

FLEISCHMANN, Monika

How Gate-keeping Systems Work in the New Media Arts

published on netzspannung.org:
<http://netzspannung.org/about/mars/publications>
14 April 2005

First published: Culture-Gates. Exposing Professional 'Gate-keeping'
Processes in Music and New Media Arts. Bonn: ARcult Media, 2003, p.
361-395.



Fraunhofer Institut
Medienkommunikation

The Exploratory Media Lab
MARS Media Arts & Research Studies

How Gate-keeping Systems Work in the New Media Arts

Monika Fleischmann¹

1. Media Art as Media Communicating Perception

The experience of a new generation of media artists is fundamentally different from that of the first generations who – in the truest sense of the word – performed pioneering work. This picture emerges from an informal survey carried out via e-mail in Spring 2003 and sent to numerous media artists and other actors involved in the media art scene. Their answers form the basis of this article. The young generation – in contrast to the pioneers – has access to experience and uses digital technologies. Their access to technology has become much easier. Not everything has to be completely reinvented or thought out and developed again. Here one might think of graphical user surfaces and editors, object-oriented programming languages or open source code. However, interactive tools often form a significant component of media art works because media art generally signifies the exploration of new forms of communication and interaction for non-linear narrative structures.

Today, media art sees itself either as a link between art, science and technology or, more traditionally, as an art form using new media. The term "media art" is used here to signify works of art which are based on digital technologies, i.e. use digital technologies and/or make them the object of investigation. In them, ways of perception associated with media communication are artistically reflected, broken down, changed and expanded. Media art is an established field, even though one which is currently inadequate and rudimentary. There are now training courses (and thus teachers), museums and information channels, festivals and support programmes. The influence of the Internet and its potential for non-institutional networking must also not be forgotten. Media art is encountered in architecture, design, installation, the visual arts, dance, theatre, music, performance and video.

The term "public space" is widely discussed in the field of media art and its networks in the physical domain - in museums and public places – and on the Internet. How are spaces, including stage spaces, changed by new media? Which new production conditions and working procedures are emerging? What do the results look like? How do these media spaces differ from the traditional public space or from traditional theatre space? Some of these questions on public space are portrayed in today's media art projects and categorised in Mirjam Struppek's master thesis e.g. as linked to the web, as social web space as mixed reality space, as interactive space.²

¹ Monika Fleischmann is a media artist and scientist as well as the Director of the Media Arts & Research Studies, MARS Exploratory Media Lab, Fraunhofer Institute for Media Communication, Sankt Augustin/Bonn, Germany. In 1992 she received the Golden Nica of Ars Electronica for interactive art.

² See MARS *Tools for Building*. <http://www.nada.kth.se/arena/emuse.html>
Murmuring Fields Installation, *For Taking Part*. <http://www.nada.kth.se/arena/murmur.html>
Wolfgang Strauss, Monika Fleischmann et al. *The Making of Murmuring Fields - Developing e-MUSE*
http://www.i3net.org/ser_pub/services/magazine/august98/page20-21.html
Wolfgang Strauss, Monika Fleischmann et al. *Linking Real and Virtual Spaces*. 1999.
http://imk.gmd.de/images/mars/files/arena99_D6_D6_2.pdf

Interface designers have better opportunities to derive economic benefit from their work than media artists whose training has usually been very free and often one-sided. Artists at art schools are less likely to have been taught tools and techniques than designers, who have discovered interactive design as a new field of activity and who have created tools as new aids for their work. The emphasis on training in new media is now focussed on games for mobile devices such as laptops, palmtops and mobile phones, game instruments for new composition forms and fun communication spaces for media-communicating perception (e.g. Phonic Frequencies³). Other themes include 2D/3D animation films for art and advertising, the development of learning tools and teaching environments for training⁴, and particularly for digital culture communication and cultural heritage. New everyday forms of family communication and interface research are also being pursued with great interest by art, design and IT⁵ alike.

Interdisciplinary co-operation between art, science and technology is of particular interest to artists, the masters of communication. They work globally and are networked, primarily on a non-institutional level. The experimental nature of their work means media artists are automatically involved in developing new forms of communication. Interactivity and networking turn artistic work into a research activity. Media artists and designers are searching for aesthetic, artistic and socio-political ways of dealing with the possibilities offered by the new media – including digital information and communication technologies. Art history technologies tend to be neglected. This is also confirmed by the media theorist Norbert Bolz. "Aesthetics is no longer oriented towards art, but towards communication. And it is precisely when it no longer sees itself as the historical theory of art that aesthetics can become the new leading science – the theory of media-communicating perception."⁶

The aim of this article is to give an insight into the current circumstances of media art production and supporting structures. Which institutions support media art and how? Male and female artists, curators and producers cite art & technology labs, festivals and competitions as factors which are improving the situation for media artists. However, they warn that a few influential boards in media art, e.g. the ZKM, the Ars Electronica and others, are defining the scene through 'Old Boys Networks' structures.⁷ In a study on "Decision Making Dynamics in Corporate Boards"⁸ Stefano Battiston of the Ecole Normale Supérieure and co-workers say: "Awareness of the power of cliques could help to offset their influence." On the other hand it is clear that an institute that is dependent on the State and on political influences faces some additional difficulties other than the board of a company.

Dr. Reinhold Grether. *Virtual Performance Research Area*. <http://www.netzwissenschaft.de/perfa.htm>

³ Examples of such work produced at the Fraunhofer IMK MARS Lab are Michael Wolf. *Soundgarten* (Masters Thesis) and Tamas Szakal. *Phonic Frequencies* (production prize). <http://www.netzspannung.org/digital-sparks/awards/>

⁴ See movii – moving images & interfaces project on the principles of design in the new media. http://www.gmd.de/PT-NMB/Bereich_Hochschulen/lfd.Projekte/08NM085.htm

⁵ Christoph Groenegrass. *Designing Intuitive Interfaces for Virtual Environments* (Masters Thesis). <http://netzspannung.org/netzkollektor/classic/>

⁶ CAT-Study, Volume 1, <http://netzspannung.org/workshops/cat-concept/>. With quotes from Sehsucht, *Über die Veränderung der visuellen Wahrnehmung*. Kunst- und Ausstellungshalle der Bundesrepublik Deutschland, 1995.

⁷ Philip Ball. "Old-Boy Network's Power Exposed. Soon it Could Take More Than a Secret Handshake to Swing Boards' Decisions", October 2002. <http://www.nature.com/nsu/021001/021001-12.html>

⁸ <http://xxx.lanl.gov/abs/cond-mat/0209590>

Under the direction of Prof. Peter Weibel⁹ since 1999, the ZKM¹⁰ - Center for Art and Media probes new media in theory and practice, tests their potential with in-house developments, presents possible uses in an exemplary form and promotes debate on the form our information society is taking. In an interview¹¹ Peter Weibel explains how the field of curating has changed as a result of new media art. "In media work, from avant-garde to advanced computer work, the challenge is greater for the curator because he/she has to be very bold and he must know a lot. He/she must know, above all, theory. In the media world to discover something, to make a good show, you have to have a lot of theory in your mind about the work and about the general discussion otherwise you would not see the work, you would not find it. So the curator's job is not only to make an exhibition of existing work or traditional work, as in a museum."

Weibel never goes to festivals, he says. He is doing telematic research by writing, phoning, and mailing around. "When I started at the ZKM (in 1999) they had the 'Multimediale,' and I stopped it because this festival had a historical role that is now over. The role of the Multimediale was (in the 80s, and beginning of 90s), to promote media art, to make it more widely accepted. For example, in 1972 nobody knew about Bruce Nauman, Bill Viola, about Woody and Steina Vasulka, about Nam June Paik. But media art festivals have now become a routine element. It is no longer a forum where you have new subjects, new issues, new ideas, and new names. So this pivotal agency or role that festivals had - to play the motor of acceleration, of investigation, motivation of innovation - is over now."¹²

Unfortunately for the generations of artists following the above mentioned pioneers this attitude is dissatisfying. In contrast to Peter Weibel's opinion on the superfluous role of media art festivals the interest of Gerfried Stocker¹³ as artistic director since 1995 is to present the Ars Electronica¹⁴ as a festival for art, technology and society and as a place to discuss and present the cultural impact on today's society, e.g. the Internet not only as a tool but as a social space.¹⁵ Software and digital codes will be the centrepiece of this year's Ars Electronica 03 entitled "CODE – the Language of Our Time." Software as the law of code prevailing in cyberspace, digital codes as basic elements of media art, and the convergence of information technology and biotech are the three thematic focal points.¹⁶

2. The 'Old Boys Network' or Media Art Collaboration

Normally, the term 'Old Boys Network' is used as an idiom, a metaphor to describe an informal interrelationship among men [here to be understood as a synonym for human beings of male sex]. There are many examples of old-boy networks at high ranking universities where members are willing to share and support each other. The concern of an Old Boys Network is to support and obtain support for individual careers.

The principle of the Old Boys Network was adapted in 1997 by "OBN"¹⁷, a group of cyberfeminists. The aim of the group is described as follows: "OBN is regarded as the first

⁹ <http://on1.zkm.de/zkm/personen/weibel>

¹⁰ <http://www.zkm.de/>

¹¹ Peter Weibel was interviewed by Sarah Cook at ZKM, September 2000.

