

## Netzspannung.org : Knowledge Space For Media Art and Digital Culture

<b>Title</b>	Netzspannung.org
<b>Subtitle</b>	Knowledge Space For Media Art and Digital Culture
<b>Lead-in / Abstract</b>	<p>How can the Internet be used as a resource of interdisciplinary exchange concerning topical discourses, projects and developments at the interface between media art and media technology?</p> <p>netzspannung.org [01], a laboratory for media presentation, artistic production and intermedial research, elaborates tentative solutions to these questions. As an interface between art, technology, science and society, netzspannung.org is an information pool for artists, designers, scientists and scholars. The Internet platform communicates diverse activities from the media-cultural scene and since 2001 has been building up a continually growing archive. netzspannung.org documents topical developments and media art history in the context of theory, technology and research. This multimedia database can be explored with new knowledge discovery tools, which facilitate the handling of the information stored within it.</p>
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<b>Short biography of participants</b>	Monika Fleischmann & Wolfgang Strauss are directors of MARS (Media Arts Research Society) Exploratory Media Lab at Fraunhofer Institute for Media Communication in Sankt Augustin/Bonn, Germany.
<b>Full text</b>	<b>netzspannung.org – archive for media art and research</b>

### Monika Fleischmann & Wolfgang Strauss

A key intention of netzspannung.org <sup>1</sup> is not to leave the presentation of media art history to art historians and media theoreticians, but also to involve artists, researchers and developers. The production of digital culture presupposes

interdisciplinary work, meaning that discourse about this form of artistic creative process must also integrate all the disciplines involved. As a result, netzspannung.org was conceived as an interdisciplinary online archive to be built up with the participation of the community.

The word "archive" derives from the Greek word "arke-os", which means not only "beginning" and "origin" but also "rule", "authority" and "official place".<sup>2</sup> Initially the archive was an instrument of rule and control. Archives kept documents that attested to rights and privileges, legitimized institutions, and established rule over territories. Control of the archive meant control over the memory of a society. netzspannung.org, by contrast, no longer sees archiving as the administration of rule, but as the networking and management of chains of information. Accordingly, archiving at netzspannung.org aims to disclose the numerous positions in media art and research, to interrelate them, and to make them publicly accessible as an important resource for art, culture and commerce.

In July 2004 netzspannung.org's database<sup>3</sup> contained over 1000 entries, comprising texts and theoretical contributions from art, aesthetics and art history, media theory and computer science, multimedia presentations of artistic and scientific projects, as well as over 130 hours of video documentation of scientific/scholarly lectures produced in collaboration with prestigious cultural and scientific institutions. Lectures by internationally renowned scientists, scholars and artists, which can be retrieved in the area "Positions"<sup>4</sup> at netzspannung.org, cover a wide range of content. Thus, the film-maker **Wim Wenders** speaks on "Every Picture Tells a Story – of Places as Authors", the robotics researcher **Rolf Pfeiffer** on "Visualizing Intelligence", the art historian **Barbara Stafford** on "Images of Knowledge", and the art historian **Boris Groys** on "Baling out of the Image". Various interfaces show connections between the database entries and open different accesses. A purely visual and intuitive access to the archive is provided by the "randomizer". The "archive browser", on the other hand, offers a structured overview of the contents of the database. In addition, innovative tools have been developed for discovering knowledge.

While these interfaces allow intuitive or structured access, texts, such as can be found in the area "Media Art and Research"<sup>5</sup> permit access via thematic questions to the interaction of man-machine-man. Taking some typical examples by way of illustration, the topics "Explore Knowledge", "Cultural Heritage", "Take Part" and "Perform & Play" provide an introduction to basic issues of media art, showing interactions between artistic, design and scientific aspects. While the entries in the database give detailed information on individual works and projects of artists and scientists, the topics put these works into a theoretical, historical and media-practical context. Thus the texts form the foundation for searching through the database. netzspannung.org is also working on networking existing media archives: a new format has been developed in collaboration with MediaArtNetwork<sup>6</sup> known as the "hypermedia tele-lecture"<sup>7</sup>. When the latter is in progress, additional images, videos or texts are loaded from various databases and shown parallel to and synchronously with the lecture. Together with the areas " Learning Media Art " and the "digital sparks" student competition, the hypermedia tele-lecture is a contribution to teaching media art.

