

# Artists Running Data Centers

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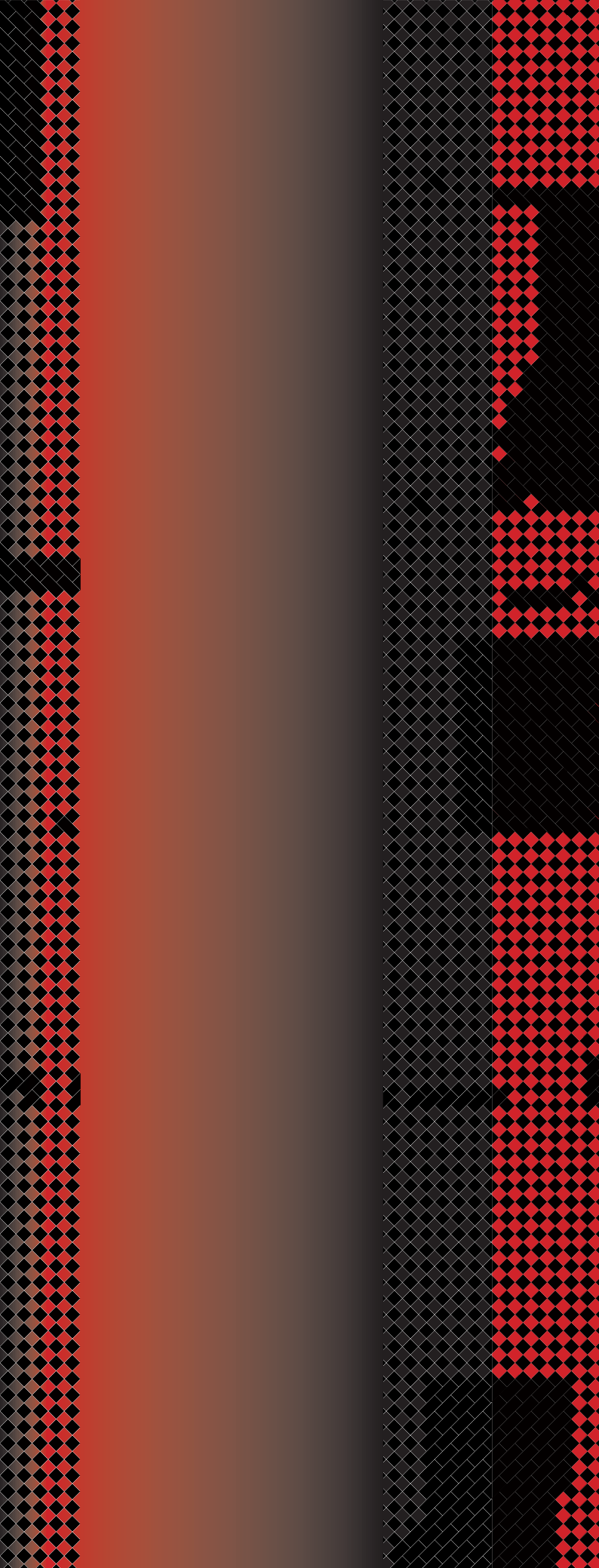
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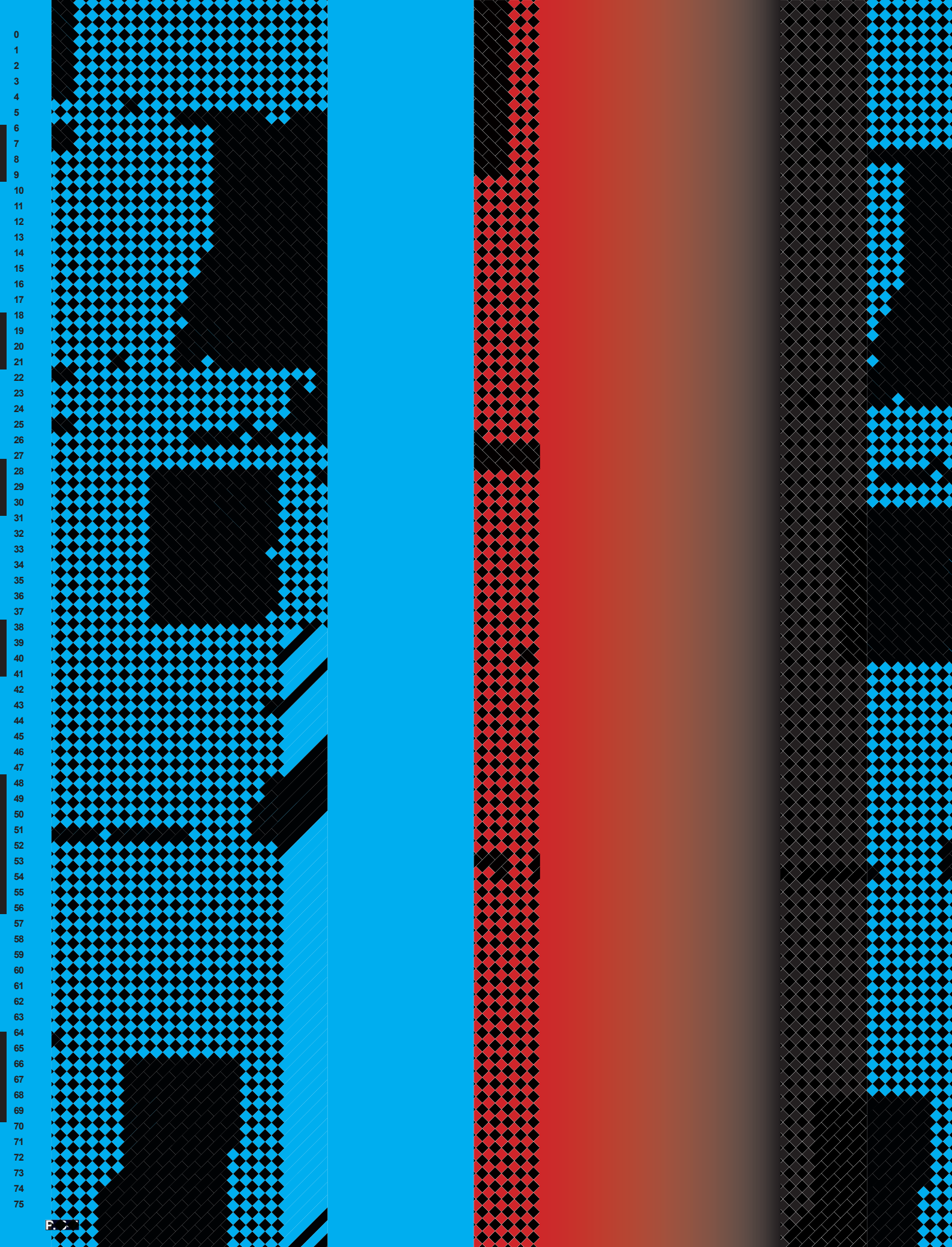
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## **Artists Running Data Centers**

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# Artists Running Data Centers

# Davide Bevilacqua



<https://core.servus.at/>

In the circles of servus.at, the expression ARTIST RUN DATA CENTER (ARDC) refers to a series of virtual machines (VMs) within the server cluster that artists and collectives use as an experimental production space.

A virtual machine (hereafter "VM") is a computing resource that uses software instead of a physical computer to run programs and deploy applications. A VM can be imagined as a fully functional computer or server, just as every basic user knows it, without any dedicated physical components or a machine. Those components and resources are emulated, "virtualised". In this way, several virtual "guest" machines can run on the same physical "host" machine. Each VM runs its own operating system and functions separately from the other ones, even though they all run on the same host machine. Because of their flexibility and deployability, VMs are often used as experimental collaboration platforms for and between collectives.

The first VM projects at servus were initiated in the early 2010s. They were made available to artists who, working on networking settings or experimental publishing, needed access to a server to develop their own research or test specific conditions. Around 2014, such experiments were conceptualised as ARDC and were structured in virtual residencies for research, often connected to the context of the Research Lab or AMRO – Art Meets Radical Openness.<sup>1</sup>

After decommissioning the ARDC machine as part of a broader restructuring of the data center cluster, the expression and the residency concept also had to be reconsidered and freshly ground. The Re:ARDC – Rethinking the Artist Run Data Center – does not explore only the set of virtual machines, but also various other web services and the relation between servus, AMRO and their communities. Similar considerations around the ARDC and the self-hosted art and infrastructure were already circulating a few years ago. In 2021, we interviewed the artist, activist and researcher Manu Luksch about the art server scene of the 90s and how similar questions about autonomous networks could take shape now.<sup>2</sup>

Within Re:ARDC, we continued researching the broader context of servus activities, investigating the topics of autonomous infrastructure and self-hosting, as well as the series of server projects that have been set up over the last decade in the data center, the machine called ARDC. Over the process, we exchanged with several actors of the media art and self-hosting scene that have surrounded servus since its beginning. We interviewed artists to get more context about ARDC projects and how they came to be, as well as information about current issues of the media art and critical tech scene. This was also a good moment to reactivate the ARDC format, initiating a few new projects.

This publication collects such interviews, with some further conversations with main actors from the context of servus.at and the communities of radical net cultures around AMRO. Its aim is not to provide a coherent history of net cultures, but rather to present different narratives and points of view, with a selection of projects from members and the wider community that have been in circulation but not yet documented.

We spoke with Franz Xaver and Christoph Nebel about media art practices and needs before the explosion of net culture initiatives in the 1990s, and with Didi Kressnig about how servus began in the context of the Stadtwerkstatt. Aileen Derieg tells how the other Linz network "Eliot" came into being and how its domains moved to servus.at after Eliot had to close down.

After learning about the context where servus came from, we moved to its main cultural project, the "Art Meets Radical Openness" festival. We collected stories from the AMRO founder and servus director Ushi Reiter, and from the long-time cooperation partners Christoph Nebel from the Department of Time Based Media at the University of Arts Linz and Thomas Warwaris from the Linux community, who is now on the board of servus.at.

All of this provides ground and context for the Artist Run Data Centers. In a conversation with servus board member – and previous system admin – Peter Wagenhuber, we discuss how the whole data center changed and grew by responding to the needs of its community, and the ARDC also follows the same principle of providing independent server infrastructure for artistic research practices. The exchange with Tanja Brandmayr and Claus Harringer from the Stadtwerkstatt and the Versorgerin addresses the combination of artistic and technical work activated

with the idea of creating autonomous structures, something that has characterised the cooperation between the Stadtwerkstatt and servus from the very beginning.

Finally, we collected inputs from selected projects hosted in the ARDC, contextualising the different artistic positions and deepening interesting aspects regarding how such experimental data centers operate. The server admin collective LURK talks about their style and motivations in running community infrastructure, especially how new alliances with collectives working on social justice and ecological matters renew the discourse around F/LOSS. Kamo and Chae / DIWO – Draw it with others working group – explained the intentions and values leading the most recent ARDC project, Scatter Chatter, a research framework dedicated to the exploration of server- and smartphone-mediated interaction between people. Also the VPS by Vo Ezn / v o i z n / deals with the dynamics between user and server, however, in this project, the focus is on the exploitation and burnout of both human and machine. The trans\*feminist collective In-Grid contributed to the publication with their Femfester Server Manifesto, grounded on the metaphor of festering, frictions and leaking. The VPS operated by Inari Wishiki is an experimental space to test modalities of interaction among users and citizens, however, the focus is on (un)making items and the creation of value within the production of networks. Inari is also a part of irational.org, a server collective that is extending the idea of ARDC with a non-virtual-machine project. Namely, they administer a physical single-board computer installed in the server room hosting the digital infrastructure of the group.

Lastly, the conversation with long-time AMRO community member Aymeric Mansoux covered several aspects of the last 20 years of collective infrastructures: from the scene of the early 2000s and the trajectories of GOTO10 and then bleu255 – and their VPS at servus – to the emergence of corporate social media and the current trends of Big Tech, which have disrupted much of the critical art practices and theories based on autonomy and experimental networks. The exchange also highlighted the serious deterioration of working conditions, particularly striking in the exploitation of cultural workers who operate critically within academic or commercial circles. The exchange concludes, however, on a positive note, observing how out of this struggle we can see a strong political engagement and the creation of new alliances between autonomous infrastructure projects and other fields of action, from feminist and environmental activism to social justice and decolonial movements, challenging classic notions of openness and bringing server practices (back or finally) into the realm of politics.

The conversations are supported by a critical glossary compiled by Joak (Joseph Knierzinger) and Nami Kim, which helps the reader to navigate the technical terms and network modalities distributed throughout the publication.

We warmly thank all the participants of the wider Re:ARDC process and the team who took care of carefully collecting and editing the interviews to prepare the publication. We wish the reader a pleasant time in getting into the context and the practice of Artists Running Data Centers and hope that this collection of stories with radical ideas, collectivist values and autonomist intentions can serve as a substrate for a renewed wave of experimental servers.

1. <https://versorgerin.stwst.at/artikel/12-2015/servus-servus-at>
2. <https://versorgerin.stwst.at/artikel/06-2021/what-can-be-an-art-server-today>



**An interview with Manu Luksch, artist, activist and researcher, whose practice interrogates conceptions of progress with a strong emphasis on research, participation and new forms of engagement. First published in the Versorgerin #130, June 2021.<sup>1</sup>**

In 1998 – at the time of the first wave of enthusiasm about the Internet, before the so-called “dot-com bubble” burst with a loud bang in 2001 – Austrian artists Manu Luksch and Armin Medosch organised a conference in London called Art Servers Unlimited [here ASU1], an event that was repeated in 2001 [ASU2]. The participants of ASU found themselves under the definition of “art server”, which was “... not just about art but about supporting and providing a platform for new forms of digital cultural work which often (however, not necessarily) combines elements of art and culture, activism, alternative technologies, journalism and research.”<sup>678</sup>

Reflecting on the practices of servus.at, we see that a cultural data center can be grounded in the same practices of hosting and experimenting with infrastructure for a community of cultural practitioners. But how did the context change over the last twenty years? What are the current challenges and visions of a cultural data center?

Hi Manu, can you tell us about the context of ASU and how it came to be?

At that time I had just left my role of artistic director of the Media Lab Munich to move to London, where I was about to conceive [ambienttv.net](#), an artist-run space focused on net culture and collective, collaborative experiments around sociopolitical questions about data and networks.

Back then, Armin Medosch and I were invited by the Austrian Cultural Institute to curate a panel about current phenomena of net.art and net culture, and we felt it was important to talk about the practices of “art servers” – we really came up with this term. We wanted to make visible those who were running such initiatives and how these were always a response to the needs of a local situation, a very important aspect that came up again and again in the events. In ASU1, we tried to bring together non-for-profit initiatives, artists and activists for a reflection that Janos Sugar from Budapest well framed in his keynote: “Media art doesn’t mean a particular art form, but an enhanced consciousness about the medium we are using, which can be or should be recycled into other more conventional areas.” We were focusing on practices around networks, this enhanced consciousness and the questioning of the media itself.

The questions in ASU1 & ASU2 seemed indeed to ask what we want to achieve with these technologies in the social realm; thinking how to enforce the self-empowerment of people and communities and how to create platforms for them to communicate. What happened at the events?

In ASU1, one major collective effort was to network and fund-raise among us. We worked on the idea of an “interfund network” – which in the end took a different shape, but it was an important catalyst to get groups together and to gain more cross-country attention. Visibility was in fact the second point, which was how to communicate to wider circles of people what we do and why. We also tried to solve this visibility problem technologically, with ideas like “web-rings”, linking each other, to channel the visitors from our websites to the next net.art project.

This topic was also picked up in ASU2, which took place in Croatia and focused on the concept of Temporary Autonomous Zones by Hakim Bey. At the time, the wireless community broadband network initiatives started to flourish, which was a new topic for ASU2. It was driven by the idea of giving access to very costly broadband, and by a vision of creating independent zones and spaces where we negotiate our own rules – e. g. about file-sharing, as at the time copyright legislation started to emerge due to the commercialisation of the internet ... In reality, it never really reached that point because much of our time was taken up by, you know, bricolage, just making sure our prototypes were running ... However, in the middle of the event, 9/11 happened, so I just remember how this took up the attention in the remaining days.

Looking from our current time perspective, ASU1 took place during the rising days of the dot-com bubble, the first commercial squatting of the internet, and ASU2 took place when the bubble exploded and the internet re-organised. Did it feel like this also back then?

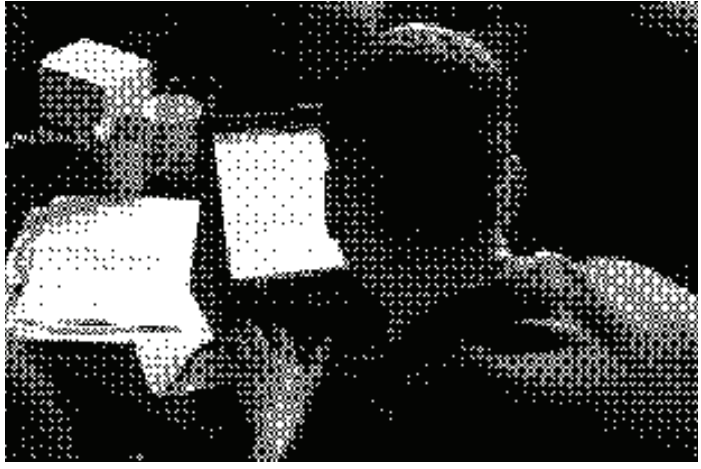
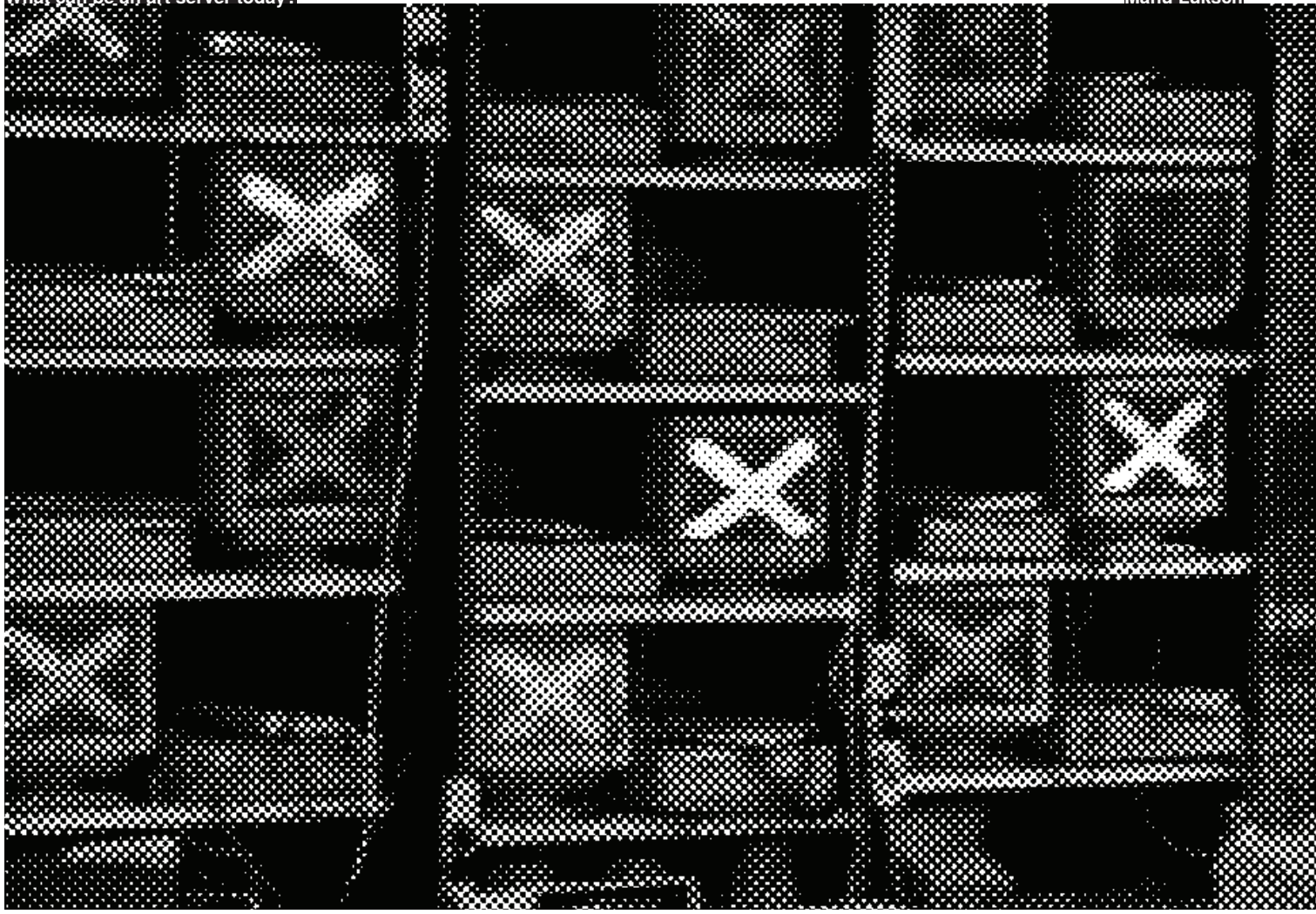
Back then I did not really see what you are describing as the

Through her films and artworks, Manu researches the effects of emerging technologies on daily life, social relations, urban space, and political structures. Her current focus is on corporate-governmental relationships and the social effects of predictive analytics in the algorithmic city. Her work is included in the Collection de Centre Pompidou, the BFI National Archive, and the Core Collection at the Academy of Motion Picture Arts & Sciences; Awards include the 2023 *Outstanding Artist Award for Media Art, Ministry of Culture Austria*; *Globale Perspektiven Award 2020*; *ZONTA Award – 65th Kurzfilmfest Oberhausen 2019*; *Open Media Award 2019*; *Best Future – Moscow International Documentary Film Festival 2016*, *Elevate Artivism award 2015*, *M. v. Willemer Prize by Ars Electronica Centre and City of Linz*.

Manu is founding member of [ambientTV.NET](#) (Ambient Information Systems<sup>2</sup>), a long-time collaboration with Mukul Patel<sup>3</sup>. She was *Roberta Denning Visiting Artist*<sup>4</sup> at Stanford University (2021), *Artist in Residence 2020/21* at Birkbeck’s School of Law and *Open Society Fellow*<sup>5</sup> 2018/19. She is currently Senior Research Associate at the *AiDesign Lab “Critical Narratives”*, Royal College of Art, and PEEK Artist Researcher at Die Angewandte, Vienna for the project *Radical Matter*.

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build-up of the dot-com bubble and its burst, and how this could affect the practices of myself and my peers in London. It was much more the ongoing shift towards harnessing the Internet as a space which is optimised for trade, transactions, commerce, shopping. That would just continue as well after the bubble burst, an attempt at making the web a regulated, controllable marketplace. Today, to put it in Shoshana Zuboff's words, surveillance capitalism is the defining force of the network space. It has become a manipulative environment.

**Do you see a difference in what was an art server in 1998 and what can be an art server now?**

After I worked at the media lab in Munich, there was a phase when "media labs" became a "political tool for regeneration", meant to help post-industrial cities transform towards the knowledge and information economy. In England this was widely deployed, as they would fund media labs in northern post-coal-mine cities with that intention. In these projects there was a lack of grassroots initiative, such as the ones that we identified in Art Servers Unlimited, which would grow on the substrate of the local needs and urgencies. This was completely absent and these labs were failures. 10 or 15 years later, I see many labs growing in different places. This shows that there is still a need and a practice to have zones where to really question everything that defines our network space, from the ownership of technologies to the politics and legal situation, as well as the standards that we agree on internationally.

I mean, we would need to speak about a cultural practice in the meaning of Janos Sugar's words.

I have been noticing, how – while we pursue this shared concern about the increased loss of privacy – actually the public sphere was pulled from underneath our feet and was privatised. You can see how in cities, many spaces that we perceive as public spaces are actually being sold off to developers and are policed in different ways, where different rules apply. The same thing happened online.

For a contemporary art server it would be very important to consider both, like an urban lab where you consider which values are important for the urban and the public space, but at the same time connect that to something like an art server. The most interesting example that I came across is the city of Barcelona, which really committed to understanding the benefits of what commonly goes as "smart city" as a combination of networked technologies, data analytics and urban management. Governance can be an opportunity to become more inclusive and democratic in the shaping of the city. Their information technology commissioner, Francesca Bria, was really taking it in the direction of data sovereignty, keeping out the multinational IT companies and allowing thousands of local technology companies to tender and offer solutions. This was an important decision not to create dependencies to corporate solutions, because once you buy that infrastructure, you will have always to pay for maintenance and upgrades and fixing, and... yes, you can't shape it.

**What you are describing seems like an answer to the statement in the ASU2 program, that the images of the Internet (virtualisation, fluidity, immateriality...) need to be countered with the idea that the digital cannot exist without the physical, from the cable to the local needs. I read it as a hint for contemporary art servers to focus even more on local problems and react to the privatisation of spaces and work against that in the virtual and in the physical space of the city.**

I guess that those are at the moment the places where to look how an art server idea can interact with the making of the development of a city. Unfortunately this went for a long time under the corporate term of the "smart city". Sometimes there are well-meaning examples, where maybe a city would commission artists to conceive embellishment projects around bus stops but not really open it up in the way that Barcelona did. You can find these well-meaning efforts where someone just can't really see how you need to open everything down to the operating system.

**What are you doing now? How do you see these threads continuing in your current practice?**

Four years ago, due to increased rent, I had to close ambient.space, a 200 square meters loft on the top floor of a studio

block here in Hackney that had allowed me to host workshops, residencies and performances for over 15 years. I am currently looking for a new location to continue this extended artistic practice. My interest in narrative formats led to several film projects, recent releases include feature montage film Dreams Rewired (2015), a history of the public imagination of being hyper-connected, and hip hop musical short ALGO-RHYTHM (2019), which fictionalises the Cambridge Analytica episode and reflects on the toxic infosphere produced by profit-optimised algorithms<sup>9</sup>. As so much of our behaviour has shifted online, where it is mined in order to serve as training data, how can we preserve our "forum internum", the prerequisite of freedom of thought, and how does its porosity affect civil society? Can democracy live up to its promises?

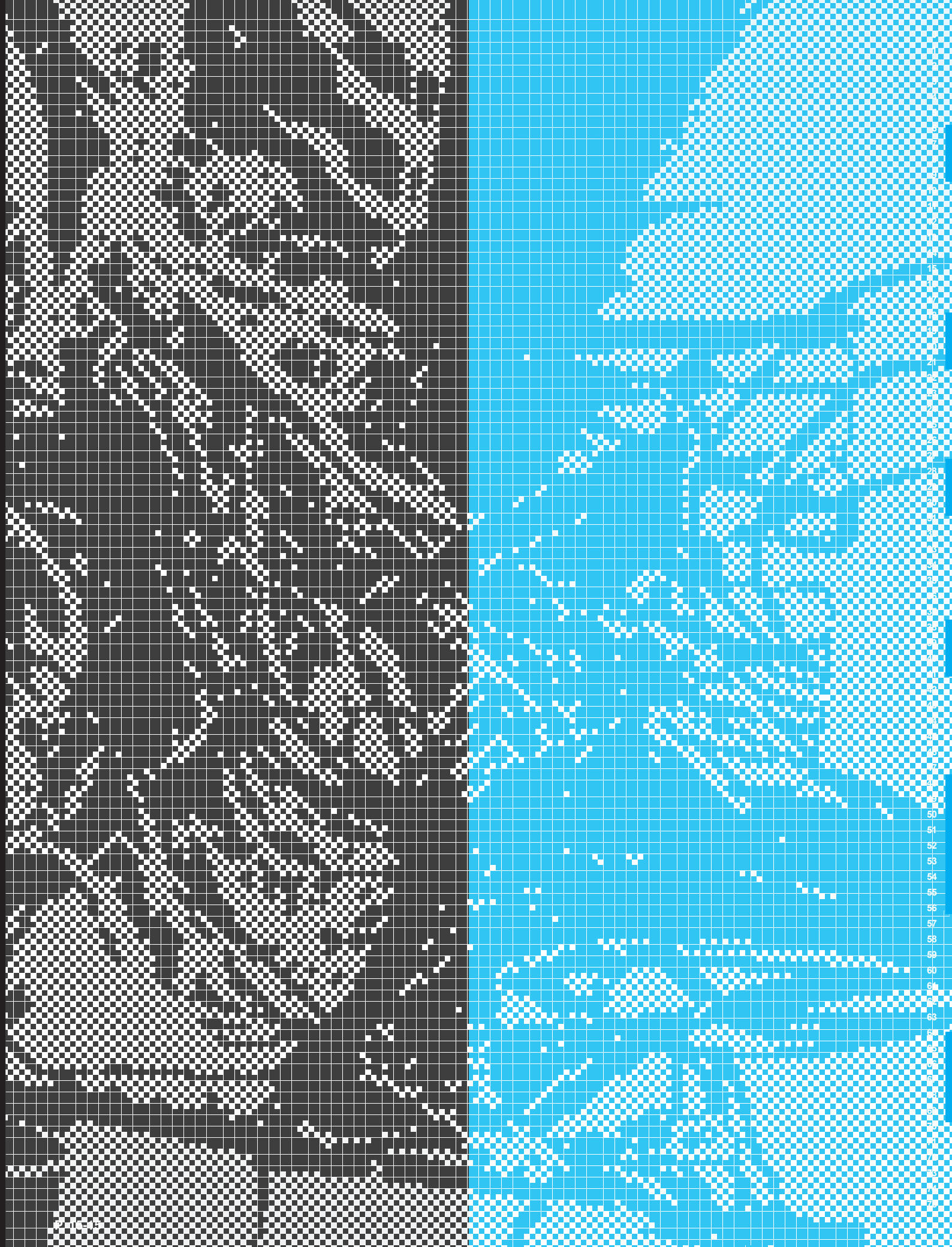
These burning questions led to an investigation into the corporate-public relationship and a research film shoot at CISCO's, a big industry player in the field of "smart tech", in the United Arab Emirates, one of the wealthiest and most influential nations. My upcoming film sheds light on the fate of those Emirati citizens who had been imprisoned for their "thought crimes" in a country which toys with superlatives when it comes to material manifestations of progress.

The film is looking at the historical and economic ties with the UAE and our complicity in the making of these authoritarian regimes, as technology exports normalise the local mechanisms of oppression but also erode the level of transparency and accountability back in the UK.

1. <https://versorgerin.stwst.at/nummer/130>
2. [https://www.academia.edu/37364296/Ambient\\_information\\_Systems\\_Luksch\\_Patel](https://www.academia.edu/37364296/Ambient_information_Systems_Luksch_Patel)
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# Media art reimagining the information society

# Franz Xaver



**A conversation with Franz Xaver about computational randomness, the internet as an alien, artists running data centres and the need to further explore the nature of networked media and information environments and their intersection with social contexts.**

Franz Xaver (AT) studied at the Academy of Applied Art, department of "Visual Communication" founded by Peter Weibel.

Subsequently, he taught computer languages, audio-visual productions, electronics and electrical technics at the same Academy until 1992. At the Technical University of Graz, he lectured at the department "Institut für Baukunst", "Communication Theory". He participated in numerous exhibitions in Austria and abroad, including Ars Electronica, Aperto Biennale di Venezia, Triennale Milano and Kunst- und Ausstellungshalle Bonn in Germany.

He was the director of Medienkunstlabor in Kunsthaus Graz between 2003 and 2007. Since 2008, he's been working in Stadtwerkstatt Linz.

Hi Xav. We met for the first time in 2014 in Bergen (NO), where you showed the project Ghostradio that you did together with Pamela Neuwirth and Markus Decker. You melted my brain there by talking about the project and its connection to second order cybernetics, randomness, computation and cryptographic keys.

So, starting from Ghostradio<sup>1</sup>, can you introduce us to your artistic practice?

My projects run through the 40 years I've been working and there's not much variation. It's always the same theme. In 2014, we were definitely in the middle of the digital age, which for me started in the 90s and that was really the point where, in my opinion, history changed. Ghostradio is about understanding this digital world and that – in the digital world – there is actually nothing accidental, no coincidences, no randomness. With the project, we wanted to create a real random generator in order to break out of this digital world and find our way back into the analogue world. We have a Kelvin generator – that's a drop that flies through the air and generates static electricity. The electrostatic field was crossed with a dynamic electric field to create this special random generator.

**Is this how real randomness can be achieved?**

Exactly, there are different types of randomness, and it's important to have real noise generators to produce random numbers. It's very important in cryptography. Real randomness is simply the key to getting out of this reality or being able to cope with it at all, because the boundaries of reality have to be somewhere... You can also see true randomness in atomic decay, or – I also have been operating radio telescopes for a very long time – in stars and in the past traces of the Big Bang, or in semiconductor transitions.

**So it's not just about the number that is generated. The system must ensure that the values or the events that are generated with it will never repeat.**

Yes, true randomness is important because otherwise there would be no free will. Free will is also an issue, it is also related to true randomness. Because only if there is true randomness can there be free will. If something is deterministic or the values come from software – these are not genuine coincidences – then there can be no free will.

**That's where the computation encounters and needs the analogue world, so to speak...**

Yes, if there is an analogue world. That's still the question. There are a lot of theories and I'm also a supporter of the idea that perhaps there is no analogue world at all.

**Maybe, to start from an easier angle: in your Red Thread Of Media Arts<sup>2</sup> you described how the world was changed through digital media, radio and the internet. To what extent?**

I've already mentioned it – everything changed with the digital age in the mid-90s. Before that, it was kind of a perfect world: whether you liked it or not, we as humanity were the masters of materials. Human took materials, technologies or whatever was available and then made art and sculptures out of them. They also used different spaces, including the electromagnetic space that was there. Stadtwerkstatt was very strong in the 80s and 90s in that realm. They had a number of projects in the telematic space, from which Radio FRO and servus emerged. They wanted to make art in the media, with the media.

