The arts and artists of networking
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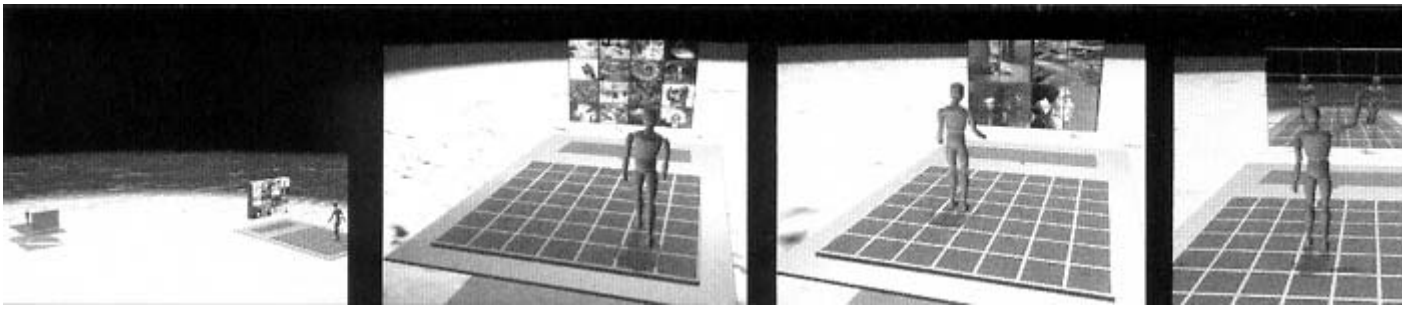


Projektgruppe Netzstadt (TH Darmstadt): "Fließgleichgewicht"

In 1922/23 Laszlo Moholy-Nagy informed a worker at a porcelain factory of the shapes and colors of his composition by telephone and by means of a grid paper and a color chart. Stove-enamelled presentations were realized in three sizes. The result was an isolated work of art despite the fact that it had no individual touch.

Separating the concept and the realization of the presentation was essential for these "telephone pictures". This separation of concept and realization contrasts with the ideas of individual style discernible by craftsmanship and of expression in established genres like painting and sculpture. As far as individual style is concerned Moholy-Nagy moves the focus away from craftsmanship to an indirect relation between shape and color. For the integration of new media into the art context it is essential to separate the concept (planning) from the realization of the presentation: prefabricated elements and combinations of elements are turned into elements of works of art, into artistic arrangements of functional contexts.

Since the 1960s the progress of entertainment and information media, like newspapers, radio, and TV, and the progress of the communications networks of the postal and telephone services have provided artists with an increasing number of possibilities for long-distance networks of input and output systems. There are one or more information paths or "channels" between input and output locations. Several input and output locations and input and output media can be combined in order to make works of art multimedial and multilocal. Electronic two-way links between data networks allow for interaction between any two points. Two-way links enable the output observer to put himself in the place of the input actor, and vice versa. Artists may program communication frameworks for interactive environments that observers/actors can access through data networks from different locations. The work of an artist is shifted away from craftsmanship to indirect shape-color concepts (Moholy-Nagy) and to media combinations and programmable communication concepts.

The art history of networking

In the following sections I will outline three artistic strategies for dealing with electronic and print media. The ways and means of media integration and the kinds of media used are correlated. This is reflected in the titles of sections 1 to 3. Section 1 looks at the integration of electronic one-way media into works of art through the ready-made method; section 2 deals with the combination of media as a method of criticism of conceptual art within the context of art; and section 3 presents examples of how net-artworks (net-works) integrate themselves into the urban context of networks. In sections 1 to 3 I will outline the history of media and channel networks from the late 1950s to the 1980s, which ranges from the integration of

broadcast media into traditional genres like painting, sculpture, and object-oriented art to the incorporation of artistic networks into urban networks.