## netzspannung.org is a place of learning

Providing teaching examples, the heading "Learning Media Art"<sup>8</sup> shows how works of media art are created, how media art can be taught in pedagogical work, and how children and artists can learn programming. Dancing scrap-metal robots, a film whose running speed changes with temperature, water movements that control electronic sounds – when school pupils realize such installations, they not only grapple with artistic strategies, but also develop aesthetic-creative and conceptual abilities as well as media-critical skills. With its interdisciplinary nature, the teaching of media art also helps develop social skills – after all, media art is teamwork. School pupils, students, artists and teachers will find all kinds of ideas and suggestions for teaching media art to different age groups and at various educational levels. Teaching media art means structurally combining content from the natural sciences and the arts with aesthetic and technical issues. Media art at schools, colleges and universities must evolve as a key cross-disciplinary capability, especially in a highly developed society that is underpinned by education and innovation.

## netzspannung.org – training the next generation

The student competition "digital sparks"<sup>9</sup> provides an overview of the current training situation in German-speaking universities and colleges in the area of the New Media. The entire competition – from submission to adjudication – is carried out online. The digital sparks production prizes enable prizewinners to further develop or redesign their projects. The competition submissions are researchable via an interactive map. This map also provides a comprehensive insight into the teaching of media art at German speaking institutions of higher education. To this extent digital sparks is more than just a competition. It is a media strategy for supporting young media culture over the long term.

## Community services of netzspannung.org

The area "Community"<sup>10</sup> is the platform's open channel, where interested members of the electronic arts community can present and archive their own projects in the so-called "netzkollektor". netzspannung.org therefore provides registered users with an opportunity to publish their own work in a professional context. This is done through the provision of a so-called "workspace" as a personal working area. The "Workspace" turns the platform into a media laboratory on the Internet and can be understood as a kind of "Internet workplace" with an "Internet hard disk".

## Tools for visualizing and discovering knowledge

Basically there are two possible ways to access digital data: through a precise searching and through an imprecise "rummaging around". Searching presupposes that the user knows what he is looking for, that he can formulate his interest, and possibly define it more specifically or widen it. Rummaging around or browsing, on the other hand, implies that the user allows himself to be guided and inspired by what is presented to him. Just as powerful telescopes enable astronomers to see and understand space, netzspannung.org's knowledge discovery tools<sup>11</sup> are instruments for looking through, reviewing, grasping and evaluating large volumes of data – special tools that both afford an overall view of heterogeneous data volumes and visualize the data stocks as contextualized information spaces.

If we understand "knowledge" to be something that arises in social learning processes and is actively constructed by the individual under the influence of his environment, we can see that knowledge discovery tools represent important instruments especially for large and heterogeneous information pools. They offer different possibilities for accessing, filtering, and navigating – are therefore important functionalities, enabling an active, i.e. constructive handling of digital information. They allow content and connections to be discovered that cannot be disclosed with the traditional methods of systematizing and presenting archive content.

The principles of the knowledge discovery tools and the re-reading of the archive material as an intervention in data space are the basis of collaborative thought processes. According to Derrida, "real democracy is always measured in terms of this essential criterion: participation in and access to the archive, to its constitution and to its interpretation."<sup>12</sup> In addition, semantic knowledge maps solve the difficult problem of categorization in media art in favour of visualizing information across disciplines.

A central access to netzspannung.org's archive is provided not just by the traditional search and output interfaces, but also by the newly developed technologies of knowledge maps. Semantic Map and Timeline are dynamic interfaces that allow the content of the platform's extensive data archive to be grasped intuitively. The user is put into a position where he can cause information to be presented in different arrangements, can explore the data pool visually, and can discover knowledge exploratively.