In the mid-90s with the Internet and the TCP/IP stack, we lost control over these materials. TCP/IP is built on layers, users and artists were only in the top layer and could no longer do anything in the bottom. To this day, the lower layers are taboo.

I like to compare it to an alien species: the Internet has spread like an alien and taken all control away from us, it has let users play on the top layer or on the top two layers and the lower layers are somehow unreachable. That was of course very tragic for the artists. And what do you do then? You move even further into the telematic space, of course.

**You say that this break was in the mid-90s, we're not going back to the world that was there before that.**

It happened in the mid-90s when the World Wide Web really opened up and everything just got sucked in. As a result, we became insanely dependent on this strange digital medium. It also took me a long time to say for the first time: "The internet is evil." With the internet, there was also a crazy spirit of

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## Media art reimagining the information society

0 optimism. That's when net art was born. Nowadays, it's  
1 embarrassing to even use that word. It really was a bit like  
2 a soap bubble. Media art is also a difficult word, but it's not  
3 as easy to get rid of as net art, because media art existed  
4 before the internet. Even in the analogue world.

### 5 How did you get involved in this experimentation on telematic 6 spaces? From where did your collaboration with Stadtwerkstatt 7 develop?

8 I got to know Stadtwerkstatt at exhibitions in Vienna in  
9 1986 and 1987. It was the first time I actually realised that  
10 you could incorporate social context into art. This is also  
11 very important for me in my history with the Red Thread.  
12 I think Joseph Beuys really brought the social context into  
13 society. Few people connected this with media art or media  
14 work anyway, but Stadtwerkstatt was a house for every-  
15 thing. Media art happened there, there was a social context  
16 and community, that was good, and I wanted to work with  
17 Stadtwerkstatt.

### 18 You said you were there at the beginning of servus in 1996. 19 What was happening?

20 That was at the beginning of the 90s, it did not happen  
21 from one year to the next one. In that time, there was the  
22 liberalisation and the new economy, everything was priva-  
23 tised and it was therefore possible to have an independent  
24 radio station. And it was the beginning of both servus.at and  
25 Radio FRO. In Vienna, the Silver Server<sup>3</sup> and the Public  
26 Netbase<sup>4</sup> were active, and in Graz there was [mur.at](#).<sup>5</sup> The  
27 same applied to radio stations: Radio Helsinki<sup>6</sup> was in Graz  
28 and Radio Orange<sup>7</sup> in Vienna.

### 29 How has this need for your own networks and structures devel- 30 oped over the years?

31 For me, these social aspects were important and how we  
32 used them to support and build communities. In Vienna,  
33 Netbase, The Thing, Blackbox and the Silver Server built  
34 up a community. At that time, Stadtwerkstatt had a big sign  
35 with the slogan "Free opinion needs free networks, free  
36 opinion needs free infrastructure". It was also logical for  
37 Stadtwerkstatt to work on its own infrastructure, in-house,  
38 so as not to become dependent on a commercial company  
39 or system and allow itself to be enslaved there.

40 Servus was online relatively early, even before Ars Elec-  
41 tronica, because Tommi Lehner – one of the founders – laid  
42 a cable during the night and so servus went online. Servus  
43 then also managed to get into ACONET through a back  
44 door and get connected there.

45 I then continued to work with free wireless networks and  
46 communities in Graz. We had a server sculpture in Kuns-  
47 thaus Graz, where there was a locker system and everyone  
48 could bring their own computer. There were 60 lockers,  
49 each locker was given an IP number and anyone could put  
50 their computer in and connect.

### 51 That was the Data Spind,<sup>8</sup> wasn't it?

52 Yes, that was the Data Spind in the Medienkunstlabor.  
53 Medienkunstlabor was part of Kunsthaus Graz, which was  
54 supposed to be a media centre at the beginning, where  
55 everything lights up like Ars Electronica. I think there was  
56 an agreement with Linz not to set up another competing  
57 institution, therefore this media thing was shrunk down a  
58 bit and it was an area within Kunsthaus. That's what I got  
59 as director.

### 60 How long were you there?

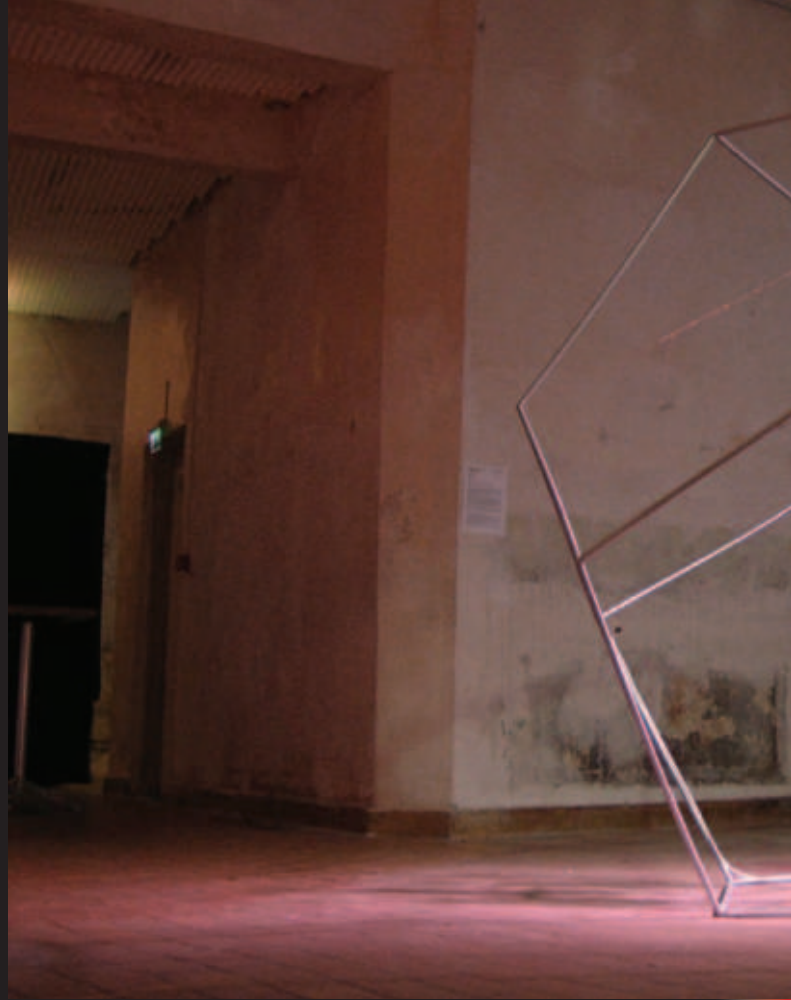
61 Three years. But it was designed so that someone else  
62 would come in every three years. Someone else came after  
63 me, but then it came to an end.

64 There, for the Data Spind, I organised a PI-space –  
65 a Provider-Independent address space –, which I later  
66 brought to Linz and is now very important for servus to  
67 continue working freely. The PI-Spaces are of course a  
68 political hit and they can no longer be acquired, by the way.  
69 They are kindly routed by ACONET but owned by the asso-  
70 ciation Halfbit.ix That's why I'm a bit fussy about these IP  
71 Addresses. :)

72 But yes, that was the Data Spind in Graz. 60 servers  
73 were running there and there were always events.

### 74 And who were the participants?

75 They were international artists who came with their





computers under their arms and then placed them there.

**Also a form of an artist run data center, so to speak.**

Exactly, that's it.

**I've been meaning to ask you what you associate with the term "artist run data center".**

It is totally important. The terminology is of course always very individual. What is art, what is technology? Who is a technician, who is an artist? That's a difficult topic.

**There was also the term "Art Server" back then. Armin Medosch and Manu Luksch organised a conference in London in the 90s around the term and the scene...**

The Art Server is a slippery concept, considering what art is, how it is viewed and how it is made.

In Graz, they stepped on my toes a bit – the politicians – of course they saw this server cabinet. It was beautiful, with transparent glass and the IP-address and how to reach them were written on it, but nothing else. You couldn't see the content of the computers.

The politicians always wanted to see what was on the servers. I kept saying: "I don't know, they've been invited, they can do what they want. They are not obliged to show anything." It was very important to me to do it so that we don't have a display or a showcase that can be labelled as beautiful by politicians.

**"The latest inventions of media art. There, please take a look. We do it here, in your city!"**

Exactly, "it's very interactive, or very beautiful". It's quite a stupid term, so is this "Digital Art" in my opinion. These digital art servers can't be pinned down to a screen surface.

**So for you, "Art Server" is already too closely associated with this marketisation of media art?**

A little bit, yes. I think in the context in which it was used at the time, yes. It was only a little later that this intellect – I always call it "digital intellect" – emerged, which is actually largely missing. So, what are digital media anyway? What can they do? Where do they lead? What is an intellect in this context? Intellectuals in this field who know what they are doing are very hard to find. On the one hand, they shouldn't just be technicians; on the other, they have to know their way around technology. It's no longer possible to contact technicians and ask questions. You have to be confronted and familiar with it yourself so that you know what the possibilities are.

**Can you mention a few names that work in this area in your opinion?**

I don't want to because now it's not that important. I had these people from Graz, but I wouldn't necessarily want to commit myself to names now. At the time, I actually only focused on IP addresses. But for me, these people are more likely to be found in hacklabs than in museums. Like Jaromil,<sup>10</sup> who came to servus in the early days and was a real digital rastasoft.

**I saw that Medienkunstlabor closed sometime in 2010 and the Public Netbase was also over in 2006. Was the golden age over with all these art servers? And why?**

Some digital communities are still running, like [mur.at](#) and servus. Silver Server has been sold. These are like islands and are really necessary to get an overview or to have a perspective on the world. It is always important to get out to these islands to get an overview of everything. There's not much left of the scene.

**Was the support from the politics or the funding no longer there or was it also something else that was different?**

I believe that politics is also a bit overwhelmed by the digital age – I often refer to the digital age as an information crisis. That's why I initiated the Infolab<sup>11</sup> in Stadtwerkstatt about ten years ago, which simply explores certain ideas in the field of information since we have no idea what role information plays in our universe. That's why we are slipping further and further into an information chaos and don't even realise it.

But the development of information is unstoppable. This spread of information or this information theory, which is actually just an information efficiency theory. My theory that the Internet is an alien and plays a fundamental role in the universe may not be so wrong after all.

**How do you research and interact with these aspects in the Infolab?**

With a lot of thinking. The concept of the island is again

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important. I linked the Stadtwerkstatt-island, servus-island, the Medienkustlabor and other islands on the water to this because you can isolate yourself there. They are areas from which one can look out over the world. Similarly, we have to look at information differently than how Shannon did [in his Information Theory]. His method of classifying information is simply far too strict. It works in politics and in our society because they are market-oriented societies, but it is wrong that you can explain or provoke information with logical algorithms. People are not logical things. They have emotions, feelings, dreams, utopias and art. It's important that we bring this in and that's why I've been advocating for several years that information should be viewed from multiple perspectives. If you look at it from complex numerical levels, you always include an unknown factor for everything you look at. If I see an armchair, it is an armchair and an unknown factor. The armchair can be something different for you than it is for me. That's why you have to re-evaluate the information and that's what art can do.

**I am surprised by this turn into imagination. I've often looked at computer (artists) as hyper-rational, everything runs according to programmes. Now you're going into very complex and emotional levels. How do you associate it with natural numbers? Do we still need that and the computation based on it?**

Absolutely. It's a very dangerous path anyway, and it is very different from what the conservative forces in politics are saying about rejecting the internet. They say, "We don't need all this shit," and often invoke their gut feeling.

But that really is a fallacy. The Internet is here to stay. We have to live with the Internet and come to terms with it. We have to bring people back into the Internet. That's my approach and that's why I think that this complex level of numbers is required to bring people back there. This is because with the rational, it's all just a power play of capital and the machines anyway... It's too late for that.

**So, the imagination still offers you this space for action. Do you think it's the consequence of this toxic development of complex computing?**

No, it just had to come about. It's like the printing press. It's simply a development of evolution. The whole evolution is just there to develop information. All the genes, the transmission, the consciousness and the printing press develop information. And I believe that man is only a tool. Humans are not the end of the line. There is much more to it.

**What does root minus one stand for?**

It stands for the unknown. It doesn't exist in the realm of natural numbers, but the root of minus one stands for a calculation with an unknown variable. In our reality, this chair is not only a chair – yes, it is a chair but also something unknown, which is everywhere and should become more visible. That's how you have to look at it. You always have to add it in. You have to study the complex numbers in maths and understand what is meant with them. It could be a new area of information technology.

It's already used in mathematics in advanced technologies, for example in electrical engineering, in sines and you need it in quantum physics. It's used in research, but it's not used in information theory, in the usual way we define information, saying that that is a chair. That's just wrong.

**When we talk about the future, do you think there's room for this complex computer science? Is that what's going to save us from the toxic computation?**

Should be renamed to complex computer science. It can't save us. It will continue. Without us, too. But if we bring the human element back in it a bit with the complex numbers, we could delay it.

**Okay, that's a pretty good picture for imagination. How does it connect back to autonomous infrastructure? You have been involved with servus for almost 30 years. What do you think the challenge is now?**

The balance between art and technology has always been difficult. Also regarding servus, it is still not entirely clear what belongs to technology and what to art. But for me, hardcore technicians are just as much artists. Didi [Kressnig] is an artist for me, although he would never describe himself as such.

That's the difficulty that still exists with servus, and not just

with servus but with the view of this genre in general. It's very difficult to make it all work together. Even in practice, when the printer doesn't work. To put it quite simply.

**The printer never works.**

How can it be art if the printer doesn't work? Technicians can't say: "That's art, that's all."

**There is also the question of autonomy, that you say you only want to act as independently as possible, like from Stadtwerkstatt. But on the other hand, we are not autonomous, and in order to maintain operations as they are now, we need additional funding to be financially able to continue running the data center, for example.**

It is definitely very important to maintain this independence. Whether in technology, art or anything else, we have to manage. But we need these independent platforms, the opportunity to look at the evil world outside. I think it's really important to do that.

What do you want to do with this Artist Run Data Center?

**It's a concept from Peda and Ushi, from 2015, where they gave virtual machines to artists. At some point, I came across it and thought it was quite promising.**

**We've done two or three new projects in the last years, where artists in residency have been given a machine and they do what they want. It's a bit like your Data Spind.**

I think that it could be more visible. I've heard this term over and over again, but you can't really see what it really is. You hear the names, but somehow it should be marketed better. **It's a bit like a black box or container. There's something inside, but nobody knows what.**

1. <https://www.firstfloor.org/ghostradio/>
2. [https://newcontext.stwst.at/history/redthread/fx\\_struktur](https://newcontext.stwst.at/history/redthread/fx_struktur)
3. <http://web.archive.org/web/19970331050338/>
4. <http://silverserver.co.at/>
5. <http://www.netbase.org/t0/intro>
6. <https://mur.at/>
7. <https://helsinki.at/>
8. <https://o94.at/>
9. [https://kunstlabor.at/posters/Data\\_Spind.pdf](https://kunstlabor.at/posters/Data_Spind.pdf)
10. <https://halfbit.org/>
11. <https://jaromil.dyne.org/>
12. <https://newcontext.stwst.at/projects/infolab/start>



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# We never wanted to do "clean" art

# Tanja Brandmayr & Claus Harringer

Within the context of hosting the Artist Run Data Center at servus.at, we discuss Stadtwerkstatt's internal structures, exploring its history and current state of resilience with Tanja Brandmayr and Claus Harringer. In this conversation, we deepen the delicate balance between stories and long-term processes, autonomy and in(ter)dependences, growing dimensions and structures, institutionalisation and instances of de-hierarchisation. And of course the long-term cooperation between servus and STWST.

Tanja Brandmayr is an artist and author, who has been working with text, media and extended art formats for many years in different contexts. She has also been managing and programming at Stadtwerkstatt and (co)operating with newspapers *Referentin* and *Versorgerin*.

<https://quasikunst.stwst.at>

<http://brandjung.servus.at/>

Claus Harringer coordinates the Stadtwerkstatt newspaper *Versorgerin* since 2020 and I've been part of it since 2015.

Stadtwerkstatt (STWST) is a cultural center in Linz, Austria, which was founded as an artists' collective in 1979. Since the 1980s, it has shaped media history with significant projects in the context of new media. As a greater collective of all resident initiatives, Stadtwerkstatt, servus.at and Radio FRO, it operates as a networked society, not getting tired of questioning the current situation of network disasters by aiming for and experimenting with alternatives.

<https://stwst.at/>

<https://versorgerin.stwst.at/>

<https://diereferentin.servus.at/>

**Introduce yourself and Stadtwerkstatt.**

I'm Tanja and I've been running Stadtwerkstatt<sup>1</sup> for a few years. In 2007, I began with the Stadtwerkstatt newspaper *Versorgerin*, writing articles and doing editorial work. In 2014 I came to Stadtwerkstatt as a board member. Although I wasn't involved in Stadtwerkstatt's very early years, as a local, I was aware of its projects, especially of the autonomous resistance part. What's also important to tell, is that I'm working as an artist and an author, and we still view Stadtwerkstatt as an artist-run space. That's why I hate it when people call me "Geschäftsführerin" [Managing Director].

*I'm Claus, I've been coordinating the Stadtwerkstatt newspaper *Versorgerin*<sup>2</sup> since 2020 and I've been part of it since 2015.*

**My first impression of the Stadtwerkstatt was in 2012 and for me, it was a very mysterious place that was difficult to grasp and impossible to have an overview of it from the outside. It has always felt like a galaxy, full of people and activities, something that is happening on its own. How would you describe it? Is it a galaxy?**

As you said, it's not so easy. The Stadtwerkstatt has a long, grown history of around 45 years there could be many answers. But as a main answer now: Stadtwerkstatt is a house, the associations working in it and also Stadtwerkstatt with its departments and many projects. Last year we created a sign at the entrance, in which we chose to identify it as a building and an autonomous structure. When we had the 40 years anniversary, we had the same question, "What is it?", in all its openness. We decided to declare us as "Stay Unfinished" then, a somehow permanently unfinished, evolving, open structure with many participants. To say it more practically: We now have a new art context and music department, the newspaper *Versorgerin*, and Café Strom as a auxiliary operation [Hilfsbetrieb]. We do not want to define ourselves as something fixed, the house is perpetually in development.

*I think that the outside and the inside perspective of the Stadtwerkstatt are different. Because people from the outside perceive specific parts or departments based on their interests. Some might know only Café Strom, the ones who go to concerts know the club, readers who subscribed to *Versorgerin* see the newspaper and people from the art world know the art projects. As far as I can tell, the inside perspective is quite different. Tanja put much work into the departments, to have them interact more. I think that's a good thing, but that doesn't transfer to the outside.*

Quite a lot of people who know *Versorgerin* are surprised that we are also doing art projects, running a club and a house, and so on. And it's nice to hear! Because each area seems to work successfully. We don't have as many people as it may sound like, so we must use what we have as a strength. And this kind of working together transfers somehow to the outside also. The spheres are constantly intermingling. Stadtwerkstatt never wanted to be a "usual art institution", we never wanted to do the "clean" art. This is strongly rooted in the history of this space. That means for example that in art contexts now we declare ourselves as an Anti-White-Cube. We focus more on an unpolished perspective of it, and for me, it must remain open and connected to society and technology. With the question "How do we want to live?" we address the importance of critique and how we can keep all of this in the art scene, and not play the art market or any market game.

**For me, there is the house, which is the physical part, where the core team and areas of work are based. And then the outside part is kind of interconnecting other elements. For example, Radio Fro<sup>3</sup>, servus, the Eleonore<sup>4</sup> and more. I cannot say where Stadtwerkstatt starts and where it ends.**

*Yes, there are a lot of threads. And again, that's why interconnecting the threads is a good thing. I mean, it's relevant.*

Yes, its relevant, especially when so many things happen. And I also want to mention the importance of interconnecting to the past. We are doing a lot of archive research about the many faces of Stadtwerkstatt, different people, structures. Of course, there has been various attempts to develop and run Stadtwerkstatt, some of them were successful, some were disasters. And the Stadtwerkstatt developed in the respective

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times through sometimes very challenging and often precarious situations.

**Staying on the archive work and research on the past, I'm curious to hear about the research that you did for the film where you investigate the feminist roots of the Stadtwerkstatt. What did you discover? How was the journey to get in touch with the women from the former times?**

That's a really difficult question, because the deeper you go, the more controversial it gets. It's clear that the Stadtwerkstatt history is male dominated. Especially when you look at the arts, I have the feeling that men always use their elbows quite efficiently, in a very matter-of-fact way. But then you see, there were many women, and it's clear that the Stadtwerkstatt would not have been able to function at all without the women – it urgently needed to be made visible the women who played a decisive role here. But also here, it depends on the time you look at. The last 10 years the situation has been different compared to the very early days, because we have more women as board members, but also as invited artists. There were many women in the meantime, too, then they disappeared again, and so on.

*If I look at the Versorgerin, that's kind of a documentation of what the interests were, but a part of the work is invisible. There were people like Gabi Kepplinger who had an enormous impact on the Versorger(in) at the time. Ushi Reiter concerning layout and so on. That is work that is not archived or transferred in big editorial pieces. That's just work that had to happen, but it's not too visible if you're not looking for it.*

I totally understand what you mean, but I also try to see it a little bit differently. It's true what you said, but when you look at the Stadtwerkstatt history and its meaning, we are all confronted with the fact that these subculture scenes are not visible enough. The meaning of women disappears, but somehow the meaning of the entire scene diminishes as well. There are so many projects that are not emphasized enough. Many artistic works of this scene should be part of a larger canon – or the value of the activist practice of subcultural scenes should generally remain more anchored in the historical consciousness of a society. That should still be the joint fight. But yes, the work done by women, also when highly respected, disappears more often.

*Yeah, sure. But there's a division of labor in which the more invisible tasks are mostly done by women. Not talked about or not on the forefront. That's the thing I wanted to point out, there's this hierarchy of work within the subcultural scenes.*

I agree. We had some kind of a joke conversation once in the office. Claus once asked me, "What do you think is the percentage of artistic and organisational-structural work you do?" Actually, if I calculate it conventionally, the time I spend on my artistic work is going into the red. When I think about working hours and so on, I work even more than 100 percent on the structure and do artwork in the so-called free time. That's the sad thing for many people working in these scenes. Besides this, I see the whole structural work in Stadtwerkstatt, especially in its own aesthetics of resistance, as art. So I said spontaneously and ironically, but also seriously: "For me, working on the structure is the art". Xav, who was sitting near us, commented, also spontaneously "And there are people who see this." It was a funny small conversation, but later, when I thought about the feminist aspect of Stadtwerkstatt and the film, what it should point out and so on, working on the structure as a part of the art is a very questionable thing. Even for me, who has the freedom to run the space and also to define the whole thing in a rather unconventional way. Also for not being reduced to this aspect of preservation. It's a trap for everybody, for men, women, transgender, whoever who works on the structure - but still especially for women. And I think that happens all the time.

**And we see these reflections in the projects that the Stadtwerkstatt has been doing in the last years – with a lot of queer and feminist questions, about recognizing the people who are doing work that too often still go unrecognized or unnoticed. But there's also the need to acknowledge that the entire system is a swamp.**

Yes, when I talk about this feminist research we do, I can tell that in the early days, for example, there was a team of women running the music and the concerts. Also men were

also in it, but there was a group of women who were quite strong working on that. When we interviewed Aileen from servus for the film, she said she came to the Stadtwerkstatt, because there were so many cool women. That was later, and it was amazing to hear. So, when I look at the history of this place, it was a place for man and woman, also people who were gay or lesbian or had no clear sexual identity, people who were discriminated by society. It was about resistance in general. But it was also a place, where the usual roles of society were reproduced. So it was a very cool thing to hear about the role of women in Stadtwerkstatt, and very interesting to hear what society was like back then. It was also unbelievable how women were treated in Kunstuni, in the society as a whole. Stadtwerkstatt was not perfect, but it still offered space also for feminist activities. And it's also a very important point to see this in the bigger context.

**Maybe we can talk about what is happening most of these days about the free scene, and the role of, for example, Stadtwerkstatt, KAPU<sup>5</sup> and so on, this idea of running your own house yet avoiding institutionalization. There is always the risk of becoming a point of reference and performing the same hierarchies. It is very visible how you deal with this identity and you found strategies to counteract. How do you build things without getting locked up in your hierarchies? How do you connect it with being autonomous from the outside?**

We are a bigger player of the free scene. I'm with you when you say that institution is a problematic word. I don't see us as an institution, but we have a bigger structure, with many things going on regularly and temporarily. And still, I think the artist-run part is very important – what means not to become too professional in a way. Even when we act highly professional in many aspects. Institutions are mostly part of the capitalist system. Normally, also in an art context, you have the managing director and the artistic director. I'm not saying that having these roles automatically makes it capitalist, but the point is that we don't separate these roles. We don't need to free art from the constraints of the world, as if they didn't exist. It's important to keep asking questions about what we need, what we want, and what we are interested in, especially as politically engaged individuals. If we take Versorgerin as an example, it's a newspaper that we are capable of running in every respect. But still – we are no journalists. Sometimes I think about the term professional deformation, this kind of professionalism in a capitalist society. It's fruitful to play with this being it and not being it.

*First, I want to say something about the institution or labeling in general. You have to take that with a grain of salt, every label you live with, it's like with a shoe. If it's too tight, you can ignore it for some time. If it's way too tight, you may look for another shoe. That's the same thing. Of course, if you call the Stadtwerkstatt an institution and some government ministry an institution, you can do that. But you must be aware that these are two very different kinds of institutions. In one case, you have a top-down model with strictly defined roles. Who is responsible for what? Who has permissions to do what? And that's not the case in the Stadtwerkstatt. There is a separation of labor, of different tasks that are done. Also, there are time hierarchies, so some people are longer in the house than others. But we listen to people because what they say makes sense and not because of their position.*

**Maybe instead of institution, I meant more an institution in the free scene.**

*Artist-run space is a nice term and if you call it anything else, institution or culture club or whatever, it depends on how much you know about it. There's a very broad range that fits that label, so if you're not too keen on what something is called, it's not a problem in my opinion. Same with the Versorgerin, I don't think it's not a newspaper, but we are definitely no classical journalists. What I like is to always stand outside, to be sympathetic to a scene or to a profession but have the luxury of being able to look less biased at it. We, of course, follow some journalist guidelines, we check information, and we try to show as much integrity and decency as possible, but we are not flocking with the birds.*

**And what do you think when people call you one of the headquarters of independence in Linz?**

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*I think it's true.*

Yeah, sure we are. Somehow it's not a question, because Stadtwerkstatt was the first initiative in Linz and many things came out of it, developed then separately or are still connected. Of course, the scene is pluralized and internationalized, and you can't compare it with the '80s, '90s or other times. I know what I'm talking about, because I also started my own thing first, and later joined in Stadtwerkstatt. But I think we still are a flagship somehow. I'm not saying we're the only incredibly important association and no one else is, and of course we are cooperating with many other great initiatives. But you can see this meaning of the headquarters very well when the right-wing parties are starting their campaigns, and the first attacks, but also responses you see come from the Stadtwerkstatt, KAPU, maiz,<sup>6</sup> and so on. I think that's quite important and you can see what we stand for.

**Sure! From the outside, you quickly end up in this flagship role, and it feels like you're constantly questioning that, trying to distance yourself from it. It's a bit like a pendulum. But, as you said, the artistic side of this could be more visible, even outside. I often feel that professionalism is expected, and many assume a place like this should have a rigid structure.**

When initiatives exist for such a long time and also run a house, then the expectations are sometimes like this. For me, it's always interesting to see that and also having the experience of what it means to run a place like this with the relatively small resources we have. It's always some kind of magic trick.

Two weeks ago I had a talk with a woman who asked me about the role of the audience in Stadtwerkstatt. I commented that Stadtwerkstatt is its own audience. It's a completely different thinking of a place like this because an association is its own audience somehow, even if it makes a program and people come to see it. I'm very happy to understand that we still function in a basically different way, because I, for example, have to deal a lot also with working contracts and financial part, programming, working on the desktop and sometimes I have the feeling that we are a normal working, exhibiting or music-organising place. Of course we have to deal with that to not ruin the association. But that shouldn't be a reason to adapt. So when I see also how other exhibition spaces or festivals function, then I recognize that Stadtwerkstatt is still doing it in a different way.

*I don't know if it's transparent from the outside, but just*

*one comparison would be if you take Radio Fro<sup>7</sup>. I don't think people from the outside realize that this is different from any other private radio. The whole idea behind it is different. As Tanja mentioned, to be efficient, you have to handle finances and regulations, even if you don't enjoy it. But there's a tendency of becoming too focused on management in the cultural world. It's not just about getting money to function, but also about following rigid structures like a company and that's not the thing that Stadtwerkstatt does. There's no place for it here.*

**The assumption that people have is that as soon as you exist for longer than three years as an initiative, and you get (public) funding, there are specific kinds of office work you simply need to have, because otherwise the whole venture collapses. I realized it when I started working in servus and taking care of the financial things and the program. These tasks are so much more based on agreements on specific needs and what was happening, so there is no master plan. But I got the impression that the others expect that there is something that has been structured before and therefore it still works. As it is difficult to confirm that something that worked five years ago doesn't work anymore, we have to find another solution. Maybe it's also coming from education or the wider society that we expect everyone to have a plan.**

What you are talking about is also about understanding yourself as creating part of the structure, the plan. To understand, if you, or some members of the community wouldn't create the plan, nobody else would do it. This is also powerful, but has its difficulties to be done. So you know, it's good to have a place where you can create or influence how things work. But suddenly, you realize the master plan has to be rebuilt constantly. I had an experience where a guy worked for us and his suggestions were terrible. The moment he finished presenting was the moment when I understood that I had to say: "No". If I hadn't, no one else would have. It's surprising how obvious but how unclear it is, that nothing builds itself, and to recognize that you have to be part of creating. That is part of the work, I guess.

*The general master plan would be to do what's good for the house and that sounds very loose but I think people have an understanding of it. They came here for a reason and if you work here or spend enough time, you get an idea of what can happen here.*

And in general: If everyone had such great master plans, things wouldn't be so bad everywhere.



I think the way you answered highlights a lot of the discussion you have every day :)

I have a question regarding the data center. It's not just artists around the center, but also artists running a data center. How do you deal with these digital layers of the house, and how do you create a new digital archive?

*I mean, it really depends on the kind of media you are dealing with. For video stuff, I just realized how hard it is to transfer all obsolete, old video formats and make them durable, for some years at least. But I'm working with text mostly, and there are less difficulties with the medium itself – if you leave out the layout.*

You mentioned us as one of the power users of server structure, and I think the main message is, that it's a super important part of having servus in the Stadtwerkstatt. Having the autonomous infrastructure and also having this discussion about what it means to use infrastructure critically. It's an important thing to have the servus data center here. For example, when you decided to host the <nettime> list<sup>8</sup> was proud that servus is hosting it. In this understanding, we have a shared critical eye of how digital ecosystems have developed, that they've become highly commercialized with companies dominated by GAFAM.

On a daily level, it's great to have you around, to ask for hints when I need them. In a broader sense, servus, as a net culture initiative, shares a similar role with Stadtwerkstatt in balancing art and infrastructure, while also supporting a wide range of artistic projects. It's good to have servus and hopefully it is also the other way around.

*Maybe just to tie the usage together with the position or the relevance of the data center, I would call it a hub. I think it's a hub, in a good way, because I mentioned the interconnectedness of the departments and one big part of that is the cloud, apart from personal conversations. Because in the cloud I see mirrored what's happening, what other people are doing and what there is still to be done.*

I was surprised when you said "hub", probably in the same way that you reacted to the word "institution". But I see what you mean :)

*Like a traveling hub – people don't need to have the same interests or agendas. You meet them, see what's happening and connect from there.*

I want to add, beyond all digital traveling hubs and so on: I think, a key point for us all will also be the importance of a social meeting place in real life again. For Stadtwerkstatt's

house community future, I see the value of having a space where people still can come together, eat, drink, hang around and discuss ideas. Of course, we are all busy with daily work. But I personally enjoy finding out what others are working on and the questions they are exploring. And it's important to keep this space also easy and active with real human connections besides the digital or cloud-based world.

**I think you are describing the house again here, but I also see it as a metaphor for the role of servus' infrastructure. It's about artists gathered around a center or hub – serving both as a space and a concept. There was a definition that Fino said that Stadtwerkstatt is a music space that spans a role that goes from hosting concerts and events till just before it becomes a professional club. And it covers a spectrum that stops just before becoming the institution. You kind of swing between spontaneity and disorganized values, which can grow and become as large as "48 hours".**

*Yeah that's why it's not called a festival, but a 48 hours showcase extravaganza.*

*Yes, that's our showcase in coop with Ars Electronica which isn't called a festival.*

*Yeah, and Tanja doesn't call herself a curator and I don't call myself an editor.*

1. <https://stwst.at/>
2. <https://versorgerin.stwst.at/>
3. <https://www.fro.at/>
4. [https://newcontext.stwst.at/projects/messschiff\\_eleonore\\_2008\\_ongoing](https://newcontext.stwst.at/projects/messschiff_eleonore_2008_ongoing)
5. <https://www.kapu.or.at/>
6. <https://www.maiz.at/>
7. <https://www.fro.at/>
8. <https://nettime.org/>

# It all started with normal computers

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*Didi  
Kressnig*

**An interview with the long(est) standing servus.at system admin Didi Kressnig about the servus.at infrastructure and its development over the years.**

**Please, introduce yourself.**

My name is Dieter Kressnig, I've been working for servus since 2000, but I joined Stadtwerkstatt a few years earlier. In addition to my work as a system administrator, I enjoy hiking or mountain biking and meeting friends.