¹² http://www.newmedia.sunderland.ac.uk/crumb/phase3/nmc_intvw_weibel.html

¹³ http://www.aec.at/festival2002/program/programm_biopage.asp?pid=1460

¹⁴ <http://www.aec.at/>

¹⁵ Interview Wiener/Hentschläger <http://www.dichtung-digital.de/2003/issue/1/stocker/index.htm>

¹⁶ <http://www.aec.at/en/festival/index.asp?nocache=616729>

¹⁷ <http://www.obn.org/>

international Cyberfeminist alliance and was founded in 1997 in Berlin. OBN is a real and a virtual coalition of Cyberfeminists. Under the umbrella of the term 'Cyberfeminism', OBN contributes to the critical discourse on new media, especially focussing on its gender-specific aspects."¹⁸ In "Erfolgsstrategien und Selbstboykott"¹⁹ ("Success Strategies and Self-boycott"), Cornelia Sollfrank – the founder of OBN – asks how she can escape the art market and still become a successful artist. She describes the central aspect of the work of the OBN as an experiment with network structures on various levels. "The motivation for working on one's own structures can be the creation of an alternative to the current situation (e.g. the art market), i.e. an anti-stance. In the end, however, it will always be a parallel structure which adds to the already existing structure. What is added is a new, individual context. Truly independent structures cannot be created because each artist is not only economically dependent on the art market (I would consider the market to include not only museums, galleries and exhibitions, but also training, grants, public promotion, teaching, sponsors and the whole publication sector in the art field), but also establishes a whole array of links and references through his/her work."

In her essay, Sollfrank describes the possibilities for independent networks. "Individual context springs from meetings and discussions in real locations (symposiums). Within the network, a set of internal rules is developed for work and organisational forms and undergoes experimental testing. All in all, a network which operates under a catchy brand name gives the individual works a greater presence. Furthermore, it establishes and intensifies a discussion from which new works will ideally arise. The network itself is often regarded as a work of art. An important component of such an organisation is the range of possibilities for electronic networking which allows work/co-operation independent of the traditional art markets, decision processes by curators, and normal disciplines and categorisations, and simultaneously give this work/co-operation a public presence."

The relationship between self-organised structures and the traditional art market is accurately characterised by Stella Rollig. "What had been developed as an alternative to the commodity character of object art had soon created its own market – a marketplace for presentations and discussion statements where image, brand name and the aura of individuals replaced the market and cult value of the aesthetic product and where there was strong jostling for position."²⁰

According to Sollfrank, Rollig is referring to a development in the 1990s that placed special emphasis on the focus of processes, communication, politicisation and discourse and was characterised by a range of collaborative projects. "This art, which to a large extent no longer regarded itself as such, may have taken place on the periphery of the general art market but was also supported by its rules and to a certain degree was again monopolised by it. Most young exhibitors like forms such as 'artistic spaces as social meeting places', symposiums, workshops, discussions, experimental workshops, temporary media labs, film screenings, etc. because these are lively forms which rejuvenate the art public and can also be achieved at low cost. A further key aspect is that it is not only new formats, but also new contents and people which/who gain access to the traditional market via alternative structures. Emphasising the point, a political commitment to art can subsequently come across as a strategic political act,

¹⁸ http://www.obn.org/inhalt_index.html (FAQ – Frequently Asked Questions)

¹⁹ *Kunstreport*, Vol. 1, Deutscher Künstlerbund, Berlin, 2001.

²⁰ Stella Rollig. *Diskurs, Diskussion, Kommunikation*. Hamburg 1999.

an "anti" stance which is paraded as such, a sense of being an outsider which even in the 21st Century is still conducive to the image of the 'avant-garde'.²¹

3. What is a Gatekeeping System?

A gatekeeper is a type of doorman who makes sure that the 'right' and 'important' people get into a club or disco. The club must have a certain image or communicate a programme in order to reach its target group. Gatekeeping systems have a similar function in art – they must keep an eye on the quality of programmes and select the participants who will contribute to exhibitions or publications.

In a survey conducted for this contribution to "Culture Gates", 45 actors including 17 female and 28 male media artists, designers, musicians, researchers, curators and theorists replied to the following questions:

1. How did you start your career? How was your coming out? What has been your most successful project? Who was/is a doorbuilder? Are you a doorbuilder today?
2. What has helped you in your career? Was it a research lab, a cultural institution, a festival, a competition, a person, your parents? Who was a moneygiver/producer? Are you a producer today? In which sense?
3. What are the hidden agendas of power in gate keeping systems which influence decision making and selection processes. Who is a gatekeeper? Are you a gatekeeper today?
4. Do you see a difference in how you as a female/male artist are supported in comparison to your male/female colleagues?

Only some of the answers to such questions can be presented in this article.²² A third of those to whom the survey was sent²³ asked what a gatekeeper or a doorbuilder was. This means either that a gatekeeping system does not seem to be particularly common in media art or is simply not noticed. The meaning of the terms gatekeeper and doorbuilder were interpreted differently depending on their own cultural background.

The Australian media artist Peter Callas responded as follows: "a gatekeeper is someone of power and influence who supports (or doesn't support) the work of particular artists or particular types of media and/or styles." For the media activist Geert Lovink, gatekeepers are "bureaucrats with power. Gatekeepers are anti networkers. It's their job to keep the networks

²¹ http://www.obn.org/inhalt_index.html (Reading Room)

²² The responses to this survey are published more detailed on <http://netzspannung.org>.

²³ The following 45 participants responded to my e-mail survey in Spring 2003. Their contributions form the basis of this article:

Edouard Bannwart, Switzerland; Will Bauer, Canada; Martine Bour, France; Sabine Breitsameter, Germany; Thea Brejzek, Germany/Australia; Bill Buxton, Canada; Peter Callas, Australia; Jim Campbell, Canada; Shu Lea Cheang, USA/Taiwan; Sara Diamond, Canada; Kathleen Forde, USA/Germany; Masaki Fujihata, Japan; Heiko Hansen, Germany/France; Lydia Hartl, Germany; Susanne Jaschko, Germany; Slavko Kacunko, Germany; Geert Lovink, Netherlands/Australia; Rafael Lozano-Hemmer, Mexico/Spain/Canada; Tapio Makela, Finland; Roger Malina, France/USA; Jasminko Novak, Croatia/Italy; Daniela Alina Plewe, Germany; Philippe Quéau, France; Mette Ramsgard Thomsen, England; Itsuo Sakane, Japan; Christian Schoen, Germany; Bjoern Schuelke, Germany; Christa Sommerer, Japan/Austria; Joerg Stelkens, Germany; Stahl Stenslie, Germany/Norway; Marleen Stikker, Netherlands; Wolfgang Strauss, Germany; Tamas Szakal, Germany/Hungary; Lorenzo Taiuti, Italy; Atau Tanaka, France; Minna Tarka, Finland; Tamiko Thiel, Germany/USA; Christine Treguier, France; Kim Veltman, Netherlands; Victoria Vesna, USA; Conny E. Voester, Germany; Lawrence Wallen, Germany/Australia; Sha Xin Wei, USA/Italy; Stephen Wilson, USA; Michael Wolf, Germany/South Africa.

away from the resources and keep the power in the hand of very few (offline) power brokers that produce useless baroque new media art installations and dream up collaborations between arts and scientists that never materialize."

Marleen Stikker, Director of the Waag Society for Old and New Media²⁴ in Amsterdam, poetically describes herself as someone who creates possibilities. "I'm not familiar with the term 'doorbuilder'. I consider myself to be a 'possibility person', not a 'reality person'. In "Der Mann ohne Eigenschaften" ("The Man Without Features"), Robert Musil describes the difference between these two. A 'reality person' takes reality for what it is and creates with what is already there, a 'possibility person' believes in 'possible worlds' and starts to create these worlds. By doing that, a 'possibility person' is creating new 'land' that can be occupied by other people."

The scientist, publisher and producer of Leonardo/ISAST²⁵, Roger Malina, describes himself in a constructive sense as part of an international gatekeeping organisation that works with a heterogeneous committees of assessors. "A door is any structure that permits, but controls, the flow across an interface. The gatekeeper is the system in this door that makes decisions as to what passes or does not pass through the door." Then, who is a gatekeeper, Mr. Malina? "In the Leonardo organisation we refer to "gatekeeping" as work of "collaborative filtering". In the simplest example an article is not published in Leonardo (or a Leonardo book proposal accepted), except after the text is sent out to 3 external reviewers, and that the feedback is "yes this is worth publishing" - this is called peer review - but this approach is used in many if not all of Leonardo activities. We try to work with advisory groups and colleagues internationally in all our ways of doing business. A gatekeeper is anyone that makes choices on what to give or withhold to someone else."

According to young american curator Kathleen Forde,²⁶ the main difference in the german artworld is "that there is an interest to present research, works in progress, laboratory style work and theory to the public. Therefore a wider audience of curators and artists can be exposed to this work. In America, research is mainly relegated to universities (MIT, Berkley for example) and theory is left to published papers. The USA is nearly devoid of festivals that present a critical look at how art practice is developing." About the curating process she says: "In general, I believe systems of gatekeeping are most relevant to the development of contemporary media arts when they are being creatively subverted. In the strictest sense, gates represent systems of willful ignorance (by and large) towards that which is not already on the guest list at the door. This subversion could take the form of coining a new 'genre' to allow for the inclusion of different types of work in the validated institutional space, placing art outside of a system that is generally a gatekeeper (in contexts such as public space, storefront windows, the net, research institutions), creating ones on system or space for public practice, or finding funding that falls under umbrellas or with teams that are not strictly 'art' based to allow for its production. Basically, the subversion ends up pushing the limits of the contemporary culturescape. Artists, producers and curators that find their way through doors/gates successfully on their own, rather than waiting for an invitation, are perhaps the best candidates to be checking the list at the door."

²⁴ <http://www.waag.org/>

²⁵ Leonardo/ISAST serves the international art community by providing a channel of communication for artists and others interested in the arts. Emphasis on artists who use science and who develop technologies in their work. <http://mitpress2.mit.edu/e-journals/Leonardo/index.html>

²⁶ Formerly working with Benjamin Weill at SFMOMA. She now works for Goethe-Forum in Germany.