1. The ready-made medium as a form of presentation/TV:

Since the end of the 1950s/the beginning of the 1960s Wolf Vostell and Tom Wesselmann have integrated functioning TV sets into pictures (Vostell, W. — "TV-dé-coll/age No. 1", 1958; "Transmigracion", 1958; "Millionen-Kasten II/III", 1958/59; Wesselmann, T. -"Still Life No. 28" and "31", 1963), montages (Vostell, W. — "Deutscher Ausblick aus dem Zyklus Schwarzes Zimmer", 1958/89), and installations (Vostell, W. — "EdHr", 1968; "Heuschrecken", 1969/70). In 1962 César attached a TV set without its casing to a scrap-metal sculpture and then put both in a plexiglass box with holes for the antenna, loudspeakers, buttons, and ventilation ("Television", 1962). The classic method of translocating isolated objects to exhibition rooms (ready-made) and incorporating them into montages is further enhanced by the functioning TV sets of César, Vostell, and Wesselmann: their sets can be hooked up anywhere and their screens thus emit unpredictable images at all times.

At the end of the 1950s/beginning of the 1960s Wolf Vostell and Nam June Paik began to focus their artistic strategies on TV-output manipulations. While Wolf Vostell (project draft, 1958; "TV-dé-coll/age für Millionen", photographs, 1959; "TV für Millionen", TV set, 1959/67) used the existing switches to manipulate TV images, Paik used the magnetism of a horse-shoe magnet ("Magnet TV", 1963-65) and a degausser ("Participation TV", 1965) to disrupt the electromagnetic waves in the cathode-ray tube and distort TV images. When Shuya Abe and Paik invented the video synthesizer in 1970, systematic manipulation of electromagnetic waves in TV tubes became possible. The video synthesizer was a precursor to computer-aided transformation of digitalized pictures.

In 1970 Richard Hamilton made a still picture from a TV monitor and used it as a motif for his silk-screen print "Kent State". The still picture was taken during a BBC newscast in May 1970. It showed Dean Kahler, after he had been shot at by the "amateur [National] guardsmen" on the campus of Kent State University during the students' riots. In 1971, Hamilton described the process of the satellite transmission of this event, beginning with the taping at the scene and concluding with his projecting it onto the screen, however, without any reference to the content. As a follow-up to this process of linking reproductive media and channels in a network, Hamilton produced a staggering 5000 copies of a 15-color silk-screen print: "Fifteen layers of pigment; a tragic chorus monotonously chanting an oft-repeated story. In one eye and out the other." (R. H. 1971)

Hamilton postpones the moment of freezing the transmission and reproduction process: by reproducing and distributing the newscast image as a silk-screen print, he continues the circulation process. Catalogues and art books showing illustrations of Hamilton's print "Kent State" add another phase to the flow of circulation. Hamilton makes us see the discrepancies between the indifferent reproduction and the actual event in Kent, Ohio. When Hamilton was overemphasizing one-way information in 1970 by duplicating the indifferent reproduction of a newscast in a sophisticated (15-color) graphic medium, Paik had already transformed one-way TV into a reactive medium in 1965. In 1969/71 Paik added to "Participation TV" and turned it into a closed circuit with a video synthesizer and four monitors ("Participation TV II). Hamilton's artistic model of the media practice and Paik's changes to this practice by modifying media technologies are two processes complementing each other.