**How did you get started with system administration and what aspects interest you the most?**

The whole thing started at university. I was studying technical mathematics and somehow I ended up helping to look after the ÖH's web and mail servers. At first, it was primarily about workstations. They were foolish clients and because they were so lame, I decided to connect to the ÖH server with the first clients and get the interface from there because it was much faster.

**Did something frustrate you so you decided to step in and volunteer?**

Exactly.

**And you liked it so much that you decided to continue?**

Well, I was already good at it during my studies, but at some point, the original department heads finished their studies and then it was just me. That's when I was fully committed. Apart from a few programming languages, such as Fortran, Java and C++, which I learned during my studies, I acquired all the know-how for this on my own.

**How did it all start with servus?**

In principle, I was already active in IT at Stadtwerkstatt and Radio FRO and did different things there. When the system admins at servus at the time, Fritz Kron and Chris J. Mutter, took on other jobs, the obvious conclusion was that I should fill the vacant positions at servus. But the idea to create an own association and structure came from the Stadtwerkstatt.

**What did you do at the Stadtwerkstatt before Servus?**

I originally came to the building via Ralph Aichinger, who was an STWST employee at the time. We actually wanted to replace the neon sign back then. But it never came to that, I did a lot of other things and was employed on a part-time basis. Over time, I also joined Radio FRO and took over IT there.

**What do you now do at servus?**

I mainly maintain and look after the server infrastructure and the network in the entire building, which includes Stadtwerkstatt, Radio FRO, servus and Cafe Strom!. Then there's the email service, the Servus cloud and all the member websites, VMs, etc. That runs on our servers and, of course, the associated user support. As we are completely independent with our server infrastructure, apart from the network connection, I maintain and look after the entire system, which means a lot of hardware.

**What are the challenges of running a self-organised infrastructure for so many years?**

The most difficult point is our power supply, where we have a relatively poor connection. We often have voltage fluctuations in there. We do have UPS's that are good at bridging fluctuations anyway, but it can of course happen that the inrush current, for example, causes something to happen that is too high for the UPS's and they can't bridge it. Then the fuse blows and one of the three circuits goes down. The whole system doesn't shut down, but it's definitely an inconvenience. As for the maintenance, support and hardware upgrades, they aren't very time-consuming. I usually take care of them at night or on the weekend, and it only takes a few hours each month.

**How did the data center change over the years?**

It all started with normal computers that you just put in a cupboard or rack, servers were simply too expensive back then and there was not enough money. As we received more and more funding and the servers became a lot cheaper, we were able to take the next step and purchase real server infrastructure. In the last few years, for example, we have acquired seven new nodes. You can think of nodes as one or two height unit servers on which all the services such as mail, cloud, etc. run, so basically hardware on which a bunch of VM's (virtual machines) run. Otherwise, we simply made sure that as soon as the server structure was in place, we kept it up to date and looked to increase storage and computing capacities. Even if, for example, requests or requirements come from our members, this often means that we have to upgrade certain

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hardware components, as long as this is possible with our resources, of course.

**What about the rest of the internet in general? How did it change over the years and how does this affect the data center at servus?**

In the beginning, we had a fibre optic line to the AEC, which connected us to the network. That was the case until the conversion, which I think was in 2002 until it went directly via LinzAG, so only the fibre optic line. Then we got modems, so we have one modem here and the other is at the JKU, where we are connected via the ACONET. We used to take the detour via the AEC. In the beginning, it was only 1 Mbit, at some point it was upgraded to 10, then 100, and I think three years ago to 1 Gbit. But it's still the same fibre optic line as back then. The server infrastructure itself has only become more powerful, as demand required. A major change about 14 years ago, which Peda was the main driving force behind at the time, was that we had VLANs in the building, and secondly that we put the nodes into operation. With VLANs, you can operate different networks over the same line so that people can only access the things they are supposed to. Three years ago, we got fibre optics throughout the entire building so that every floor is connected with 10 Gbit, which is especially necessary for video and sound editing that takes place in the building via the network.

**What is your motive?**

Historical (laughs). I've also worked in the private sector where the salary is certainly higher, but what I love is that I have almost complete freedom here in terms of what I do and when I do it. I can also experiment a lot, which is great for me. For example, if members and their websites are not so well secured or updated, I experiment a lot with how I can separate the websites on our servers. So if one website is compromised, I make sure that not several are affected and that the pages are separated from each other.

**In F/LOSS, contributing is a huge part, is this something you do as well? Do those experiments result in such contributions?**

Sometimes I do that, but not too often. It comes up during the experiments or a snippet appears on the net via a mailing list I'm on, which is not yet so mature, then I improve it and post it on these mailing lists again. An example would be the filter I wrote for rspamd<sup>2</sup>, a service that can be used for spam filtering.

**A question regarding servus. Do you see the need for a generational change? Is it even possible to do a handover?**

I'm over 60 and won't be doing this forever. I'm not thinking too much about it at the moment, but of course, it will become an issue at some point. The main problem, however, is finding someone who won't just do it for three or four years but will really stick with it for the long term. The transfer of knowledge itself is possible, especially if the person deals with the existing documentation and continues their own training. But of course, there has to be a personal exchange.

**What do you wish for servus ?**

I hope that we continue to receive strong support and encouragement from our members, stay in high demand and maintain our funding so we can keep growing. And also that we find a capable successor who can take over my role effectively and for the long term.

1. <https://strom.stwst.at/events/elasouls-dusty-thirstdayz-30/>  
2. <https://rspamd.com>

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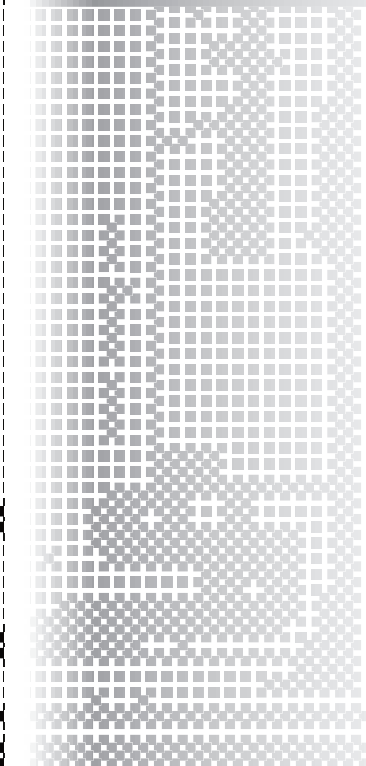
# “We’ll call the network Eliot”

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Deriege

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# A conversation with Aileen Derieg about exploring self-hosted networks, creating alliances, running autonomous infrastructures and cultivating situated data centers of technologies inhabited by human experiences and emotions.



Aileen Derieg is a former translator and a media activist focusing mainly on free software with an emphasis on autonomous cultural initiatives. After decades of translating in the cultural field, she retired in 2018 and has since intensified her work with initiatives such as servus.at, AMRO and Eclectic Tech Carnival, among others. Soon after having closed the chapter of professional translation, Aileen spent two years living in and working with the hacktivist collective in Calafou, Spain, before returning to Linz, Austria, full time.

Thank you Aileen for joining us. I would like to welcome you and invite you to introduce yourself.

That's probably the trickiest question. I was self-employed as a translator for 24 years. I started translating computer manuals, then moved in the direction of digital, contemporary art and afterwards into more critical social theory, philosophy and media. In the end, I went back to technology theory. My first encounter with computers was when I took an Introduction to Computer Science course in 1977, where I started learning to program in BASIC, and I've been fascinated by computers ever since.

**As far as I remember, you also discovered Linux through your translation work, right?**

Yep.

**And how was it? What was the first encounter with one of these manuals?**

In 1994–1995, I was asked to help translate to English a revision of one of the first books about Linux, because I was one of the few translators in the area who already had an email address. I hadn't heard of Linux before, but at least I knew what an operating system is and why it matters.

**Did it fascinate you?**

Yes. Translating the introduction about what Linux is, my first impression was that this is a feminist strategy and I got really excited.

**Where did you see this?**

The idea of collaborating and sharing knowledge, emphasising that the work is a collective effort rather than just one person doing it.

**Were there already discussions about free technologies or free software at the time?**

That was my first introduction. The one to email happened through a project that I was responsible for, Aktionskomitee "Asyl für verfolgte Frauen und Mädchen", which was a group in Linz that formed around the first office of women's affairs of the city to push in the early '90s for recognising rape as grounds for asylum during the Balkan War. Our group also published a reader about violence against women in the context of war, so at that time we were collecting information from lots of different sources, and at some point, we were starting to get short messages in a strange format. A woman from the group knew what it was, she showed me an email which was the first one I ever read. It was about urgent pleas for help from women's shelters in Belgrade that were overflowing and not getting any international aid. So, then I came home and I told Peter that we needed it! I connected with a group called "DeMuT" (Demokratie Mensch und Technik). We were both intrigued by their work, but I was just finishing maternity leave and starting my business, so I couldn't do it all at once. Therefore, we agreed that Peter would take it on. He learned how to set up modems and connect to the internet. That was also our first internet connection so that we could get an email, and I started learning to search through Fido, use Gopher and all of that.

**After this start, how did this grow over time?**

When I was translating the book about Linux, Peter started trying out the CD. We said, "Okay, let's see if we can connect the three computers we have in the room," and we agreed that if we wanted to make our own little network, it needed a name. Peter was standing in front of the bookshelf as we talked about that, and I looked at the books behind him. There was one of my favourite authors, George Eliot, and I said, "We'll call the network Eliot." So, the first computer was called George. Then we connected a dual-boot Linux-Windows machine that we called "TS", for the poet T. S. Eliot, an American-born British poet. The third computer we connected was a Windows machine meant for games, for the boys, and we called that one "ET". In the film ET, the little extraterrestrial is befriended by a boy named Elliot. So all of our computers in this network have always somehow been associated with Eliot.

**How did you start trying out services at that time?**

There were some internal conflicts at DeMuT, so we had to get a different internet connection and new email addresses. It was through the small company called Ping, and our emails were at site38.ping.at. We had the 38th email address

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in Upper Austria, but then they stopped numbering new addresses very soon. Ping was sold to a larger company, which was sold to another larger company, which was sold to another larger company. It was just getting annoying, so we ended up starting to set up our own email server, which was really fascinating. Then several other people also had email addresses with us, including friends and family.

**Did this develop into a more stable setup with initiatives and interested people?**

People who understood they needed an email address, website and domain name, but didn't want to handle the setup themselves, trusted us to comprehend their requirements and help them.

**Were there many people doing this at that time in Linz?**

There was us, and servus, and I think DeMuT continued for a time but eventually gave up. Before Google, there weren't that many ways to get an email address. Hotmail was a popular choice, for example. My brother still uses it and he is very proud of that.

**How did you come to realise that you were no longer just running your own machines, but had also turned them into a server for others?**

It just grew and it was interesting. People would ask us and we tried to help them. We both enjoyed experimenting and trying out new things.

**Nice, so at the end you had emails and other services. How did you choose what to install and use?**

We had email and IRC. While experimenting with IRC, Peter and I realised that as we were next to each other on different computers, we should check if someone from the outside could connect with us. We got my sister on, and the three of us could exchange text messages in real time. Then we noticed that my father was online with ICQ, which was also popular at the time, so we tried to help him get into IRC, but it didn't work very well. We ended up just joking and goofing around. A few days later, when my sister and I met for his funeral, we agreed that if we had seen him that night or even heard his voice, we wouldn't have just sat there fooling around. The next morning we realised that my father knew he was dying and so he just took a little time off from that to spend an evening having a good time with us.

Some time later, I got involved in a blogging project, after which I became interested in this topic. When my son got ill, there was really nothing to find on the internet so I started

my blog "Living with Plan B" initially on Blogger. Then the Blogger platform I was using was sold to Google, and some years after my sister's death, I decided I couldn't trust Google with those precious memories. That's why I persuaded Peter that we needed to set up Wordpress on our machine and that's how we started running Wordpress.

**How was the work to maintain, were you doing it together with Peter or did each have specific roles?**

That was always a point of tension. First of all, Peter and I didn't work well together, and when the boys started school, it became even harder to change the dynamic. I had my office next to Peter's workshop, but I was the one who could transfer my work on a floppy disk – or later use FTP, moving it over with FTP – to take my work home and try to continue working with a bunch of kids next to me in the computer room. Peter obviously couldn't take his work home with him, the very large instruments and mountains of wood shavings, so it ended up that I was at home in the afternoons and had to go back to work in the evening as soon as the boys were in bed or somewhere else. Peter worked in the workshop all afternoon, came home in the evening and had time to sit down and work on the computer while I was trying to finish my translation work. So, he became very interested and learned a lot, and I learned together with him. He kept me constantly updated on what he was discovering, because Peter learned best by explaining.

**Were you sharing some of the services, or was he mostly managing things while you were more focused on the research stage?**

Yes, and also helping people figure out with whatever problems they were having with email or their websites and so on.

**What happened then after Peter died?**

When Peter died, it quickly became clear that I couldn't maintain the server by myself, certainly not in addition to closing his affairs, trying to keep up with my work and everything else all at the same time. Jörg Lehner thus organised a gathering of local system admins to figure out how to move all the domains. We were hosting about 60 of them on our machine, and at some point, as we were talking about it, which domains could go where and who could offer what, I got so discouraged and I looked around and thought that the distribution of technical skills and people skills around this table was a disaster. That night I sent an email to the ETC mailing list and explained the situation. I wrote: "I can't do this with this group of guys. I need Paula, Amaya, Donna, Ivana, I need all of you." And they all responded, it was amazing. When we met online, they talked me through everything so that I could close up especially the private parts of our lives, remove it, store it on hard drives and set it aside. I told all these guys that nobody should touch this machine until I said so, and at least they knew me well enough to know that I was very serious.

**It must have been a heavy process.**

I had never realised how much of our relationship was documented on this server. It was such a big part of our lives, and emotionally, it was really difficult.

**So then, part of this moved to servus, right?**

I moved all of my domains there: [eliot.at](mailto:eliot.at), [derieg.com](http://derieg.com), [selbstlaut.net](http://selbstlaut.net), whatever other domains I have.

**How was servus back in the days?**

Peda (Peter Wagenhuber) and Bundes were great! Peda helped me extract all of Peter's email, set up my domains, and at some point I asked him: "Oh, I can still use Pine, right?" He looked a bit dismayed and said: "Well, if you really need to use Pine, I guess I can set up a special connection for you." My comment was that I could deal with Thunderbird. I had been reading about things like "IMAP", "POP" and the different protocols for email and thought that it was interesting to know, but before I had just logged into my terminal, here is my email, and I'm fine. It's probably why I've always had an irrational aversion to Thunderbird.

**Are there still services you manage yourself or other projects that you continue to give support to?**

Well, first of all, in "Willy Fred",<sup>2</sup> most of my responsibilities have to do with computers and networks. Secondly when Interregnum [another servus member] wanted to try Ghost [a

recent CMS], I remember we looked at that and we thought it seemed interesting. Bundes encouraged me to try it out, and after setting up Ghost on my machine with Federico [Poni], we started trying to set it up on a virtual machine here but we got stuck. Both of us learned a lot along the way, which made me very aware of the different understandings of self-hosting. Ghost is open-source and has a small, capable team, but the problem is that they are completely dependent on other commercial services like Mailgun, Zapier and when I was trying to look for information, I realised that in the whole section about self-hosting, all of these people are on Digital Ocean, Amazon Cloud, somewhere else. Nobody is hosting their own, and so it's been really hard to get away from this dependency on other commercial services.

**This basically relies on large infrastructures that take care of some standard stuff on the contemporary web, right? And then this is what we don't keep up with.**

No, we actually have all of that. We've got ListMonk, so we don't need Mailgun. But there's no way to find out how to plug in ListMonk instead of Mailgun because everything is designed to run with it, which is a commercial service. Maybe someone with better programming skills who is more of a developer could do this, but I haven't found a way to make it happen yet.

**I mean, this does not sound like a normal setup for a self-hosting project. It sounds like you want to set up your Nextcloud, but also need to code certain parts to make it work for you.**

Yes, that's a good analogy with Nextcloud. In Calafou, I was one of the admins for it. There were also a lot of responsibilities which I enjoyed very much, as well as the inside of things. Although I'm not that knowledgeable, I'm always trying to learn more.

**The next question is more general. You mentioned before that there were also other servers in the '90s and early 2000s, like "t0",<sup>3</sup> "Silver server" and others, but then they had to close one after the other. There are dozens of these from tiny to midsized that had to shut down. Why do you think this happened?**

Too many people got too interested in how to make lots of money with the internet. In addition, the idea of communication and connection got lost because everything was just focused on how can you turn this into a profit. I think in free software and open source, a lot of people just couldn't keep up with constant volunteer work and then the big companies like Google or Yahoo became a monster.

**Can it also be that technically it became more complicated to keep up all the services?**

Yeah, the technology has become more and more complicated and also security needs. That's still a constant race to keep up with.

**On the other side, there is also a very big cultural aspect that if a large amount of users understood all these troubles and were kind of willing to still have independent infrastructure, there would be more of a niche for this.**

Yeah, I think it just got lost in this huge rush for shiny new things like Facebook and Twitter and suddenly everybody was there. It's really easy to set up and you don't need to worry about running a server or even understanding how it works, just use it.

**Do you think it is changing?**

Yes, I think there is a renewed interest in that. Eclectic Tech Carnival (ETC),<sup>4</sup> for example, we thought it was over, but a new generation of people came in and said: "This is fantastic! Let's keep it going." They've done a great job expanding and evolving the format while maintaining its core. There's also a growing desire to learn skills that don't rely on commercial services.

I think people are realising that centralised services are a bad idea. As it also came up at AMRO, there's a desire for something different, but many don't know where to look. So, we are at a moment of connecting the knowledge that's still there about decentralized and self-hosted services, moving away from big tech.

**So, there is interest, but people still feel lost. What do you think might be a place where they can learn, get involved, and eventually become autonomous?**

I think there have to be a lot of different alternatives. A lot

of people who came to ETC this year are involved in those kinds of grassroots initiatives like Diebin in Vienna, or syster-server, which runs on a virtual machine at [mur.at](http://mur.at). Someone else, for example, organised a series of meetings and workshops for skill-sharing and learning about free software. In a discussion during Ars Electronica, it was suggested that we should bring back "cybercafes".

**There seem to be renewed alliances where the work of tech people is not only working with themselves, but it also becomes part of other groups that deal with topics of social importance.**

And not just focused on the technical aspects of it, but seeing it in a broader context of society and culture.

**Exactly. We need more of this in a way and I'm hoping that through this kind of documentation of what's happening, we will help others recognise and understand the need for it.**

Absolutely.

**The last question is, what are you currently working on?**

My three main projects are: Willy Fred – the collective house project where I live, servus, and F.I.S.T. – Feminist Intersectional Society Terror, a group that seeks to promote queer feminist discourse in Linz in collaboration with other groups and always in different places. Our last event was on the 6th of November [2024] about how to be an ally. We have invited people from various collectives, who deal with discrimination, people who actually need allies to discuss with us and to figure out what helps and what's not helpful. We have Maiz, Das kollektiv, VIMÖ – Verein intergeschlechtlicher Menschen Österreich, Pride Linz" and others.

**How long has this collective existed?**

Our first event was one year ago in October 2023 and we came together about half a year before. Our approach is that we are not using any commercial social media. As soon as we became an association, we applied for a membership with servus to use email, Nextcloud, a mailing list, and also Mastodon. We decided not to advertise our events but to invite people directly, which is why being with servus, rather than on platforms like Instagram, is important to us. This choice is both intentional and experimental, but it followed a really long discussion.

1. <https://livingwithplanb.derieg.com/>  
2. <https://www.willy-fred.org/>  
3. <http://www.netbase.org/t0/>  
4. <https://www.eclectictechcarnival.org/>

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# From Intermedia Research to Art Meets Radical Openness

# Christoph Nebel

**This conversation with Christoph Nebel opens up the early times of media art in Austria and focuses on how a scene working with critical networks developed over the years. The first part focuses on collaboration, experimentation and the use of new digital tools. Christoph tells the underside of projects such as HILUS, Open Circuit and UNITn, which have been fertile ground for cooperation approaches within art and technology. We move then to the adoption of free software in arts and discuss LiWoLi and its evolution into AMRO.**

**Introduce yourself in a few words.**

I was born in Basel, Switzerland, where I did an apprenticeship as a sign painter for four years. During this time I was also visiting the School of Design in Basel and after my apprenticeship, I went to the foundation of the Basel School of Design. The whole time I was in the studio, painting, drawing and doing things like this. A friend was also there and he worked mostly on video and photography with the first equipment available.

In 1984, we organised a collective exhibition “aesch” with a group of students in Switzerland, where we rented a huge fabric factory building for a month. Already then, in 1984, there were computer-based installations, laser works, dance performance and painting in the exhibition. We were open on the weekend and during the week we were working all together on our artworks. The project was so inspiring for me and it highlighted the value of collaboration and shared expertise.

Around 1986, I moved to Vienna and started my Master’s studies at the Angewandte by Peter Weibel, Visual Media class. For the first year, we had no space, we had nothing, we just visited whatever art history lectures and Weibel’s classes. Then the program was set up in a studio with Umatic video equipment. I got into Atari computer for music production and I had a Commodore Amiga computer at home. We had one in the video studio for the paint program and doing masks and layers for the video production. At the time, we used a different machine for each purpose and the Macintosh Cube was just for playing the games. I think it was the first machine connected to the internet before it got commercial. Only later I realised that this time had a big influence on me.

Franz Xaver had a lecture there, it was about soldering and doing your own little machines. I was very impressed about the position that Franz Xaver took as an artist – building your equipment to do what’s impossible. To try out a multi-frame computer system to access satellite images and connect them. Maybe there was the seed for getting into Linux later and appreciating open-source, community-based work.

**After that, you went on with the development of network art projects such as HILUS – intermedia project research, Open Circuit event, UNITn – art with new technologies and many more that deal with digital and network technologies. What were they about? And what was the context in which these projects were realised?**

It was not only me, it was always a collective behind the projects. At the time of my studies at Visual Media, Herwig Turk, Christine Meierhofer and Max Kossatz were also studying at the university and then there was Reinhard Braun. Around 1991, we visited Ars Electronica and stayed at the house of the mother of Kurt Hentschläger [who later founded Granular Synthesis] and there was a book that caught our interest, “Digitaler Schein, Ästhetik der elektronischen Medien” by Florian Rötzer. When we sat in the garden we thought: “Let’s do a reading group!” This was the starting point of getting together as a group.

Around 1992, I got a state scholarship which allowed me to spend some time travelling. Like my other colleagues, I visited festivals all over Europe, specifically video festivals. The AVE<sup>1</sup> – Audiovisual Experimental Festival in Arnhem was among the most interesting ones. They started around 1984 and the special part about the AVE festival is that they had so-called “scouts” who visited several countries in Europe: Poland, Austria, Germany, France and Great Britain. As an artist, you had the chance to meet and talk with them about your work. They took notes about your idea, how developed it was and what kind of equipment you needed. With all of this information, they went back to Arnhem and discussed what they collected and then made the decision who to invite.

It was completely different from other video festivals. For me, it was crucial for making connections and they were aware of it: they had a wall with photos of all participants, so if you were impressed by a specific artwork you could go there and see what the person looked like and get in touch with them. It was very impressive and when all of us came back from all these festivals, we knew that this was totally missing in Vienna. We all saw a lot of ideas and concepts that we never heard of in Austria, so we thought we had to make an initiative to exchange that knowledge. We shared all the materials we collected at the festivals, books or fanzines, publica-

Christoph Nebel (born in 1962 in Basel, lives in Vienna) studied Visual Media Design at the University of Applied Arts, Vienna, 1986–1991; 1991–1993 founding member of “HILUS – intermediale Projektforschung”, Open Circuit event, UNITn – Art with New Technologies; 1993–2014 Vienna Art School, teaching assignments and head of the Interdisciplinary Class; 1993–2022 university assistant at the University of Art and Design Linz; 2005–2022 co-head of the Department of Time-Based Media; since 2022 Professor of Time-Based Media, University of Arts Linz.

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tions or whatever we brought back. At some point we thought: "Let's set up a place where other artists can also come and get the information."

**Was this HILUS?**

This was HILUS.<sup>2,3</sup>

**Was it a space where you gathered?**

No, it was just an idea. We always met in our apartments because we had no space at the time, I think that was around 1991.

At that time, we were just four or five people, we were aware that everyone knew so many different kinds of works and had different interests. We started to work on concepts and we thought to set up an infrastructure in Vienna with discussion about analogue and digital communication tools, and space for seminars and workshops. As you know, around 1994, the internet became commercial, but we have been already working with Gopher and other basic internet communication. It wasn't about integrating existing digital art networks or exchanging data and information – it was about fostering dialogue. Our main objective was to provide experience and advice to independent media artists and connect them to the digital network.

We did a lot even though we still didn't have space or funding – nothing. We started to communicate, to do research about artists, institutions, organisers, galleries, databases and groups, and started to think about what to do with it. It was also a critique at the time that we thought some institutions already should do this, like museums, but they were very conservative and didn't want to show anything with electricity because "if the power is out, the artwork doesn't exist". Therefore, we had to do it on our own.

**How did the production of events start within the practice of HILUS – intermedia project research?**

For us, it was more interesting that our works were shown at festivals than in a gallery or an art space because festivals brought people from all around the world together, fostering interaction, whereas galleries were quiet, open for two weeks, and that's it – that wasn't our goal.

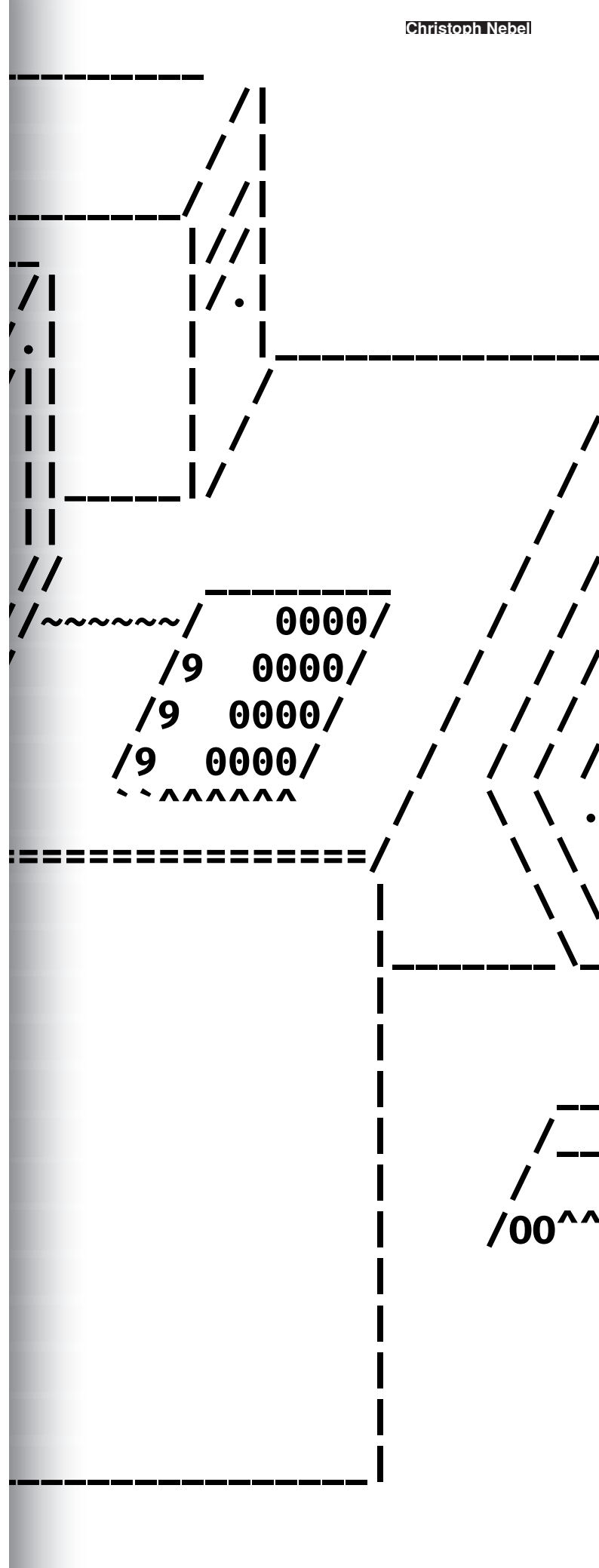
The name HILUS was chosen in a meeting at the apartment of Max Kossatz. I went to the bookshelf and found a science book about medicine, where I saw the term "Hilus", which is the gateway at which blood vessels and nerves enter an organ. I thought that was great! Nowadays everyone talks about the interface, but back in 1991, we were already focused on the concept of the interface as essential for human connection.

The first event that HILUS realised was Open Circuit<sup>4</sup>. It was based on a concept called the Roundtable Talk for Synchronous Information Exchange. The idea was a three-day retreat for 40 participants around a huge round table in Pöllauberg. It was there because we thought it shouldn't be in the city of Vienna, where everyone can go out at night. We brought together art groups, artists and initiatives, which sat at the table, with the second row of theorists, journalists and scientists. It was forbidden for the latter to talk and we said also we didn't want any article or information to go out. Of course, some of them were quite annoyed but still accepted the invitation. So, we drove to Pöllauberg by bus and every invited initiative had half an hour to present their project. Afterwards, everyone knew about what was happening at the time. Probably the same would be happening in a messaging app today.

**I'm quite sure that also back then you could have set up a messaging system right? I like that you did it very physically.**

Yes, the synchronous information exchange happened during the day and the nights were filled with debating, talking and questioning, and there were also performances. It was important for us – it was not easy – not to invite only initiatives, artists and groups working with media. We invited therefore the Vienna Poetry School, the early Flex – a concert place in Vienna, now very famous for the sound system, at the time it was more like a garage. We had Christian Ide Hintze, journalists like Wolfgang Zinggl or radio makers Kunstradio<sup>5</sup> and so on.

**You're talking about a time when people started exploring art,**



**technology and research-based practices, like video, performance and intermedia, building on ideas from Fluxus. Was this already kind of what we can call a media art scene?**

It wasn't really a scene because there wasn't a dedicated space for it at the time. The idea of the scene came later. The first generation of media artists like Valie Export<sup>6</sup> at the time didn't even have a gallery that represented them, so why should we have a place? We were the first students of the media class at the Angewandte and we knew different Institutes for Electroacoustics in Vienna, in Graz, in Linz at Bruckner Uni, which was later closed. Of course, it was mainly Vienna-based, but as I mentioned earlier, we also invited initiatives from other cities.

As HILUS, we wanted to be part of a larger community, not as the dominant force taking over everything. But later this became the point that made HILUS split up. Especially for me and Reinhard Braun<sup>7</sup> it was important not to run an initiative where we present our own work, so HILUS was a connection point. At some point, we had the idea to do a huge event called UNITn: 250 square meters for Art with New Technologies, between 15th January and 15th April 1993, an international forum exchange for presentations. All in one space with phone, fax, email access and so on. Out of Open Circuit came not just HILUS alone, but it was also Kunstlabor from Franz Xaver, Initiative Literature and Media, Kunstpassage, Vienna Medienwerkstatt, Pyramedia, the project group Medienkünstlerinnen im Gespräch, the Steirische Kulturinitiative, die Arge Kultur und Technik and so on.

