated by AktiveArchive that is of interest.

The applied methodologies developed for AktiveArchive's preservation and restoration of digital media arts started in 2006, with researching virtualisation and emulation methods. At the outset, this seemed like a natural first step, however the general trend in conservation shifted from case studies that work on the object, the actual artwork, to documentation sheets and models focused solely on describing the piece. However, often such documentation models lack a real understanding of the technical structure and semantic explanations. In order to emphasise the importance of understanding the technical structure Tabea Lurk developed a technological methodology, summarised under the term "work logic."[39] This methodology recognises the importance of knowing not only what technical components have been used, such as which graphics card, but also presents the technical components of a work in a "technical-aesthetical" way. In other words, like Runme.org, AktiveArchive tries to document the historical context of the work. The emphasis of AktiveArchive is on the technical aesthetics of the time the artwork was made: i.e. what a software could or could not do influences what a work looked like and how it behaved. Subsequently, in order to realise this, a close dialogue with information scientists is needed, because they know much more about technical aesthetics in a certain time, and also have a precise understanding of what happens inside a machine.

Together with Jürgen Enge, AktiveArchive developed a tool to document websites, the Netart Router.[40] The tool is based on concepts of digital long-term archiving while trying to expand these in ways so that they can be used for dynamic media objects. Guaranteeing the access to the works is of central importance. Strategies of emulation and virtualisation are chosen in order to sustain authentic system environments, which enable acting the original coding and configuration of the artwork.

38] Tabea Lurk, Jürgen Enge: Sustaining Dynamic Media Objects and Digital System Environments. An Assessment of Preservation Methods for Computer Based Artworks (EMG 2010)

39] For more information see Lurk and Enge (2010).

40] For more information about the Netart Router see: http://www.aktivearchive.ch/digitalconservation/media_in_motion_docam_final.pdf (accessed February 2011).

SELECTION AND DOCUMENTATION

To choose the case studies, AktiveArchive looks towards digital artworks that are available in museum collections or those that are cited and assembled on common platforms. This makes it possible to not only examine a single object but a group of selected projects at once. As such they do not employ any selection criteria. At this moment, they are foremost interested in experimentation. Rather than setting up specific selection criteria, they feel it is more important to think and explore strategies for the documentation and preservation of the work. Their theoretical research has guided most of their case studies. Often the case studies relate to the experience of specific artworks, in which they take into consideration the present possibilities of the Internet. In these cases AktiveArchive also looks for interesting examples themselves. This is not to suggest that AktiveArchive is not interested in selection criteria, but they believe in an open discussion on such criteria which they aim to start in the near future. As Tabea Lurk stresses, "To not conserve anything because the discussion of selection has not finished, is an indefensible mistake. At the current point where conservation is so much easier for certain aspects we should do everything in our power to start and improve practices where possible".

Even if artists or programmers are not necessarily interested in preserving their work, or cannot be found to obtain information, AktiveArchive still feels it is important to preserve this work. This is thought of in two ways: that the artworks might outlive the artist, but also that artists often change their opinion later about wanting to sustain the longevity of their work, and are often interested and affected by retrieving and restoring works they expected to be lost

CONCLUSION

From the perspective of AktiveArchive, the organisational structure of the institution really does enable possible solutions for archival issues, largely in the context of funding. Without the university or institutional context in which AktiveArchive operates they would not be able to apply for funding, grants, or research projects. The research findings and methods of preservation of digital artworks are contributing to innovations in this field, which without the educational context and related funding capacity would be impossible and would effectively stunt growth and development of the digital media arts field.

Within the context of considering the challenges to AktiveArchive's organisational structure, as Tabea Lurk mentioned, she is in fact quite happy with the current situation. While additional funding is always welcome or to work without the need to write funding applications and other time-consuming paperwork, the current situation is agreeable. Within this kind of work though, as Tabea Lurk also mentioned, individual self-management is key, as people dividing their time between various projects can easily suffer from worker's fatigue, or burn themselves out. More importantly these kind of projects are rarely quantifiable in terms of strategic importance, because they are undertaken in relatively obscure sections or small fields of work. As with the earlier cases, Runme. org and Turbulence, these projects are only sustainable by individuals driven by personal commitment and time investment.

Being located at an institution, the Bern University of the Arts in a department dedicated to conservation and restoration provides AktiveArchive with a support system. Funding through the Swiss Federal Department of Culture Affairs (BAK) gives AktiveArchive attention within the Swiss context and promotes their recognition abroad. On an international level AktiveArchive is recognised and respected by the museum sector who regularly submit case studies for preservation and ask for advice on specific preservation issues.