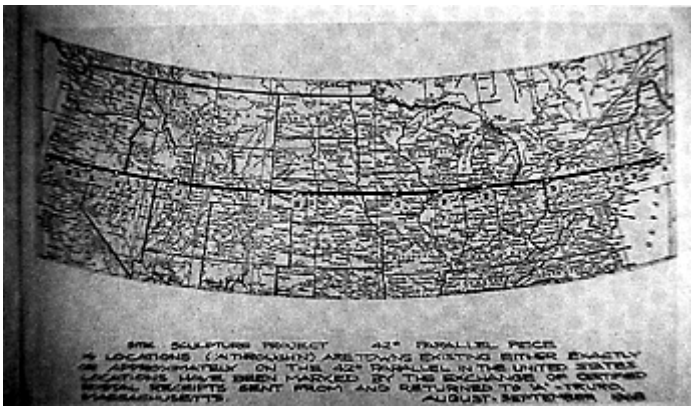
2. Combination of media/printing, postal and telephone systems:

In 1968 Douglas Huebler created his documentation system called "Site Sculpture Project: 42° Parallel Piece": he drew a line on a map along the 42nd degree of longitude. Then he mailed cards, without giving the street names, to chambers of commerce in cities on or near that line. From the post office he received 11 mailing receipts and 10 cards were returned to the sender. All this was then displayed together with the map and a text telling how it all came about. Douglas Huebler's multiple work documents a process. The difference between the postal system, which produced these documents, and the documentation system as a work of art is kept as small as possible. The documentation system becomes an extension of the postal system.

George Brecht used the postal system as early as the beginning of the 1960s in order to distribute his "event cards" outside the regular cultural framework. He mailed cards with concepts for certain events reduced to key words ("idea happenings"): the receiver could read them, interpret them freely and/or carry them out.

In 1969 Robert Barry turned the postal distribution system into a system of art ("Closed Galleries"): on invitation cards for a vernissage he added information on how long the gallery would be closed. By way of this information Barry substituted the vernissage as a social meeting place for a private act of reading. The only specification of the exhibit was a reference to its non-existence. Barry presents the invitation cards at exhibitions and in catalogues as the works of "Closed Galleries".

Barry's and Huebler's strategies of using non-artistic "channels" and media for artistic purposes was further enhanced by Joseph Kosuth in "The Second Investigation" in 1969/70.From the "synopsis of categories" at the beginning of Roget's Thesaurus Kosuth picked a number of subcategories (designated with Roman numerals) for various exhibition themes and then published them by way of folders, billboards, and newspaper ads. At exhibitions he displayed charts and boards with information on all the subcategories having been published in different places and media so far. Kosuth managed to link the medium "thesaurus" to various media of publication. He thus created feedback from these non-artistic media links to artistic media, i.e. exhibition rooms of art museums and galleries, via an information system.



While Kosuth focused on returning all non-artistic forms of presentation and information to artistic information systems and places of presentation in his "The Second Investigation", Daniel Buren went the opposite way. In the catalogue of "Summer Show", which was organized by Seth Siegelaub across America and Europe in 1969, Buren published information on the type of advertisement that he would use in order to advertise the Paris locations of the presentation of his two-color stripe iterations in "Les Lettres Françaises". The reader of the catalogue was thus informed on what non-artistic medium he had to turn to in order to receive information on non-artistic locations of presentation. The catalogue was distributed via systems that are an extension to the sub-systems of the regular artistic "channels" (the address file of the gallery owner Siegelaub, (art-)book shops). In "The Second Investigation" — a photo of a billboard presentation was included in the "Summer Show" catalogue. Kosuth himself performed the feedback from non-artistic media networks to artistic media, but Buren left it up to the observer to remember the artistic origin of the information that he had received via artistic media and that had led him to information placed in a non-artistic medium and eventually to Paris.

Walter de Maria had an operational telephone placed on the floor of the exhibition room in "Art by Telephone" in 1968 (Museum of Contemporary Art, Chicago) and in "Wenn Attitüden Form werden" ("Giving Shape to Attitudes") at the Kunsthalle in Bern in 1969. There was a sign next to the phone saying, "When the phone rings, pick up the receiver. Walter de Maria will be on the phone wanting to talk to you." The media de Maria combined

were the telephone, the exhibition, and the sign. The phone was used as an information channel between the artist outside the exhibition context and the audience within it. De Maria did not decide the topic of conversation, but the way this traditional non-artistic channel had to be used: it was the artist making the phone call, but he did not know whether his call would be answered and by whom. But is this not the same communicative context where the artist "sends" a message and has to wait for his "signal" to be received and decoded, which we also find with traditional presentation media? The answer has to be yes in terms of the initial situation when the phone rings. But when the visitor starts talking to the artist, the one-way communication from the artist to his audience becomes two-way.