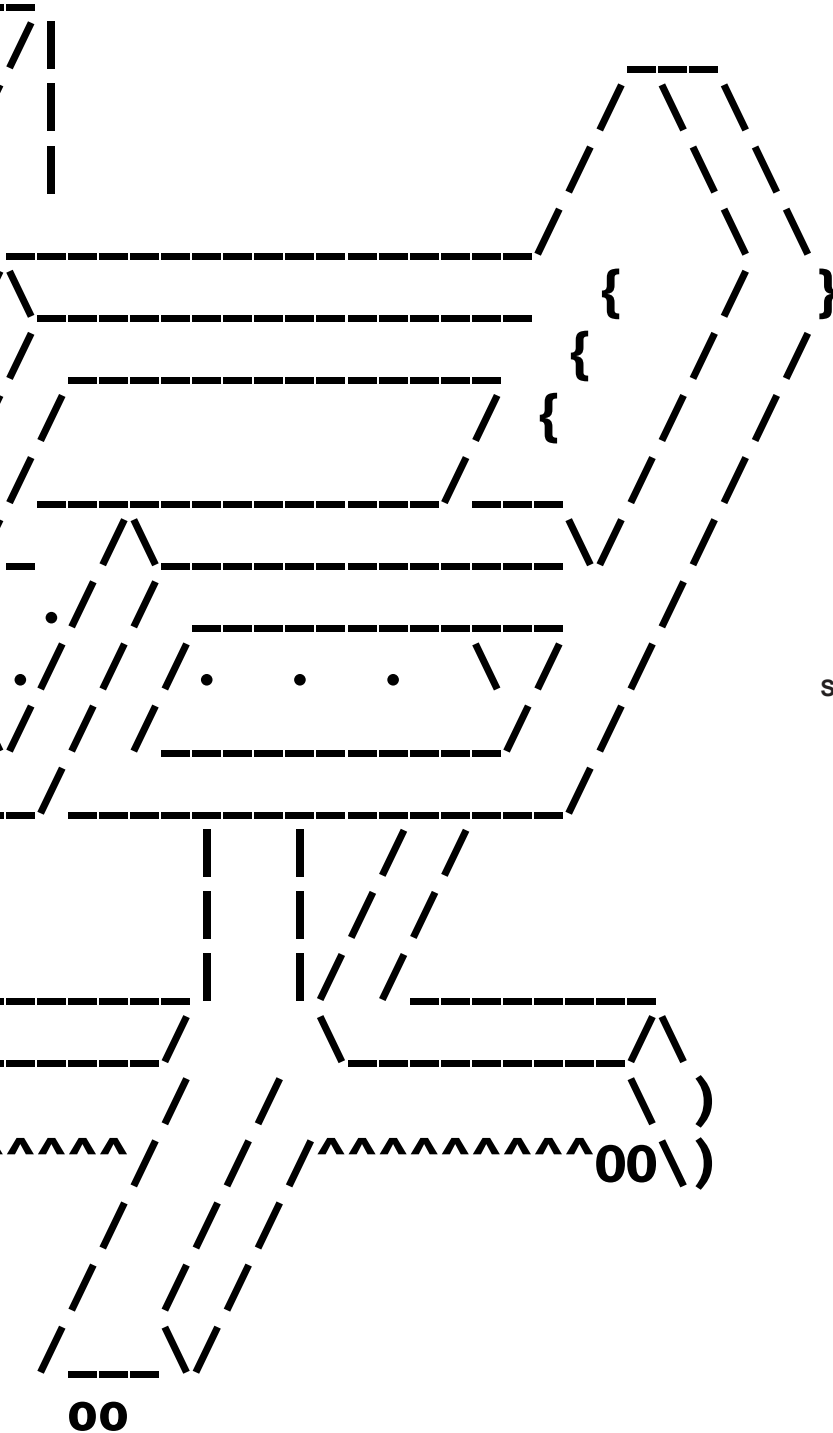
We had no funding because the state funding department thought it was too big for us and we are not able to do it. Since we had no budget, we relied on what we had. All the groups brought their equipment – from Marshall amps to rock band microphones; Pyramedia brought the TV screens. Everyone had different kinds of equipment and we collected it all together in a space at the WUK<sup>8</sup> in Vienna, in the so-called "Projektraum". The WUK said that they will support us with sending out information. We searched also for sponsors, and I have to say that one big sponsor was Microsoft at the time. There was another sponsor from whom we got the computers from, it was Compact Computers. We also had a connection with Radio Austria<sup>9</sup>. Through them, we got access to the internet.

**So, you still did it. How did you develop the program?**

We did it with the sponsoring and after the whole event was over, a few months later we got the money from the state funding. Everyone was burned out, the members of HILUS stayed there day and night for three months just doing this. We hosted book presentations and studies on technological culture. Austrian Airlines supported us, allowing us to invite artists from around the world to Vienna for the program. I set up video equipment and monitors permanently, creating access to a video database. We also cooperated with a symposium called "Online Together" with the Styrian cultural initiative, where we did also the online access together with Graz. There was the Symposium "Technological Culture and Media Art, Problems and Solutions". There were performances, interactive projects, music – where data was transferred in a concert. This is just a short summary. There is a book published about UNITn.

For three months, we hosted online sessions with Howard Rheingold, discussing topics like the future of technology, how it works, and where it's headed. I still have printed transcripts of those conversations. Big thanks to Max Kossatz and a colleague of mine, Patrick Maun, Amy Bruckman, who was pioneering a medium for multi-user interaction (multi-user dimensions – and MOOs – multi-user object-oriented spaces), we set up a virtual space using her platform, MediaMOO<sup>10</sup>, hosted at MIT. MediaMOO was text-based – no images, only ASCII code – and allowed users to create virtual spaces for up to 200 participants. We recreated the WUK space, the virtual space, and used it for these conversations. It was a unique and groundbreaking experience for that time.

**How did the internet work at the time? How did you integrate it in the system?**



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I'm very happy that I could experience that. The technical stuff was done by Patrick Maun and Max Kossatz, who was later a quite important person in the most relevant networks at the time<sup>11</sup>. It was fundamental for me to experience the internet as text-based, if you searched for some image or 3D models, you had the FTP file transfer protocol to download it. I liked to have the text-based information and when Max and Patrick set up the MediaMOO, this space was in words. "You see a dusty room of 250 square meters, on the left you have a bookshelf, on the right you have a data bank, and so on." In MediaMOO, you navigated using text commands like "go left to the bookshelf" or "take a book". Once you selected a book, you could read parts of it. You could also say "go to the elevator", "go up to the first floor" or "enter the computer room". From there, you could connect to the Unix system at MIT and use tools like Gopher to explore further.

It was an exciting and interactive experience. Mosaic, one of the first graphical web browsers, emerged later, introducing the graphical World Wide Web we know today. Back then, everything was text-based and loading images took ages. We were used to text, but the ethics of online interactions were already a hot topic. Debates often arose about what was acceptable behaviour and what wasn't in these digital spaces. So, if someone in a media conference said: "I light up my cigarette," others said: "Please, open the windows." If someone faced sexism or something like this, it immediately brought up reactions and debates about it.

We only worked with the ASCII code so that it stays readable and connectable worldwide, we can't use special characters. Nowadays, you just type whatever you type, but back then it was important to think about the others, who had slower modem connections or small screens.

**I'm curious how was the discussions about free software or setting up your own infrastructure at that time. You were experimenting a lot and creating new connections and new software. Was there a discussion already at the time about aspects of**  
P. 40-41

**KUNST-SCENE**



**Quo Vadis, Medienkunst?**





**F/LOSS or not yet?**

As I remember, no. Not many knew that such network technologies existed because this was only the starting point. Scientists used it and there were no rules. It was like this, you just got the information to access certain technologies, but you never asked: "Am I allowed to do this?" Because there was no regulation and as I said, we had Windows-based computers and so as I remember there was no debate about open-source and Linux at the time.

**I think that's very important to understand about the early 90s media art scene. What happened after that?**

After UNITn, there was this heavy debate among the five members of HILUS. Three of them said it's very important also to show their own work and to organise events with their work. I left HILUS together with Reinhard Braun. I began working in institutions while also trying to change programs and bring my experiences into my work at the Art University.

In 2004, the so-called NetzNetz Initiative<sup>12</sup> in Vienna happened, which was a coming together of a younger group of artists and initiatives. There was a new generation and I tried to participate and go there to see all the discussions and debates. It happened between 15th and 17th October in the Künstlerhaus Vienna in the huge ground floor space. The topic was "Bring Yourself and Your Own Device". So, everyone who brought a carpet could set up their carpet, whatever they wanted. Among the participants there were [5uper.net](http://5uper.net), [basis-wien.at](http://basis-wien.at), [dada.at](http://dada.at), [funkfeuer.at](http://funkfeuer.at), [kig.mur.at](http://kig.mur.at), [kunstlabor.at](http://kunstlabor.at), [mono-chrom.at](http://mono-chrom.at), [net!zen](http://net!zen), [nde.at](http://nde.at), [netbridge.at](http://netbridge.at), [t0.or.at](http://t0.or.at), [ubermorgen.com](http://ubermorgen.com), [urkult.net](http://urkult.net)...

**Okay, this list sounds like what I meant before as a scene.**

This was an incredible event and of course, everyone visited the others to have a look. After this beautiful event, there were strong strategies to institutionalise the project, secure funding and sustain NetzNetz as a network. However, conflicts over money and responsibilities led to its collapse. There is always a common risk: transitioning from a dynamic event to an ongoing project often brings administrative challenges and decision-making struggles. There was a participant (Stefan Lutschinger), who brought in an important text: "The Tyranny of Structurelessness" by the American feminist Jo Freeman.

Written around the '60s, it explores power dynamics within radical feminist collectives. For me, it was a crucial text as it illustrates how failing to consciously structure a movement can lead to dysfunction and collapse when trying to institutionalise it.

**At the time of HILUS the discourse about free software was not present yet – it only emerged in the late 90s and early 2000s. How did your come to Linux and free software in connection with art production?**

When I was doing OpenCircuit, UNITn, I worked on Commodore Amiga, then I got my first Windows computer. When Windows stopped working properly, I tried to install Linux. I started my experiments of installing SUSE Linux from scratch, it must have been around 2001. I was struggling for information and therefore went visiting the Linux Weeks in Vienna<sup>13</sup> for the first time in 2005. It was at MuseumsQuartier<sup>14</sup>, where I also heard about the "Special Crash Linux for system administrators", and the person behind Knoppix<sup>15</sup>, Mr. Klaus Knopper, had an excellent presentation! He told the audience that his partner was blind and begun working on a Linux distribution for blind users<sup>16</sup>. Having difficulties generating artificial voices to create acoustic signals, he invited anyone from the audience with relevant skills who were interested in collaborating on the areas where he was struggling. I was very excited because Microsoft had a system costing around 10,000 euros, but he was working on this Linux-based trip system OS, which was free to access.

**You mentioned that Linux Week was in Vienna. What about Linz then?**

You had Linux Weeks all over Austria. After Vienna, I went to visit LiWoLi, the Linux Week in Linz organized by LUGL (Linux User Group Linz), it was around 2007. To my surprise, it took place in the Ars Electronica<sup>17</sup> building, I went there, but no information was provided at the entrance. In the end, it was down in the cellar, and later I found out that the Ars Electronica Center didn't allow to set up sponsors. At Linux Weeks, there

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22 were usually stands from groups like the Free Software Founda-  
23 tion,<sup>18</sup> SUSE Linux or Ubuntu.<sup>19</sup> So, my experience visiting  
24 the Linux Week in Linz<sup>20</sup> was frustrating. This was the moment  
25 I thought: "Why not do it at the Art University?"

26 Quite an important person at the time was Bundes, Markus  
27 Panholzer, whom I was working with on a website project for  
28 our department. Markus set up the contact to the LUGL.<sup>21</sup>  
29 In 2008, the first Linux week happened at the Art University  
30 of Linz.

31 **Why was it important for you to bring it to the University of**  
32 **Arts Linz?**

33 I realised that all the servers hosting Linux distributions  
34 were at technical universities. And I got the information from  
35 supporting websites and Linux user groups that people  
36 working on software need more artists because otherwise  
37 they would not be able to imagine which new problems to  
38 solve – artists or cultural workers often need to go beyond the  
39 limits of existing systems. Such contact should happen at the  
40 University of Arts.

41 **How did you convince the University that they need to have a**  
42 **Linux Festival?**

43 We had good support! The head of ZID<sup>22</sup> of the time, Dietmar  
44 Elmecker, strongly supported the idea. The Linux Professional  
45 Institute asked if they can do exams to get the certification as  
46 Linux professionals. I thought it was a great idea, so LiWoLi  
47 had an extra space for certification. When I discussed this  
48 within the university, we didn't even have Wi-Fi in the building.  
49 For ZID, especially Johannes Kreamsner, it was a big chal-  
50 lenge but also a key goal as they knew that experts would  
51 be attending and the network had to work. I believe it was the  
52 starting point for widespread Wi-Fi access at the university.

53 **This was in 2008. What was the structure of the event? You had a**  
54 **program with a strong Linux presence, but it also included artists**  
55 **from the start.**

56 Yes. We had support from IBM, the Linux User Group, and the  
57 Free Software Foundation. We also got interest from schools,  
58 because we had the server for education. On the other hand,  
59 there was also quite an important part which was already  
60 called Art Meets Radical Openness. For me, it was quite inter-  
61 esting to have artists on one side and tech enthusiasts on the  
62 other.

63 This was a kind of starting point, where Ushi Reiter and  
64 Markus Panholzer were very important, even to this day.

65 **So, this format went further for a while?**

66 It was like this for just one year. In 2009, it started already  
67 to focus on art and cultural workers. This meant leaving the  
68 LiWoLi-Linux Wochen Linz term towards Art Meets Radical  
69 Openness.

70 **At some point, as I understand, the Linux User Group decided that**  
71 **continuing Linux Week in its original form no longer made sense.**  
72 **Do you remember that?**

73 Maybe bringing Linux Week to the University of Arts created a  
74 bit of a division. For some people at the university, there was  
75 this big question: "Why bring in these tech specialists?" And



from the Linux and open-source community's perspective, the role of art wasn't clear. I thought this connection was interesting and could be fruitful. We also had guests from Linux Week Vienna, but as the focus shifted more towards cultural initiatives and artist-centered work, the tech side gradually disappeared. It wasn't a perfect mix, I still think it would be great to bring these perspectives together as a sort of melting pot that allowed both confrontation and collaboration.

It's great that it worked with Art Meets Radical Openness.<sup>23</sup> We had more possibilities to get funding from the University because it focused on art. However, during these years, I tried to get a kind of sensibility to work more with open-source Linux systems, to bring this closer to our students, hoping to offer them alternatives to relying on expensive proprietary software after their graduation or using illegal copies during studies. But I failed.

**I also have to say that the world around you changed and therefore maybe your intention didn't work. I remember Thomas Warwaris mentioned that the Linux User Group's focus shifted because the conditions were also changing. So, at least for some of them it made sense to move to AMRO. With personal computing becoming proprietary and the educational sector affected, the group saw that Linux had already "won" in professional internet infrastructure.**

For me, it is very important to mention Franz Xaver, because he is the person who developed his own equipment and technology which others said was impossible. Let's take, for example, making a video or documentary. I often hear that the Linux open-source video editing software isn't good enough. But I believe the story and narrative are what matters most. I've never known anyone who used every tool in Photoshop, yet still criticised GIMP for not being good enough by comparison. I thought that, for the Art University, it would be very important that there's no proprietary tool which tells you what you can do and what not. It would be worth focusing more on the concept and using open-source software. And if you come to a point where something is not possible, get in contact with the community and give this important input to them.

**I have to say that I think we are now facing a moment where people realise their dependencies on corporate closed-source things, but there is still a big difficulty in liberating ourselves.**

**Thinking about the benefits and impacts of the collaboration between AMRO, servus and the University of Arts, what could be the next steps?**

It's maybe difficult to answer. AMRO has been happening in connection with the University of Arts for such a long time, but I still don't know if my colleagues at the university understand what's happening there. That's not their fault, but I think there is still this myth that AMRO is only for technically interested people.

Now, alongside the debate about how to use artificial intelligence, there's also the question of control, sovereignty and hosting your own data that is shifting perspectives on what AMRO has aimed to do over the years. It's about responsi-

bility – artists creating their tools, scientists and theorists working with AI while being aware that we need to host and manage our systems. They will realise how crucial open-source systems are, and I see a growing awareness at the university that AMRO makes sense in this context.

I have a strange thought I came up with the first time years ago during a talk at AMRO, and it was to think about closed systems. This would be another topic, but as we see now, open-accessible systems are being used for work, like controlling drone swarms, which was once an attraction for the Futurelab.<sup>24</sup> Today, it's a reality in warfare and disaster scenarios. That's why I thought that we should talk about developing open-source technology with a focus on art, culture and the idea of how we can live together without smashing each other's heads. It has to be in closed systems.

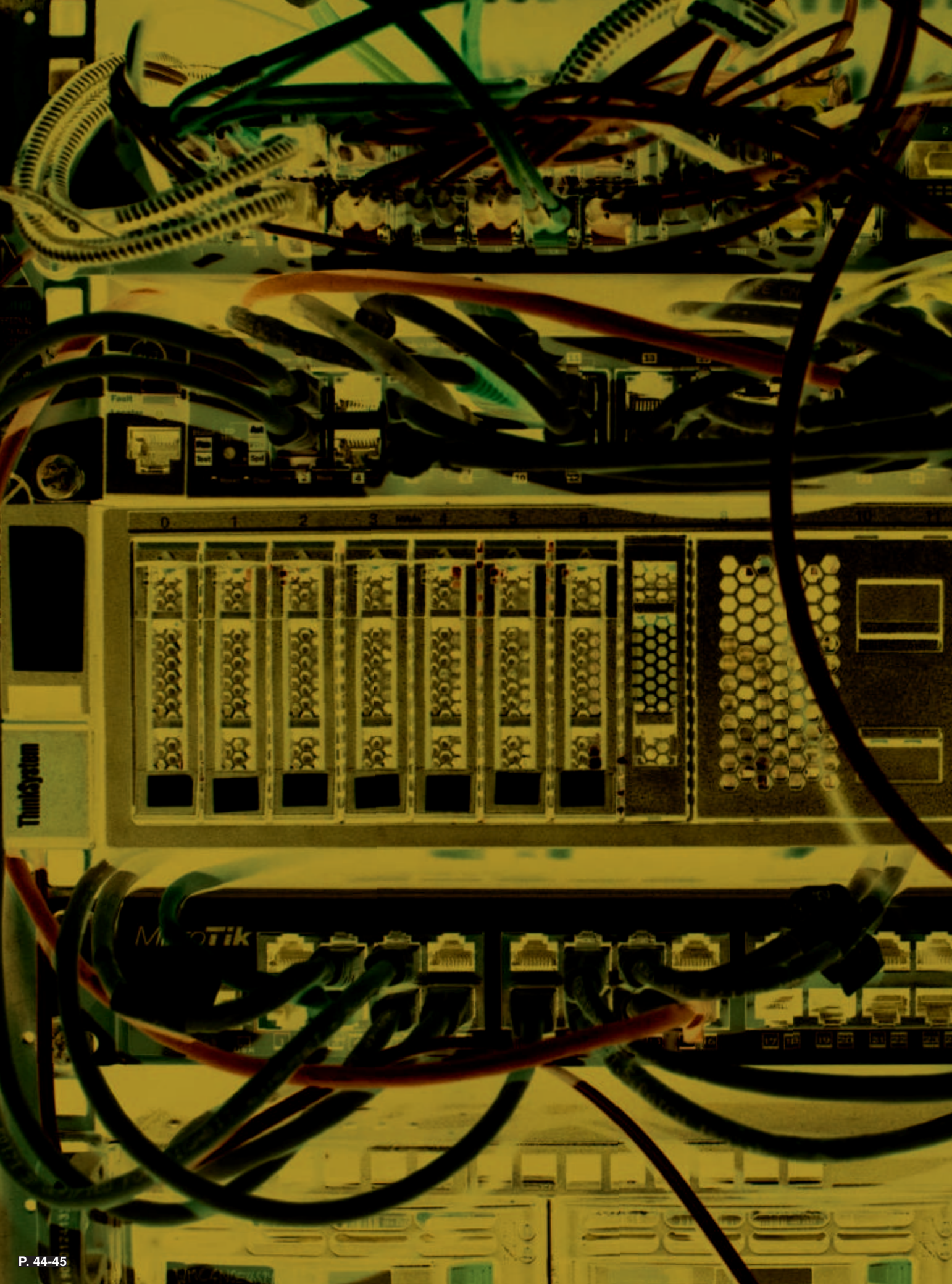
**A paradox. We shifted from the open circuits back to closed systems. How to access them?**

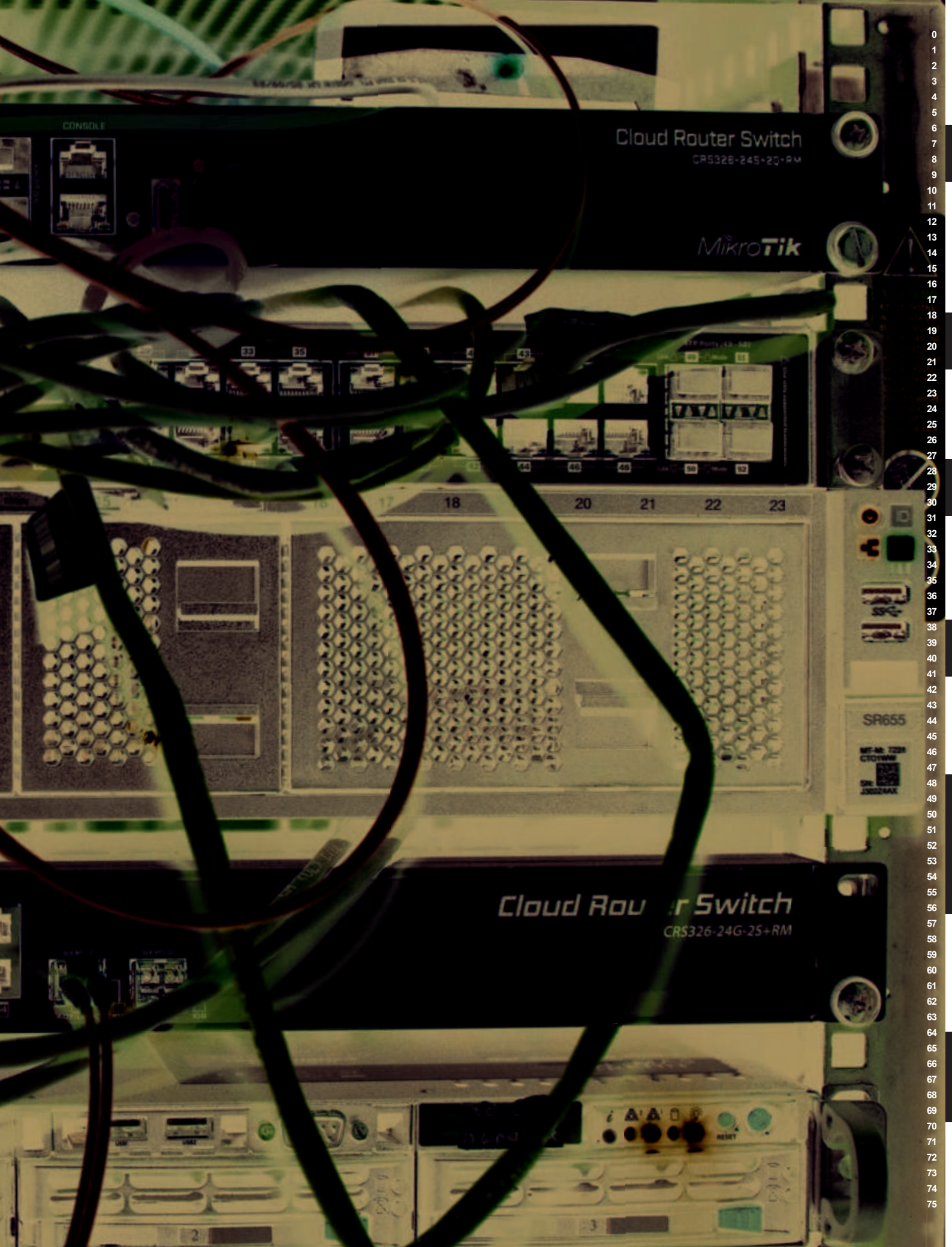
Well, of course, but what are the entrance rules? Here we return to the point I mentioned earlier about the tyranny of structurelessness and the consequences of openness.

1. <https://search.worldcat.org/de/title/907563417>
2. <https://monoskop.org/HILUS>
3. <http://braun.mur.at/projekte/hilus/hilus01.shtml>
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23. <https://radical-openness.org/en>
24. <https://ars.electronica.art/futurelab/de/>

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CONSOLE

Cloud Router Switch

CRS326-24S-2D+RM

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SR655

Cloud Router Switch

CRS326-24G-2S+RM

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**Beyond the  
battle for  
operating  
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level.**

**Thomas  
Warwaris**

# Exploring the roots of Art Meets Radical Openness, we talked with Thomas Warwaris, who was one of the LiWoLi organisers.

**Hi Thomas, who are you and what do you do?**

In the context of servus, I was one of the main organisers of yearly festivals dedicated to Linux and open-source software, which started with install parties in Vienna. Then they grew into yearly Linux community events in Vienna, Linz and Graz, later other cities joined.

**Which years are we talking about?**

Something like 20–25 years ago.<sup>1</sup> It was when the clash with open source and Microsoft happened and when SCO – another company – tried to claim ownership of Linux. We closed that chapter for SCO in one of these festivals together with Knopper Klaus from Knoppix and with the German Linux user scene. That was a time of struggle between open and closed source as we worked to bring open-source, free software and Linux to the public and professional users. That situation changed over the following years, when we all recognised that the industry and commerce were hopping on free software and the Linux bandwagon. There was no need any more for install parties, because several distributions cared about easy install. In Linz, we thought that just preaching to the choir and telling everybody how nice it would be to use Linux in the industry while speaking to an industry already using it, wasn't something necessary for the future. We were open to a new challenge.

**How was LiWoLi<sup>2</sup> back then?**

In the early 2000s it was an offspring of a fantastic Linux install party in Vienna, which motivated all of us in Austria to do more.

**Were there more Linux events happening across different cities?**

There was one main event in Vienna and everything else was a spin-off. Later on, we started developing educational events Austria-wide. We had one in Vienna, in Graz, sponsored by the university, and that's when I started talking with servus and Ars Electronica Center about doing one Linz. We created one, which first happened in the Ars Electronica Center and had servus as the main organisation behind it.

**Who participated there? Was it more developers or companies?**

It was a mix. It started with one small party and some lectures at servus, which went very well.

**Which topics did you cover in the lectures?**

Early lectures were about installing Linux and basic development. It was more on a beginner level, since the template for that was a kind of Linux installation party or a GPG key signing party.

**Well, we would still need some GPG keys signing parties, huh?**

Yes, actually. But also these changed rapidly, a year after, when the event was held at the Ars Electronica Center and tried to bring sponsorship in. Austria-wide, things grew more into events with lectures and sponsorship, so early Linux adopters were trying to present their knowledge. It went quickly into lectures for network admins and experienced users.

**Did you get inspiration from other events outside?**

Yes, the LinuxTage<sup>3</sup> and the German user groups were some of the the main inspirations. A lot of things happened without a big plan, just because it was kind of a community in Linz with around five to seven people, and an Austria-wide community of ten to fifteen persons.

**What kind of a community was it? Enthusiast adopters or Linux professionals?**

There were a lot of early adopters as well as advocates for free software so it was a mix. Advocacy didn't just mean free software evangelism, but could also mean someone giving a three-hour lecture on Vim [a highly esteemed text editor].<sup>4</sup>

**Is this community still active or did it become something else?**

It became something else. For me, it was important to have a kind of a handover and to do something new, and get new people involved. That should happen without any vision or planning from my side. It was basically to stop doing it and trying to see what came up next. I think the original energy moved into /dev/lol,<sup>5</sup> that's what my impression was, it got more into Linux, DIY and maker-scene.

There's a lot of professionalism in the Linux scene right now, but I wouldn't count that as community. I think the idea of community as a big block wasn't something that was happening. However, there are still a lot of groups,

Thomas is an expert in IT and IT security. He has around 30 years of experience in various projects and was one of the driving forces behind Linuxwochen in Linz until 2005. He is self-employed in the field of IT consulting and product development. With this know-how, he supports servus.at in an advisory capacity.

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“Stammtisch” [regulars’ tables] around Austria. Some User Groups, like Graz or Dornbirn, still hold yearly events in this event format – the Linuxwochen<sup>6</sup> –, and some don’t happen regularly any more.

**Did the format change from LiWoLi to AMRO already or was it still very similar to the events in Vienna?**

The early format evolved from the install party context. With Ars Electronica Center and servus, we could change that format into a more structured conference with lectures, which worked well for several years. Sometimes there were also commercial lectures, where people presented the products they developed, but most of the time it was about programming. It was a mix of different aspects, but in general lectures on free software.

**Then the Kunstuni entered the cooperation?**

There was a step before. We had some unexpected growth with the format in the previous years which basically led up to a very big event, where we had not only the lectures but also an exhibition here in Stadtwerkstatt with sponsors. I remember the discussion if it was really necessary or if it fit Stadtwerkstatt to have a big booth from a big bank in the space. It was a wild time when Linux got the attention of the general public and there was more awareness and interest. Additionally, this was the time before restrictions on sponsoring from compliance and all that, it was basically a perfect storm for creating that kind of event. It also brought us into the thought process of wondering if this was the direction we wanted to go.

**Which year was it?**

When was the first AMRO?

**Looking in the archive, the first AMRO seems to have happened in 2012, but the expression Art Meets Radical Openness had been present already before, since at least 2009.**

Then it must have been around 2006. There have been around five or six LiWoLis in Linz, more or less steadily growing, and then the event developed into AMRO.

**I interviewed also Christoph Nebel, who told me the story of how LiWoLi moved to the Kunstuni after leaving the Ars Electronica Center. What were the reasons for that move?**

I think the reasons were twofold. On the one hand, it was known that we would lose the infrastructure of Ars Electronica Center because of the renovation of the building. This meant that we needed to search for new rooms and this brought in Kunstuni. Talking with Christoph Nebel about how things are at the University, and reflecting on the needs of participants gave us the solution to the problem of what to do with LiWoLi. Christoph highlighted how artists were confined within proprietary software and the processes taught in universities. We saw this as an opportunity to break from the industry discourse and engage with artists to help them challenge those restrictions. The production processes at Kunstuni seemed like the direction to continue in and that was when the idea of AMRO was born. Because that’s what is behind the concept of Art Meets Radical Openness, in the sense of what artists are doing.

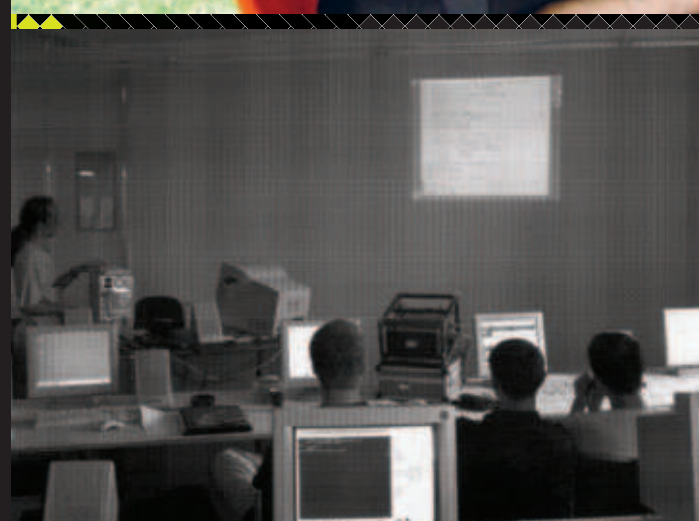
**Is it true that at the time there was no longer the need of introducing Linux and open-source systems to IT professionals, and that was maybe a good moment to bring it up to a wider public?**

That’s not entirely correct, because the idea was never really about the wider public. In effect, I always thought that computing topics weren’t necessarily for the wider public. I remember that, at least in the first years, we addressed Kunstuni students. Then things took on dynamics of their own and LiWoLi/AMRO launched off into much more art and less computing, and I think everyone is happy with that.

**This connects to what I think might be the two souls of the LiWoLi and AMRO communities. Can you describe them?**

AMRO meets two main ideas. One is the idea of free software, mastering your tools, which is a nice idea but has to be taken with a grain of salt. The other is art, and to me, it’s where these two passions meet together, artists seeking openness in their work. This changed from the earlier days when it was more IT enthusiasts driving this forward.

Going back to your previous questions, I wouldn’t say that Linux has won the war on operating systems. I think that the challenges for free software are now more political and less something that can be solved by expanding the user base or lecturing about home user topics. I think there will be a harder







battle in the future, especially now after the election results in the US.

However, this topic is out of the hands of the developer and free software community now, and I think it's a little bit the same when we look at the production of art and its topics. I don't think it's something that has to be discussed between developers, but artists and the bridge of Art Meets Radical Openness is exactly that. That's why I'm happy that now it's an artist's and not a developer's festival.

**Considering the evolution of AMRO, what do you think are the future challenges we should focus on? In recent years, we addressed topics like environmental impact and internet infrastructure, but also societal needs for solidarity, critiques of wars and invasions and AI development. What are the most pressing current and future challenges and how can AMRO continue to address them?**

I would also have thought about the topics you mentioned, maybe in a different order. I think that AI and intellectual property rights again will be a topic in the future. Simply because AI will have the most impact where it produces products and not art. It will change a lot how products are created, yet there's still no distinction across Austria, Europe and much of the Western world between the production of art and art-like products. There are a lot of breaking points that I remember from past discussions about intellectual property rights and about how participants see themselves in the picture, which will change in the future.

**When was this last wave of discussions around intellectual property?**

It was four or five years ago. I think the changes in the Austrian Intellectual Property Law regarding "Leerkasstetten Abgabe", which is the term for taxes on everything that could hold MP3s. In terms of newer days, hard disk storage would lead to absurd taxes. While opinions differ, the law's renewal sparked some absurd debates, which after a while again slipped away. AI will bring up this issue on two fronts as it challenges intellectual property rights by raising questions of ownership and it

disrupts production processes and money flows, which affects art funding.

**Are there examples we can apply now from what we learned in these discussions? Or is it something that is totally lost and we are just trying to leave the discussion to the experts?**

There are no experts. The thing is that the old solutions, from my point of view, will stop working. Till now, the funding system is grounded on a law the logic of which supports the idea that society wants and needs art to exist. But discussions on the topic center about concepts where claims are rooted in basically the divine intervention of creating art or the personality of artists. This viewpoint will not be a good foundation for a discourse about AI.

So, in observing AI discourse, we should focus less on the technology, and more on the social agreement for which artists should be supported and enabled to produce their work. Because what they are doing is good for society.

That would be one of the ways to start thinking about that.

**This echoes a lot of the discussion on free culture.**

I think it's true.

**So let's consider where to channel our energy now. You say it's no longer only about discussing Linux and software, but about looking into cultural production and understanding how cultural products are going to be developed. Are these the wider effects of free software?**

That's very consistent with what many people see as the central idea of free software. The freedom of what you can do and produce and control as a society. Some ideas have always been pretty nice examples, but not that realistic. However, it's far more crucial to focus on the tools people use to express themselves because that's where we lose a lot of freedom. From a "nerdy" perspective, we have won the battle for free software as most social media platforms run on it, but we have allowed them to lock down their users for free.