POSTSCRIPT

Just before this document went to print we heard that Tabea Lurk and Jürgen Enge left AktiveArchive. AktiveArchive decided to concentrate more on preservation of vintage machinery and video based art. The digital conservation part is continued and enlarged at the so-called ArtLab of the Conservation and Restoration Department at Bern University of the Arts and at the Karlsruhe University of Arts and Design (HfG). Tabea Lurk has been head of the ArtLab at BUA since 2008 and Jürgen Enge is head of "Digital Archives" at Protextorate-Research since 2006. At the moment he is also involved in the formation of the Kudka-Kometenz Zentrum Uberlieferung Digital Karlsruhe (Karlsruhe Competence Center for Digital Tradition) based at the Karlsruhe Institute of Technology (KIT). This again proves how much successes or failures in digital archiving depend on the individual motivation, as well how unstable executing policy is with regard to changes by ruling people, politics and general cultural change. ←

CONCLUSIONS ARCHIVING THE DIGITAL

French philosopher Jacques Derrida made the claim that "the mutation in technology changes not simply the archiving process, but what is archivable – that is, the content of what has to be archived is changed by the technology."[41] What he means is that not only the style of the content is different through new processes and production, moreover the relation to time and space, being reduced to mere seconds one can reach someone in every corner of the world, has effected the content. The knowledge that information reaches someone within a certain time frame, which could immediately influence a situation, has of course an effect on power relations, in decision-making and accountability.

It is known that archives construct a specific account of history, many things end up in an archive, but even more remain outside, to be forgotten. Questions like who is in charge of an archive, who selects, and for whom is the archive have been plaguing archives from the beginning. One could argue that the digital accelerates this process and at the same time is making these processes more transparent. Some claim that the Internet has become the archive of archives.[42] Digitisation has led museums, organisations, libraries and national archives to open their archives to the public, using the Internet as their interface. At times information is made more accessible in a way that people can add their own information, tag existing documents, or make relations between different documents. At the same time, the Internet audience is making their own archives uploading and posting their documents to peer-to-peer networks and/or large (commercial) databases. Derrida rightly assumed that technology has changed power relations, moreover with the open structure of the Internet ordinary people have the ability to be heard and influence existing content by adding their own. Archives are not stable anymore, as Erik Ketelaar writes: "Every interaction, intervention, interrogation, and interpretation by creator, user, and archivist is an activitation of the

41] Derrida (1996:17).

42] See among others
Alsina, Paul (2010).

record. The archive is an infinite activation of the record. Each activation leaves fingerprints which are attributes to the archive's infinite meaning."[43] For some this means a threat to traditional values as authenticity, originality and uniqueness.[44] In this Virtueel Platform Research we have described and analysed three case studies that are examples of the power that these new archives can bring. All three initiatives show in their own way the multi-layered and multifaceted meanings of archiving. More than anything they exemplify that an archive is not simply a recording, a reflection, or an image of an event, but it shapes the event.[45] Nevertheless old questions remain important, hence the question from the outset for this Virtueel Platform Research was in what way the organisational structure influences the building and maintenance of their archive: How are decisions made, where is the archive kept, who is making them, and with what aims?

The exploration of the background, structure, and preservation projects of these three case studies offer insights into how the development and growth of these organisations pose different challenges, and possible solutions and strategies, for their preservation and archiving initiatives. The most obvious difference between the three initiatives is of course their background. As a research project, AktiveArchive starts from the idea of research and application regarding the preservation of digital artworks, not from trying to preserve the safety of their own collection, as is the case with Runme.org and Turbulence. The latter organisations both emerged from the basis of commissioning and/ or presenting new digital artworks, which eventually evolved into collections that required preservation. Despite the different outsets and approaches there are several common denominators through which to explore the implications of organisational structure and preservation initiatives.

1. CONCEPT

Although the initiatives have different aims and goals they all start off with acknowledging the importance of documenting or preserving their accumulated collections, or in the case of AktiveArchive that of other organisations or individuals. As also came forward during the Archive2020 meeting, there is a common recognition that a huge gap exists in today's contemporary art collections, where there seems to be

43] Ketelaar (2001:137).

44] For more information see Ketelaar (2001:139).

45] This is a very short summary of points that have become synonymous with the deconstruction paradigm in archival theory and practice. For more information see Harris (2001, first edition 1997) and Derrida (1996).

a lack of historical awareness and recognition of net art. The three initiatives described try to bridge the gap and ensure the longevity of software art and net art works.

2. METHOD

Although only realising afterwards the value and difficulties regarding the sustainability of netbased- or software art, the initiatives are taking actions to overcome this. The specific actions that are taken are influenced by:

• The initial structural basis of the archiving initiative: organisation set-up from within the community (Runme.org); collaboration with institutional organisations (Turbulence); working within a higher eduational and research environment (AktiveArchive).
• Conceptual ideas of the main steering group of the initiative: non-institutional and organic, including also non-art projects (Runme.org); commissioning new online artworks to show the relevance of net art to the wider cultural field (Turbulence); emphasis on mutual technical and conceptual collaboration (AktiveArchive).
• Financial means: voluntary based with some limited arts funding (Runme.org); independent project and partner funding within the arts (Turbulence); part of large educational and government supported research grants (AktiveArchive).
• Active people within the organisation: in order to develop the initiativ es there is a serious need for enthusiasts, specialists, highly committed individuals prepared to put in more effort and time than a 'regular job' might require, without such people none of these organisations would have existed.