See Fig. 1: Archive Interfaces <http://netzspannung.org/archive/?lang=en>

## Semantic knowledge maps

Semantic Map <sup>13</sup> is a map for the database which gathers all the content of the archive into clusters. It allows explorative navigation in cross-discipline connections on the basis of semantic relations. Through semi-automatic text analysis of the database entries and subsequent evaluation with a neuronal network, relations between individual documents are assessed, organized into clusters with similar content, and visualized accordingly. Semantic Map is, therefore, a map that shows the interrelationships among the database entries. It appears that the data know of each other, reminding us of **Marvin Minsky's** vision of books being able to talk to one another <sup>14</sup>.

## Chronological knowledge maps

Timeline <sup>15</sup> orders database entries along a time axis, which presents several parallel development lines or categories neatly differentiated. Here too new possibilities for generating knowledge across disciplines arise. For example, content from media art practice is juxtaposed with theoretical discourse from events. It is a form of visualization that creates new semantic connections, thus allowing things to be understood in another way.

## netzspannung.org perspectives

Online archives and public knowledge spaces on the Internet make an important contribution to the development of digital culture by processing current knowledge and making it available for general use. For some time it has been noticeable that – especially for copyright and economic reasons – access to knowledge on the Internet is becoming ever more restricted. However, students, trainees and those thirsting for education rely on free access to high-quality information. Knowledge is only socially relevant if all those who work in a particular area or are acquiring knowledge and skills in that area can participate in it.

Further development of the platform as a vehicle offering education and training affects both its technical and content levels equally. One objective is increased networking with other media-cultural online archives. To this end, web service technologies, for example, are being developed that will allow other archives to apply netzspannung.org's knowledge discovery tools to their data pools. In addition, an editing function is being designed for these tools, so that they function as authoring tools for developing theme- or context-specific teaching concepts.

Online platforms are a prerequisite for blended learning, i.e. for study groups that meet at physical locations to exchange ideas and use the network as a resource. Joint workspace, chat, webcast, streaming media give rise to a new community medium, which can also be used for teaching media art and its adjoining areas. In the future this medium may be expected to find its way just as much into cultural educational work as into education and training at universities and colleges, supplementing itself with "situated learning" (SiL), which can take place anywhere, nomadically using the Internet with the same personal environment. Where previously instruction was the order of the day in teaching, with SiL the students themselves are primarily active. Where previously knowledge was offered and taught to them, now they construct their knowledge themselves.

## Acknowledgments

Netzspannung.org Team  
<http://netzspannung.org/about/team/?lang=en>

<http://netzspannung.org/about/mars/index.xsp?lang=en>

## References

- 1 <http://netzspannung.org>
- 2 Cf. Aleida Assmann: *Erinnerungsräume. Formen und Wandlungen des kulturellen Gedächtnisses*, Verlag C. H. Beck, Munich, 1999
- 3 <http://netzspannung.org/archive>
- 4 <http://netzspannung.org/positions>
- 5 <http://netzspannung.org/media-art/>
- 6 <http://www.medienkunstnetz.de>
- 7 Model of a hypermedia tele-lecture, see <http://netzspannung.org/learning/lectures/daniels/>
- 8 <http://netzspannung.org/learning/>
- 9 <http://netzspannung.org/digital-sparks/>
- 10 <http://netzspannung.org/community/>
- 11 Novak, Jasminko et al.: "Discovering, Visualizing and Sharing Knowledge through Personalized Learning Knowledge Maps", in Van Elst, Ludger (ed.): *Agent-Mediated Knowledge Management*, Springer Verlag, Berlin, 2003, pp. 231-228
- 12 Derrida, Jacques: "Archive Fever. A Freudian Impression", in *Diacritics*, 1995, 25/2
- 13 <http://netzspannung.org/about/tools/semantic-map/>
- 14 Minsky, Marvin: "Can you imagine that they used to have libraries where the books didn't talk to each other?", in *Library Journal*, Reed Elsevier, USA, 1991
- 15 <http://netzspannung.org/about/tools/timeline/>

**Related internet addresses**

<http://netzspannung.org/community/?lang=en>  
<http://netzspannung.org/archive/?lang=en>  
[http://netzspannung.org/index\\_en\\_flash.html](http://netzspannung.org/index_en_flash.html)