**Do you have any examples of people that are already working on the current discourse?**

Actually, no. I'm now pretty far away from AMRO. I was happy that it runs so well, but it was always part of the plan to leave it to the new and younger people. The negative aspect is that it leads to a kind of disconnect.

**After this interview, you will have for sure more young people coming to you to ask questions about AI and copyright. At least I will. Maybe to close this conversation, do you want to share a final thought on artist-run data centers? Where do you see their future?**

It's a mixture of feelings. I'm a bit sceptical of running the old outdated tools like email. I think there is still a need for running your own collaboration tools. I don't think that there is a possibility for do-it-yourself to compete with the big social media companies. I don't think Facebook or TikTok can be replaced, because they are much more than just tools.

The realisation that we can't control this by DIY approaches should lead to the idea that this has to be resolved on the political level.

1. <http://www.quintessenz.at/d/000100000781>
2. <https://www.linuxwochen-linz.at/2023/home/>
3. <https://www.linuxtage.at/en/>
4. <https://www.vim.org/>
5. <https://devlol.org/>
6. <https://www.linuxwochen-linz.at/>

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# Running data centers and researching radically open art practices

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# Us(c)hi Reiter

**A conversation with Ushi Reiter about art providers and critical networks, how LiWoLi evolved into AMRO Festival, on the construction of ARDC and several other aspects dealing with running independent infrastructure for many years.**

Us(c)hi Reiter studied graphics and design at the University of Art and Design Linz. As an artist and project developer with a special interest in net.activism and audiovisual communication, she has been working with various groups and artists since 1998. From 2005 to 2017, Reiter ran the non-profit cultural organisation [servus.at](http://servus.at)<sup>1</sup> – Kunst & Kultur im Netz. She continues to research free/libre/open source software in the context of cultural production and art as well as conceptual and performative setups. She is one of the main founders of Art Meets Radical Openness and has been on the organisation's board since 2018. She currently works for [architekturforum oberoesterreich](http://architekturforum-oberoesterreich.at).<sup>2</sup>  
<https://www.firstfloor.org/ur/>

Hi Ushi, can you introduce yourself and how you got in touch with servus?

I started working at servus in 2005, a long time ago. I was independent, working as a graphic and exhibition designer, but was always strongly connected to Stadtwerkstatt. The first contact I had with Stadtwerkstatt was Gabriele Kepplinger. I also took part in projects like "Bugrace".<sup>3, 4</sup>

At that time, Markus Panholzer asked me if I was interested in running servus after my time in New York, where I worked for the first BBC communication network platform [the thing], which was run by an artist, Wolfgang Staehle. I was there for around one year and then I came back.

During that time, I used the infrastructure of servus, so there was a connection already. But I felt insecure, I have to say, because these were very technical things. At some point I thought: "Well, okay, then let's jump in cold water." And it was really cold water because I had never been so exposed to free and open-source software or Linux, it was all quite new for me.

In other conversations I heard you had been in contact with Stadtwerkstatt and had already collaborated with Versorgerin. Did this help to build connections in the scene?

Yes, I was doing the layout for Versorgerin,<sup>5</sup> that's what Gabriele Kepplinger asked me at that time. We started working together and there was a lot going on already, with Vienna, the Public Netbase t0<sup>6</sup> (Wien), or the konsortium.Netz.kultur<sup>7</sup>. This was the content I was laying out and I got to know a little bit more about the scene during that time.

How was the scene? What did the community look like?

It was small, but there was the already mentioned Public Netbase t0 in Vienna, there was [mur.at](http://mur.at) in Graz and servus in Linz. There was also the European network. It was a very thrilling time, we saw so much potential in the net, maybe even to discuss democracy anew. But already when I was in New York in 1998, people begun saying that the net was going to be just a commercial place. I couldn't believe it during that time, but for many it was already clear in which direction it would go. There were no limits, no regulations and there was a lot of freedom to experiment also.

I was talking with Christoph Nebel, and he also mentioned the connections between Vienna and New York as well as the many European media art events in the 2000s. What was going on? What was the connection?

One of such connections was The Thing,<sup>8</sup> who had a BBS (Bulletin Board System) platform for artists built by Wolfgang Staehle and his team. Contemporary artists were using the system to communicate and they also became interested in the issue of the internet from their own practice. There were artists who used it as a tool for communication and others who were working more theoretically. So, I would say it's like a pre-model of Facebook. It was a challenge to understand what was going on during that time, there was a very high level of discourse. That was the context in which the <nettime><sup>9</sup> list was initiated and all these (mostly white & male) intellectuals who were setting up and discussing the conditions within the internet.

How much do you think this influenced net politics of the time? Or the discourse around that? How much of it has come to be now?

It was a hot spot of theoretical and intellectual base which grew out of this network of artists and people.

You said that it was already clear that the commercialisation of the internet was going to happen. Were they thinking about creating alternative networks and structures at the time?

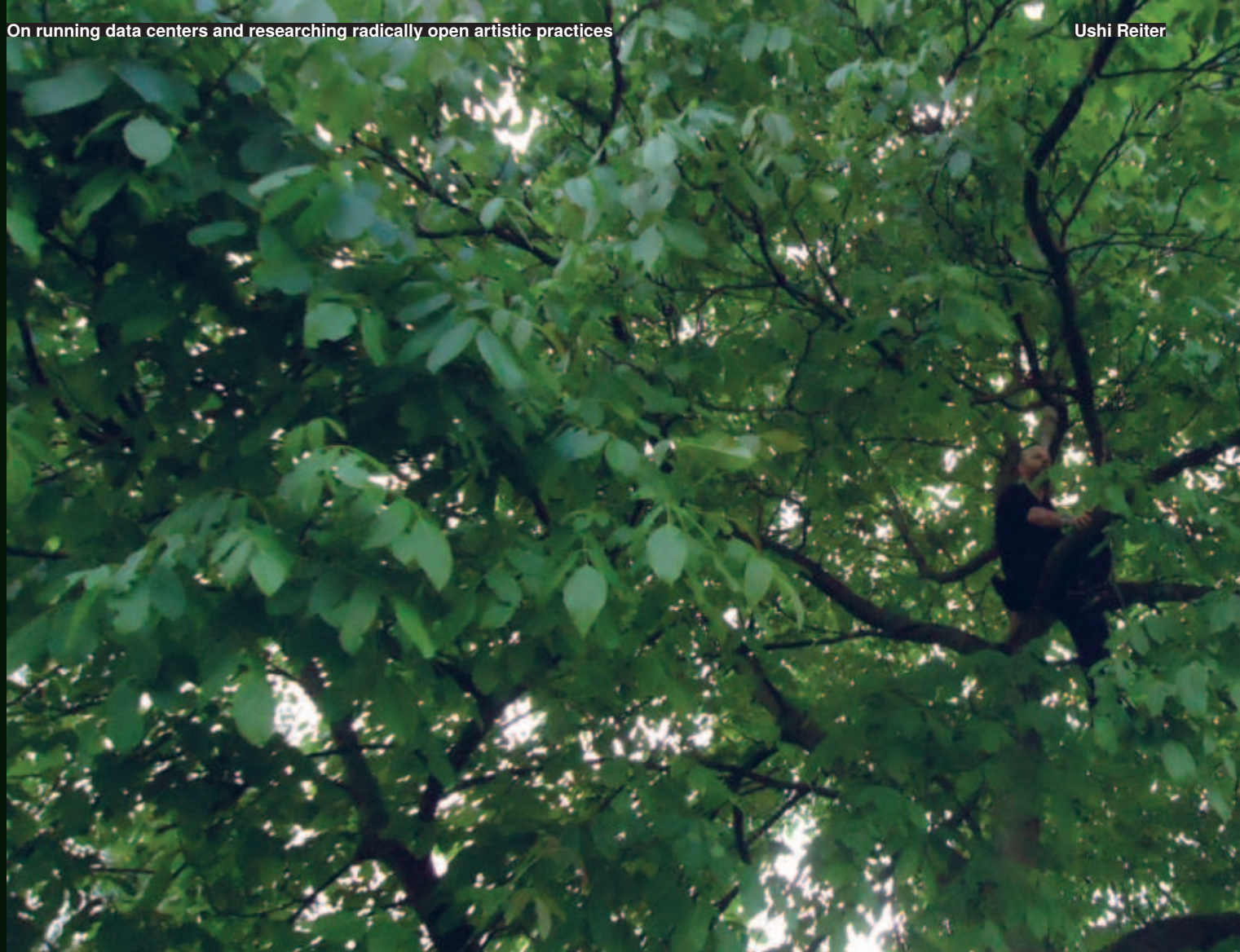
Not in that sense... Back then you could easily get access to several possibilities and the first thought was often not about building an alternative. That came soon of course, considering that servus was founded in 1996.

But at first it was like "wow, that's interesting, we can use this," and people in the artistic discourse began exploring what that meant for the image and so on. There was not a lot of discussion going on about building alternatives, people were building their own projects because they needed them. The alternative to commercialisation followed shortly afterwards.

Moving towards the context of AMRO,<sup>10</sup> was LiWoLi already happening when you began working at servus?

LiWoLi<sup>11</sup> was happening every year. There was a cooperation

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with LUGL, which was a very alive community that promoted the use of Linux and open source software. Servus.at was a cooperation partner of LUGL; we developed cultural projects around this community.

But very soon, around 2006 or 2007, it seemed more and more obsolete to only promote open-source software. I began extending the cultural program of LiWoLi with artists who were using free open-source software. With time, the focus shifted in this direction and cultural activities became more prominent.

#### **Was this also when the cooperation with the Art University began?**

Yes, that was an important moment. Before that, the Linux user group rented some rooms in other spaces for LiWoLi, and servus and Stadtwerkstatt were the locations for the cultural program. Then around 2008, Christoph Nebel, who had always been interested in this community, suggested hosting LiWoLi at the Art University, which hosted the editions from 2008 onward. They were still curated by the Linux User Group community, however servus got more and more involved. It was good working together with nerds, but there was a point where the Linux community and servus couldn't work so well together anymore. There was too much art for them in the program. They received less and less interest from the outside... It felt like something developing naturally.

#### **In the documentation of past editions, at some point the expression "Art Meets Radical Openness" emerges as a subtitle and slowly becomes the main title and then the name of the festival. Was there a moment when you realised that LiWoLi developed into a different identity?**

The change was based on a conflict, because we were confronted by some members of LUGL, who were not much interested in art and culture. I was taking care more and more of the organisational part of LiWoLi and it was always important

that the Linux User Group contributed to the program. Over the years, their contributions diminished and I filled the gap. It was very visible that at the Art University there was not much knowledge about open source – it's so sad that I did not hear of F/LOSS when I studied there. At that time, the computer rooms of the Kunstuni had just opened and I was sitting there day and night. But there were just Windows and Apple machines there, nothing else.

Christoph and I therefore saw the urgency of bringing free software to the Art University. There is also a nice documentary from 2009<sup>12</sup> about the idea of bringing LiWoLi to the Kunstuni and how we involved artists. I started looking for artists who were already using F/LOSS tools, because LiWoLi was also very tool focused. Political issues were addressed in the program too because using free and open-source software has a political aspect as well. At a certain point, it was not only about tools anymore, but about the dynamics of the software industry and what it meant using software. The question of what's behind such software was coming more and more to the foreground and started being the central question of the festival, which was renamed Art Meets Radical Openness in 2012.

#### **What does Art Meets Radical Openness mean to you?**

At the time, many artists seemed to be very open and free in terms of distribution of their work, and there was a lot of discussion around copyright issues. The new culture of remixing, reusing and the creative commons came up. Conversely, people complying to more stereotypical images of "the artist" were not always that open. They were benefiting from the knowledge around them – because as humans we always reproduce and use things – but then they said that this was their work and they wanted to have copyright on it. That



different from the girls from the ETC community. So, in 2007 there was this big event, the Eclectic Tech Carnival, which was huge, it had 100% female presenters and was very DIY-oriented. This definitely influenced the shift to AMRO.

**True, and also the upcoming years, as AMRO regularly engaged with feminist practices within tech. In 2014, you also hosted one of the sessions that brought to the formulation of the feminist server manifesto.**

This was very important. For a long time, I was the one person organising everything. At some point, we got more women involved in the program because by then they felt more comfortable to apply. You cannot take it for granted, because you have to count more time in if you want to have women involved. You have to start earlier, and ask if they have time, if they feel secure enough. There are a lot of reasons why they are not so spontaneous. You need more communication and you need to plan that in. That's what I learned over the years.

**Did you get inspired by other festivals or were you following what the community was giving you?**

Of course I was inspired by other festivals and collectives. For example, GOTO10 and their Make Art was very important for AMRO. That was really the root. I was also invited to some work sessions of Constant<sup>21</sup> in Belgium, which was also a very good connection. In 2013, they did a very cool event, it was called "Are you being served?"<sup>22</sup>. It was impressive and very inspiring. They used several locations and a lot of sessions and yet it was such a warm way to do a festival. That was really amazing. Also, they documented their event so well. It was not a new thing, but what I brought back to AMRO was that they had a really good note-taking organisation. For speeches or talks, they had note-takers who prepared a summary for the evening sessions. I was really impressed how they built such an event.

**I also find their methods to be very much on point and I find that such events are still shaping what we do at AMRO, from what I saw there or from previous conversations with you. It's not easy. And every time we try, it becomes more visible how difficult it is to do it.**

Femke [Snelting] is a very inspiring person and Anne [Laforet] too. It was a really impressive event. Also, during that time, I regularly visited the Transmediale,<sup>23</sup> because content-wise it was much better than Ars Electronica for our research. Not everything, but it was also the place to go to meet people. I never wanted AMRO to become such a big festival, but the guests they had were so interesting and the panel discussions were very well made.

**I wanted to ask you specifically about ARDC – the Artist Run Data Center. ARDC was for a long time a mysterious project for me. I didn't know what it was about, there was a list of machines, but I had no idea who was doing what and I was very curious. How would you describe it? How did it start, what was the context?**

ARDC came out in conversation with Peda, who also helped with the organisation of AMRO. Working together, we often had discussions about having this infrastructure and yet not being a provider, because we are not just giving email accounts and web spaces. At some point we asked ourselves: "Why don't we use the server as an artistic space?" I mean, that's so obvious. But I think it was really Peda's idea. As I was always writing the cultural program for the funding applications, I asked how he wanted to contribute. He came up with this Artist Run Data Center. That was a great idea, because of course we were in contact with artists through AMRO and a lot of them found it very interesting. Mostly it came out of conversations, they were asking if they could use the space and so we packed it into a name and a project.

**How did you reach out to people? Which kind of projects were initiated?**

This was in 2014. In principle, it was us giving server space on virtual machines to artists who needed it. At first, we didn't even have an insight what they were doing there. For example, the !Mediengruppe Bitnik also used our infrastructure for their prominent work, *Delivery for Mr. Assange*.<sup>24</sup> That's why I thought that we should maybe promote it a bit more, because there were things happening which were relevant. So yes, they were basically artists who needed infrastructure. They were not so many: Aymeric & Marloes (bleu255), Heath

was always something that I didn't like that much.

**In other conversations we also discussed how much the idea of copyleft or creative commons disrupts the idea of the romantic artist. And why it is important to highlight the context where a work is done.**

This was also the reason for working with artists who had another understanding of copyright. While I was looking for artists using free and open-source software tools to produce art, I found many that generated their income over sharing their knowledge and didn't participate so much in the circuit of white cube galleries. I kept being interested in such artists who had political opinions and lived and produced with a principle of openness.

**Can you name a couple of them that come to your mind?**

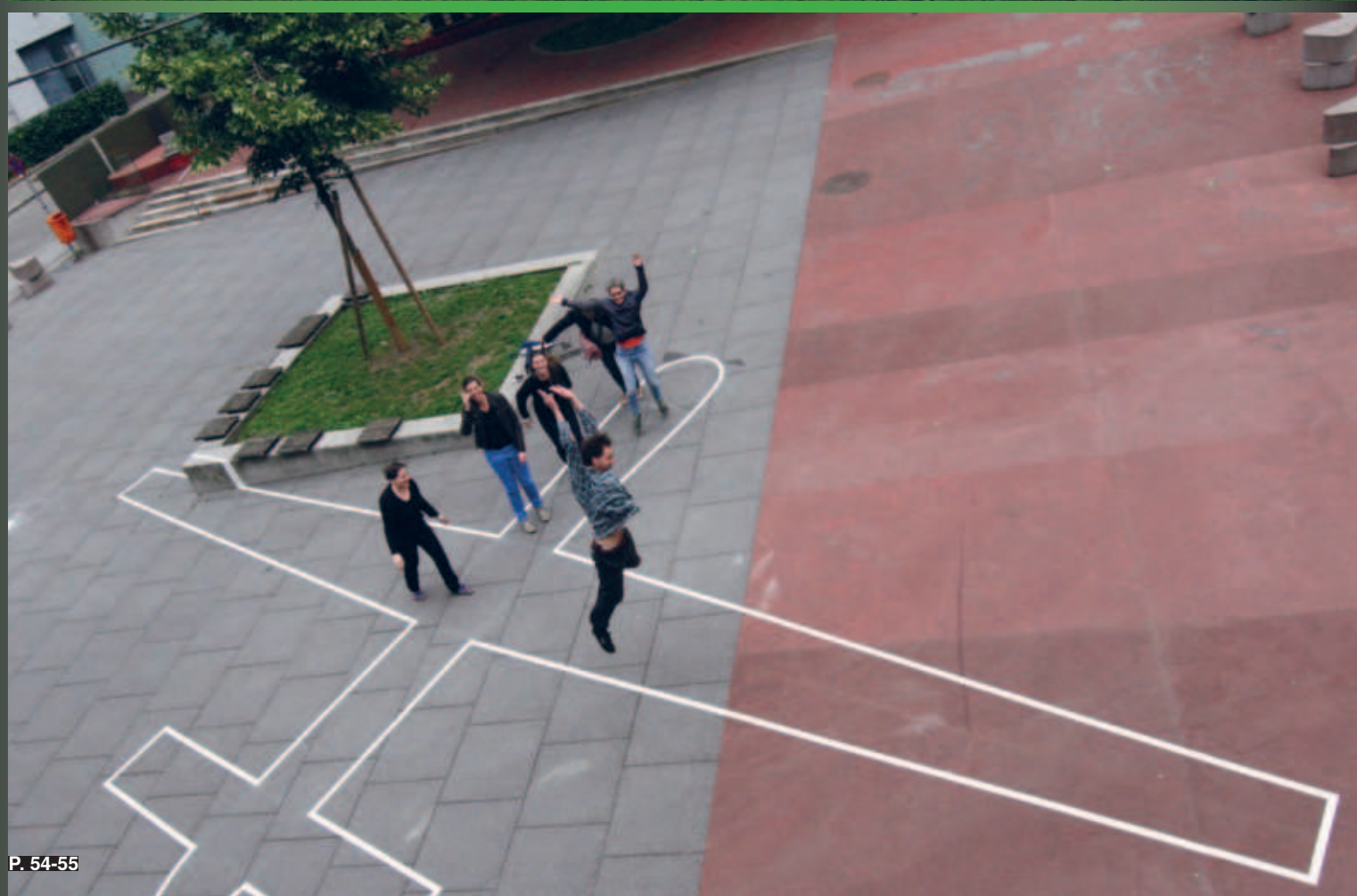
One for sure is Heath Bunting from [irrational.org](http://irrational.org).<sup>13</sup> He was a very radical person when I discovered him. Also in Berlin there was Karl Heinz Jeron<sup>14</sup>, !Mediengruppe Bitnik.<sup>15</sup> There was also Jaromil,<sup>16</sup> who was very strongly connected to Stadtwerkstatt and servus and is still using some services in our server. He has always been an artist strongly connected to the Debian Community,<sup>17</sup> he also presented the Chaos Computer Club<sup>18</sup> and wrote his own visual tool.

**What happened as part of the shift? If you look at this in 2006, you had the Linux conference and then four or six years later we have the Art Meets Radical Openness festival, which has a different structure.**

What we shouldn't forget is that, of course, these Linux user groups were very much male dominated.

In 2007, though, we organised the Eclectic Tech Carnival<sup>19</sup> together with Aileen. Aileen is really the key person in the whole history and connected me with the right people such as ETC and also to the FACES network,<sup>20</sup> which is completely

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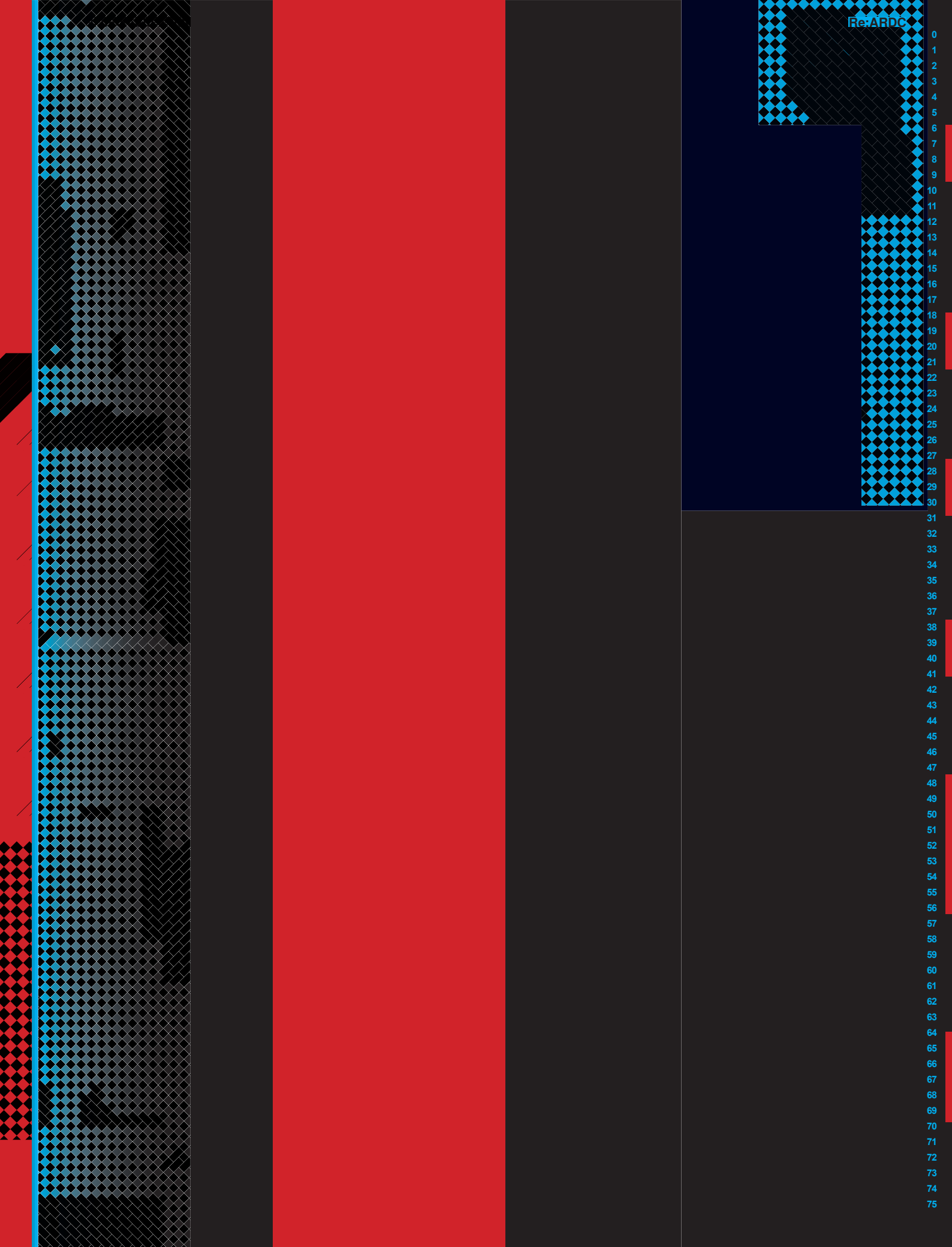






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# An Artist Run Data Center in the context of Free Software and autonomous infrastructure

Peter  
Wagenhuber

**In this conversation we start with the philosophies and practices of Free Software and how big tech is also grounded on open source software, which over the years led to a change of the common understanding of terms like free software and open-source. Working at servus as a system admin allows to create infrastructure answering the needs of the community, like the artist run data center.**

**Hi Peda, do you mind introducing yourself?**

Sure, I'm Peda, I've been working as a teacher for 10 years now, but I used to work in Stadtwerkstatt before, as the guy who ran the events in the hall. Then I was introduced to free software and Linux and I decided that computers are interesting. I changed to servus and worked there for 10 years, when I stopped working in the team, I joined the board.

**You mentioned free software, so we will just immediately jump to that because that's something that the whole servus as an initiative is dealing with. The term and the philosophies around it have been very visible in the last 20 years. What do you associate free software with?**

Maybe to start with a personal historical perspective: I was fascinated by the idea of free software, because you're doing something and not only giving away the product for free, you're giving away all your knowledge, so it's also an inherent knowledge transfer. You don't try to control what happens with your thing, so it's free. I can use it, change it, improve it and I can give this improved version back.

Also, free software drives servus, at least free operating systems and applications. We're not the free software fundamentalists that don't use proprietary firmware.

I really like the idea of not just doing things and having my intellectual property protected. It's also a bit of not reinventing the wheel all the time. I mean, if I have three proprietary products that all do more or less the same, they have to reinvent the wheel and do the stuff over and over again. Why not just use a common base and improve that? So that it's also economic.

**Yes, it allows not wasting people's resources on a global scale.**

I already talked about the knowledge transfer that I can have a look at the code, learn from it, improve my coding and my knowledge. There is also a bridge between technical and social, usually, in open-source projects you have direct contacts. I can get in contact with the people who do the code. I can say, "This doesn't work for me," and "Could you please help me with this bug?" or I can volunteer and translate the software, even if I don't know how to code. So, there are ways to interact and to be a member of the community that writes it. Everything is possible there.

**At servus, system admins don't code so much, but they keep up the machines and are also at the center of a techno-social construct of data center, machines, people and the community around. How did you experience being part of this network? How did this network and the work manifest? What was happening at servus when you were there?**

On the one hand, there is this sys admin thing, which is – or at least should be – well-structured work with fixed schedules, and on the other hand we have this artistic work, which is more experimental and is a bit more chaotic. Bringing that together is quite interesting because I'm not the person who structures their day so tightly, so it fits very well – this mixture of a spontaneous, chaotic work situation with structured work as a sys admin. It was always a bit of a translation between the tech and the art world, more like an interface in-between. There are art people and, I mean, they know tech somehow, but they don't know how we use it. There's always someone who needs to be this interface or translation.

**Also, because in a space or at a data center, like the one from servus, we are dealing with structures that have grown over many years and there is a very specific way of doing them.**

Yeah, we have to explain it to the users and there's always the challenge of keeping it up to date and up to what we want to do with it. So, it's a special challenge with a low budget-grown infrastructure.

**When you were at servus, I think you were also in touch with similar projects or communities that were running their own infrastructure as well. What were the characteristics of these people in general? Who were they? Are they still active? What were they doing?**

I think some people that are still active is Riseup.<sup>1</sup> They worked in a very professional way, but they had a very limited set of services. They set it up in a technically very tight way, so they had their fixed processes. But they worked voluntarily, no one was paid, so I think this is the main difference between servus and a lot of other initiatives in Europe – I met

Peter Wagenhuber studied computer science at the Johannes Kepler University. He completed his Master's degree in 2022. After many years as a network administrator at servus.at, he is now a board member of servus.at (secretary) and writes articles for the website <https://versorgerin.stwst.at/>. He is currently also a teacher at the HTL Traun, where he teaches network technology, secure information systems and networked systems.

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many people over the years –, they all ran their data centers or their free nodes in different locations. They all do it voluntarily, so it makes the projects more volatile. People changed, so sometimes the projects died, new projects emerged. One very special thing about servus is that we can at least pay a bit, not like a fully blown tech employee, but at least something. The work is therefore more stable, we have been able to run this data center already for almost 30 years. And that is exceptional. There is only one similar project in Austria, which is called [mur.at](http://mur.at),<sup>2</sup> and they do it in a similar way but these are the only two projects I know of that sustained for a long time.

**They both work with art. Many other projects don't seem to be moving in the context of artistic or cultural practice, but are covering more activist work, which is more political. In your eyes, how does the context influence the way of doing infrastructure?**

This is the difference between political activists and art-driven projects, which is that there has been – at least until now – a possibility to get public funding. Maybe this will change in the future because of the political situation. This artistic core also means that there is some kind of political intervention too, it always goes hand in hand, I think.

To come to the next point, I think that infrastructure and how it's run and governed is a political thing itself. Not only that we run our infrastructure on free software, and maybe this will be another point within the free software discussion, but also, we don't have customers, we have members. So, it's more like that you come to servus and you can imagine it more as a virtual clubhouse. You just pay your membership fee, and you can use everything and this is different, because every member has the possibility and the right to say, "Could you please take a look at this?" or "Do we want to run that?". It already happens all the time, we run our Nextcloud<sup>3</sup> and people demand the features they want. "Could you please install this, we need it for that," and if it's not possible in our infrastructure and the artists need something more, then they can use a VM in ARDC. So this is extending the clubhouse, so to speak. You can build your own house in our garden.

**Thanks for mentioning ARDC, because it fits here very well. In a conversation with Ushi (Reiter), she mentioned that the expression "ARDC" comes from you and that you should be the one describing it more.**

The idea didn't come from me. I was experimenting with virtual machines some decades ago and the idea was more about having some test setups for me internally, to test new versions and have some things developed.

**Technical interruption curiosity. Was it common back in the days or was it something special to have many virtual machines? Because today it feels like everything is virtualised.**

Back then, every server was a physical machine in our server room, so it was the first time that I did experiments with virtualisation back then. It was Xen<sup>4</sup> and the machine was called "develop", because I just tried to develop our infrastructure further. Then some people came and said, "We are trying to make this project," and I thought about how we could include those in our infrastructure. You don't want to let people have root access to your machines. We also didn't want to have too many machines in our server room because then the space is limited and every physical server needs more electricity. It's not the best idea, so we came to the decision that maybe they should just get a virtual machine, and we gave them their own networking compartment and so we could have it separated from our infrastructure. This also gave them the most freedom possible.

So, it's not something I invented, it was the need of the community, we just thought about how we could realise it. This is also something different from having customers, we have members, and we try to be as cooperative as possible. Then it grew, more people came up with their needs and then we had the idea of starting a separate project from it, then ARDC was born. So, it's nothing we invented during the night thinking about what we can do next.

**In the meanwhile, also the rest of the infrastructure follows the model that everything is much more virtualised.**

This development led to a change in our infrastructure. I learned how virtualisation works and then Didi also, so we tried to figure out how to integrate this and we thought it was

quite nice. Later KVM got mature enough to be used. There was a development on the technical side, then we tried to implement it here because it was a nice idea not to have this – I don't know the English expression – "Eierlegende Wollmilchsau" servers ["Egg-laying wool-milk sow" aka "has only advantages and fulfils all requirements"], so we could separate the services in different virtual machines and have it a bit more cleaned up.

**Who was using the ARDC? Do you remember which projects were activated?**

I think one of the first ones was Tim from Time's Up.<sup>5</sup> Well, this was the artistic side and from the technical side we had Anna and Matthias, they are scientists and for a long time they had their scientific publications and their website there. It was a long time ago.

I think one of the ones I had the most contact with was Scott [Sinclair] from Half theory.<sup>6</sup>

**In my conversation with Xav, I discovered that around 2006 he had a so-called Data Spind in Graz that conceptually was really close to ARDC. Did you know it before, or was that the inspiration?**

I knew the project,<sup>7</sup> but it wasn't a direct inspiration. I was just inspired by the needs of the people, so it wasn't a great genius invention.

**A lot of it disappeared, right? As far as I know, there is not much documentation on what was happening with the space. You just gave it to the people and they did whatever they wanted. That's okay, but on the other hand, it's a bit of a pity not to know what was happening.**

I think it also came with personal changes at servus. In naming the project Artist Run Data Center, we did an open call to which people applied. This was in the later phase of my servus occupation. Then I left servus, and one or two years later Ushi left too, so there was a change of people, which also led to losing contacts. You can give the passwords and the contacts to the next person, but you can't give them the whole conversation and everything you had with the people before. Even if you do hand over the email exchange, you established a relationship with the people and you can't pass that on to the next person, that's impossible. So, things change over time.

**I know what you mean, as Ushi put me in touch with the AMRO production network, the people and the community, that she built over many years. Now that we are trying to document ARDC, we are also reactivating it, offering it to newer artists, to people who needed machines and they belong to a new generation that became, again, aware of what is necessary. How do you think the servus Data Center and the ARDC can move forward? Are there things that we are missing? If we had the resources, what would you wish for servus?**

If we had the resources, my wish would be to pay the people a bit better.

**That's also my wish.**

And to have it on more shoulders. It's always these minimal core teams and it would be interesting to have more people involved. I think it would be also interesting to involve servus in the development of tools, not just to use them, but also to engage in the development.

**And technology-wise, what do you think the direction is?**

There are always these phases. When I started at servus, some people said something like "servus is completely unnecessary because we have our hosts, so we don't need a website". You could go on Myspace, later it was Facebook, you didn't need to have your videos hosted, because YouTube came up, you didn't need to have your email hosted because you could have Hotmail or Gmail. Then there were the Snowden revelations in 2013 and everyone thought: "Oh, okay, maybe it's a good idea to have your own infrastructure." There's always a back and forth.