3. Reactive combinations of media/urban networks:

In 1968 Ted Kraynik planned to install buoys with lights in the harbor of Boston ("Synergic Light Buoys"), which were to react to the number of telephone calls, to the street and subway traffic, and to the consumption of gas and power. In Yokohama Toyo Ito realized a performance of "Networks" for "Samplers", "Performance Devices", "Interface Devices" — for the purpose of interaction between samplers and between "Samplers" and "Performance Devices" -, computer links of harbor networks with other networks ("Computer Network"), and "Key Stations". The networks of Ito's multimedial and multilocal interactive system tied in with existing networks. The samplers, presentation media, and key stations of urban networks, just like those of the Network Performance, are situated in the same urban locations: in Yokohama, Ito crossed existing urban networks with newly installed technology. This kind of network transformed the context in two ways: Ito's network reached into urban reality and urban data, and his network of interfaces (i.e. the points where existing and newly installed networks were combined with each other) influenced events within the urban reality and urban data.

Text production through collaboration in the network

The possibilities of electronic data-exchange inspired artists in the 1980s to create and implement concepts for collective text production. The mailbox ARTEX established under Robert Adrian in the I. P. Sharp Associates Network in 1980 provided the technological basis.

In 1983 several authors in various countries were working on an interactive "planetary fairy-tale" as part of Roy Ascott's project "La Plissure du Texte". Visitors to the exhibition "Elektra", which was organized at the Musée d´Art Moderne de la Ville de Paris in 1983, were able to witness the production of a text on screens connected to the authors' computer terminals. In 1984/85 Norman White chose the transformation of a text through multiple transmission as the theme of his "Hearsay": within a period of 24 hours a poem by Robert Zeno was transmitted from one group of artists to another, and each time it was translated into a different language. The final product of this chain was then sent back to its origin in Toronto. In "The Heart of the Machine" by Ian Ferrier and Fortner Andersen (of ACEN = Art Com Electronic Network, available on CompuServe and USENET via WELL since 1986) the autobiographies of network users are integrated into the sequels of an "experimental novel" (Loeffler 1989). "The story is shaped by the identity of its readers" (Couey 1991). The users can call up the chapters they have contributed to: a "continual work-in-progress" as an "on-line environment". This work is expanded through new information, but previous structures of its organization cannot be changed.

The works presented here are limited to collectively producing a text on the basis of a plan of consecutive processes. "Connectivity", the added combination of old and new parts in the

work-in-progress, can cause authors and readers to change their views of passages read a long time ago in light of passages just read, which will have repercussions on the passages to be written. In this way, the relation between man and machine and the relation between the digital structure of the work and the observer's memory appear to be the difference between linear progression and recursive transformation.

Net-works with and within networks

Artists working with networks in the 1990s certainly have examples to draw upon: artistic strategies of media networking exist (see sections 1 to 3), which can be modified for projects with data networks and installations of electronic networks.

Media-critical approaches, which may lead to social and art criticism as a continuation of section 2, are possible improvements of the approaches represented by the use of mailboxes as free-access citizens' networks by, say, FoeBud (association for the promotion of public data transmissions and stationary data). The artist Rena Tangens introduced FoeBud into the art context, whose about 20 members manage to transmit information from the war zones of the former Yugoslavia across new borders and broken telephone lines via a mailbox in Bielefeld (Bionic in Zerberus). That social practice not related to art is the continuation of the practice of those artists that were summarized under the heading of "Art & Sociology" in the 1970s (Hervé Fischer and Fred Forest in the Collectif d´art sociologique, John Latham in the Artist Placement Group (APG), Stephan Willats).