4. What Support do Gatekeeping Organisations Provide?

At the start of the 1980s, there were neither training courses nor residencies for media artists working with new technologies like computers, video laser discs, sensors, interactive environments. It was entirely normal to first create your own infrastructures in order to be able to experiment. Educated as an architect and working as a professor for urban planning at the Hochschule der Kuenste Berlin, Edouard Bannwart initiated and led his first research project in 1984, called ART+COM, exploring the possibilities of networked design processes between locally connected universities in Germany. "This project was the basis for the foundation of ART+COM e.V., a research lab for designers and scientists working on the possibilities of computer graphics and animation. Mainly supported by Deutsche Telekom and its corporate research department (Berkom), ART+COM quickly became one of the most innovative research groups in the late 80s and early 90s. There was no direct involvement of any kind by the institution or organisation. But certainly the later success of ART+COM can be mainly attributed to Deutsche Telekom who sponsored the major part of the forward-looking high-speed telecommunication projects."

In the 90s Christa Sommerer joined Peter Weibel's newly installed Institute for New Media at the Städel Art School in Frankfurt. "I started my career in the media arts in 1992 when I teamed up with Laurent Mignonneau and we started to produce interactive artworks together. We were then students at the Institute for New Media in Frankfurt, Germany, then led by Prof. Peter Weibel. It was him who also invited us to show our first big work at the Ars Electronica in Linz Austria. Our first big artwork was "Interactive Plant Growing" which gained international acclaim fairly quickly. Our first big international show was at the 'Intercative Garden' exhibition in Otsu Gallery, Finland, curated by Erkki Huhtamo."

What helped you for your career? "At the beginning of my career I received several grants to study in Frankfurt (the DAAD German Research Grant) and in Chicago (The Austrian Culture Ministry's Chicago Grant). Later I won several competitions (the Golden Nica Prix Ars Electronica in 1994) and showed my work in many festivals and exhibitions around the world. I always produced the work myself together with Laurent Mignonneau but we were supported by various institutions, such as the Institute for New Media in Frankfurt, the NCSA National Center for Supercomputing Applications, in Champaign-Urbana, IL, USA and later the ATR Advanced Telecommunications Research Lab in Kyoto. This is where I worked as a researcher and artistic director since 1995 and where most of our works have been produced. Other sponsors include the NTT-ICC InterCommunication Center in Tokyo, the Ars Electronica Center in Linz, the Tokyo Metropolitan Museum of Photography, the Cartier Foundation Paris, the City of Science and Industries-LaVilette in Paris and many other exhibition venues for which we produced artworks, most recently for the Sprengelmuseum in Hannover, Germany for the exhibition "Science+Fiction"²⁷

Daniela Alina Plewe emphasises that the period of the early 1990s was advantageous for expensive media art installations. "I started my career around 1991/2 in media arts. At that time, there was no institutional support at all and I just began out of a suspicion that the computer may be a suitable medium for my aesthetic goals, this turned out to be the case. My most successful project was UltimaRatio (a software and interactive installation) displayed at solo Exhibition in Spiral Gallery (Tokyo), at Ars Electronica, invited to UCLA and numerous other international exhibitions. Helpful were basically the openness of researchers from all

²⁷ <<http://www.scienceandfiction.de>>

disciplines, the optimism concerning new media. Still helpful and supporting in terms of production tools were Jeffrey Shaw and in terms of networking support Andreas Broekmann and especially Yukiko Shikate and Kaz Abe from Tokyo but many others and friends as well. Helpful was the invitation to the ZKM for a production, and of course the Canon Artlab and Ars Electronica financing partially Ultima Ratio. But especially to get a project started one needs personal money for the conception phase. This is the most difficult time to finance, since the outcome is for the potential supporters (including oneself ;-) is not judgeable and is a high risk investment."

Plewe says the current situation for media art productions is more difficult than it was 10 years ago. "I still produce works independently, though cheaper than in earlier days. (One just sold to the ZKM). I also worked for the Fraunhofer Gesellschaft, but with the focus on practical applications rather than pure media art. In commercial contexts, I work as a freelance consultant for corporate communication agencies. Here of course every once a while even purely artistic projects may be selected and realized."

The American media artist Jim Campbell²⁸ said that he needed his own gatekeeping system to bring attention to his art. "I tried for 3 years to get a show in my city unsuccessfully and finally I rented a space for 3 weeks with a friend and we presented a show ourselves. This worked very well for me as a doorbuilding idea as a curator from a museum came to this show and put my work in his next show."

American artist Stephen Wilson mentions the importance of LEONARDO for publications. "In the early days it was the journal Leonardo. Here I was interested in experimental technology and galleries/ fellow artists were not very interested. Then I discovered the journal Leonardo with its articles from similar minded artists all over the world. It was reassuring and stimulating. Also Ars Electronica. I couldn't get shows in museums and galleries in the US; they didn't care about experimental technology. Ars provided a place to show and to see others work and provided resources to mount the work and even a prize to aspire to."

Alongside numerous individual organisations such as the Banff Media Center in Canada, Amsterdam's Waag Society or Rotterdam's V2, the Fraunhofer MARS Lab in Bonn/Sankt Augustin, the ZKM in Karlsruhe, the Ars Lab in Turin or C3 in Budapest, the European media festivals such as EMAF in Osnabruck, Transmediale in Berlin, DEAF in Rotterdam or WRO in Wroclaw, two institutions were cited particularly often by those questioned as important and supportive for media art – the Canada Council for the Arts and the Ars Electronica Festival. The Leonardo Journal for publications was also cited frequently. What are the consequences for artists? How have they been helped and what effect has this help had?

American and Japanese media artists came to Europe where a lot of new festivals supported media art especially the Ars Electronica in Linz. Japanese artist and professor at Keio University, Masaki Fujihata, felt a real change in producing and presenting his work after receiving the Golden Nica of Ars Electronica: "Most of my pieces are made with students in graduate school and was shown in several different places. Siggraph, Ars Electronica are the most succesful places. Now I am asked to be in a jury for that type of exhibition and competition. The biggest change happen after I won a Golden Nica from Linz."

²⁸ <http://www.jimcampbell.tv/>

Electronic artist, Rafael Lozano-Hemmer²⁹ cites V2³⁰, the Institute for the Unstable Media in Rotterdam, as an important source of support for his most successful project. "My most successful project, in terms of recognition, has been my installation "Body Movies"³¹ first developed for V2 in Rotterdam.

Will Bauer, a Canadian artist and engineer declared enthusiastically that, "the Canada Council for the Arts is a wonderful institution. They are willing to take chances and have a very intelligent and sophisticated sense of what their mandate is and should be - they are great supporters and enablers of media arts (and other arts) in Canada. Their support allowed me to develop the relatively unique career trajectory I have had. The Ars Electronica Festival was also a key supporter. They invited our technological theatre group, "PoMoComo" to come there for our international debut and have been great supporters of my projects and collaborations over the years."

Tamiko Thiel put particular emphasis on the differing support structures in European and American festivals. "I found the process with European media festivals very positive. I could submit cassettes to many festivals and had to pay only the costs for postage and for making dubs of the cassettes. In the United States it was much more difficult, because each festival charged an entry fee, making it difficult for young artists to get started."

Shu Lea Cheang sees the benefits obtained in her work as an artist as a result of the support she has received from art & technology research labs. Having gone from a developing artist to a hi-tech aborigine she notes that "being a pick-up artist of hi-tech leftovers, I thrive in the cyber-fringe zone". However, she also underlines the particular difficulty for female artists in finding support in a male-dominated technical domain and describes this as a separate learning process. "As a female media artist, one learns to master the language well enough to walk with the boys in the field. One is quite aware that the field of programming / software / system administration are quite male dominated. I did have a few chances to work with some great female cgi / java programmers and saw how extra hard they have to work compared to their male counterpart. It is not usual for me to collaborate on all male teams. Mostly, if I can stand on my conceptual grounds, I can pull off with the team. One does have to know one's part / role to get supported technically."

Most of the support received by Shu Lea Cheang was provided by media art & technology research labs managed by women. "I benefited a great deal from working with the media research labs. I have worked with the Banff Center for the Arts³², Canada (Sara Diamond), the NTT - Intercommunication Center³³ (Japan), the Waag Society³⁴, Netherlands (Marleen Stikker) and the MARS-Exploratory Media Lab³⁵, Germany (Monika Fleischmann). I have mostly exhibited my works in museums and cultural institutions. The museums provided an infrastructure to solicit funding and social outreach. My work Bowling Alley³⁶ (1995) shown at the Walker Art Center was supported by a grant from AT&T's³⁷ New Art New Vision.

²⁹ <http://www.lozano-hemmer.com/>

³⁰ <http://www.v2.nl/>

³¹ <http://www.fundacion.telefonica.com/at/rlh/eproyecto.html>

³² http://www.banffcentre.ca/bnmi/programs/cwc/bio_faculty.asp#diamond

³³ http://www.ntticc.or.jp/index_e.html

³⁴ <http://www.waag.org/>

³⁵ <http://www.imk.fraunhofer.de/mars>

³⁶ <http://bowlingalley.walkerart.org/walkerart.html>

³⁷ <http://www.att.com/foundation/>

Another work, "Brandon"³⁸ received support from two new media fellowships granted by the Rockefeller Foundation³⁹ and the New York Foundation for the Arts⁴⁰. Through the Guggenheim Museum⁴¹, we got funding from the Bohlen Foundation and the New York City Department of Cultural Affairs⁴². Working with the Waag Society, we received funding from the Mondriaan Foundation⁴³ and the Dutch Ministry of Education and Culture⁴⁴. The two works which I exhibited at the NTT/ICC, "Buy One Get One"⁴⁵ (1997) and Baby Play⁴⁶ (2001) - were both funded by NTT (Nippon Telegraph and Telephone Corporation)⁴⁷.