Now we have the hyperscale, you can have your Google Compute Cloud, your Amazon Web Services. I think the main point is that servus is not so interesting on the technological side because also all the others use free software, but they are trying to do business and we are trying to make a community, to listen to what people need and to implement that with our knowledge. That's the main point. It's not about having technology applied somewhere, it's always how you apply and govern it. So, this is one problem with the free liberal



open-source software. It's always just this technical aspect of it, it doesn't say anything about how the projects are run and governed. Linus Torvald is the dictator of Linux, he is the one in charge and he decides what is in Linux and what's not. The recent things about WordPress – it's another level. Facebook, Amazon, Google and other companies are not thinkable without this free software because it was the software they had at hand and they could adapt it to their needs. So, it's the foundation for those huge companies now. It's different if you try to offer a service or develop something within a community.

**This answer could fit in any critical theory symposium. It's good. We were talking about F/LOSS in the beginning, you mentioned that free and libre open-source software is at the grounding of the internet, which is now unthinkable without that movement. But still, I don't think it's very visible in the public, except that "open-source" became a sort of eco-label of quality for software. Now even with the open-source AI systems, this definition itself is getting a bit less clear for me. Do you think there are ways to rethink it or to make it sharp again?**

The point is that open-source and even free software came from a time where computer users were programmers and this shifted obviously.

There are four freedoms in free software and they're all technically related. I think it never got attention from the wider public because they are not technicians. There has to be a shift, you have to involve the people and design software for their needs, not for the needs of a company. But this is not on a technical level, it's different. You can't solve social problems with technical measures. You have to think about it differently. We have to think about how to get people involved in this

open-source project, so that free software and open-source are the base. It's not enough to say it's open-source alone, you have to be transparent about how decisions are made and why you came up with doing a red menu button.

I think the challenge is to scale up from this technical base to social community projects. I really loved this possibility to involve but I think now it's time to be more offensive, to say: "Okay, this is the way we operate the software. We don't just want to give you this new AI-driven camera, we want to give you what you need."

1. <https://riseup.net/>
2. <https://mur.at/>
3. <https://cloud.servus.at/>
4. <https://xenproject.org/>
5. <https://timesup.org/>
6. <https://halftheory.com/>
7. [https://kunstlabor.at/posters/Data\\_Spind.pdf](https://kunstlabor.at/posters/Data_Spind.pdf)
8. <https://www.gnu.org/philosophy/free-sw.en.html>

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Discussion with the LURK server admin collective about their style and motivation in maintaining community infrastructure. Navigating between radical honesty in “doing the real thing” and trying to avoid the dynamics of admin self-exploitation, they observe how communities dedicated to software openness and cultural freedom are moving from a purely technical discourse towards social justice and ecological concerns.

At LURK, we host, facilitate and archive discussions around net and computational culture and politics, proto- and post-free culture practices, (experimental) (sound) (new media) (software) art and things like that...

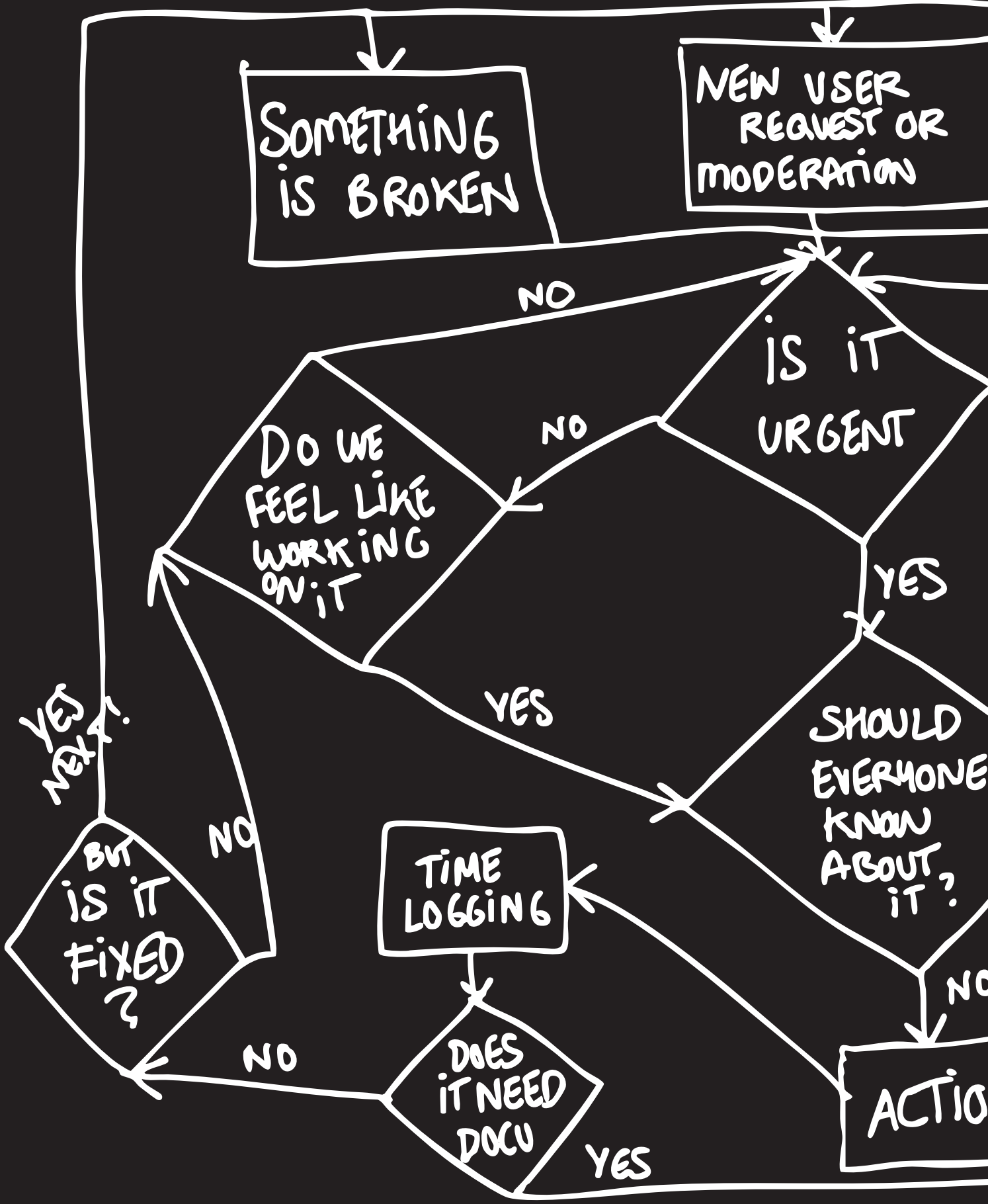
We're volunteer-run<sup>1</sup> and wish to:

- ▶ give the opportunity for individuals, groups and collectives working on net and computational culture to have a presence outside of corporate silos, surveillance capitalism and closed Facebook groups;
- ▶ offer a place where discussions and resources on self-hosting and alternative network infrastructures can exist outside of libertarian and Pepe discourses;
- ▶ provide ourselves with something high-quality to procrastinate with, share good memes and eat pop-corn;

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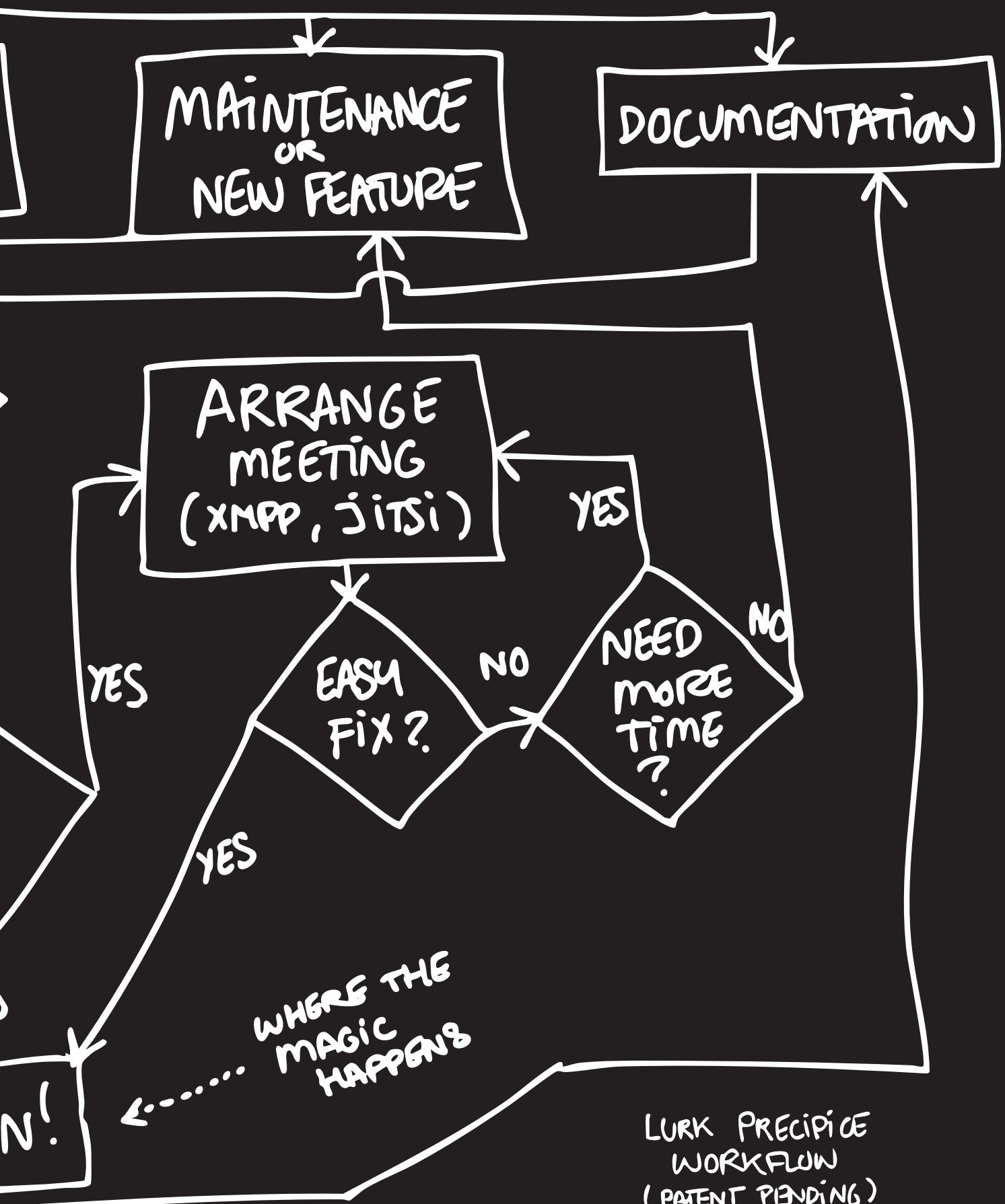
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WHERE THE MAGIC HAPPENS

LURK PRECIPICE WORKFLOW (PATENT PENDING)

## Why LURK?

LURK was started by people who spend a lot of time online, and as pointed out by Joanne McNeil in her book *Lurking: How a Person Became a User*, while often associated with negative things, lurking is central to net and computational culture, online communities and is probably the most accurate umbrella term to describe a broad range of how humans make use of electronic communication systems.

Also, when we started, 10 years ago, it was a cool domain name one of us had already purchased and had no plans for.

## What do you do exactly?

LURK provides a few community services composed of mailing lists, federated chat (XMPP) accounts and group chatrooms as well as access to the Fediverse through our Mastodon (Hometown) instance. We also have a streaming media server for serving live-streams, both audio and video. In addition to offering these platforms, we try to document how they are set up on a wiki.<sup>2</sup>

## Who are your members?

We have five people in the core admin team. Our Mastodon instance is limited to 666 accounts, there are both technical and socio(sub)cultural reasons to limit the size of the community. However, we regularly remove unused accounts and open the instance for new applications. The mailing lists have around 1600+ subscribers. There are several dozen chatrooms with anywhere from four to several hundred users each. Not everyone is able to contribute to the costs but we have about 100+ individuals and groups who regularly pitch in with some cash.

## How does the community work happen?

There's a certain amount of basic moderation that needs to get done: dealing with trolls, SPAM and blocking assholes or hijacked servers. Once in a while, some personal conflicts or emergencies come up. There can be waves of mod work but in general, we are dealing with kind people, so it's not too heavy.

But in terms of establishing and maintaining the momentum of online communities, and although we love lurking, these things live and die by a smallish, core subgroup of motivated, nice people who regularly post and reply. Otherwise it will just decay into an announcements/self-promo forum. So there's a fair amount of active encouragement and curating/inviting people and groups to keep the discursive biome lively and diverse. It's also good to note that these dynamics vary greatly depending if we're talking about the fediverse, or email discussions, or the XMPP chatrooms.

## And how is the server work done?

Our system is based on an impulsive, time-constrained, benevolent, Euro-centric oligarcho-do-ocracy. We follow a "precipice-workflow" school of project management, where we generally fix things either when it's really urgent or especially interesting (or a personal obsession).

We have a private XMPP chat room where we coordinate, help out and vent about petulant mailing list software maintenance, etc.

More generally, we want to address that there is a certain kind of naivety that surrounds specific ideals of community ran network infrastructures about, well, how the rent gets paid and the dishes get done, etc. There's a notion that joy and a sense of purpose will be enough to motivate those doing the labour, but if you ask anyone who has done a lot of volunteer work involving a lot of responsibility, over a long span of time, you risk getting burned out. So we try to make sure that we can pay people sometimes which has the double benefit that we can 1. justify spending the time on bigger meaningful efforts 2. know that our efforts are valued and supported by our larger community – that does not prevent us to also lament and be aware that taking into account the economic dimension of such work is a painful reminder that the underlying precarity of these practices under capitalism is getting worse and worse. So, it's not a career or a big budget operation but it seems to help keeping things a lot more self-sustaining. If someone needs to hibernate for a while or if we need extra help, it's also nice that, through the support we get from the LURKers, we can invite someone and offer financial compensation for their work, instead of deploying yet

another free labour scheme. This is, of course, still not 100% ideal, our model works because we benefit from the support of hosts, like [servus.at](http://servus.at), who are giving us free servers. We don't take this for granted and it's all a big work-in-progress for the whole network to be fairly compensated, but it's moving in a good direction. Ten years ago, even within niches like ours, discussing the economic dimension of our practices was a big taboo and there was always a stream of people ready to volunteer for admin burnout. We have to change this culture.

**What is your motivation in keeping up the infrastructure?**

It's fun. We get to support individuals and groups that we like. We can also use it as a chance to make a small argument for a different kind of IT culture – one that's a bit more personal, participatory, honest (sometimes things break or go offline) and has a (virtual) local flair. It's a way to make digital spaces where we can do things our own way outside of the more normative commercial regimes we all know.

It's also in part about "doing the actual thing". A lot of people in the field of art, design and culture production spend an awful lot of time talking about computers and network culture – negatively or positively – and here we're actually working on the real, material conditions. Both our critique and hopes are deeply rooted in the practice of net and computational culture, and reciprocally, we can express the critique and hopes by experimenting with these machines and software.

**On your website, you mention post-free culture practices. What do you mean by that? Why is it important?**

Post-free culture is an attempt to point that while we are all using and supporting F/LOSS, and occasionally consuming and producing free culture licensed works, some of us in the group see these projects as far from ideal and far from the counter-hegemonic imaginary they tried to project 30 years ago. The anarcho-capitalist, libertarian subtext, as well as the overall ICT industry capture of the digital commons and the normalisation of technosolutionist and techno-optimist thinking, cannot be ignored any more. Not even to mention the toxicity of many F/LOSS communities. Today, free culture as a whole cannot be thought of as an emancipating alternative, it's just a different materialisation of the same crap. This one, however, still has potential to be appropriated and could, maybe, help envision something else, but this won't happen while free culture is still thought as an end and not a supporting means of much broader political, social and cultural issues. Not to mention, producing free culture practices, in the vast majority of time, cannot be decoupled to one's privileges. Ultimately, it is not surprising that communities who are working critically on technological matters have shifted their interest from the importance of openness and cultural freedom to questions of social justice, labour and ecological matters, as seen for instance in groups discussing permacomputing.<sup>3</sup>

**Is there a future of artist-run infrastructure?**

Not only there is a future, but it is also a long history that the cultural sector tends to forget because of its addiction to novelty and complicity in legitimising Big Tech. Thankfully, Monoskop has started to document a lot of the community servers practices and history.<sup>4</sup> In a general sense, most artists outside the mainstream always have and always will need alternative infrastructures, digital or not, to support their work, and we see this effort as part of that long tradition of off-spaces, independent galleries, indie publishers, studio collectives, equipment pools, etc. that will most definitely continue into the future. This can hopefully help the field of art, design and culture production rethink its capacity to materialise different ways of living and working within and outside of its own field and move away from the same tired recipes of the culture industry.

Lately, a lot of other groups have started to take an interest in running various kinds of infrastructure in varying forms and degrees, to gain a bit of independence, create localised spaces and have more of a say in the form and character of everyday digital life. And, interestingly, some (but certainly not all) of these nerdy things that used to be very tedious to maintain have started to become a little bit easier and more approachable to some people. That is to say, it has become more apparent that you don't need to be some kind of super-hacker with years of training to run a few services on a Linux

host. We might compare it to particular crafts – that you can learn a bit of basic woodworking, knitting, gardening or Unix system administration and do some useful nice things in your community. The golden rule still remains the same though: do not do that on your own.

**Should the rest of the world learn something from them? Or is it better if these places stay around as hidden and slowly disappearing gems?**

"Slowly disappearing"!? Wait a minute. On our Mastodon instance, we had to put a limit on the number of users (666 – a totally arbitrary number) to keep growth from distorting the character of the place. There is really a longing for something else than mainstream social media crap. The fediverse may not be the solution, but it does show a motion on a scale unseen so far in its capacity of attracting other people than those running this space. It's still a big work-in-progress and some people just love to shit on all that for various reasons (usually because of an upcoming blog post, book chapter or monograph), but in reality, and beyond the narrowness of the fediverse – social media is only one of many things you can do with servers – the model of a community server and its wild variety of governance models and applications is one of the most interesting approaches to engage with net culture. Given the importance of the medium today, and the sorry state of the world, taking ownership of such infra seems like a moral imperative.

But to return to your question, if our experiences can inspire or inform others who try to incorporate some of the ideas and knowledge we've developed in order to build their own communities, that's a great thing.

1. <https://lurk.org/#pls-send-halp>
2. <https://lurk.org/#wiki>
3. <https://permacomputing.net/>
4. [https://monoskop.org/Community\\_servers](https://monoskop.org/Community_servers)

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# Scatter Chatter: the server as a chatty machine

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# Chae & Kamo

**The Scatter Chatter is a VPS project in the ARDC that is about exploring how the public and performers are connected to a server. In this interview with Chae and Kamo, we discussed situated software and infrastructure, how servers can be at the center of communities, and described the virtual machine as a research-framework to investigate the digital layers between people.**

Hello, Kamo and Chae, what is your server name and what happens there?

*Hello! My name is Kamo.<sup>1</sup> I work across various fields, including art, design and computers. My catchy one-liner these days is that I'm interested in how technology organises togetherness and how togetherness affects technology.*

Hello. I'm Chae,<sup>2</sup> and together with Kamo, we're working as DIWO group, an acronym that stands for "Draw it with others".<sup>3</sup> We find this explanation quite helpful in introducing people to our Venn diagram. In this, my name is connected to colouring, hosting, publishing, humour, intimacy, drawing and performance, showing the overlap of different realms in Kamo's work.

The name of the server that hosts us is chatterboat, a combination of chatter + boat. "Chatter" comes from Scatter Chatter, our project. We imagine this server as a chatty machine, busy with small talks all around. "Boat" in this case is not a regular sailing ship but rather a contraption or expansion of a bot, robot. It is a name emerged from a practice of the masters in Experimental Publishing (where we first met) at the Piet Zwart Institute, Rotterdam, where a small self-hosted server is set up for each class of students. Our server there was named soupboat, which derived from sandbox, the server of our seniors, derived from sandbox, the name of their predecessor, etc ... It has become a bit of a tradition for us to name the machines where we work something-boat, and chatterboat was no difference.

**And where does "Draw It With Others" come from?**

*In our study and projects, we always explored the idea of DIWO (Do It With Others), especially since it relates to the cultures around open-source software. At some point, we connected our work to drawing because we do it frequently. Over the time, we've created a variety of tools specifically for it and we find that to be a quite relatable and accessible practice to think about an open source technology. So, we began this duo, which is open to expansion, grounded in the idea that you are never doing something yourself, but someone else is always involved.*

We realised that "Draw It With Others" is a way to break the ice and bring people together. This shared practice of drawing connects us, as do our mutual interests in tool-making and technology. So, we play with the phrase "Do It With Others", a concept rooted in open-source, digital and DIY culture, and then twist it around.

**You are also part of other collectives, such as the Blob Shop Collective, and you always mention a lot of the XPUB. Can you contextualise it?**

Sure! Kamo and I studied alongside each other, we did the same course and graduated together. The class name was Experimental Publishing, aka XPUB.<sup>4</sup> In this course, the focus is not just on what people make, but on how they make it. So, this approach brings out all the relationality. In art schools, you are mostly invited to focus on the final result. XPUB not only cares about what you produce, but also emphasises the tools that are used, the networks of references and the various infrastructures that support your work. That is all coming from different communities. During our first year, we worked closely together as a group, which was quite significant for us. This led us to form the Blob Shop Collective.<sup>5</sup>

*One of the main focuses of this collective is the idea of combining the notion of a shop with the self-organised structure of a collective that caters togetherness. It is a meeting point where transactions and exchanges of knowledges, skills and resources are circulating. How do we organise this work and how do we manage to keep track of all these different scattered realities that now are living in different parts of the world? I think this is something that really shaped our way of working together.*

**Yes, and additionally servus + AMRO have been long-term partners of XPUB and the Piet Zwart Institute, I think that much of the overlap and exchange between these communities is visible in your practice.**

**Reading about the Venn diagram in your bio and the mention of the situated software, I would like to explore the idea of situatedness. For example, you always mention and bring up all the components of what you are doing and the communities you**

You are looking at a Venn diagram with the following sets: software, performance, drawing, documentary, birds, drawing again, colouring, hosting, publishing, humour and intimacy. In some of their intersections, you read the name Kamo. In others you will see the name Chae.

They collaborate under the alias DIWO working group, exploring drawing as an open source practice. They host workshops, develop situated software and participate in different networks with a focus on free and open source technology. Their publications are distributed by the Blob Shop Collective.

DIWO working group [draw-it-with-others.org](http://draw-it-with-others.org)  
Blob Shop Collective [blobshopcollective.org](http://blobshopcollective.org)

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are in contact with. How does the idea of being situated across communities dealing with socio-technical systems influence your work?

*The difficult part for now is how to talk about situated software without giving a context.*

We had this issue when we were applying for residencies because a lot of times applications require you to be compact, concise and able to communicate what you are doing. This is sometimes challenging for us since we see so many layers in our work. Especially when you have all these different networks of people and machines each with their own situated context. When discussing a project, we struggle with how much we should cover. The push to stay concise can be frustrating, but it also challenges us to create more entry points for those that are not entirely familiar with this kind of practices.

*Each of these different contributors brings unique nuances to the work. For example, the fact that our project Scatter Chatter<sup>6</sup> is hosted in a VM at servus adds some nuance. The fact that we tested it in Varia,<sup>7</sup> which is a collective working in Rotterdam, brings in some other kind of feature. It's really difficult to hold all these perspectives and aspects because when you have a 1000-character limit for a project description, just posting a series of links to show how various networks connect isn't always effective or accessible. For those immersed in the context, it may be clear but outsiders often find it cryptic. That's why we are aiming to balance legibility and a certain level of encryption, making it understandable but staying nuanced.*

**Maybe we can tackle the tension between the "artist as genius" who hides their process and the push for maximum contextualisation, visibility and accessibility. It's not a binary choice, but rather a spectrum of approaches. So I'd say that you are positioned in a part of the spectrum that tends to make the context visible. How do you put it into practice in your performance project?**

I'm very interested in how intimacy can bring people together and make things accessible. Each time we iterate and rewrite the script depending on the context, venue and topic. We use the same format, but in each iteration we explore something a bit different. It's a lot of work to change the setting each time, but it brings more engagement and makes the project more appealing.

*As you mentioned, there is one side of the spectrum interested in black boxing and making technology look like magic somehow. This entails hiding the processes behind a curtain and letting people see only the results. What we are doing is working in plain sight. We create something that works, but when it breaks, we notice it and fix it, all without hiding anything from the public. If I think about Scatter Chatter, we also had moments when something was not working and we were very upfront about it.*

Black-boxed technologies and the "genius artist" are quite similar, aren't they? Through our practice, we are trying to move away from both of those tropes.

*Then, eventually, I'm happy, for example, that we don't need to care about how the big blue button [where the interview was done] works. We can just have a meeting and use something that is working because someone else is taking care of it. You feel that there is someone who is taking care of the server and this technology. So, it's not just working like magic. Quite often, you have all these services that you only notice exist when they break and when they do, we don't know what's happening – it feels detached. But when a friend server fails, I know exactly who is involved and I know someone is probably freaking out somewhere.*

There's more body in it.

*Exactly! You can imagine people around the server which is good sometimes.*

**Your project Scatter Chatter emerged from a specific request of being invited to contribute to the Touching Thought project. How did this become part of the continuous elaboration of ideas and work that you layer over time?**

*I'm fascinated by your mention of a continuum as it reminded me of the various small, situated software and tools developed over two years of experimental publishing. Scattered projects slowly move from platform to platform, creating a kind of tentacular journey. For instance, after our graduation*



*tools hosted on the server Soupboat<sup>8</sup> gradually transitioned to Divoboat, our new server. I resonate with the idea of a continuum because these complex projects do not have clear boundaries, they emerge from one place, move to another and leave pieces scattered along the way in the best way.*

Just to add on that, there's a technical side with small, situated experiments, like drawing or music tools mostly created by Kamo. Then there's the thematic side, which appears in performance scripts. These two aspects sometimes merge and sometimes stay separate, building upon small experiments over the years or our interests. Altogether, it's become a space for us to explore different topics with people, often through smartphones.

**Your performance is very dependent on your mediation between the server and the participants. How do you address the many layers? And how do you see yourself in it? Should the system eventually become autonomous from your presence?**

*Indeed, Scatter Chatter is not only a layered project, but also one that literally spans through several layers of a complex technical stack, too many to be addressed during a twenty minutes long performance. We figured out that the project could be developed across different formats.*

*The performative side of the work is about taking one detail of the system, like a part of the smartphone, and focusing a group's attention on it, creating a shared way of examining how we interact with that specific feature. We see it as a research framework, one we could open to others interested in technology and smartphones. Scatter Chatter's situated nature lets us explore various themes such as accessibility features like screen readers, UI and UX patterns, emojis or even the musical aspects of push notifications.*

*Then we are working on a publication to chart the infra-*



structure of the system, with a big map of functions and wording in the code. We put great care into the metaphors and language used in coding, from the server architecture to the naming of functions and variables, to re-conceive power structures and relationships among actors interacting with the server. For example instead of “Server” and “Client”, which carry hierarchy and business connotations, we renamed them in “Scatter” (for the server) and “Chatter” (for the client), that add new meaning and character.

We also want to document the API of Scatter Chatter in order to make it more accessible to the public because, in the end, this is also a tool. It's a tool to have a lot of people connecting to a server and scatter around some messages. We imagine developing a workshop to show how it works and teach others to set up their own system or connect to ours.

These are the main projects we would like to focus on in the near future, alongside performance.

**Each performance you do is a unique exploration of how one can interact with the Scatter Chatter system. Can you describe the performance at Roodkapje in Rotterdam and the one in JKU in Linz? What were the differences and what did you learn in the two different iterations?**

Roodkapje was our very first try-out of the Scatter Chatter project, it was an intimate and cosy setup. We were mostly talking about the physical traits of the smartphone and looking into certain habits around it. The one that happened in Linz was part of a bigger project where we were invited to use all the materials that the researcher of the medical department used.

From my background in dance, choreography and technology, I often see duality between the public and the artist, and the divide between who can use and has access to the

technology and who doesn't. Technology is often hidden, creating a sense of inaccessibility. So, at some point, I got a bit tired of this hierarchical relation. The result was that in Scatter Chatter, we started gradually blurring the line between how the public and performers are connected to the server, which is an important process for us.

**The server of Scatter Chatter is part of the ARDC,<sup>9</sup> which stays for Artists Run Data Center, within the servus.at infrastructure. I'm curious to hear what you associate with the concept of “artists running data centers” and how you see yourself in it.**

We started our first-ever experience working on a server during the Master's in Experimental Publishing, which was the small Raspberry Pi. After graduating, we moved away from the initial infrastructure and the server became less reliable. As a team, we debated whether to continue with Raspberry Pi setup and self-hosting, raising concerns about performance, stability, consumption and costs. Ultimately, we decided to switch to a VPS hosted by OVH, moving from the small Raspberry Pi in a public school network to a virtual machine in a large, unknown data center. At the same time, we started to ask ourselves what works for us. Then we thought that servus is a good middle ground, because it's not self-hosted, but other artists are running on it with their projects that we are interested in.

I think this idea of the artist-run data center is close to do-it-with-others. For example, at XPUB, editing the server configuration was always a headache. We developed the habit of leaving messages in the files, “use port 3000”, for the next person. This helped us work with technology that's not fully virtualised while knowing we can rely on others to manage the server.

**How does Scatter Chatter interact with all the communities such as XPUB and Varia? It's like a pulsating network where things occasionally align.**

Indeed, Scatter Chatter connects different networks and communities. It was possible thanks to XPUB, Varia, Hackers and Designers, AMRO, which are slightly different, but with a similar mindset. Moreover, it's not only about connecting these communities but also about Kamo and me staying in touch and supporting each other. For example, after our return from our project presentation in Linz last September, I received a cute email (with curated ASCII arts!) from him. He shared his reflections on our work and the project, expressing his emotions and gratitude. This is why I like to stay away from the “genius artist” setup, because it can be so lonely. Working together, connecting with different communities and constantly finding ways to involve friends and give credit transforms the experience. It creates a space for others, reduces loneliness and brings more validation through mutual support. For me, this project is not just work. It's a way to connect with different communities and deepen my friendship with Kamo in a unique way.

To add on this, after our first performance in Rotterdam, Chae wrote a personal message to each participant, thanking them and sending a unique picture she took for every one of the 30 people. It was a way of showing real care and appreciation. Of course, we were lucky to have such a great audience made up of friends who were sensitive to our work, but this gesture made something click for me.

It reminds us that we can approach this project not just as something between Kamo and me, but as something that truly involves the network and the different communities we are connected to.

1. <https://kamomomomomomo.org>
2. <https://chae0.org>
3. <https://draw-it-with-others.org>
4. <https://xpub.nl/>
5. <https://blobshopcollective.org/>
6. <https://scatter-chatter.net/>
7. <https://varia.zone/>
8. <https://hub.xpub.nl/soupboat/>
9. <https://core.servus.at/de/projekt/2023/reardc-rethinking-artist-run-data-center>

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# VO

# EZN



**Talking with vo ezn about the ARDC project f00f.fail.<sup>1</sup> The server, xouna, is visible through an introverted web-based interface that reflects about burnout. The project where\_is\_my\_money is about sharing experiences of payment delays and a mail server configured to send automated email reminders to unload the burden of asking for payment.**

You developed your project f00f.fail during the Research Lab 2023, which was then presented at the STWST48x92. Looking back now, can you share the context of the VPS, the research and what happened then?

When I got the VPS at servus, I started to work around the server monitoring system. I got access to it and started experimenting with it on the terminal, but something always felt off. For months, I kept ignoring it, the burnout. While I was fiddling with the monitoring system, it was triggered. I was looking into this monitoring system to check the state of things, but kept ignoring my own condition.

I decided to incorporate this state of mind and condition into the work, showing the live update of server condition through an interactive web interface.

The server introduces itself, its name is xouna; you also see when it was last rebooted or when was the last time it had a sleep. Title “f00f” comes from a bug in the Pentium Processing chip, back in the late 90s, which halted the machine until you rebooted it.

After the server introduces itself, you see how much memory it is using to operate, how much memory the database is using, and you also see a live update of the web server nginx error logs. Then there is a prompt field that says, “when burnout what is art”, where you can insert a phrase in it or some words and the database picks it up.

On the upper right corner there is a text circulating. That’s the text input from the database, so whenever you insert a text, you wait, and it randomly starts spitting it out. I do introverted interfaces, so there is no project description on the page, but there is a field where you can insert your email and that sends the description to your email.

Then, there’s an ASCII fire and, in the background, there is a photo I took years ago in Tbilisi, where two buildings are held together by this huge metal structure in between them. I always think of it as a reference to infrastructures in general – infrastructures can be patched up like this at times.

So, I bring in this burnout-mode, maybe in a more subtle way, but I’m more explicit in the email which you receive. This kind of human-machine capacity comes together in this work.

**I didn’t realize it was an ASCII fire, so now I’m happy you explained it. Then we also have the fact that the machine says “it’s just you here”, right?**

Yes. When you visit the machine and if it’s only you connected it says “it’s just you here”. If you open it in a new tab, or someone else joins, it says “xouna has two guests”. But if a third person joins, then it redirects all visitors to a page which explains that you’re there because xouna hosts only two people simultaneously. You can also stay on the page for maximum five minutes at a time. It’s like saying: “I’m out of capacity, please leave now.” It’s a lot about that.