Installations with computer-aided data-processing systems, which are fed data controlled by observers and external data by data networks, are improvements of those in section 3. For example, in 1994 the "Projektgruppe Netzstadt" (project-group "network city" of the technical college of Darmstadt, Department of Urban Planning) combined two reactive installations via a network. In two locations observers could control the images of one of the screens by means of floor sensors. These operations could initiate a continuous balance, in which the users could see and talk to the users of the other installation, or initiate computers that would regulate the manipulation and number of images, the changing of images and the acoustic signals depending on the degree of deviation. Through a set of harmonized operations the observers could reach the interface that allowed for visual and auditory interaction between these two locations. The proximity and distance between these two installations did not depend on the real distance between observers, but on mutual oberserver operations: "The city and the world can function properly, only if there is a continuous balance." This reactive interaction created a communicative framework between observers because of its program to maintain a continuous balance.

The use of a data network by FoeBud and the double reactive installation of the "Projektgruppe Netzstadt" are projects that were based on social issues and that followed media experiments in the art context. But they did not deal with artistic and aesthetic issues — in contrast to the decentralization of text production, which was collective, open, and serial in nature through "global connectivity" (Ascott, White, Ferrier/Andersen). "Networking" favors a limitless openness of the art context to issues arising from using the same systems, media, and media networks in a context not related to art. FoeBud represents a media practice which shows that non-territorial, free-access citizens' networks can be an example of how data networks may be used in art projects. The "Projektgruppe Netzstadt", as context-related conceptual art, gives us a concept and model for incorporating urban systems into networks. FoeBud is a model of art being used within a context, the "Projektgruppe Netzstadt" provides, parallel to the artistic practice of conceptual art, a concept of context by setting an example.

The question whether such models, which position the observer at the interface of an electronic system, are created by artists or experts in other fields — for example, the urban planners of the "Projektgruppe Netzstadt" -, is not essential for their quality of being examples and artistic models. FoeBud represents a paradigmatic use of media, and the "Projektgruppe Netzstadt" provides a media model for paradigmatic use. The alternatives "art within a context" and "context-related art", which came into existence by the 1970s, are revived in the network alternatives "use of art in data networks" and "artistic installations with data networks" in the 1990s.

Net-works in "electronic art galleries"

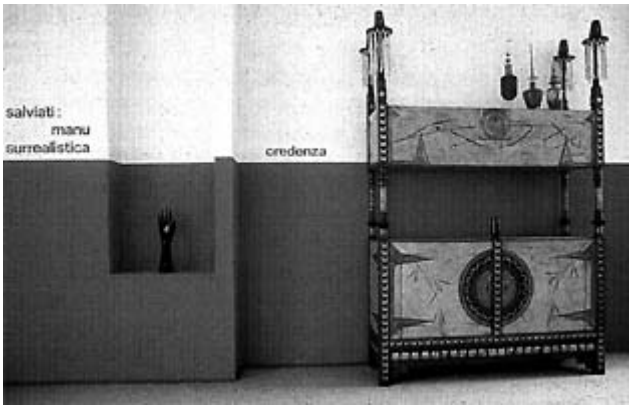
"Reiff II-Museum" is a program into which images can be fed via a computer in the infobus of "Mehrwert e.V.", an art association in Aix-la-Chapelle; these images can be called up on the Internet. "Reiff II-Museum" is not the first network to be used to present art works to the public. In 1986 Jan Hoet organized "Chambres d´Amis" from the Ghent Museum van Hedendaagse Kunst: on entering the museum one received a ticket and details on the locations and exhibition times of installations in 51 private homes. The museum rented bicycles and provided taxis. Like Kosuth in "The Second Investigation", Hoet linked non-artistic presentations to an information system within the realm of art. The museum is not only the place of exhibition, but also the headquarters of information on art activities outside the museum. In Siegelaub's "Summer Show" of 1969 there was only one central medium, i.e. the catalogue listing all exhibitions across America and Europe, but no central institution. As far as "Reiff II-Museum" is concerned, the computer program for storing images is the central medium, while the terminals for the digital input of images and the distribution via the Internet are decentralized. The "electronic art gallery" of the Art Com Electronic Network, however, replaces the catalogue of the "Summer Show" and presents electronic art works via data networks, as these art works need not be physically displayed (cf. the "electronic gallery" of the KUNSTLABOR in Vienna). The "electronic art gallery" is a work of art that contains works of art. Through an electronic network of art institutions it is possible to make electronically stored works — even exclusively — available via private terminals. So, you can access art works that rely on presentation and distribution through "electronic galleries" from any place that is hooked up to a data network. Within the "art network" art works may be entire "electronic galleries", which are displayed as galleries within a gallery.