5. The MARS Lab as an Example

The architect Mette Ramsgaard Thomsen came to the MARS Lab as a result of her experience gained in a web agency and because of her interest in an undetermined and fluid field. "I have been working with digital media since my diploma in architecture in 1996. My interest in digital media came through an interest in examining a space which was undetermined and fluid. During the first years after my diploma I worked with 3 dimensional modelling and website design. I did a series of internships in TV and advertising, which landed me a job in web development. These jobs were more about skill development than really about my central interest, creating architectural spaces which are informed by/constructed of digital media. In 1998, I started to work in the MARS media lab at the GMD⁴⁸. Here, I worked within an interdisciplinary group of artists, architects and computer scientists on creating mixed reality environments. Being part of MARS gave me insight into the core issues of digital media/virtual environments as a research field. Working with people of different background as well as different levels of experience allowed me to learn about the core issues of the research field, learned methods of undertaking research as well as developed my own standing within the research field. I have many doorbuilders. As mentioned above the MARS team and especially Monika Fleischmann :-) has given me many opportunities and given me a basis to enter the research field. Other doorbuilders are my professors Peter Cook and Mel Slater. Both supervise my PhD and give me invaluable help both through teaching but perhaps more importantly in this context through contacts and support. Susan Weghurst and Mark Billinghurst at the Human Interface Technology Lab, University of Washington, have also given me opportunities to collaborate and work with them on projects. At present, the University of Brighton where I teach and research is also a doorbuilder in their help and support [both practical and financial] allowing me to undertake new research projects."

The current generation of media art students are supported in their careers by the new training courses in colleges or art schools. In particular, students in the interactive design course at the renowned Royal College of Art in London are naturally also calling for this support. Heiko Hansen, a graduate from the RCA, came to the MARS Lab in 2000. He describes his career and training in various research labs as follows. "Like most media workers, our careers started within an educational institution. The Royal College of Art provided a cultural framework

³⁸ <http://www.waag.org/brandon/>

³⁹ <http://www.rockfound.org/>

⁴⁰ <http://www.nyfa.org/>

⁴¹ <http://www.guggenheim.org/>

⁴² <http://www.nyc.gov/html/dcla/home.html>

⁴³ <http://www.mondriaanfoundation.nl/start.asp>

⁴⁴ <http://www.minocw.nl/english/index.html>

⁴⁵ http://www.ntticc.or.jp/Calendar/1997/ICC_BIENNALE97/Works/buy_one.html

⁴⁶ http://www.ntticc.or.jp/Calendar/2001/BABY_PLAY/

⁴⁷ http://www.ntt.co.jp/index_e.html

⁴⁸ GMD and Fraunhofer merged in 2001 <http://www.gmd.de/en/pressemitteilungen.html#Fusion>

within which to develop our own vision and working method. The experiences after the RCA exposed us to different research approaches from media art, interaction design and HCI. These labs enabled us to broaden our knowledge, to make contact with key players within the research community whilst continuing to develop and disseminate projects."

Gillian Crampton Smith, formerly the head of the Computer Related Design Department at the Royal College of Art in London, is today the director of the Interaction Design Institute in Ivrea, Italy. Interaction design is a new discipline - a fusion of aesthetics and culture, technology and the human sciences. It concerns the design both of the services these technologies might offer, and the quality of our experience of interacting with them. Interaction Ivrea is a new kind of institute that combines research, design, and business. On the Ivrea website the FAQ⁴⁹ calls its unique product the know-how, rather than know-what; not technologies, but people, "super-innovators" who know how to design in new ways in a networked society serve as teachers in Ivrea, e.g. John Maeda and Ettore Sottsass are guest lecturers in Ivrea. Former students of RCA, like Heiko Hansen or Helen Evans, get the opportunity to do research in Ivrea through this media art & design community network which started for them at RCA in London. Both were also supported at MARS Lab and work today as design researchers at INRIA⁵⁰ - Institut Nationale de Recherche en Informatique et Automatique, in Paris, designing interactive, intergenerational interfaces within the European IT research project "InterLiving".

The three student prize winners (Michael Wolf, designer; Tamas Szakal, artist; Martin Schneider, computer scientist) of the *digital sparks* competition⁵¹, organised for the first time in 2001 by the MARS Lab, received generous production grants⁵². They were also given the opportunity of studying interesting topics for their dissertations with expert support in art, design and computing within the context of their co-operation. All 3 dissertations have since received several awards in the national and international community.⁵³

Michael Wolf was a student at Cologne Fachhochschule für Design (Design College) until the middle of 2002 and upon graduation worked as a full-time employee for a year in the MARS Lab, before going to South Africa in 2003. "I presume that education rather than a nature-given gift "built my door" to become a designer. The more I was educated or learned about design the larger and the more solid the door became. I believe that since my first steps as a designer I'm moving in an accelerating process of coming out. Success is to take part in a project that receives positive attention from certain "key persons" (gatekeepers) or a broader audience. Having won the "digital sparks award" got me the professional support of the MARS-Exploratory Media Lab for my diploma thesis. This is one of the reasons why the resulting project "Soundgarten"⁵⁴ might become my most successful project so far. To be successful in the media art scene it is helpful to be supported by established artists and organisations and to be associated with them."

Tamas Szakal studies media art at the Hochschule für Grafik und Buchkunst, Leipzig. While still a student, he built his own network and thus his door to media art. "As I founded the net audio station contour.net in 1996 with colleagues in Hungary, Germany and Switzerland in

⁴⁹ <http://www.interaction-ivrea.it/en/faq/index.asp>

⁵⁰ <http://www.inria.fr/>

⁵¹ <http://netzspannung.org/digital-sparks>

⁵² <http://netzspannung.org/digital-sparks/awards/>

⁵³ Op. cit.

⁵⁴ <http://www.soundgarten.com/>

order to build a kind of network between these countries, I mingled with a lot of artists and musicians. At this time I was studying media sciences and journalism in Leipzig / Germany. The inspiring work with artists encouraged me to experiment with things around me and after a while I decided to begin my studies in media arts and this has changed my way of thinking completely. Since then I have been working on installations and performances for different exhibition spaces. My most successful project besides contour.net was my first net audio installation called "dialtone", which was exhibited 2 times. There was a lot of response to it, and the work won the "digital sparks award" a prize in a competition for young media art projects. The competition and its organiser, MARS Lab / Fraunhofer Institute for Media Communication, was of course a doorbuilder, they invited me to build a new work with their financial assistance. The lab paid for the costs and also, it was really inspiring to work 6 months in the lab and to study the interesting connection between arts and research. I will integrate this experiences in my future work, because I think that it is very helpful to ensure conceptual improvements in following projects."

The third winner, the computer scientist Martin Schneider, became involved in the development of the semantic map of the MARS Lab netzspannung.org platform. He subsequently made important contacts and participated in a particularly exciting conference on artificial intelligence in Italy.

6. Hidden Agendas: How do Gatekeeping Systems Function?

Art & technology labs, festivals and museums are the most important doorbuilder and gatekeeping systems for media art and its curators. Media artists seldom come from traditional fields of art, but rather from music, performance, experimental film, architecture, design, political activism and from social and natural sciences. The problem that media artists have faced until now was that they had to train their future curators themselves. Author tools, first developed by artists and computer experts, now form part of the field in which curators make their name, with the result that the new curators – as was previously the case for computer experts – also understand and portray themselves as artists. The term "art" in media art is just as fluid as the term "author" due to the method of inter-disciplinary working in teams. However, it is essential in media art that the different disciplines are given equal standing. Mutual recognition is always a complicated learning process and an important experience. It would be better for results and acceptance if participants were able to work together over a longer period in 2-3 year inter-disciplinary research projects.

During his career in the 1970s/1980s, trained musician Bill Buxton⁵⁵ developed from an artist into one of the most prestigious researchers and designers on the theme of the human aspects of technology, one of the most important areas of research and development in the fields of media art and computing. As a researcher at Alias Wavefront, Silicon Graphics (SGI) and Xerox PARC, he dealt with issues such as, "techniques and theories of input to computers, technology mediated human-human collaboration, and ubiquitous computing". Bill Buxton is an advocate of co-operation between art and science in teams and labels. He believes that the cult of the individual in the art world is one of the developments in current society that must be corrected. "I believe that the biggest gate to break down is the cult of the individual, the notion of the genius as individual. I am smart because I work with, learn from, and share, with other smart people. Social networks are more important than computer networks. Especially heterogeneous social networks. We get what we reward. But what do we reward from

⁵⁵ <http://www.billbuxton.com/>

kindergarten on? Individual performance. Never team performance. And when, in graduate school, we get into team projects, they are homogenous teams, not heterogeneous. We need to determine the types of social networks are important to the types of behaviours that we want, that our society values, and then transform the reward system to bias the culture, including/especially the educational system, to encourage them."

Creative learning in communities is given as little consideration as the subjects of visual arts and music. While in New Zealand dance is introduced as a subject in the first year of primary school in order to increase the creativity and motivation of the children, Germany has mostly untrained art teachers in primary schools who may soon to be joined by untrained language teachers because of current 'needs'. This has led to an educational debate, also with regard to pupils' chances in the future labour markets.⁵⁶ Conservative and rigid power structures in political institutions also have an effect on media art festivals. Susanne Jaschko, co-curator of the Berlin Transmediale media art festival, highlights the difficulties in changing these structures. "Before talking about the hidden agendas and gatekeepers, let's take a look at the obvious ones, the conservative power structures. People who are not interested in social and cultural change and improvement but who try to keep old and outdated value systems. In the cultural field, this leads to a backwards movement, to an overestimation of the past and a loss of cultural innovation."

Female media art curators and producers in public institutions in Germany often – or still – have the experience "that personal retention of power, particularly by representatives of the older generation, plays a predominant role in most institutions. Particularly when it comes to the need to find and apply new criteria to evaluate current media art, considerable pressure is applied by older colleagues who often do not want to recognise the necessity of new criteria. You get the impression that they want to keep what they have built up and are not willing to consider that new circumstances require a new way of looking at things."⁵⁷

Sara Diamond of the BANFF Center in Canada takes a self-critical view of her own role in the game of gatekeeping and existing power structures. "There are many agendas! I recently spoke in a context (ARCO⁵⁸, Madrid) where I was part of the conference agenda where the old guard from new media spoke! I was shocked to be in that category, but I do run a major resource centre and offer my opinions about the work that artists make and the ways that works are produced. I try to create support for new practices and stabilize existing artists practice. I am very aware of the need to look for new faces and practices and for a range of cultural backgrounds. I have been very active trying to support women and aboriginal people in terms of access to creative media and creation. I try to make decision making processes transparent."

