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Pits, Lands und Licht – die Disc als kreatives Medium und interaktiver Wissensspeicher
(Pits, lands and light – the disc as creative medium and interactive storage of knowledge)
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Pits, lands and light—the disc as creative medium and interactive store of knowledge

The subtitle of this book "Video interaktiv:…" points beyond the purely technological aspects of the DVD and incorporates, with numerous examples, the wide spectrum of applications this versatile medium has.

The DVD, especially the video DVD, has long since achieved a leading position in the mass entertainment market. At the same time, its importance in the context of the exponential growth in information, aided by the dissemination speed of electronic mass media and in particular the Internet, is increasing significantly. It can be assumed that its role will—with a different technical basis, whether as Blu-ray Disc, as HD DVD or optical disc based on holographic processes (Holographic Versatile Disc), and also in combination with networks—become even greater in the future. However, the DVD cannot be regarded as an isolated phenomenon in terms of its cultural and social impact: it is much more part of a fundamental structural change of communication as a whole. Torsten Stapelkamp takes account of this development: the book is not an isolated look at technology, software and implementation in production, but rather an overview of the approaches that integrate media, complemented by numerous examples of content and application. "The DVD," he writes in his introduction, "is consciously described in this book as a content-carrier and not only as a data-carrier."

The DVD is primarily a storage medium, following in the line of numerous developments and precursor media, and continuously developed since then. As such it is not a finalised technology, but rather a stage in a progressive process. Therefore the DVD has—from the technical and the economical to the cultural and artistic side—many fathers and mothers. It is worth making a short review of them.

In July 1945 the American scientist and engineer Vannevar Bush published his article *As We May Think*. In it he described his vision of an easy-to-use, information-processing machine, the Memory Extender or Memex. It was intended to aid the human memory and associative thinking. The Memex was not only a type of multimedia library, which put saved knowledge at the "fingertips" of the user in image, text, sound and moving image. Two features made Memex revolutionary: it allowed, on one hand, user-oriented linking and hierarchising of content, and on the other hand, the addition of relevant user-generated data. Memex was thus an open, flexible, constantly growing multimedia system, which made use of special interfaces, including speech synthesis and recognition—a thoroughly topical model, in light of the global flood of information and the worldwide growth in scientific findings and knowledge. The media available to it at the time were connected to an individual memory, missing, however, were the capabilities of future PCs and the integration in an interactive, multimedia global network.[1]

In 1972, Sam Fedid, a British Royal Mail engineer, managed to transfer electronic text to television screens using the so-called "blanking interval" in the television signal. This videotex system, used by all broadcasters today and originally called Viewdata, opened an important phase in text transfer and elementary interactivity for millions of people via the television, which was, until then, focused exclusively on the image. It was, at the same time, the transition to the Videotex systems, the first interactive systems to be developed for global public use, that combined the telephone, as the transmission channel and the television set, supplemented by a decoder. In Germany the system was called *Bildschirmtext*/*Btx* and was tested in field studies, systematically inspected and further developed. In collaboration with

the Bundespost (German post office) and the European telecom institutions, the working group for Media Development/Media Research (AGM), under the leadership of Manfred Eisenbeis at the Offenbach University of Art and Design, implemented the analysis and redesign of the display performance, leading to the European CEPT standard at the beginning of the 1980s. This, the first comprehensive analysis and representation of the design possibilities of a new medium, was summarised in the programme MOSAIK in 1983, and published via the screen text system in around three thousand pages as well as in numerous printed publications. As such it was made accessible to the public, complementing the system expansions, so that people could develop their own applications and enable social testing, acceptance and use.

Decisive criteria, due to the foreseeable intercultural scope and importance of such interactive systems, included the fact that all knowledge and presentation areas could be displayed in both text and images as well as complying with ergonomic and aesthetic standards. These comprised, in equal measures, the universal use in economy, sciences, education, art and the complete range of private applications.

Manfred Eisenbeis, who then founded the Academy of Media Arts Cologne in 1989, summarised these technical system requirements and the resulting interactions in the term “media culture”: “Technological developments are, in this perspective, also always factors of cultural development that influence perception, communication and creative processes, as has been shown by the history of photography, film, television and, in even more lasting ways, that of printing.” This quote from his book *MOSAIK. Handbuch zur Gestaltung von Bildschirmtext*, published in 1985, has lost none of its topicality.[2]

The analogue LaserDisc can be seen as a storage medium precursor of the DVD. It was based on video resolution in PAL, NTSC or SECAM standard. The LaserDisc already included all of the basic features of the DVD. It could be played and navigated via remote control as a linear medium or via a menu, which contained extras such as audio commentary, trailers and background information. Filmmakers were often asked for a LD edition or produced new

transfers. This basis established the industry that helped the DVD to its current success.