The work of art — a communicative framework

Works for data networks may provide a communicative framework. This framework enables the user to add comments or to restructure the framework as such. Throughout this process the user/player moves within the rules of a given communicative framework. The player modifying the rules moves from being a player playing according to the rules to being a player playing with the rules ("rule player"). The programming artist can provide an easy-to-use language for the purpose of modifying the rules of the communicative framework in order

to enable as many players as possible to reach the status of a "rule player". The programming artist becomes the programmer of programming options, a programming programmer. When the framework is restructured, the relation open-closed becomes important: does it gain openness because of a lack of closedness or because of a closedness that has been caused by an internal differentiation of its sensitivity towards its environment? "Environment" in this context means the number of moves of the players and the operations of the users; "sensitivity towards its environment" comprises the number of possible reactions of the communicative framework to the players' moves. As for networks with a modifiable communicative framework, it is essential to observe whether the users' interventions raise or lower the framework's sensitivity and its ability to react to subsequent operations/moves. An artist may subject his communicative framework to this interaction test or try to prevent the loss or entropy of complexity by way of blockades.

Artistic communicative frameworks in the "art network"



A contextual analysis may help to find ways to define or avoid the limits between electronic networks of art institutions and electronic net-works. The net-works themselves may perform this analysis by making their concept and its relation to the given context, i.e. the "art network", explicit: conceptualization through investigation of the possibilities (and their limits) of self-incorporation into prefabricated (and modifiable?) electronic contexts.

This conceptualization of data-network communication can have room for user operations or can itself be modified. The user can switch from being a player according to set rules, to being one playing with the rules of the communicative framework set by the work. For the purpose of internal communication about this switch of roles a superior system or information framework is needed. This communicative meta-framework can transfer the conceptualization of the possibilities of the role switch within the work to the playing and programming options of the "art network". The established "art network" provides the rules; the communicative meta-framework of the net-work selects some of them and either adopts them as a meta-framework of the work or discards them. The meta-framework may comprise two levels: one level for the reflection of the relation of the moves of players to the modifiable rules of games inside the work, and another level for the reflection of the relation of the work's communicative framework to the "art network". These two levels or meta-frameworks for works within the work and for the context may be split into two more levels: one for the modification of the framework, and one within the framework giving access to lower levels. So, the meta-framework is split twice in two ways: there is a work-related level and one related to the context; each consists of a level for the presentation and reflection of the internal rules and a level providing for the modification of the rules. But this double meta-framework requires an additional framework for the reflection of the stratification, i.e. a meta-

meta-framework. If this meta-meta-framework is to be open to modifications, it, too, will have to be structured into an internal level of the presentation and reflection of the stratification and into an external level providing for variations to the stratification. The works whose sole theme is art as a communicative framework together with its rules and their modification in the "art network" do not have the levels of work-internal rules and rules modifications. If an artist conceives a work as an alternative "electronic art gallery" with access to electronic works and opens works, e.g. a gallery, within the work to modifications, a sufficient differentiation will lead to the eight levels mentioned (diagram 1). These levels belong to four communicative frameworks, with three of them having one level each for modifications: rules of the works within the work (without a modification level), reflection and modification of the rules of the works within the work, reflection of the rules of the context and modification of the reflection of the context, reflection and modification of the meta-rules (the stratification) of the relation of the work to the context. The modifications of lower levels may lead to a decoupling of higher levels or to the return to the top modification level, which can effect deconstruction and/or reconstruction of the stratification.