In the context of producing her operas and media projects, the director and theatre expert Thea Brejzek⁵⁹ links the hidden agenda of a gatekeeping system with a clear aim. "The hidden agenda is in itself power. How to keep and augment one's individual power and improve one's professional standing / position. This is a rather natural occurrence both in management and in artistic practice. One's artistic and institutional identity and identity as a curator is largely dependent on the selection processes (of team members, of participating artists, of CI and

⁵⁶ This debate was fuelled by a recent comparative European ability test, the "PISA-Study", where Germany figured at low ranks.

⁵⁷ Media art producer who would like to remain anonymous. The name is known to the editorial team.

⁵⁸ <http://arcoenglish.artmediacompany.com/amigos/foro/programa.jsp>

⁵⁹ <http://netzspannung.org/cast01/speakers/#spkr03>

marketing decisions) one makes over a number of years or even just within one project. In this sense I am a gatekeeper by selecting my creative teams and performers very carefully and by, typically, working with the same people over and over again."

Shu Lea Cheang⁶⁰, who describes herself as a "self styled digital nomadic artist", also regards my question about the "Hidden Agendas of Power in Gate Keeping Systems" as the normal situation in the media/art market. "Either one is in or out. Each (media, cultural) institution does have it's own agenda. If one knocks at the right moment with the right key and right password, one can get in. At the same time, I am witnessing the attempt of setting up open source collaborative platforms and shared (wireless) networks. The one holds the gate can be the one left behind."

When asked about "hidden agendas", digital sparks winner Michael Wolf responded. "While in the middle ages monks guarded the gates of knowledge in their libraries, today the curators of leading TV stations and internet portals decide which information is passed on to the public. "Gatekeeper" could be as well translated with "establishment". The problem with the establishment is that it will always try to stay in this position and might take its decisions to empower itself or its associates. In Cologne we call this the "Klüngel", which means something like a knot of people who pass on jobs, opportunity, and power. However, it seems as if this society needs "gatekeepers" to sort through the incredible amount of information and give an overview or select the most important information."

7. The Necessity of Targeted Support Structures

The production of media art, art & technology, new media – whatever you want to call the cultural field in which not only artists, but also designers, architects, musicians, dancers, computer experts, engineers and natural and social scientists very often work in teams on joint projects – can be compared to the workflow in a firm of architects that draw up, plan and construct projects in teams under the leadership of one or more project managers. The places where media art is produced bear greater similarity to an experimental laboratory⁶¹, a workshop or a studio than a quiet atelier. The structure of an interactive installation is similar to a stage production, whereby sequences which – in all respects from the lighting to the gestures of the actors – must fit together are tested so that the planned effect is achieved. Although a large proportion of production still takes place in isolation in front of a screen, the players are networked and co-ordinate with each other to ensure that the complexity of the tasks is achieved.

The inter-disciplinary genre of media art requires its artists to have a broad range of knowledge and skills from various fields of (sound-) design, science, technology, visual arts and architecture. This enables media artists to find employment in various fields of work, making them somewhat less dependent than traditional visual artists on support structures which offer levels of financing which are usually equivalent to German social security payments. This could be precisely the reason why there is still insufficient support for media artists.

⁶⁰ <http://www.artandculture.com/arts/artist?artistId=681>

⁶¹ Experimental labs and workshops are already available in a few well-equipped colleges and art schools such as the Kunsthochschule für Medien in Cologne, the Hochschule für Gestaltung in Karlsruhe and the Akademie der Künste in Munich.

Many media artists are now working as independent film producers or in small companies so as not to be dependent on grants. Alongside attempts to produce their own media art projects – e.g. by obtaining sponsorship – they often accept temporary positions in the more traditional sector where they can put their wide-ranging qualifications to commercial use. In their function as project implementers, they often assume the function of a doorbuilder themselves.

The computer engineer and musician Will Bauer is an all round talent who, due to the lack of infrastructure support, constructed his own production environment at the beginning of the 1990s. "We had to build our own infrastructure out 'in the street', so-to-speak, completely from nothing. This dramatically lengthened the time it took to get projects underway and forced us to develop a level of skill in both project management and fund-raising that most academic practitioners simply don't have. I had to raise my own money through grant applications and extremely creative fund-raising and financial structuring ideas, sometimes in partnership with corporations and government R&D funding programs as well since we also do technology R&D to make certain artwork possible. Today I am a producer - part of the time - I had no choice but to become one because of the large budgets required to do both ambitious media-art pieces and technology R&D, both of which I pursue simultaneously. I raise money, create Art and R&D projects, and organize the people to work on them."

At the beginning of the 1990s, colleagues and art historians accused media artists of having (too) expensive production means and - in my case – of receiving support from ART+COM⁶², the GMD Research Centre and the Fraunhofer-Gesellschaft. They said that they had not enjoyed such generous support. Nobody had the idea that we had invested a lot of time and energy and learnt a great deal in order to be accepted in such partnerships on more or less an equal footing. We also had to set up all of our own infrastructure without any experience whatsoever so that others might profit from our work⁶³. I recall an amusing incident in 1996 when Rafael Lozano-Hemmer - sitting on a joint panel of the IN ART festival in Tenerife - responded to a member of the audience complaining about the lack of support with the following answer: "None of us were born with a Silicon Graphics computer beside our bed."⁶⁴

With the end of the hype and the decline of the new economy, the situation for media art has become difficult despite more favourable production conditions. Legendary think tanks, development and production sites such as Xerox PARC and the Interval Research Institute in Palo Alto, California, financed by Paul Allen⁶⁵ are being closed. Support is being suspended or withdrawn. Worldwide there were and are only a few places where it is possible to get expert and financial support for your own production. Annually, around 3000 awards including promotional grants and honorary prizes are presented in Germany in the cultural sector, of which, less than 20 are for art in and involving electronic media.⁶⁶

There is not one single foundation in Germany which concentrates solely on the promotion of media art. There are special foundations for the traditional arts of painting, sculpture,

⁶² Monika Fleischmann is a co-founder of ART+COM and personally initiated the infrastructures now available at the Fraunhofer Institute (former GMD).

⁶³ Examples of the support provided by the MARS Lab are the netzspannung platform, the netzkollektor, the digital sparks competition and the MARS production grants.

⁶⁴ This computer formed the heart of most VR/real-time installations before low-price PCs became equally powerful at the end of the 1990s. "SGI, also known as Silicon Graphics, Inc., is the world's leader in high-performance computing, visualization, and the management of complex data". <http://www.sgi.com/>

⁶⁵ Paul Allen now invests in a Jimi Hendrix Rock Museum rather than in artistic research.

⁶⁶ Andreas Wiesand. *Handbuch der Kulturpreise 4, 1995-2000*. ARCult Media, Bonn, 2001.

architecture, design, dance, music and film which award grants, prizes or exhibition opportunities for the different art genres. One of the few international exceptions is the Daniel Langlois Foundation for Art, Science and Technology based in Montreal (Quebec), Canada. Its founder, Daniel Langlois, the developer of Softimage and co-founder of the company of the same name, set up the foundation in 1997 with the proceeds of the sale of his company. The Daniel Langlois Foundation has concentrated specifically on promoting and supporting media art. As well as giving financial support for the realisation of individual media art projects, the foundation primarily promotes media art archives. One example of this is the archive of the work of Woody and Steina Vasulka.

Media art has in no way found general acceptance within the professional art market. Michael Hirtz of WDR (Cologne) describes media art as a "marginalised niche in the art market".⁶⁷ Artists who work with digital media often have a strong interest in society. They use technical developments to experiment, play and express themselves. Media artists often deliberately avoid involvement with the commercial art market. They work in teams as is the case of films or architecture. However, their products are seldom of commercial value and are difficult to sell either in the art market or in rock and pop culture. Even though media art can now be regarded as an established branch of the art market, it is too young in comparison to other artistic fields to be able to rely on stable infrastructures. Employing an in-house system administrator to maintain expensive, complicated, usually unreliable and quickly out of date hardware is too costly for a museum and only within reach of a few collectors. This situation is certainly changing because of the falling prices of software and hardware. However it leads to the question of uniqueness and copyrights and, related to this, the question of the market value of an artistic installation.

The current situation makes targeted promotional strategies necessary. It is precisely the link between art, science and technology which leads one to think of a variety of possibilities for support and promotion, e.g. guest research visits, production and publication promotion. However, the inter-disciplinary nature of art, science and technology also give rise to obstacles. Media artists seldom have the opportunity of working in scientific institutes or research labs.⁶⁸ Contrary to what one might think, they do not necessarily bring ideal conditions for media art work. One must also not forget that media artists and media art scientists employed in institutes and research labs, unlike their IT colleagues, usually have other criteria to meet alongside their research – e.g. organising exhibitions and public environments which help to promote the work and the image of the institute.

The possibility of inter-disciplinary co-operation and knowledge transfer represents an essential model for media art. Consequently, the advantages of employment at research institutes must also not be forgotten. Bill Buxton reflects on the providence of being able to combine art and science at the start of his career. "I started my career as a musician, trained in the arts, not science. I never set out to have a career other than music. No plans to have been a scientist, academic, involved in business or policy. That just happened. What I had was serious curiosity, the confidence to pursue it without worry about "career", and lived at a time and in an environment where classifications and qualifications did not have as much importance as did ideas and passion. I found in a computer art book a computer scientist, Leslie Mezie, at the University of Toronto, who was doing visually what I was trying to do in

⁶⁷ *Nam June Paik Award 02, Exhibition Catalogue*. Stiftung Kunst und Kulture des Landes NRW. Dusseldorf, 2002.