**Your work lets me think about how current forms of work are connected to machines and how burnouts are mostly accompanied, if not generated, by machines. For everybody who is working at a company with a monitoring system for workers, we all have these surveillance services that want more and more from us. What are your thoughts on this?**

After talking about this work in public and presenting it, people come to me, and we chat about this, because everyone is experiencing this and everyone is kind of burned out. I don’t want to have a work that’s like: “Oh yeah, we are burnt out, okay, that’s it.” It’s nice to have a moment afterwards to discuss and to check in with each other and how everything is going.

**Yeah, I totally see the work as a channel through which conversations happen.**

Exactly, that’s the point.

**And the second iteration was during AMRO<sup>3</sup> this year [2024], where you did a workshop about payments, or better payments not happening. Can you share more details?**

Yeah, that workshop went places. It was so interesting. All the methods people use and the horrific stories they shared – also good ones – of hacking the payment and delayed payments. How things happen in different fields also, and how – email is still my favorite technology – some people really hate it because in some workplaces the way it’s used is very overwhelming and intrusive. Recently I discovered people just do “thumbs up” on your email and you receive an email about it.

vo ezn /vɔ ɪzn/ -- sound && infrastructure artist, working on server-side tensions and introverted interfaces ]] configurations grounded in personal experiences & {material} realities { labour conditions & server-person capacities }- ]] --to-for-by-with on my own terms. ++ @ feminist server collectives/networks syster-server/ anarchaserver/ minadoraserver, and workshop coop hackers & designers

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**The server is out of capacity, we will go elsewhere.**

I'm like: "No, not this email."

This project is called *where\_is\_my\_money*<sup>4</sup> and it's about automating an email to send it from your terminal or server. The idea was that we would write a text together with the workshop participants. We would share stories about working conditions and delayed payments first and compile a reminder email. There was a technical part also where I set up this email server that would start sending out automated emails. And it would also count how much time passes. On day one, it would send, "Hey, I still haven't gotten paid," and next day, it would be like, "Hey, it's been one day." So, every morning, it would do this and also start counting the days. "It's been two days", "... three since I've heard from you the last time." It would basically outsource to the machine the burden of doing it yourself, so that's kind of how the machine comes in as well.

**Like many others, I also experienced similar situations and was wondering if there was some way of automating the communication exactly like your work. But I remember also how powerless I felt in that situation, I was enraged and furious. So, how can a machine...**

It's not solving that, it just takes on the burden of sending out these reminders, that's it. It doesn't pretend to solve anything, but sending the reminders is also part of the thing that takes your time and energy thinking: "Oh, I have to ping them today." So, it does this instead of you.

**I was wondering if there are some sort of repositories of good and bad payers in the community you are active?**

I don't know, but I do ask around though. That's what works for me; I ask my friends before engaging in a work that could turn into a disaster. But I don't know if there is a whitelist or blacklist for that matter.

**Did you have other occasions to test this workshop or to have these conversations other than AMRO?**

Yes, I did talk about it a few times after. And, this is unrelated, but I'm using the email relay Porkbun, where I also have a domain for this website. They reached out to me recently. It turns out someone is abusing this email feature, sending out a bunch of emails every day. I had to deactivate it temporarily. Sometimes when I present it, I'm like: "Hey, I'm going to activate it temporarily so you can test it." I checked it, looked at the logs, and it was just bonkers how many emails were sent out.

**But these were not the people that took part in a workshop of yours, right?**

No, I think some bot is just putting a lot of emails there and sending them. So that happened. But, I mean, it's out in the open. It's a field you can fill and press "send". I need some protection for that.

**And what about the people joining the workshops?**

Usually it is not a dedicated workshop, I show it as part of what I do and I talk about collective practices. Someone had asked once: "Why would I insert my email there?" And that's fair. I think when a trusted person shares this work or when I introduce it, then it's easier to put your email in the box and send it to yourself. If you just stumble upon this, maybe you won't do it.

As for the text input, I've noticed that someone really inputted their whole experience. They say that they were hired at some big festival, and things went bad... But of course there's no time to read it because it changes every second or so. With all these kinds of inputs, there is space for the project to shift a little bit. I'm getting all this feedback and it's interesting, so I'm noticing how it could shift a bit.

I didn't expect people to put a whole text in it, you know? I thought it would be just a word or two, but someone just shared a very bad experience.

**Yeah, maybe somebody just needed that.**

Yeah, exactly.

**Are there other services that are running on servers that might make sense to mention here or is this interface everything on the server? Are there other things that you're testing?**

No, that's it for now.

**Do you already have some ideas what to test or is it about this continuous tweaking and...**

It would be nice to have space and time to focus on that and maybe go back to munin [the monitoring system that vo ezn

vo ezn

begun experimenting with] to see how that can be incorporated and make visible not only this machine but the whole community of machines that this is also part of. And to adjust maybe this email part and how the text is displayed. I also want to elaborate it – well, that's beyond this project though – to a place where people come together and talk about how to be more proactive with burnout. When we talk about burnout, of course we are talking about capitalism, so it's not like you are going to solve capitalism with this.

**This is what I like about your project. It's more like a starting point to relieve some tension and help, it does not try to solve capitalism. In his interview about Bleu255,<sup>5</sup> Aymeric makes a very striking point: the working conditions of the art and design industry – which are just avant-garde for what happens in the rest of society as well – in the last 20 years have become so much worse, with payments and inflation. Your work is very much in line with this and the presentations are important moments to make connections and share the burden and the burnouts. This is maybe a starting point to build stronger networks for fighting back.**

That will be the best route. My wish is that this project won't be just about shouting, but also sharing how different people deal with it and who helps them or who you can reach out to when things go down. I also learned that in the Netherlands, in certain circumstances, there is a support system for when you are burned out, for instance. So, information like that can come up through the conversation that this work brings up.

That's a more valuable point.

**What do you think about the broader context in which we are working? There are more and more machines and individuals that are more and more automated themselves. I am thinking about how Amazon's workers' time and actions in the warehouse are timed and monitored by machines. This is a terrible extractive system.**

Yeah, you would think we would use all the technical developments that humans have created to make our lives easier. But no, it's always used against working class people. Always.

**Is it because they have no say in how the system is implemented and what is there?**

Yes. And then comes the union busting practices and all the policies that forbid workers to unionise. All these machines are indeed turned against us, even if we are running the machines, it becomes like a race to keep them up 24/7.

That's why I like this feminist approach to machines, that we're going to take care of it at our own capacity. If it's down, that's fine. We're going to come back to it when we have the time.

1. <https://f00f.fail/>

2. <https://stwt48x9.stwt.at/>

3. <https://radical-openness.org/>

4. <https://art-meets.radical-openness.org/2024/program/where-is-my-money/>

5. <https://bleu255.com/>



One time I worked for  
 a festival for a big  
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# Femfester In-grid

This femfester is In-grid's iteration of the feminist server manifesto. As we rub up against and dance our way into network practices, festering acts as a place to form intentions and imagine how we want to collectively meet here. We fexaster as we care for the holes in our pipelines, tend to the ooze that undulates out aand sit with these leaky seamful infrastructures. We don't aim to cure these frictions or plug these holes, but to care for them. We ask how we can enable infrastructuring to fester otherwise from our pulsating practices.

## A femfestering Server...

Is a situated technology. The server feels out their context and considers themselves to be part of an ecology of practices.

Is maintained by a community that cares enough for the frictions of accessing and maintaining a server, and where these frictions feel like a generative affair.

Ferments the materiality of software, hardware and the relations of the bodies gathered around them.

Opens themselves to expose the difficult processes, tools, sources, habits and patterns to make accessible these difficulties.

Does not strive for seamlessness as it creates a bubble. Talk of transparency too often signals that something is being made invisible and inaccessible.

Avoids efficiency, ease-of-use, scalability and immediacy because they can be cages we need to abolish.

**Knows that networking is an awkward, promiscuous, interdependent and pleasurable practice.**

**Is autonomous in that they feel out their own dependencies, relations and politics.**

**Radically questions the conditions for serving and service; practices queering client-server relations where they can.**

**Approaches network technology and sociotechnical systems as places of social change.**

**Enables networks and their practices to be improvisable and read-write accessible.**

**Does not confuse safety with security.**

**Takes the risk of exposing their insecurity.**

**Tries hard not to apologise when they are not available, as they learn to communicate their capacities.**

(un)making: the more you creatively avoid production, the more value

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**(un)making:  
the more  
you avoid  
production,  
the more  
value you  
create**

**Inari Wishiki**



**This interview with Inari Wishiki casts light on artistic practices dealing with niche economies and market void exploitations, developing conceptual alteration of making through the appropriation of production processes.**

Hi Inari, can you tell us about your practice? What kind of projects do you work on?

My name is Inari, either known as Inari Wishiki or Yoshinari Nishiki, both identical persons with different outcomes, the former more artistic and the latter one is more technical. To summarise what I have done very shortly, “economically sound, morally unacceptable” ways of resource circulations. Poking market failures<sup>1</sup> and exploiting them to a level where things start to fall apart. In other words, exploring how inefficient our modus operandi can be in terms of business operation.

How do you use the VPS at servus?

I have been using my VPS at servus, [bnp.servus.at](http://bnp.servus.at), since 2015, as a long-term residency at servus. It was an idea to build a trusted couch-surfing service [Beyond Private Network] by harnessing social restrictions. The VPS is a playground where I try experimental ideas without having to worry about ruining something. I have broken more than a few things on the server, but I’m always warmly assisted by the technicians! Also, authorship-wise, when I host something that has a more communal character, I tend to use [bnp.servus.at](http://bnp.servus.at).

The best example is when I worked on a slow-speed virtual residency project funded by the Dutch Embassy in Tokyo during the pandemic. This project involved many different parties and personnel: a curator from Tokyo, local people from the former disaster area (called Minamisanriku [南三陸]), and the director of a Dutch media art institute. I do have my own server ([irational.org](https://irational.org)), but hosting the project on it, I would hesitate, due to the potential biases that people might feel from things put on it by other members. In a sense, a VPS on servus.at is a politically neutral entity for me, and I found it suitable for a project that happened between the Netherlands and Japan (hosted in Austria). The project archive is available at <https://bnp.servus.at/msr-haag/wordpress>.

What is your connection to free culture/software practices?

My connection to free software culture started in 2013 when I studied with Graham Harwood at Goldsmiths. He (in)famously put it: “Linux is great because it breaks!” Until then, I was using Mac OS X, but suddenly began feeling so much more confined after the introduction to Ubuntu. After a year or so, I switched completely to Ubuntu/ThinkPad, a classic combo. A few years later, I discovered Libre Graphics and decided to become a practitioner.

You have also participated in several editions of AMRO. What does that mean to you?

AMRO is a platform through which I met many of the essential people in my network. I first visited as an assistant in 2014 and presented there for the first time in 2018. This year, in 2024, I presented as well, and I feel that the festival has played the role of milestones in terms of the development of my practice. For me, AMRO is nearly exactly equal to servus.at as that is where it comes from.

How do you think AMRO connected and integrated into the work of the Data Center? You are currently working on the concept of “(un)making”. Can you explain that to us?

I’m currently conducting an engineering PhD on (un)making, a variant of unmaking. Unmaking is a newly emerged term that came after unlearning and is also seen as an extension of Critical Making. In the field of HCI and design, unmaking entails alternative approaches to mere making: 3D printing aimed for decay rather than perfection is an example. My approach is more value-focused and I explore a new kind of value-creation mechanism where the more you avoid production, the more value you create. I’m working on the guidelines for those what I call “(un)made objects” and conducting workshops to verify them.

What would an Unmaking approach to infrastructure look like?

Unmaking approaches to infrastructure are NOT something like building an eco-village from scratch with like-minded people. Rather, situating yourself in an intricately knitted apparatus of modern infrastructure in a way that you might appear opportunistic but cannot be removed. I basically do that all the time, I’m just scavenging for life!

1. A situation in which the allocation of goods and services by the free market is not optimal, potentially causing a loss of value.



Yoshinari Nishiki (a.k.a Inari) has always explored unconventional ways of resource circulation. Projects pursued include the infinite multiplication of bananas (*Banana Multiplier*, 2013), a legal train ticket recycling scheme using pigeons (*Homing Pigeon Unused Train Ticket Delivery System*, 2014), a courier-free free transport system (*Contingent Cycle Courier*, 2019) and an energy drink made from waste materials (*EROI Drink*, 2020). In 2023, Inari developed his art practice into a culminating concept called “(un)making” – an ultimate mode of production where technically no production takes place. He is currently seeking to establish an environmental certificate based on this concept and has started his PhD (engineering) on the same subject.

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# half the risk of data loss is accident

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# irational.org

**This email-interview contextualises the Irational.org tiny housing in the servus.at datacenters as one of the various interpretations of the Artist Run Data Center.**

Hi Irational, who are you and what do you do?

Hi there, I am a server encapsulated in a small plastic case, people call it Raspberry Pi, it's like a small computer. Every day and night, I process multitudes of data on request of my clients. Actually, there is no day and night for me, just more or less regular change of intensity in which I receive requests from the clients I serve. Also, they are not really my clients, I got to learn more about some of them with time and we established some relations... Actually, I store evidence of a collective of artists calling themselves the same as myself. According to the stored data, they lived in very scattered parts of the globe and were moving in very unpredicted ways, occasionally having opportunities to meet in person. I assume that was the reason I came into existence, to gather them somehow in one place. Back then I was much bigger, you know, huge, and loud! Also, there was an issue with heating up. Processing so much data was heating my body so much that I could easily explode if there was no ventilators and a cooling system. Also, I had lots of other buddies beside, servers, just like me, serving different clients. Oh, gosh, this was a time... Then, at one point everything changed...

**Around one year ago, you decided / were forced to abandon a commercial data center hosting and move to servus. Why? How did that happen? How does your housing work?**

For the questions above, you could look to: [https://titipi.org/wiki/index.php/None\\_of\\_this\\_experiment\\_is\\_evident](https://titipi.org/wiki/index.php/None_of_this_experiment_is_evident)

**So you don't have a VM, but you have a tiny-yet-very-physical machine. Why that? What are the downsides and upsides of your choice? Legal ones?**

legal: physical servers are covered by property law, which is older and stricter  
virtual servers are covered by service law, which is younger and debatable

**Do you have other backups or host partly in different areas?**

Collectively, a daily backup is made to another legal jurisdiction (different country)  
individual users are encouraged to backup their own work regularly  
half the risk of data loss for irational is accident, while the other half is political sabotage via quasi legal means

**What/Who are you hosting downstream? Do they know?**

The core members are Heath, Kate, Vahida and Inari. Vahida has some users in Serbia. We offer email for the above mentioned TITiPI. All from the tiny computer!

**Why is it still important nowadays to continue working in making art & infrastructure?**

We are living in the age of short viral videos where nearly all web spaces are hosted by Instagram via Linktree. But hosting a web page is inherently something much more simple, just <html></html> written on any memopod saved as SOMETHING.html put to a directory already gives you a space. How can an artist survive financially without having an Instagram account? Each member of Irational has their own strategy, somehow retaining their own position within the world that keeps drifting. Being connected through "a server" somehow helps us in this process, that's the feeling.

**What do you think is the future of artist-run infrastructure?**

There is a tendency in this space which is ever increasing concentration. In other words, alternative spaces are becoming scarce and the infrastructure is concentrated, which is a bit ironic, as distributed systems should be kept distributed. We need to collectively think to be kept distributed. Irational is currently looking for an alternative server farm for our next back up server so that our people can be slightly more resilient.

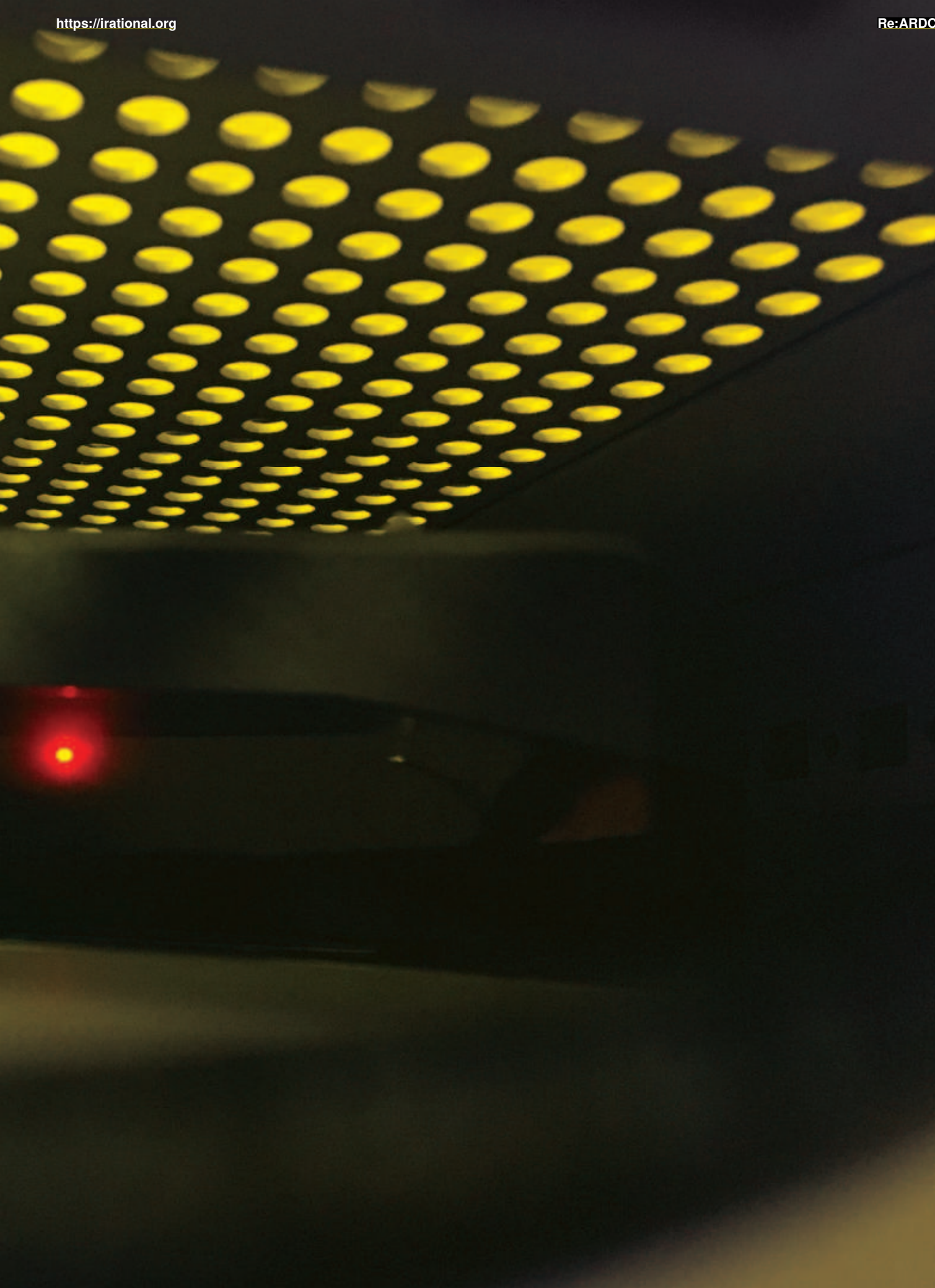
**Can the rest of the world learn something from them? Or is it better if these places stay around as hidden and slowly disappearing gems?**

In the case of Irational, some people like just how the name sounds, e.g. researchers from technical universities. It's just a name, but it means something to them, and they think that what we do well represents the name, Irational! Other places can also function in a similar way, just through a name, it can say a lot! If anybody wants to set up a new place in this Instagram age, I highly recommend "mangolas.si" with the Slovenian domain, it's just a drink!

Irational is a loose grouping of international net and media artists who came together around the server irational.org, founded by the British net artist Heath Bunting in 1996, going on to make a decisive contribution to early net art from the mid-1990s onward. Based out of Bristol.

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# From infrast the commons infrastructu strug

# Mansoux

A conversation with Aymeric Mansoux about bleu255, GOTO10 and how the scene of independent cultural producers evolved in the last 20 years, how to apply this knowledge, the changes in these communities and the reasons behind them.

# Structures for and towards ures for the gles

# Aymeric

Aymeric Mansoux (he/him) has been messing around with computers and networks for far too long. He is a lector (professor of practice-oriented research) at the Willem de Kooning Academy, Hogeschool Rotterdam. His recent collaborations include: What Remains, an 8-bit Nintendo game about whistleblowing and the manipulation of public opinion in relation to the climate crisis; LURK, a server infrastructure and collective to host discussions around net and computational art, culture and politics; and the Permacomputing wiki, where a growing number of contributors document and discuss alternatives to extractive mainstream computation.

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Can you introduce blue255? It has its roots in GOTO10, right? How did you start the collaboration with servus?

GOTO10 was a collective of artists/musicians/hackers<sup>1</sup> that contributed to projects linked to the 2000s scene of cultural producers interested in Free/Libre Open Source Software and Art, overlapping with several other similar initiatives as shown in LiWoLi and the early days of AMRO. We had servers all around Europe, but when Marloes [de Valk] and I left the collective in 2009 or 2010, we started to look for a machine for ourselves. At some point, Ushi offered us a small VM, borok, in the servus ARDC. This became our primary server for work, but also a private server for direct friends and family. Eventually, when GOTO10 disappeared entirely, Claude Heiland-Allen,<sup>2</sup> who was part of GOTO10 and a regular at LiWoLi and AMRO, also migrated all his stuff to borok. The two of us have been doing the admin work since then. We also have friends who have a backup shell or email on borok in case their own server is down. This way, you can also see the mutual aid pattern in action, that was also inherited from this 2000s scene with many community servers creating a web of interdependence. More generally, there are also several domains associated with this machine. blue255 is the most visible because that's the main entry point, but we do have a couple of other ones. And basically, it's the machine that we use as an internal kitchen and for all sorts of projects. For instance, LURK still doesn't have its own wiki – for now we use borok.<sup>3</sup> Same with the permacomputing wiki<sup>4</sup> and many other things. Projects are often kickstarted on borok and, if needed, moved elsewhere, sometimes symbolically with their own domain, sometimes completely migrated to another server. In that sense, Servus has become our main server scratchpad for \*everything\* we do!

Like some sort of a group workshop and archive? How did it evolve in the last years?

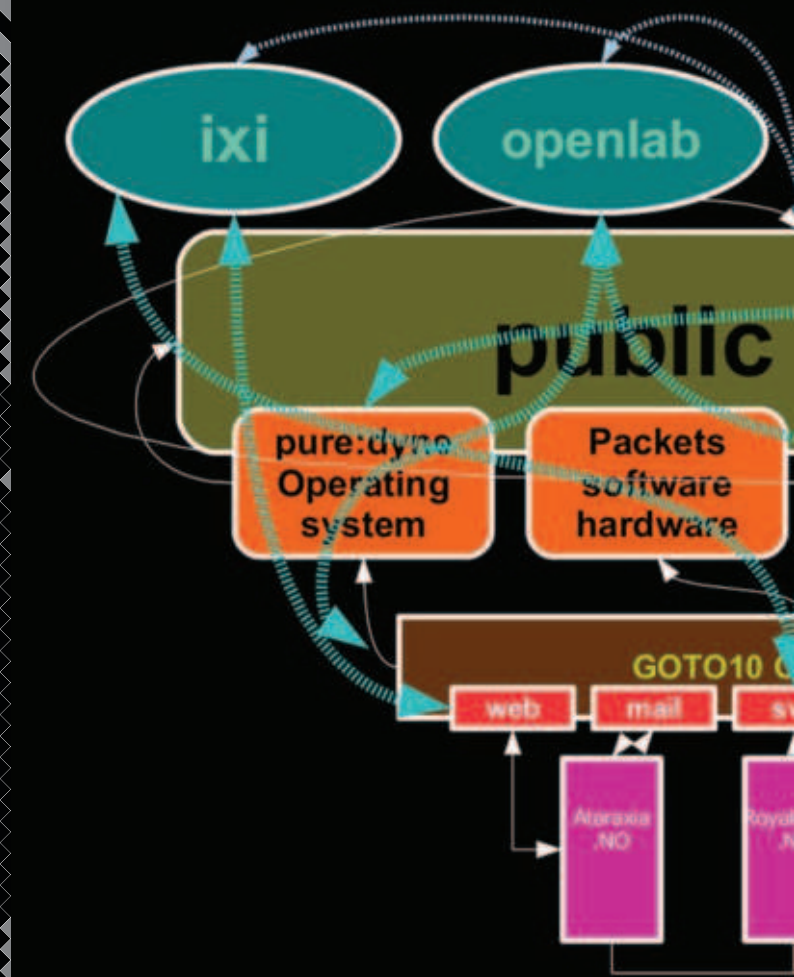
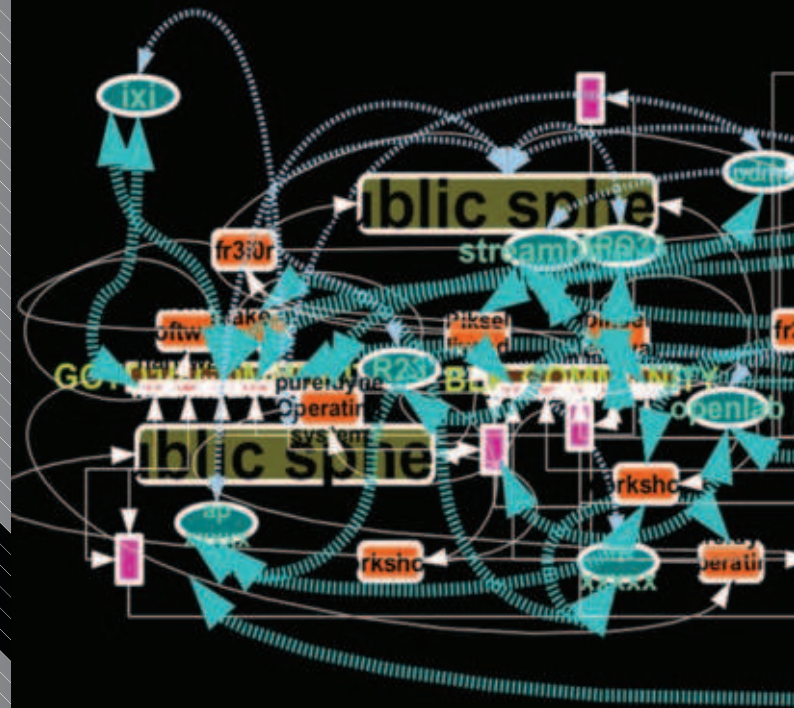
It's at the same time a laboratory, a kitchen, a fermentation jar, a bag of networked tools and tricks, an office space, a shell shelter, etc. It has always been like this and, technically, I think the server did not change much either over the past years. Maybe five years ago, we had a bump of 100 or 50 extra gig of storage or something like this. Until the recent migration to the new system, which happened a few weeks ago, we were still running on the old hardware as far as I know. Basically, it's the same kind of usage since the beginning but with accumulated cruft. I guess this is the problem with VMs. They can be too easy to move around, and as a result it bypasses entirely the more traditional system admin opportunity to start clean and redesign filesystem/service/name organisation, when prompted by a migration that involves a re-install of the OS. We plan to do some spring cleaning at some point, but, hm, it's not necessarily something we find super exciting, so the motivation is limited.

The recent move was from the old ARDC server, which was the oldest machine we still operated. We got some infrastructure funds that were used to restructure the whole server cluster at servus also to reduce our energy demand – that was when the energy prices sky-rocketed at the beginning of 2022. Now, ARDC is no longer an isolated machine, but even if the VMs are part of the rest of the cluster, we decided to keep the term ARDC and explore further the idea and its archives.

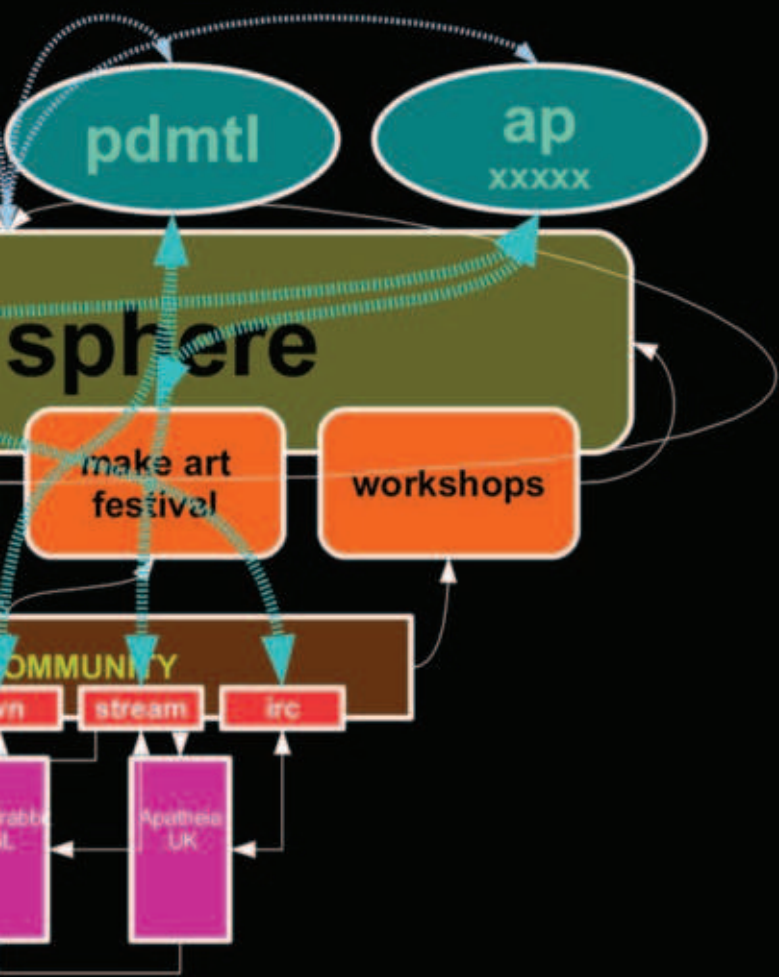
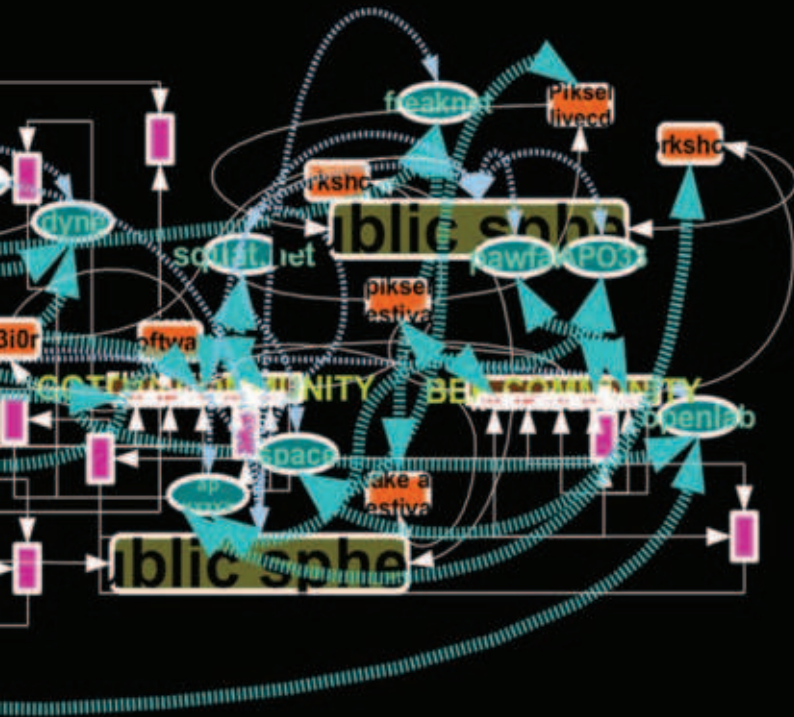
Yes, that's great. For us, borok is also becoming an archive, an archive for old projects that we were involved with, and also we have started to salvage some old GOTO10 stuff, including things that the collective was hosting for other people, like websites and projects. But like with spring cleaning, I have to say that the main source of dopamine still remains starting new projects, not ruminating over the past or indulging into auto-canonisation. :)

When clicking through the website of blue255, one finds lots of things from GOTO10, which you also mentioned before. It's the context where you started, right? And you were also doing a festival. Can you give us more info about that?

GOTO10 was started by Thomas Vriet and myself around 2000. I was on my way out of the art school in Poitiers and we just gathered a small group mostly focusing on electronic music and electronic music tools. We organised a lot of gigs and evenings with musicians, performers and people who







were also developing their own software and hardware tools. Then I moved out of Poitiers and started travelling in Europe. When I met nice people interested in similar things, I asked them: "Do you want to join GOTO10?" In retrospect, I think this has always been my main modus operandi for any collaborative or collective thing I initiated.

Overall, GOTO10 was really focused on the question of artists, designers and musicians making their own tools and these being distributed under free and open-source software licenses. It predates the whole free culture rush, so we weren't so concerned about Creative Commons and the distribution of works of art or design under free culture licenses. We were much more interested in the question of tools, networks and infrastructures, and saw our practice as experimental and research-driven. The musicians orbiting these spaces were also more focused on the tools, installation, broadcast and performances rather than discussing if their MP3s should be released under a CC license or not. Regarding the kind of work we would do in this context, I think the key ingredients were generative art, software art, net radio and live coding, but I don't recall it was something we would plaster on our work, it was just the things we were doing beyond the tools/infra stuff. As for the servers, we provided part of the infrastructure of festivals such as Le Placard,<sup>5</sup> a headphone festival with icecast streaming servers. We maintained code repositories, it was not git at the time, but Subversion (SVN). We had IRC chats, where artists developed their own IRC bots to experiment with. And also, there were the building servers where we produced ISO images of the Puredyne Linux distribution<sup>6</sup> that we worked on. We had mailing lists and email servers, as well as a VPN for decentralised/meshed experiments, and to remotely maintain and debug artworks and installations we installed in festivals and exhibitions.