The stratification of an "electronic gallery" created by an artist for an established "art network" corresponds, in terms of its specific themes, to the artistic installations of art works at art exhibitions and museums such as those created by Michael Asher, Marcel Broodthaers, Daniel Buren, Ed Kienholz, Joseph Kosuth, Gerhard Merz or Daniel Spoerri in the 1970s and 1980s, but without the levels for modifications (diagram 2).

The "art network" as a "permanent conference"

The network installed in or instead of an art institution can contain positions of critics, artists or other network observers, who deal with the work's concept and the definition of the status of art. Such dialogue positions in the "art network" serve the purpose of talking about the artistic net-work. The dialogue positions may also become the theme of an electronic net-work. As for the established art context with its strict hierarchical separation of the work and its presentation, the separation of the art work from the institution of art reaches a critical point when the net-work consists of a proposal to deconstruct and/or reconstruct the function of the network of the "institution of art", when the artistic proposal is circulated in this "art network", when network observers actually implement the proposal of reconstruction, and when it is accepted as a new rule in the art context. The net-work thus transforms itself from an artistic contribution into a component of the "art network".

Joseph Beuys' proposal to make the museum the venue of the "permanent conference" — which he also propagated in the context of museums — could be implemented on a multilocal basis via the dialogue positions of an "art network". The dialogue positions can be defined and modified by a permanent criticism of the communicative framework of art. The alternative practice of "free-access citizens' networks" can thus be applied to art operations. Examples of this critical art of dialogue are Joseph Beuys' information office of the "organization for direct democracy on the basis of plebiscites" at the documenta 5 in Kassel in 1972 as well as the panel discussions organized by members of the artists' group Art & Language at Australian museums (National Gallery of Victoria, Melbourne; Art Gallery of South Australia, Adelaide) in 1975. At these panel discussions the Art-&-Language member Terry Smith talked about the international predominance of American art and American art trade from an Australian point of view. The net-works, which criticize the context from within data networks, can continue and differentiate these forms of anti-art (and then art-about-art), which since the end of the 1960s has been institutional criticism within the art context.

Net-works

Since the trail-blazing achievements of object-related art and its first "happenings", new forms of presentation have abolished established art definitions and art definitions have been used to keep new forms of presentation away from art. Media and channel networks no longer trigger modifications of art definitions by way of a change of media (a change of the forms of presentation), but by way of combining media and channels. Technologies, not genuinely artistic, but with an artistic background, are integrated into concepts which provide for interactivity, collaboration, dislocating and relocating, multi-world simulations or changes of program within a program, and transformations. This does not necessarily create "intermedia" (Higgins 1966), syntheses of art works, mixed forms, and new entities, but interaction with observers and the environment may develop structures that can be transformed and differentiated and that can transform and differentiate themselves. In this way, the art works are becoming processes capable of constituting and modifying the institutional framework: the connections between the institutional framework of art and the communicative frameworks of art works, and between the "art network" and net-works can be shown as connections between two levels varying in transparency: whatever one level lacks becomes apparent when we move to the other. Either of these levels, net-work and "art network", may be made up of several sublevels where the relation between the work and the context can be differentiated. Multi-level net-works complicate their relation to the "art network" in such a way that it becomes very likely that a net-work has already provided the "art network" with a modification of its (meta-)meta-framework, before the "art network" in its previous state has been able to react to it.