⁶⁸ There are limited possibilities to do this e.g. at the Fraunhofer-Gesellschaft, the ZKM (Germany), the BANFF Center (Canada), the Sony Research Labs (France and Tokyo) and at the IAMAS Academy (Japan).

music. I began corresponding. He responded and gave advice. Finally, after a certain amount of correspondence, he said that if I went there, I could have the run of the lab, and be an informal 'artist in residence'. This he did without ever meeting me. The rest, as they say, is history."

In response to the question regarding those factors which particularly helped him apart from his contact with a computer expert who had an interest in art, Buxton adds, "It was as much the times as the institution which helped me. In the 70's and 80's, there was not the same emphasis on applied 'industry relevant' so-called 'research'. There was enough resources to support risky, curiosity driven projects. At the time, nobody took computer music, graphics or animation seriously. It was entertaining, harmless, and interesting 'play'. But from this environment came a great deal in both art and business."

Media artists in research establishments are now judged by the normal standards of the free market economy. This means that media art projects are examined for their commercial worth and marketability and are evaluated by scientific criteria. This not only applies to projects, but also to the artists themselves. In a culture of "publish or perish", the list of publications next to an academic title is of great significance. However, artists have so far had virtually no opportunity to write a dissertation in an appropriate environment. Roy Ascott's PhD programme is an example of how those involved in media art can create the necessary structures themselves. Victoria Vesna⁶⁹, an artist and chair of the department of Design and Media Arts at the UCLA School of the Arts⁷⁰, replies to the question of who or what has supported her career, "I was definitely helped by the educational institutions -- UC Santa Barbara, UC Los Angeles -- and by being part of the PhD program headed by Roy Ascott at the University of Wales."

8. The Gender Question: Are Women in Media Art at a Disadvantage?

Do you see a difference in how you as a female/male artist are supported comparing to your male/female colleagues? The following answers speak for themselves.

Lydia Hartl, cultural adviser in Munich: "Despite all the rumours to the contrary, women are still at a disadvantage in the job market in terms of development, key technologies and leading positions in the art world/art market."

Sara Diamond, Artist, Curator and Producer in Banff, Canada: "Sexism is still very, very strong. People still do not think women can handle leading technology research...(not all, but many still think this!) -- at the recent DEAF festival conference there was only ONE woman speaker when the theme was data knitting! This is amazing to me, when women are so prolific in creating strong, thoughtful, technically challenging works! Women are still a terribly small minority in computer science in North America and numbers are falling. We need to keep training young women, building their confidence and making technical contexts human not hermeneutic."

A particularly large number of decision-makers with responsibility for determining "quality" responded to the question about gatekeeping systems in the following way, nobody can deny that these systems also have other effects. For example, there are 14 female and 51 male

⁶⁹ <http://vv.arts.ucla.edu/>

⁷⁰ <http://www.design.ucla.edu/>

editors and advisors in the Leonardo Editorial Board and Office. Does this not have an impact on the selection of authors and on the invitations sent out?

Thea Brejzek – an opera and media project director – does not believe that male and female directors are treated differently but compares the situation in opera houses with that of top management firms dominated by men. "There is however a large discrepancy in numbers as far as the ratio male / female directors goes. This discrepancy equals the discrepancy in any top management position with large human resource and financial responsibilities as is the case in large scale opera / technology productions.

The curator Susanne Jaschko, Co-Director of Transmediale in Berlin, also highlights the difficulties working mothers face due to the lack of support in terms of childcare in the reunified Germany – in contrast to the former GDR. "Funnily enough most women that I know, work in second row positions, under dominant men. In my opinion, due to two factors: the strong belief that women with children cannot work in leading positions, which is true to some degree because of the lack of social support and a lack of self-consciousness of women, which is surely originated by education and the still-overall presence of traditional gender roles".

Sabine Breitsameter⁷¹ – director and producer of the SWR Audiohyperspace⁷² – underlined this view of traditional roles. "There are still men, mostly from the younger generation, who view it as a type of challenge to their male self-image if a woman has a leading, decision-making role in innovative projects involving new technologies. I and other female colleagues have at times found that these people often cast doubt on our technological competence and sometimes even do so in team meetings. Supervisors in particular tend to give more credence to male assessments of technical questions than those of females. Some men often like to portray themselves as promoting younger women but react in a defensive and unfriendly manner if these women gain status and are successful. It is more difficult for women than men to make their way through this glass barrier and move from the second row to the first. The relationship between the female producer and male artists is at times complex. The relationship between the artist and the producer is a very complicated one which, on the one hand, requires a personal approach at times, while, on the other, implying a "power relationship" (budget, technical possibilities, publicity – all are controlled by the producer). If the female producer does not play the typical mother role, this can become an irritating process for some artists and can even end in typical male-female power conflicts."

Christa Sommerer sees the biggest problem in European University structures. "In terms of showing the artworks, being selected for awards or to gain international recognition there is no difference between male and female colleagues. There is however a big difference when it comes to an academic career in the university system, especially in Europe. When we look at the ratio of male/female professors at European Universities, woman professors are in the minority, even in the media arts, and this is certainly not due to minor qualifications. I became a professor of media art in Japan, but most of my colleague professors in Europe are men. There is an inequality problem to be solved here. I suppose this is certainly related to a gate keeping problem. Also I try to especially encourage our female students here at IAMAS⁷³ to not sub cum to gender based pressure and discrimination."

⁷¹ http://www.swr2.de/audiohyperspace/ger_version/breitsameter/index.html

⁷² <http://www.swr2.de/audiohyperspace/index.html>

⁷³ International Academy of Media Arts and Sciences. <http://www.iamas.ac.jp/E/index-html.html>

Of course, some male artists also suffer from not belonging to a certain university or institution or from not having the support of an influential curator. Lawrence Wallen, an Australian living in Berlin, sees networks as the most important form of support for his own work. "The network is ultimately the most powerful gate keeper and gate keeping system. However on an individual basis nobody does anything unless that decision reflects well back upon them and/or they gain in some other way."

Male-dominated networks have a long tradition in our society, predominantly to the benefit of men. When asked whether male and female artists are given differing opportunities and support as a social phenomenon, the French curator Martine Bour⁷⁴ responds, "Unfortunately this question has nothing to do with media art! It is a cultural problem in our countries." She has a point here if one looks, for example, into the mostly male dominated higher management structures of large companies.⁷⁵

But what do men have to say about this issue? Female artists and authors are not only supported by women, both male and female curators clearly prefer to give support to male artists. According to the media artist and architect Lawrence Wallen, "most of the curators I deal with are woman, most of my students are woman, collaborators are about 50% women / men, assistants tend to be women, however most of my colleagues are men!?"

Jim Campbell⁷⁶, a media artist, mathematician and engineer who lives in San Francisco, is more than a little surprised by the dominance of men in group exhibitions. "I don't see a difference on an immediate level with my colleagues, however in the group shows that I am in I do see that there tend to be more men than women in these shows."

Young artist and digital sparks winner Tamás Szakál reinterprets, "I think there is no difference in supporting, but there are differences in the way female/male artists work, especially in the field of technologies. Also, there is a big difference in the number of artistic works in this field and therefore male artists seem to be more present in the scene."

Rafael Lozano-Hemmer, artist, Mexico/Montreal/ Madrid has responded by saying, "I think I have greatly benefited from being a male artist, not so much once my career started but rather when my parents encouraged me, rather than my sister, to pursue my studies and my interests. I also think I benefited from being in the middle-class and having white skin. Having studied Linda Nochlin, I am conscious that my chances would have been considerably diminished had I been born a woman (or poor or black). Having said this, I think I have also benefited from a perceived marginalisation / romanticisation / exoticisation from the fact that I am a Mexican. Artists like myself (a Mexican-Canadian) or like Eduardo Kac (Brazilian-American) or Coco Fusco (Cuban-American) are a problem for representation because by including us some people think that they are actually breaking the hegemony of the first world. Wrong! Eduardo, Coco and I live with the privileges of the first world and I am very wary of times when race/nationality/sexuality or other factors are used either by curators for tokenism or by artists themselves to self-exploit. I firmly believe in affirmative action, I just don't want it to be abused by people, such as myself, who are now - by fortune or hard work — enjoying the privileges of a society of wealth and consumption."

⁷⁴ <http://www.labart.univ-paris8.fr/ciren/leciren/>

⁷⁵ Germany figures particularly low, in this respect, if compared with the USA, France and even Turkey, cf. "Die Putzfrau als Karriereschub" ("The Cleaning Lady As Career Boost"), TAZ, Berlin from 10.2.2003 <http://www.taz.de/pt/2003/02/10/a0085.nf/text>.

⁷⁶ <http://www.jimcampbell.tv/>

Itsuo Sakane, director of the Japanese media art college IAMAS, started to organise exhibitions in Japan at the end of the 1970s and to help media artists in their productions. He is of the view that female artists may simply need greater technical support and should therefore work with an engineer or programmer. As a curator with many years experience, he says, "I did not care about the gender of artists. I selected them only from the point of the uniqueness of the art works. Especially in the field of interactive installations, I discovered many interesting female artists outside Japan, and invited them. Unfortunately there are not yet many unique independent female artists in Japan, and even in the educational institutes in Japan, still the number of the female students are less than the male students. But I think we should support the female artists more strongly because they often have the unique idea and imagination even better than male artists. But sometimes they lack the necessary skill or programming knowledge. So if they could collaborate with the skilful and friendly male engineers or programmers who could collaborate with female artists, they could have more chances for making innovative media art works. Even at our school, we have some good examples of the successful collaboration between female artist and male engineer which could have the great result and received even the international awards."

However, the majority of female and male participants in my survey saw no difference at all in the opportunities for male and female media artists. Astonishingly – given the above statements – the majority of those questioned saw no gender-specific difference in the way the different sexes are treated in their environment. Personally I have to say that outside of my own research group I notice on a daily basis the subtle differences in my male-dominated and highly hierarchical surroundings. As the head of a particularly successful research department in Germany who, as a female scientist and artist, occupies an unusually high position in an IT research institute, it is sometimes best to drop out of view in order to avoid giving rise to unnecessary friction due to envy or pointless power struggles.