In the 1980s, large film production companies transferred the editing of film to re-writable LaserDiscs run on PCs. Precise access to shots, including stills, already anticipated non-linear editing. At the same time the LaserDisc, connected to a PC or in some places also to Btx, was deployed as an interactive hybrid medium in museums, exhibitions, at trade fairs, as POS or POI, for the mediation of knowledge and as an interactive schooling and learning platform.

A novelty now existed in the coupling of Btx and LaserDisc, i.e. network and moving image, as developed, among others, by the author in the framework of the AGM and the HfG Offenbach. This enabled the retrieval of data that was currently being distributed around the network in association with video on disc and live TV. At the same time, an anticipation of the coming integrative and hybrid media systems, which continue to be developed now, was already apparent here.

The most complex interactive wall of information and split-screens of the 1980s and 90s, with 40 monitors and realised for a German Postal Ministry exhibition, was also based on this foundation. 5 LaserDisc players, live cameras and networked information could be brought together and, as required, be handled interactively via several terminals: an open system that also provided scope for further creative and artistic development. This network of media already concentrated the characteristics and potentials of today's extensive presentation media. Pioneers of interactive art such as Steina and Woody Vasulka, Titus Leber, John Sanborn and Chris Hales have, in the last 25 to 15 years, anticipated much of what once again, or still, occupies the younger generation of designers, artists, filmmakers and scientists today.

As early as 1983, Steina and Woody Vasulka used the advantages of several LaserDisc players synchronised with one another to produce the audiovisual space installation *The West—an electro/opto/mechanical environment*. The circuit was implemented as a loop. In their performance

Violin Power at the end of the 1980s, Steina played, for the first time, a MIDI violin with a PC controlled LaserDisc player. The allocation of the strings, variable tempi, rhythms, playing forwards and backwards could be transferred synchronously to the controls of the optical disc. Steina used the optical disc as an instrument, a kind of VJing between violin and optical disc.[3]

Titus Leber, art historian, author and film director, also discovered the potential of the interactive—or better—the "extended" film at the beginning of the 1980s. His LaserDiscs *Vienna interactive* and *Mozart interactive* were pioneering. Here he was already able to create new narrative forms from cinematic dramaturgy and the particularity of the interactive medium. He was able to realise his ideas of interactive, poly-structured narration in an even more advanced way in the production *What Did the Buddha Teach?*, an edition that comprised the scholar's universe on 3 CD-ROMs and which will soon be published as a DVD. The DVD version of *Mozart interactive*, revised and reissued for Mozart's 250th birthday, will confirm this successful combination of film, audiovisual feuilleton, information, expert knowledge and exploration. Leber, specialised in music films, including one about Gustav Mahler, tells the story of Mozart's life in compact episodes and strands of information. The most important pieces of music are presented in 80 video clips. These short versions are complemented by a direct link to the respective piece, which is then played in full length. The individual pieces of music can also be controlled via an interactive Köchel directory. This DVD presents, alongside one and a half hours of audiovisual and film material, musical playback of seven and a half hours in total.[4]

The British video artist Chris Hales and the American director John Sanborn are also trailblazers in interactive film and storytelling. Hale's stories began with the first CD-ROMs and the first possibilities to present moving images on the PC. *Jinx* (1996), the story of a complicated morning, progresses absolutely normally without the intervention of the viewer to start with. Through the decryption of several objects as mischief-makers and their activation by mouse click—or by finger point in the installation—the quiet beginning of the day is plunged into chaos. The viewer determines the order

of events. Hales experimented with numerous other forms, such as the "parallel streaming" of up to nine sequences, which result in one story. He describes his work, in dissociation with the classical cinema experience, as "interactive movies." In addition Hales proceeds along two tracks in his presentations: there are either installations (in galleries and at festivals, for the first time at the International Short Film Festival Oberhausen in 1996 for example) or he performs as guide or animator in front of a large audience: a concept in-between a cinema presentation and event, in which the audience influences the course of events, depending on the interface (including the tuning of sequences of notes etc.).[5]

John Sanborn, American video artists and television director, has experimented in almost every possible way in the area of new technologies. After HDTV productions for well-known music and dance groups, as well as advanced animation, he turned his attention to the interactive CD-ROM and the non-linear narrative. In 1994/95 he created, with the support of Marc Cantor, founder of MacroMind, the production *The Band*, a CD-ROM that is animated both visually and auditively through the intervention of the user like a scratch disc and thus, in ever new audiovisual loops, already anticipated DJing and in particular VJing. At the same time the legendary webisode *Psychic Detective* began, followed two years later by the equally successful webisode *Paul is Dead*. An unusual, completely new dramaturgy and narrative method was developed for both stories, a new format of interactive narration so to speak. Sanborn as director and Michael Kaplan as author also knew how to allow the media characteristics of the Internet system, including communication and usage behaviour, to influence the story, mediation and dramaturgy. Stories in the form of daily episodes were created, breaking down the boundaries between fiction, report, topicality and information. There is still considerable potential here, which could embrace the DVD as a narrative medium, in particular in connection with the Internet.[6]