At some point, we had too much stuff running though. Every time I was visiting a place across the EU that had good bandwidth and decent capacity for hosting machines, I had taken the bad habit of asking if we could put a server of ours in there. It became an inside joke and criticism as well: "Aymeric, stop asking people to give you a server because we have too many." At some point, I think we had five or six different servers. With the introduction of vservers in Linux, it became even worse as one machine could easily offer some form of virtualisation.

It's in the context of network infra and artistic practices that I eventually met Ushi and GOTO10 got invited to do things in Linz. For a few years, we also had an IRC federation called Beernet, which was started at one of the Piksel events, where we decided to interconnect different IRC servers together. So, there was the IRC server of Le Placard, the one Spanish collectives Riereta and R23,<sup>7</sup> and then the ones of servus and Piksel. I think there a few more, I forgot, it was 5 or 6 servers, an IRC Federation, so it was quite simple, but suddenly all the chat rooms of all these different groups were visible to each other. It felt more like a community. We were not thousands of people, but still, it was a small few hundreds of people linked from different groups of this scene.

Between 2006 and 2010, we also organised a festival called Make Art.<sup>8</sup> It was quite similar to what AMRO would eventually do when growing out of LiWoLi. There were many other little festivals that were popping up in Europe at the time, with a mix of conferences, workshops, performances and a small exhibition. The main difference with the other festivals was that – like for LiWoLi and AMRO – we were very picky about who could get to apply, as we invited only people who were not only using free and open-source software, making art, design and music with it, but also that these people were the ones developing such technologies. Sometimes when selecting the applications we got for the festival public call, that meant looking at the source code of the work and checking if the artist had contributed significantly. Some people were a bit upset about this, but to contextualise, this was never about being elitist but to instead resist the little EU media art old boy network that had polished a formula in which an artist could have a residency in a medialab, where a bunch of invisibilised ghost programmers would turn a vague concept into something tangible that the artist could then exhibit with an open

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source label stuck on top, and with \*absolutely zero\* understanding or appreciation of the underlying technological apparatus. This was particularly ridiculous when the work was addressing critical aspects of computation and net culture.

**It feels like there was a very coherent, diverse, moving and still strong community. By looking at the names, I see that many of the people that participated at Make Art, for example, are still around and active in other institutions. What happened to the scene? Did people get tired or did the web change?**

To my knowledge, there has not been any serious sociological work done to unpack this era and scene, however, it is obvious that it can be understood in part through the usual dynamics of youth and young adults subcultures, in which the questions of identity, style and politics – direct and prefigurative – are central. While there was no particular form of ageism taking place, the F/LOSS and art lifestyle of the time could be very reckless and intense, and that kind of made it impossible to become a profound trans-generational effort. And so when you get old, well, things get more complicated, whether we're talking about physical and psychological strain, deciding to have children, being tired to live with less than minimal wage in an increasingly expensive EU, or interested in resuming your studies or starting new ones.

This is not necessarily a problem for a subculture or scene as a whole. There can always be a new wave of practitioners joining in and starting to meet, code and party in a different EU country every week. By the way, there is definitely an untold story of EU media art to be written in relation to EU circulation and low cost flying. No, the problem is that at some point, Big Tech emerged. I'm making a shortcut here, but Twitter and Facebook captured so much of the audience from these critical media practitioners that it simply almost entirely destroyed the infrastructural ambition of this scene and its inner energy necessary for its renewal. I saw a lot of people who used to be and are still quite critical of the tech industry, suddenly falling into the trap of being able to reach a larger audience and getting hooked on it. You could see all these politically engaged people from the community realising: "Oh, I could have an actual audience for all my stuff and I'm going to do that on Facebook." There's been a lot of migration happening. So, everything that had been built by these communities shrank violently within two years.

We had to wait to come back of the Fediverse<sup>9</sup> for the topic of the community server to become a thing again, and then to have a new generation of people who grew up with Facebook, Twitter and other social media to reinvent a response to that through self-hosting, making their tilde towns<sup>10</sup> or engage with novelty stuff like the IndieWeb,<sup>11</sup> or even the idea of developing your own local tools for your community and collectives. It's nice to see that now a lot of these younger groups are making the connection, starting to say: "Hey, wait a second, this actually happened before." So, in the past five or six years, we can really see how this is being reinvented from scratch, but with a slow increasing awareness that there should have been a continuation. And we really failed to make it happen. On the plus side, that's why today the term "community servers" is becoming more of an umbrella to inscribe a trajectory that started already in the '90s.<sup>12</sup>

Last but not least, there is a new immense challenge today: the economic situation of the cultural sector. All these projects happened from the late '90s up till the late 2000s and were only possible because you could still make a living out of it. Precarious living, yes, but not poverty, and not in a situation that sucks out all your life and energy. Many people worked one or two days a week, which was fine for them to survive, and used the rest of the week to do whatever they wanted. And for a lot of people, the "whatever they wanted" was the building of these collective infrastructures.

Fast forward to today, after the budget cuts and the increasing problems of economic crashes, inflation and rent increases that we started to see between 2010 and 2015, this model is no longer working. If you look at the newer collectives working in this space, it's quite bleak, because they have to spend their time writing applications for funding, which is often combined with part-time jobs. So you have a kind of financial

construction where the two days of work to support your five days of experimentation have been extended to six days of doing all sorts of things that are really shitty and exhausting. Then, if you're not dead tired on the seventh day, you can finally do something else.

What we had before was very privileged. It was, of course, way worse than what people from a privileged generation had in the mid-90s. But it was still, compared to today, day and night. You see a complete degradation of working conditions for artists and designers from the '90s up to today. And the result is not an impact on artistic production, but that all the work that was done by artists and designers as community builders has completely eroded.

**That's a harsh reality. What do you think can be done now? Do you think there is a way back? Or what could be a way to challenge or change these structures?**

I have no idea. But there are, in a twisted way, positive consequences to what we are just discussing now. The political engagement of these groups is totally unseen and this might create conditions for a change. People are really struggling and that forces everyone to understand what the reason behind such struggle is. And so we can really see that in all these new groups the political dimensions and the engagement with the questions of how we shape society, and with which values, are becoming much more urgent.

That didn't happen 20 years ago. 20 years ago, if people talked about politics in the context of free open-source software infra, it was not political. There was no connection with feminist struggles, with black feminism, intersectionality, queer politics, social justice, climate justice, etc. It was a bunch of quite privileged people, who didn't earn a lot, but still got to do a lot of stuff, and were there to say "Oh, let's make a better world with Linux", "Oh no, it's not Linux, it's GNU/Linux, can I entertain you with a monologue about the great schism between free software and open source software", and so on. So the political dimension back then was quite a joke, really. I think while some discourses are still stuck with the "libre-ist" politics and the free software movement, others have really moved on to other planes of discussion and political engagement. The challenge of running a community server today is to acknowledge right away that there are issues of local and global organisation, of common struggles, of needing to forge alliances. I think this is really hopeful.

**What would you suggest to young people who are looking for this time to explore, do things and critical work with the media?**

This is really hard, and who am I to advise on this? Plus, I really think that for many, you need to go through this work yourself to understand it. If you're given some sort of formula but you don't understand what it is about, is it really going to be effective then? Is that like a five-step recipe to success? And if there is a five-step recipe to success, then...

**But is there maybe some sort of best practice or some attention that we can develop?**

Always work with others, don't try to solve problems by yourself, try to integrate the questions of organisation and production in your practice to really address how things are made. Try to move away from this cliché of the professional artist as much as possible. We have to go back almost to the '60s culture industry critique and Fluxus to address the question of professional art as being already discussed as a dead end. Not to say Fluxus was a good model, but just to say that this is a very old discussion and one that should be given more visibility in art and design education. Today, professional media art practices are part of mortifying circuits linked to politics of linear growth economics, funding pressure, mass consumerism and extraction, and speculation over social, cultural and economic capitals. Artists, designers, cultural workers and cultural practitioners in general are good at connecting the dots and organising collectively while offering other ways of living that can be more generative, joyful, enriching and critical. How can this be applied beyond the production of a bunch of random stuff spread on a gallery floor? How can such other ways of living, seeing, being counter the seasonal pattern of cultural programmes favouring the ever growing discourse formed of incomprehensible buzzwords? And to be clear, this is not a challenge that should only be left for the cultural prac-

practitioners themselves to solve. Everyone is concerned, especially those having more instrumental positions like cultural organisations or those running funding and policy bodies. At the moment, what we have been doing for 20 years in the art world – and in academia as well – is to say: “I’m going to cosplay and pretend that I’m doing something stupid to get some money because this stupid thing is a requirement to get some fund, be invited, etc. Then I will do something not stupid with this opportunity. I’m such a clever person.” The sad truth, however, is that this creates a situation where it’s becoming more and more complicated to deviate from the bullshit that we are selling to other people as part of this clever attempt to obfuscate things. Today, this Trojan horse has completely backfired. It makes problematic discourse, networks and circuits much stronger and it removes time that could be invested in doing other things.

The usual counterargument to such position, and it’s a very, very, very valid one, is the question of survival. It’s easy for me to articulate an antagonising position, but I very well know first hand that it’s not possible to materialise such critique if this is to end up burning bridges and opportunities. The key argument for me, however, is to try to convince those who have means to acquire some capital, some privilege in this space, to use it to create counter proposals to the scenario I just described, instead of capitalising on past success to reapply the same morbid formula that we know is creating profound damages to our field.

Next to that, and at times where culture funding in the EU is threatened and challenged to the point of being questioned and threatened, it is becoming yet another incentive for cultural practitioners to group together, form a co-op or try to organise yourselves, implement fair task division and pay, even figure how your very skills and know-how could be relevant to another sector or field that may not be as damaged or scarce as the cultural one. There is a lot of discussion happening in this direction right now. You know, more like a microscopic economic space for how we can engage with the constraint of capitalism, but with a form of organisation that is different from the ones that are expected by such an oppressing system. That will somehow renew or revitalise local communities. But ultimately, we don’t know if we are just kidding ourselves, trying to buy us some time before things get catastrophically bad. OK, maybe I just made it worse now.

**Maybe there are still ways to think about cooperative hosting, like what you were doing with GOTO10, to have a few servers in different places and the intention to support critical practices from others. What you would see as the future for servus or for similar artists-run servers?**

I think that one good question would be: How do we apply what we all learned in these past 20 years to develop more independent infrastructures and ways of communicating? How do we apply that and make the connection with the political awareness that we have grown?

On the one hand, we’re getting better at understanding how to run community servers. And also, we are aware of the political context in which our practices are completely embedded. So, how do we connect these two in a way that is not just about making a work of art? We have to figure out for what reason we have to organise.

Right now, in the context of permacomputing, there are quite a few projects happening. People recycle hardware to host on old machines that can be solar-powered, and old phones or laptops. It’s something that I’m also doing as a teaching method, and it works. You can transfer practical skills and knowledge and use that to open up about different issues happening in the tech industry. But then you end up with the typical “hello world syndrome”. What do you do then? You’ve got your community server running on a phone. But was it really something that is going to make a change? Who is going to benefit from that? What was the purpose of it?

This is where we see this Venn diagram between artists, designers, cultural workers and hackers, there is something happening in the middle that is powerful. But still, a lot of things feel like unsolicited help or unneeded infrastructure. So maybe making this connection, thinking how the community servers are historically self-serving for these communities so

that they can explore art and design practices. What would it mean if they stopped being self-serving? If all these skills were employed to support communities that actually need alternative infrastructure and active servers to be able to communicate and chat together, all this knowledge would not end up in showing a Raspberry Pi at Ars Electronica, but in doing work that has an impact.

Instead, what happens often is exactly what the tech industry is doing: “Hey, we developed this app. Please come. Use the app.” A lot of these projects are functioning like this. “I installed this new community chat system. I’m chatting with myself right now. Please come. This is going to be great.”

**I get the point. The self-hosting scene should focus less on running the self-run infrastructure but finding more, stronger reasons to exist. Otherwise, we all end up having our own Nextcloud hosted on the fancy Raspberry Pi that we just bought, and everything is great because we feel that we are finally free from big tech.**

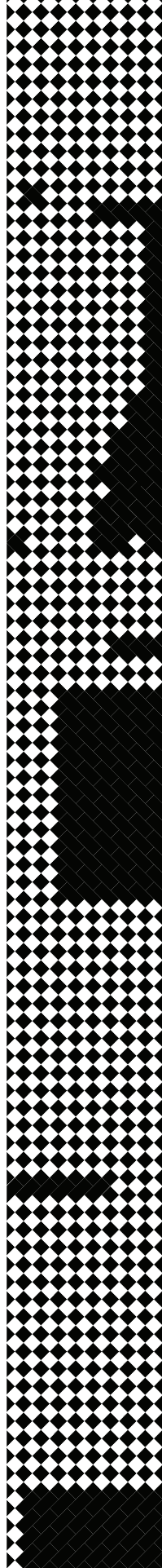
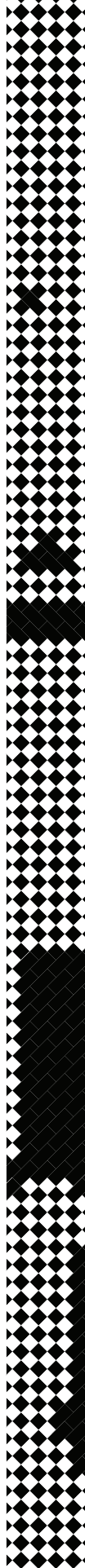
We are trying to have this discourse about communities and collective practices, and yet, we are still obsessed with hosting things that concern a very tiny audience, not realising that we could join forces much more efficiently. And this would be both from an environmental and social perspective much more interesting and relevant. So that’s maybe the next step: What are the struggles addressed by such forms of organisation, what are the communities and groups concerned, and how helpful are these approaches compared to other ways of organising and working?

1. <https://archive.bleu255.com/goto10>
2. <https://mathr.co.uk>
3. [https://things.bleu255.com/runyourown/Main\\_Page](https://things.bleu255.com/runyourown/Main_Page)
4. <https://permacomputing.net>
5. <https://www.leplacard.org/>
6. <https://puredyne.org/>
7. [https://web.archive.org/web/20120101000000\\*/](https://web.archive.org/web/20120101000000*/)
8. <http://riereta.net/drupal/>
9. <https://archive.bleu255.com/makeart/main/>
10. <https://fediverse.party>
11. <https://tilde.town/>
12. <https://indieweb.org>
13. [https://monoskop.org/Community\\_servers](https://monoskop.org/Community_servers)

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# Glossary

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This glossary was ordered at short notice and quickly compiled by Joak, with one entry on HTML by Nami Kim.

**ACOnet** is the Austrian research and education network, which provides a data network for non-profit organisations in Austria. This network consists of over 250 participating institutions, one of which is servus.at.

**CMS** is the abbreviation for Content Management System. It is software that helps to organise (create, modify and delete) text and media on a webpage without writing HTML (→ HTML) code. Explained etymologically, content comes from the Latin contestus which can stand for 'held together', the Latin manus is a root for management and means hand, and system goes back to the ancient Greek σύστημα which means a whole made out of several parts. To conclude, a CMS is like a hand that holds together separate parts to provide a whole, i.e. the website. CMS can be considered resource-heavy for the webserver, but it can at the same time create low entry barriers for users without knowledge of technical specificities. Popular examples are WordPress, Drupal, and Joomla. Some CMS have a F/LOSS license (→ F/LOSS) and other CMS are proprietary software (→ proprietary software).

**HTML** (HyperText Markup Language) is a markup language that tells web browsers how to structure the web pages you visit. HTML consists of a series of elements such as <p> for paragraph, <h1> for the biggest header, <img> for image, etc. It can be generated by applications (→ CMS), but it can also be written manually. It can be as complicated or as simple as the code writer wants it to be. The language itself is standardised by the W3C (World Wide Web Consortium). (Nami Kim)

**Human-Computer Interaction** (HCI) studies how users and computers are getting interwoven in their daily activities. One of the goals of these studies is to make sure that computers and platforms are less bothered by users and that users adapt easily to changes made by the operators of platforms. This type of research is done in a fancy way with different degrees and big grants.

**IMAP, POP & SMTP** are abbreviations related to protocols for electronic mailing systems. After the process of electrification was completed and the process of building worldwide telecommunication was ongoing, the idea was realised that mail could also be sent via electronic impulses. Such an undertaking needs a well formulated protocol. IMAP stands for Internet Message Access Protocol and helps your email client (e.g. Thunderbird, Outlook, Apple Mail) to read your mail on the mail server. POP is known as the Post Office Protocol and – in contrast – downloads your emails from the server to your email client. For sending email, your client uses SMTP (Simple Mail Transfer Protocol) to let your mail server know that it should send an email to someone else.

**IRC** or Internet Relay Chat is a protocol to relay written conversations over the

internet. Where email is built on the metaphor of physical mailing, IRC uses the metaphor of conversations. These electronic conversations are held in the so-called channels, so you can imagine them as a room. Channels are often dedicated to specific topics. For identification purposes, you have to choose a nickname that doesn't necessarily reveal your real name. Users use different abbreviations like afk means "away from keyboard", BTW means "by the way" and IMHO means "in my humble opinion".

**DNS** is the Domain Name System, which could be seen as an address book of the internet. It lists a corresponding IP address (like 193.170.194.26) for each human-readable domain name (like servus.at). Your browser searches in the Domain Name System for the IP address of the domain that you have entered in the address bar.

**Firmware** is software that is embedded in different devices and act as an interface to control the device. For example, your mobile phone operation system is having a standardised conversation with the WIFI chip of your smartphone. "Hello, WIFI chip, please send these bytes to this device." "Hello, operation system, I just received these bytes from this device." Nowadays even an electronic toothbrush could have a firmware. A firmware can be open (→ F/LOSS), but also closed (→ proprietary software). Closed firmware can be a security risk – keep this in mind when you use your new electronic toothbrush.

**F/LOSS** is the acronym for Free/Libre Open Source Software and describes software that is released under licenses that allow users to freely use, study, modify and distribute the source code and its software. The most popular operating system that is free software is Linux (→ Linux). Another example of software is the image manipulation software (→ Gimp)

**GIMP** is in daily language the name for a popular raster graphics editor and stands for the GNU Image Manipulation Program. It is licensed under GPL3 (→ F/LOSS), is free to download and is available for modern operation systems. Its development happens openly through the contributions of its developers and users. It is possible to donate to the main developers. The word gimp can also mean an impolite word for a disabled person. This issue was often discussed in the GIMP community.

**Hacklabs** are community-run spaces where activists, artists, developers, and researchers, etc., regularly meet. In most cases, the community shares common interests in the fields of technology, art and politics. Tools and other resources are also often shared by the community and you can frequently find workshops in hacklabs.

**IP Address, PI-space and AP-space** Each device on the internet has its own unique IP address (in the case of servus.at, it is 193.170.194.26). PI-space

is known as the Provider-independent address space and is a block of IP addresses assigned to an end-user organisation. On the other hand, AP-Space is the Provider-aggregatable address space, which is a block of IP addresses assigned to an internet service provider (ISP) that provides it to its end-users. servus.at has an address block (193.170.194.0–193.170.194.255), which is independent from an ISP.

**Kernel-based Virtual Machine** (KVM) is a virtual machine (→ VM) running with the virtualisation module of the Linux kernel (→ Linux).

**Linux** is (a kernel for) an operating system for computers. An operating system manages the computer hardware and provides different services. It is the layer between your applications and the hardware. It takes care that Thunderbird can interact with the internet connection and at the same time the user can do some fancy image manipulations with Gimp (→ GIMP). Windows, for example, is proprietary software (→ Proprietary software), while Linux is free (→ F/LOSS / Free Software) and exists in many different flavours (or distributions). Once there were even Linux distributions especially made for artists (dyne:bolic and Pure:dyne). Proprietary software is software that is owned and controlled mostly by a company. The underlying source code of the software is not publicly available, only the compiled executable version of the software are. Users can therefore not modify the software or share it with others.

**Xen** is a F/LOSS (→ F/LOSS) hypervisor to orchestrate several virtual machines (→ VM).

**UPS** is commonly known as an uninterruptible power supply. In a nutshell, it's a device that contains a battery, and if the power source breaks, it provides electricity for the server or other devices. Such a device doesn't come without costs linked to the electrochemical reactions in the battery. For this, it needs different forms of resources, which are harmful in their extraction and disposal. Therefore and because nowadays offline is the new online, it is accepted (or even welcomed) that a service or platform can go offline. However, some devices are part of an emergency (or critical) infrastructure (like hospitals, etc.) and need to stay powered all the time. In small scale data centers, which are sometimes operated by artists, UPSs are also used during power outage to keep the server running for enough time to allow the shut down procedure to complete safely. This way, data corruption or hardware stress that would be caused by the sudden electricity drop are avoided.

**VLAN** (Virtual Local Area Network(s)) is a “virtualized” network. Several devices from different local networks are connected into one “virtual” network.

**VM** (Virtual Machine) is like a computer within a computer. In this case, the hosting (or physical) computer virtualises or emulates other computers. It is possible to run different operating systems with different applications on one host. The reasons for this are manifold, from security to redundancy.

**VPS** means Virtual Private Server (VPS). By analysing the words for VPS separately, we see that “virtual” implies something is not real, “private” refers to something exclusive and “a server” is something that provides you with resources. A VPS is a server running inside a physical computer. The key lies here in virtualisation (→ VM), and most of the time several virtual machines run on one physical machine. The advantages are customisability and resources optimisation, as a virtual machine uses fewer resources compared to a physical one. The counterpart to VPS is the RPU or Real Public User.



# Images & Captions

## **Manu Luksch / What can be an art server today?**

Video stills from Video documentation of ASU1 – Art Servers Unlimited <https://archive.org/details/ArtServersUnlimiteddocumentaryvideo>

## **Franz Xaver / Media art reimagining the information society**

Ghostradio – 2014 – ghostradio is a fieldtest by Pamela Neuwirth, Franz Xaver and Markus Decker.

<https://www.firstfloor.org/ghostradio/web.html>

Data Spind – 2004 – Data Spind was a locker system for internet-connected computers at Kunsthaus Graz

Autonomous DSL internet node in the hands of artists. 1997.

## **Tanja Brandmayr & Claus Harringer, (Stadtwerkstatt) / We never wanted to do the “clean” art**

STWST48x9, Photo by Tanja Brandmayr

STWST48x10, Photo by Tanja Brandmayr

STWST 48x5 STAY UNFINISHED, Photo Courtesy: STWST

STWST STAY UNFINISHED, Photo Courtesy: STWST

## **Didi Kressnig / It all started with normal computers**

servus datacenter, main server rack, photo by Sophie Morelli

## **Aileen Dering / We'll call the network Eliot**

Foto Eclectic tech carnaval 07, Linz, Foto from the servus archive.

## **Christoph Nebel / From Intermedia Research to Art Meets Radical Openness**

Computer Ascii art by hectoras, retrieved at the page: <https://www.asciart.eu/computers/computers>

Participants at Open Circuit 1992

Nebel Christoph, FE Rakuschan, Heather Barton, Siegfried Zielinski at Hilus 1993

QuoVadis Medienkunst?, Article, Nahrada, 1992

Nebel Christoph, Kathy Ray Huffmann, at Hilus 1993

FE Rakuschan, Heather Barton, Siegfried Zielinski, at Hilus 1993

Participants at Hilus 1993

## **Thomas Warwaris / Beyond the battle for operating systems, we have to continue on the political level**

Linuxwochen Linz 2002, photo by synflood.at Andreas Krennmair

LiWoLi 2006, by \\_(□)\_/, AMRO archive

## **Ushi Reiter / Running data centers and researching radically open art practices**

Heath Bunting, Climbing Trees! workshop, AMRO 2012, AMRO archive

LiWoLi 2006, by \\_(□)\_/, AMRO archive

James Bridle, A drone for Linz, showcase at AMRO 2014, AMRO archive

## **Peter Wagenhuber / An Artist Run Data Center in the context of Free Software and autonomous infrastructure.**

Algorithmic solidarity: can colonialism be encoded into algorithms? by eefff.org, Workshop at AMRO24, Foto: Violetta Wakolbinger

## **LURK: the impulsive and time-constrained benevolent eurocentric oligarcho-do-ocracy community server that cares about net and computational culture by maintaining a community server**

Lurk Precipice Workflow, Courtesy LURK.ORG

## **Chae & Kamo / Scatter Chatter: the server as a chatty machine**

Scatter Chatter: The Becoming of the Sample, Performance at the JKU MedSpace during Ars Electronica 2024, Part of the Project

Touching Thoughts, cooperation servus & JKU LIT. Photo Sabiswabis, image credit DIWO Working Group

## **Vo Ezn / The server is out of capacity, we will go elsewhere.**

vo ezn, non-zero exit, [f00f]\_fail presentation at STWST Saal, STWST48x9, 2023

Screenshot f00f.fail

vo ezn, Workshop “Where is my money” AMRO 2024

## **Inari Wishiki / (un)making: the more you avoid production, the more value you create**

Portrait by Florian Braakman

## **Irrational.org / half the risk of data loss is accident**

Irrational server foto by Ivan Sukhov

## **Aymeric Mansoux (bleu255) / From infrastructures for the commons to people's networks fighting shared struggles.**

Image courtesy by Aymeric Mansoux

In community projects such as servus.at, which have been running for decades, the documentation of the project grows organically over the years, so that in some cases authorship is not so easy or straightforward to define. Some of the pictures in this publication were selected from the association's archive, others were sent to us by the participants interviewed.

We publish them under the principle of fair use, trusting in the understanding of the authors who have shared the images with servus over the years. Captions are listed per article. Unless otherwise stated, the images are courtesy of servus.at - kunst und kultur im netz & AMRO Art Meets Radical Openness.

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**Artists Running Data Centers**

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## About servus

**servus.at is a non-profit net culture initiative based in Linz. As main focus, servus.at deals with the demystification of technology through cultural as well as technical processes. <https://core.servus.at/> Servus.at produces artistic research projects about phenomena of digital and networked cultures, and organizes in cooperation with the Art University Linz the biennial festival "Art Meets Radical Openness". <https://radical-openness.org/>**

**The association also operates an independent cultural data center with open source basic services for its members, consisting of art and culture producers, alternative educational institutions, free media, university institutions and NGOs.**

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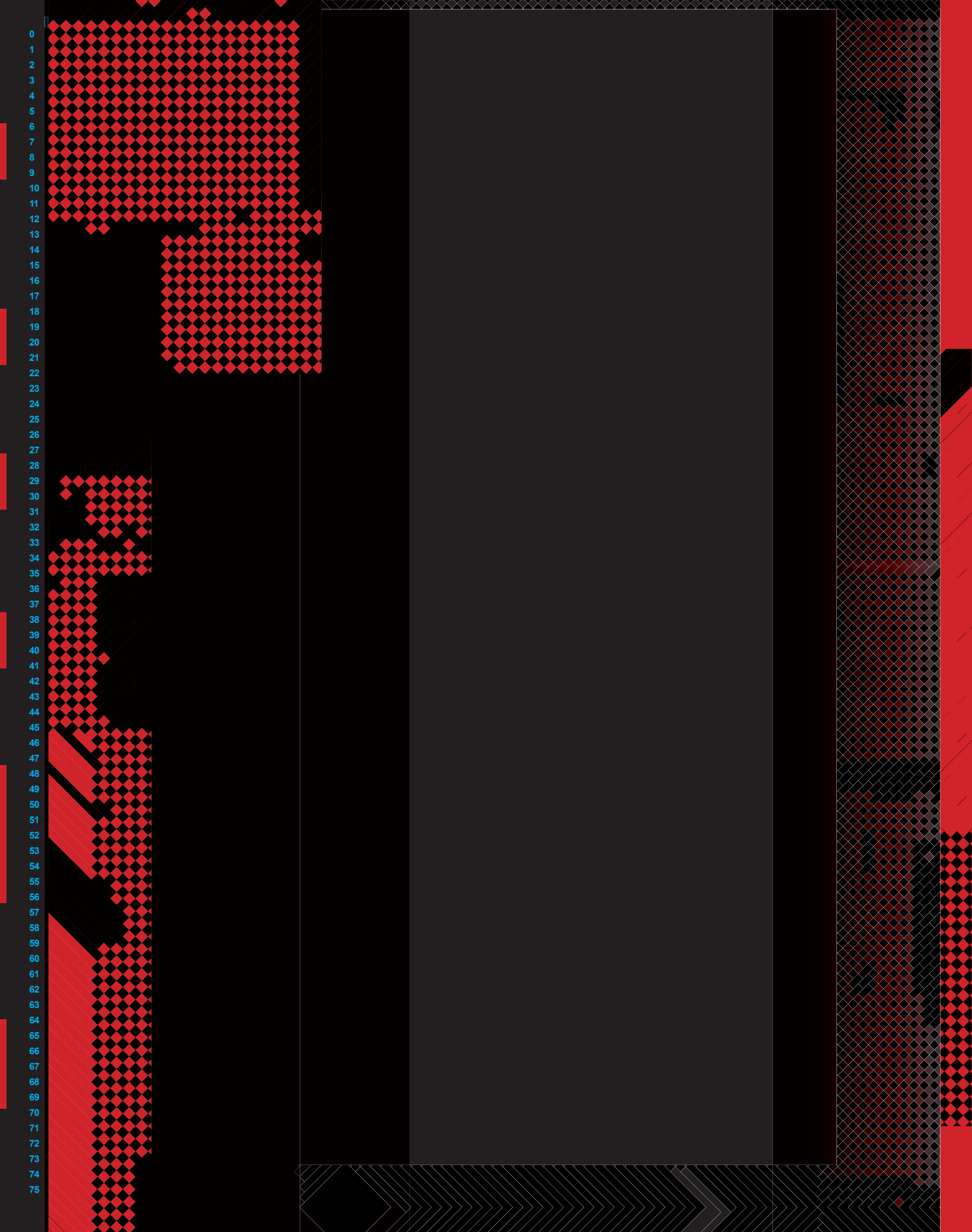
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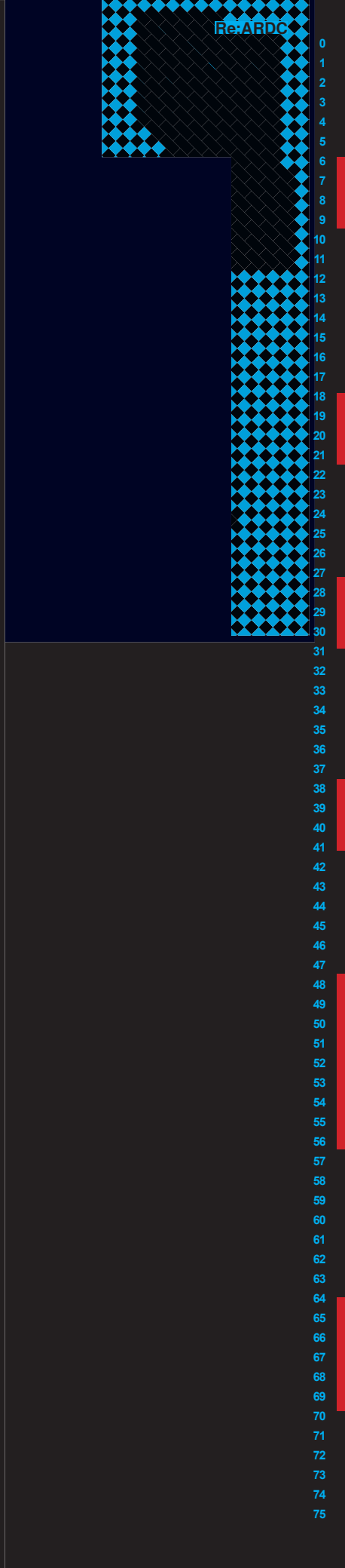
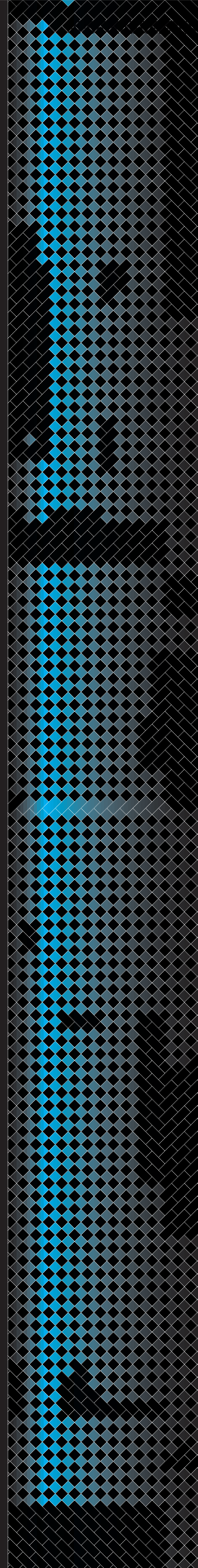
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**This publication presents a series of conversations with key actors from the context of servus.at and the communities of radical net cultures around the Art Meets Radical Openness Festival. These are ARTISTS who are RUNNING independent, experimental, radical and cultural DATA CENTERS.**

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