According to studies and surveys there are nevertheless differences within Europe in the recognition and support of female managerial staff in the arts, science and business as Tapio Makela⁷⁷, programme chair of ISEA 2004⁷⁸, notes: "Finland is one of the few scenes where female artists have really been the most successful artists in new media. I see power relations working gender in University positions at a higher level, but in the field of media arts practice, it is very egalitarian in Finland. I have very different experiences of that in the east, west, and south. The area where gender did, however play a stronger role in a negative sense was in the new media industry boom. I was very critical of the "engineering world view" with its narrow scale of hegemonic masculinities surfacing within .com, mobile and telecom scene - also in Finland. Internationally, there are some networks that favour women, some men, but since I move with a gender-critical, post-colonial theory-aware approach I am usually welcome in both networks, but never feel comfortable nor seek to work with "boys networks".

Women like to work in undefined fields and this is possibly why they were so strongly represented in media art in the 1990s. When men enter the field, women often withdraw because they do not have networks, which are as strong as those of the men – and probably for lack of self-confidence. Women have to use their ability to work in teams in order to formulate their own interests. They must also learn to create a respected position for themselves in these teams and finally always to remember to give support and encouragement

⁷⁷ http://www.translocal.net/tapio/cv_eng_tapio_makela.html

⁷⁸ <http://www.isea.2004.net>

to other women so that female networks are created, expanded and strengthened. The example of the OBN cyberfeminists is an interesting model for other female 'old boys networks'.

9. The Influence of Networks: Conferences - Festivals - Exhibitions

In her catalogue contribution to the "Nam June Paik Award" 2002, Regina Wyrwoll, Secretary General of North Rhine-Westphalia's Art and Culture Foundation, underlined the importance of international networks linking media artists and media art institutes and thinks that Germany has played a pioneering role since the middle of the 1980s "which is now seen in Tokyo, Budapest, Moscow, Rotterdam, Barcelona, Toronto and other locations throughout the world in an adapted form."⁷⁹

However, as has already been discussed, there is very limited support for the production of works of media art. Production opportunities are offered by some college courses and by other competitions such as the student media project competition "digital sparks"⁸⁰ set up by the MARS Lab, and with MARS⁸¹ production grants. Europe only has a very few events such as festivals or competitions which produce, exhibit and thus promote and support media art. The Handbuch der Kulturpreise/Handbook of Cultural Prizes⁸² gives a good overview of these media art-related festivals – here are a few examples:

Ars Electronica, Linz, Austria

Ars Electronica Festival in Linz (Austria), the Ars Electronica prize and now the Ars Electronica Center as a permanent exhibition centre are a unique combination. Ars Electronica has been a pioneer in the field since 1979 and has brought media art and its developments into the public eye. A broadcasting institution has been and is still of great importance for this festival. The founder of Ars Electronica was Hannes Leopoldseder, the director-general for many years of ORF Oberösterreich (Upper Austrian Radio). He brought the ideas, the artists and the media presence with him and was thereby able to gain large number of sponsors. With the benefit of an unusually large budget and Christine Schöpf (ORF) at the helm of the Ars Electronica prize for many years first with Peter Weibel and since 1995 together with Gerfried Stocker, the festival has grown and become known as the most important international arena for the discussion of media art. A worldwide community has now grown around it. The influence that is projected from the tranquil town of Linz and felt all over Europe and the international media art community – in particular in countries of Eastern Europe and the Balkans – must not be underestimated. The effect on Linz from curators, artists, theorists and scientists mostly from the USA is also significant. Alongside the art context, the focus of Ars Electronica is on innovative developments in applications, socio-political discourse and the Future Lab.

⁷⁹ *Nam June Paik Award 02, Exhibition Catalogue*. Stiftung Kunst und Kulture des Landes NRW. Dusseldorf, 2002.

⁸⁰ <http://netzspannung.org/digital-sparks/>

⁸¹ <http://www.imk.fraunhofer.de/mars>

⁸² <http://www.kulturpreise.de/>

DEAF, Rotterdam

Just as media art crosses many boundaries to related disciplines, each festival also has its own emphasis. One of these events is the DEAF Festival (Dutch Electronic Art Festival) which has taken place in Rotterdam since 1994. DEAF is organised by V2_organisation under the artistic direction of Alex Adriaansens, who founded V2 in 1981 together with Joke Brouwer. The festival – which does not feature a competition – is directed at an international public from the fields of art, politics, culture, IT and network specialists. It features a comprehensive programme of exhibitions of interactive installations, live performances and presentations (with sound, music, installations, film and images), discussion forums, seminars and workshops. Experts are invited every two years to consider a specified theme. This means that discussion is limited to and focussed on a specific field but allows more specialist and intensive consideration. Those participating in the festival also see advantages in this as it provides them with an opportunity to exchange information with and between experts and the foundation of new communities are the main reasons for attending DEAF.

European Media Art Festival (EMAF), Osnabrück

The European Media Art Festival⁸³ was founded in 1988 in Osnabrück as an international forum for media art. It is directed by a team of 3 people - Hermann Nöring, Alfred Rotert and Ralf Sausmikat. In 2004, 'Larger than Life', the leitmotif of one of Europe's greatest multimedia events. Genetic engineering has long penetrated art; blurring the borders between technology and art. Under the motto "Larger than Life" the EMAF has invited film and media artists whose works reflect this development. The European Media Art Festival (EMAF) invites not only specialists from the fields of art, culture and commerce but also, of course, interested members of the public, to obtain an overview of current trends and latest developments in media art over a period of five days. It presents a programme in the area of tension between visions, stories and crossovers. The jury selects works from over 1,600 entries, presenting innovative artistic ideas and projects. Besides experimental films and videos, there is also performances, multimedia installations and new works from the field of digital media, such as CD-ROM, DVD and Internet. Art works of two female and ten male artists were presented in 2003.⁸⁴ In addition to performances, the EMAF presents in a Student Forum the current work undertaken at universities and colleges throughout the world. In 2003, the Hochschule für Gestaltung und Buchkunst (HGB) Leipzig was a main partner. Current works by students from Europe, the USA and Australia were presented within two film programmes. The European Media Art Festival is promoted and sponsored mainly by the Nord Media Mediengesellschaft Niedersachsen/Bremen GmbH; the Osnabrück City Council and the EU Commission.

ISEA 04, Stockholm, Sweden; Tallinn, Estonia; Helsinki, Finland

The International Symposium on Electronic Art (ISEA) is even more significant in terms of contacts and the opportunity it provides to exchange the latest information. The festival was founded in 1990 in Holland as an international non-profit organisation. Moving the location around has helped the festival to become more well-known and generate increasing interest in the ISEA from the industry. ISEA has previously taken place in Utrecht, Groningen, Sydney,

⁸³ <http://www.emaf.de/index.html>

⁸⁴ These included: Peter Bogers (NL) - Shared Moments; Anne Cleary / Denis Connolly (IRL) - Scènes Du Boulevard; Christian Ziegler (D) - Dis-Place; Björn Melhus (D) - The Oral Thing; Michael Snow (CDN) - That/Cela/Dat; Daniel Canogar (E) - Obscenity of the Surface; Björn Schülke (D) – Nervous; Dirk Hupe (D) - zeichen_ver; Jan van Nuenen (NL) - Optimizer Customizer; Bea de Visser (NL) - Blow up; Andreas Zelle (D) - Die Windharfe.

Minneapolis, Helsinki, Montreal, Rotterdam, Chicago, Liverpool-Manchester, Paris, and Nagoya. The aim of the festival is to promote interdisciplinary and cross-cultural communication/cooperation between art and the fields of technology, science, training and industry. The activities of the ISEA involve organising international symposiums and local events, developing partnerships, implementing various cultural initiatives, publishing and archiving. The board of directors is international. Universities, art institutes, museums and experts from the fields of electronic art/media art and industry are represented on it. The next ISEA⁸⁵ 2004 will take place in Stockholm, Tallinn and Helsinki with Finnish Programme Chair Tapio Makela.

SIGGRAPH 03, San Diego, USA

SIGGRAPH⁸⁶ the "Special Interest Group on Computer Graphics and Interactive Technologies" of the influential American Association of Computer Machinery (ACM) is more oriented towards computing but of no less importance in terms of the interdisciplinary nature of media art. In addition to the publishing activities of the network, one must mention the annual conference which changes location every year and describes itself as "the world's largest marketplace of computer graphics and interactive techniques"⁸⁷. The conference also features associated events such as a trade fair and an exhibition of the latest hardware and software trends and their applications. The community comes from the IT sector and is made up of scientists, technicians and to a lesser degree artists and designers. The emphasis is on aspects of IT such as interactive technologies, algorithms for interactive applications, computer graphics and special effects for films. In American colleges and research institutions, SIGGRAPH has not only established itself in the field of computer graphics but is also gaining importance for media art and its projects when scientists or artists interested in combining art and technology curate the corresponding programmes such as, for example, Art Gallery or Emerging Technologies. An ever increasing number of media artists present their latest projects on the Art & Technology Panels or as a video in the Electronic Theatre.⁸⁸ The projects to be presented are selected each year from the submitted contributions in a peer review process by a team of experts with a different composition each year made up of scientists, artists and professors.

Sónar, Barcelona, Spain

The Spanish Sónar⁸⁹ festival could be said to be the most happening festival in recent years. With an emphasis on electronic music, it attracts hundreds of professional DJs from all over the world and a great number of young party-goers. For several days, Barcelona - the secret party capital of Europe - is taken over by dancing and celebrations and – almost as an afterthought – high quality media art is shown in all the major museums in the city. Even though media art seems to be firmly anchored in youth culture, the real achievement of this festival lies in the way it influences the audience. In the long term, it is helping the genre of media art to achieve social recognition and to gain an established position in museums. Björk will be one of the main highlights of the Sónar 2003 music programme. The tenth edition of the festival will host the Icelandic artist's new live act. Sónar is a cultural initiative of Advanced Music, the Centre de Cultura Contemporània de Barcelona (CCCB) and the Institut

⁸⁵ <http://www.isea2004.net/>

⁸⁶ <http://www.siggraph.org>

⁸⁷ <http://www.siggraph.org/s2003>

⁸⁸ This is even more impressive as they, as an exhibitor, have to pay their own costs, contrary to the IT practices and conditions for participating in Ars Electronica activities. The – very high – entrance fee of Euro 750 is waived for the participants.