So *Producing, Designing and Manufacturing DVDs* finds itself in a very creative and sophisticated neighbourhood. However, there are essential differences to the precursor media that are comparable to the marketing and

miniaturisation of video and digital cameras, as well as the telephone. The DVD is easy to handle, mobile, relatively robust and can be used, even by the technically inept, as a cheap storage medium. Whereas the production of a LaserDisc cost a small fortune in its first years and could only be manufactured with a relatively large amount of programming effort by a few specialised producers, its successor is treated as a cheap consumable. The manufacturing and use of media has changed completely in the last 10 to 15 years. Whereas the CD-ROM has already been declared dead due to the concentrated use of the Internet, it is apparent today that the user handles various media platforms much more confidently, also in terms of hybrid formats. This also includes the DVD. The integration of disk drives and burners in PCs as well as improved displaying processes and larger storage capacities have contributed to this significantly.

In the post-industrial society, in which—as Daniel Bell already stated in his book *The Coming of Post-Industrial Society* in 1973—knowledge is one of the most important resources, appropriate means of access and mediation must also be found. Storage media such as the DVD are virtually predestined at this time, through their wide acceptance and their good depiction and integration features, to take an appropriate role in this. Torsten Stapelkamp and his co-authors pick up on this current need and provide interested creatives, scientists and journalists with the pragmatic basics needed and selected case examples. The challenge remains for the future DVD authors and designers to enrich the media landscape with inventiveness and the talent to implement complex communication processes in stimulating and captivating ways.

If one asks about the outlook for the DVD and possible successor media, the priority will be, alongside a pragmatic use of the respective technological standards, the interactive mediation of contents and thereby the design of communicative processes with the goal of acceptance.

Yet at the same time, the goal is also about finding appropriate methods. Interactive film may be difficult to realise as a cinema experience, but it is not dead as the title of the second chapter suggests. On the contrary: filmic

characteristics such as the narrative quality, the nature of—and the emotional—address, a sensible segmentation and linking of processes and dramaturgic rules go far beyond the linear construction of the fictional and could thus contribute as a model to the further development and the better understanding of interactive communication processes.

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[1] Vannevar Bush, *As We May Think*. The article is reproduced in full at http://www.ps.uni-sb.de

[2] Manfred Eisenbeis et al., *MOSAIK. Handbuch für die Gestaltung von Bildschirmtext* (Nürnberg, 1985). In a close consideration of the interactive media-connected screen text, the publication concentrates on three fundamental features: the variety of content and range of applications, the mass-media character and the importance of a qualified visual presentation of information as prerequisite of information and communication performance. All content areas are already systematically introduced: economy, media, science, e-learning, entertainment, art and culture.

[3] Manfred Eisenbeis and Heide Hagebölling (eds.), *Synthesis - Visual Arts in the Electronic Culture* (Hochschule für Gestaltung Offenbach, 1989). This publication came about as part of an international UNESCO colloquium. It deals with the relationship between the creative disciplines and new technologies in aspects of education (electronic academy), the artistic process (electronic art and creativity) and the publication (the electronic museum) and already anticipates numerous current conceptions and approaches to this complex theme.

Steina Vasulka and Woody Vasulka: http://www.vasulka.org gives an overview of their artistic installations and experiments, including their use of the LaserDisc.

[4] Heide Hagebölling (ed.), *Interactive Dramaturgies: New Approaches in Multimedia Content and Design* (Heidelberg, London, New York, 2004). The publication deals with new forms of dramaturgy in terms of interactive works

from film or video to exhibition. Titus Leber, John Sanborn and Chris Hales, among others, present their approaches in detailed articles.

The complex interactive Mozart DVD by Titus Leber is depicted in detail at http://www.mozartinteractive.com

[5] Chris Hales, *Interactive Movies* PhD thesis (University of East London, Smart Lab, 2006).

[6] David Streitfeld, *A web of lies*. The dramaturgic methods of John Sanborn's webisode "Paul is Dead" were depicted in detail at http://www.washingtonpost.com from August 9, 1997. The very successful story integrates the conditions of the medium as well as communicational and usage behaviour as a structural feature. A model that has surely lost none of its topicality, also for interactive narratives with hybrid media

Alex Cohen, *Paul is Dead*. Alex Cohen described the content and structure of the webisode on the website http://www.wired.com from April 1998.