3. FUNDING

Financial constraints have a heavy influence on organisational structure, archival aims and their realisation.

• Minimal or no funding leads to a structure of volunteers as opposed to paid employees, making for a more autonomous, but less-sustainable organisational approach.
• Funding may have strings attached: the necessity for collaboration, often restructuring the original organisation and forming new consortia. However this

can also lead to new partnerships and bring in new knowledge and expertise.

- Non-arts funding such as university research grants can often be more secure and provide a project with more continuity. This relative stability may also attract more and different partners and in the end may give more freedom to choose and act.

4. ORGANISATIONAL STRUCTURE

While all three cases exist as (small) organisations, albeit in different formations, the basis of the project and its archival and preservation initiatives are largely reliant on individual people to run daily operations, apply for funding to sustain them, and initiate preservation projects. Without the involvement and commitment of these individuals it is questionable whether the initiatives could have started or would continue to exist. Multi-partner projects are complex and require a lot of time to understand and share common languages and values in order to make a successful project. Establishing mutual goals and aims can both benefit and enrich a project.

CHALLENGES

There are also a number of challenges that all three initiatives face:

- Technical problems: ranging from software updates to browser changes, server dependencies and many more;
- Data historisation. Often there is a loss of contextual information in which the cultural context of when, where and how a digital media artwork was originally created cannot always be recorded and documented in full. Some works derive from a specific area in time and demonstrate specific technical or social developments, as such these can only be understood within the historical context of what technology/software/society needs were offered at the time;
- Lack of knowledge and understanding in institutional field of different approaches to conservation: these works have a different process of ageing which requires a different conservation strategy;
- Identifying and attaining funding, partners and personnel that has the required capabilities at each different level;

- Because of lack of real funding these projects are only able to support part-time work at most and/or make short-term investments, therefore they lack a forward planning and future scenario thinking.

Small-scale initiatives whose main focus is the preservation of software- and net art will come across or recognise these challenges. At the same time they are valid for a larger field. Especially at a time when everyone is making digital photos, saving them on their home computer or uploading them to large online platforms, when museums rely on citizens scientist or curators to help them improve the quality of their information and collections, or when digital games and software programmes are used to monitor progress or decay in daily live, thinking about the long-livety of the digital is an issue. In other words when information does not have an analogue equivalent challenges on the sustainability of the data will become relevant for anyone who wants to hold on to what they have created. In order to work towards a sustainable practice for preserving software and netbased (art)work the following should be taken into account in order to work towards solutions:[46]

1. Ensuring an open and preferably networked knowledge transfer. This way other people can build on your work and you can lean on others. In other words, using open software contributes to the interoperability between software, or even hardware, which in the long run will limit the extend of data migration.
2. Documenting the working method in order to easily retrace steps in the future. No matter what strategy is chosen to capture or preserve the work (for example virtualisation, emigration, or porting) it is crucial to clearly document the source code of a work and the environment it runs on. Additional contextual documentation will complete the prospect of future access to the work. Needless to say, this relates also to the previous point of using open systems.
3. Finding a solution that fits your organisation and aims, but make the organisation and work people independent and at the same time independent of global conglomerates.
4. At the moment there are quite a few small-scale organisation that are experimenting with different strategies and methods. They are providing a

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46] These solutions were partly also introduced by the authors in the edited volume Archive2020, for free download or order http://www.virtueel-platform.nl/#2950 (accessed February 2011).

growing network that creates new frameworks, encompassing multiple perspectives and spreading the responsibility for the preservation of cultural memory. This will allow for a public culture and knowledge infrastructure in which collective decisions can be made about what a society considers important to preserve.

5. Stabilising funding, as much as possible. It is clear that the mutability of the digital domain makes it difficult to formulate overarching policies. Instead of waiting for cues that may point to a 'right' direction organisation should rely on their own resourcefulness and networks. In this sense it would be worthwhile to think for example of crowd funding, collaboration with other organisations, universities or commercial partners.

6. Trying out scenarios – solutions are bound to change in the future but when nothing gets done certainly the future will be bleak.

Although some of these points could well be applied to any organisation from any sector, in some ways these online archives have specific relevance and advantages of already being in the field and should therefore be more dedicated to follow them. For example crowd funding, just as happens with many online web2.0 applications it would be worth following the advantage of the network. By asking a donation to sustain the work might prove to be extremely fortuitous on the long run. A successful example of such a practice is the Rhizome community who manage to receive enough donations in order to maintain the necessary work. With regard to experimentation it is especially important in this area to try things out because if nothing gets done documents and artworks will soon disappear due among others to lack of updating. As Tabea Lurk rightfully stated "Currently we are discussion only – and very little people are brave enough to start. Of course you can make mistakes and they will happen, but not to conserve anything because the discussion has not yet finished – instead of improving practice and starting at the current point where conservation is so much easier for certain aspects – is an indefensible mistake". Moreover, it is not only an indefensible mistake but one that is irreversible. ←

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