⁸⁹ <http://www.sonar.es/>

de Cultura de l'Ajuntament de Barcelona (ICUB), with the collaboration of the Departament de Cultura de la Generalitat de Catalunya.

Transmediale, Berlin

Transmediale⁹⁰ is a Media Art Festival which was founded 1988 by Micky Kwella in the context of the Berlin International Filmfestival – Berlinale. Since 2001, Andreas Broeckmann and Susanne Jaschko are artistic director and curator of Transmediale. It is one of the most successful international festivals of electronic media art and media culture in Europe. With its presentation and the choice of its topics constantly being updated, it has developed into an interactive platform for artists, media theorists, scientists and interested laymen over the past 15 years. The transmediale.03 was focussing on the artistic and cultural consequences of globalisation. Its slogan “Play Global!”, presented a varied and critical discussion about the extent to which economic and political globalisation also bring about new forms of cultural expression, allowing the individual’s actions to become effective globally. With the transmediale.02 (February 2002) the organisers took a decisive step forwards: on the one hand, the transmediale developed its image by concentrating on the cultural effects of the new technologies and by presenting relevant international media artistic productions. On the other hand, the fact that this was the first time a media art exhibition had been realised in this dimension strengthened the position of the transmediale as one of the most important European events of its kind. The transmediale has been successful at establishing itself as an important festival of international radiance. International reviews of the festival and the exhibition were positive, and the event set a new record with a total of 20,000 visitors. The strong public response to the exhibition of 2002 - which attracted around 10,000 visitors over the three weeks it was running - shows that there is considerable interest in contemporary media art. Each year the transmediale has a different slogan that lends a certain structure to the festival’s diverse programme and serves as a thematic setting for the artists.

The Transmediale 2002 and 2003 took place at the House of World Cultures⁹¹. The festival occupied the entire House for five days, implemented its own festival design and made use of the different rooms for its various types of events. The exhibition hall with nearly 900 m² housed the transmediale.02 _exhibition – current positions of media art – for two and a half weeks. A specially devised interior design had been set up in the multifunctional exhibition room to form a complex interior tailored to the various architectural requirements of the installations. The House of World Cultures has proved to be a perfect venue for this year’s transmediale. The successful co-operation between Berliner Kulturveranstaltungs GmbH / transmediale and the House of World Cultures will be continued in the coming year at the wish of both co-operation partners. Since 1997 the transmediale is sponsored and integrated by the Podewil bzw. the Berliner Kulturveranstaltungs-GmbH.

VIPER, Basel, Switzerland

The annual VIPER⁹² festival which takes place in Basel was founded in 1980 in Lucerne where it was held until 1999. Since 2002 Annika Blunck and Rebecca Picht took over as artistic directors from Conny E. Voester who was directing the festival seven years. Analogue media such as film and video are exhibited alongside digital works. VIPER is the biggest and most important media art festival in Switzerland. As well as featuring very interesting exhibitions of innovative works, it is particularly noteworthy due to its cooperation with

⁹⁰ <http://www.transmediale.de/en/>

⁹¹ http://www.hkw.de/en/programm/programm2003/transmediale03/c_index.html

⁹² <http://www.viper.ch/>

companies from the IT sector and the resultant support programmes for young media and video artists who, by way of a prize for the competition, receive the opportunity of producing a piece of work in these companies. With exhibitions spread across the whole of Basel, the festival is very popular with the public and involves them through its Online Competition – Public Award.

Zentrum für Kunst und Medientechnologie (ZKM), Karlsruhe, Germany

The ZKM officially opened to the public for the first time in 1997. It finds itself in the unique situation of being located under the same roof as a college of design which offers an opportunity to combine theory and practice in art and design including connections to current media art production. Works are subsequently exhibited on the premises. The ZKM is still unique in Europe. It awards the annual International Media Art Prize which attracts considerable attention due to the strong media support of SWR.

In terms of the development of media art in the 1990s, there were a few particularly important and interesting exhibitions which were primarily organised by media artists themselves or took place with their advice as curators. It is unfortunate that such milestones of media art in terms of concept and exhibition staging could not be sufficiently documented due to limited financial resources. These exhibitions often took place in "exotic" locations which attracted a large audience with a great deal of curiosity and growing interest.⁹³

In addition to specially organised festivals and one-off events, it is important for the exhibition, promotion and production of media art to have an ongoing process and permanent space in order to be able to recognise and discuss developments. The festivals and related opportunities for producing, exhibiting, awarding prizes, networking, forming communities and cinematic, multimedia and written publication are of great importance in promoting and supporting media art and establishing it in society.

Kathleen Forde comments on the difference of German and American attitudes when curating a new media festival. "I have to say that often I can find festivals like Transmediale or Ars Electronica devoid of an interest in aesthetics and conceptual rigor. What I find more important about these festivals (and more importantly about the conversations and conferences related to them) is that they open the space for dialogue and departure points for new ideas/collaborations. In terms of transdisciplinary work, for sure Germany takes the cake. America (from its museums to its universities to its funding bodies) is alarmingly Victorian in its approach, everything has its definition. Museums have departments (painting, sculpture, new media, architecture) that rarely are allowed to overlap. In all but a few cases art schools (unlike khm for example) do not allow for a multidisciplinary approach, but ask students to pick a medium before they have even found their artistic voice. Research institutions and funding bodies that support artist research are few and far between."

⁹³ Examples of particularly interesting exhibition concepts I was involved in:
Machine Culture, Siggraph Anaheim, 1993 (Simon Penny, ACM);
Voyages Virtuel, Les Virtualists, Paris, 1993 (Christine Treguier and Pascal Schmidt, Trois Suisse);
Arte Virtual, Madrid, 1994, (Rafael Lozano-Hemmer, Telefonica);
Interactive Media Festival, Los Angeles, 1993/94 (Lisa Goldman, Motorola);
Lollapalooza, Electric Carnival, 1994 (Paul Allen);
Telepolis, Luxembourg, 1995 (Stefan Iglhaut + Armin Medosch, Siemens/Burda);
Arte Virtual – Realidad Plural, Mexico, 1997 (Karin Ohlenschläger, Museo de Monterrey);
Medien-Kunst-Geschichte, Karlsruhe, 1997 (Hans-Peter Schwarz, ZKM Medienmuseum).
The Interaction, Ogaki, Japan 1995-1997-1999-2001 (Sakane Itsuo, IAMAS Academy)

10. Summary and Outlook: Electronic Gates for Electronic Arts

Where are the sought-after gates and doors suppose to lead? To the Valhalla of media art where the Gods are in each others company? Is it not rather about introducing media art and its influence on society to a larger audience in order to enable ongoing discussion and personal experience? Media art labs which deal with digital culture and new cultural technologies and include the public in such discussions can help media artists to develop and communicate their work.

Will Bauer, who created the tracking system used in Knowbotic Research's "SMDK" and co-created with Rafael Lozano-Hemmer in 1995 "The Trace", urges the European Union to take action. "The best thing governments can do at the policy level right now is to recognise the deep connection between Science and Art and start providing funding for projects that combine these two. These two areas were one until a few hundred years ago. There is every reason they should be together again like they were during the Renaissance. The recombining of these two in our philosophic world of thought could well precipitate a new Renaissance with results as important to humanity as the last one. The Canadian government is starting some preliminary experiments in this way - if they are not also going on in Europe, I would urge the European Union to consider similar measures."

Media art also suffers from a lack of public exhibition venues and distribution systems. If one wants these works and their influence on today's society (media-communicating aesthetics) to be made known to a larger audience, then in addition to the ZKM⁹⁴, we need more permanent institutions such as experimental labs in museums and media lounges in public libraries. The Brazilian cultural centre Itaù Cultural - financed by the bank of the same name – is exactly such an institution which shows exhibitions on four floors and gives people free Internet access in the media lounge on the ground floor. The video library also features top animation films with computer graphics for intensive study. Children and young people in particular but also adults can have a fun yet highly informative time in an ambience modelled on Verner Panton⁹⁵ in the middle of Saõ Paulo.

Of equal importance are the public access and distribution systems, the building of structures allowing information retrieval from the many different archives. "The challenge is to build dynamic archive adapter systems in order to create connected archives", says German media artist Wolfgang Strauss. "Furthermore we must develop radically new ways for information retrieval and browsing. In contrast to the human intelligence we need to employ machine intelligence. This doesn't mean to get rid of all the curators, but to create knowledge discovery tools to support curators and theorists." With the Internet platform netzspannung.org⁹⁶ at MARS Lab we have developed methodologies and interfaces for transfer of knowledge. The platform provides alternative access technologies and retrieval systems that take into account the requirements of the media sector and theoretical research. One attempt on structuring the knowledge is semantic mapping. "As a knowledge discovery⁹⁷ interface, the Semantic Map⁹⁸ makes it possible to find contents and relationships that conventional methods of archive systematisation are unable to identify. All documents are

⁹⁴ <http://www.zkm.de/>

⁹⁵ <http://www.panton.ch/>

⁹⁶ Internet platform and knowledge space for media arts and digital culture <http://netzspannung.org>

⁹⁷ <http://netzspannung.org/research/knowledge-discovery/en>

⁹⁸ <http://netzspannung.org/cast01/semantic-map/>

thus related to one another and are grouped into clusters according to their similarity. This opens up the curators mind to close the gap and cross the borders of various disciplines that contribute to media art”, argues Strauss.

The aim of this article and the suggestions and ideas given above are to contribute to the increased future support and promotion of media art in Europe. However, personal initiatives to work on unusual structures and unusual forms of co-operation should not be neglected.