Multi-sensuous Mediator: Evolutionary Interactive Art through Network

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Abstract

Recently, as information communication network is expanded as a result of development of network, interactive art work that may be changed in real time transcending time and space is produced and implemented. In order to achieve interactive communication relation among the audiences through art works, temporal, spatial limitation is transcended. Participation of the audiences is implemented in a form of interaction and mutual exchange between art works and audiences is represented through interface of art works. After the art work is reacted by the audiences and has a formative transformation for a behavior, it affects not only art work itself but also environment among audiences. In this study, randomly connected structural environment of network is created by manufacturing multi-sensuous mediator that gives emotional immersiveness (flow) to the audiences. And audiences are making an advanced network by a process of generation, extinction and consolidation of community through a system. By storing multi-sensuous mediator in information of random majority, created customer information sometimes becomes extinct by other customers and it passes through a consolidation process in a process of a sharing activity. Communication space among audiences is formed by making dynamic network environment through participation of audiences in an interactive art work.

Keywords: Art installation, Interactive art, Community, Mediator role, Network, Multi-sensuous

1. Introduction

Sensing has interdependent, inter-facilitative relation and it shows better ability of processing sensory information than one sensory organ demonstrates its ability. Recognition phenomenon is taken place by interaction of sensory organs. Multi-sensing corresponding to a complex sensing recognizes external target through external/internal sensing and exchanges with environment by inducing a behavior through body movement. Generally, interface resorting to multi sensing is realistic. Owing to development of sensing technology, art work cases applying multi sensing interface could be seen commonly even in interactive art field as it contributes to art work participation level, immersiveness and hedonic qualities of the audiences. This multi sensing is required to be converged with community process by matching it with environment of contemporary society of which human network is composed in a complex form and in that case, identity of one's own could be established by storing personal information as a media of interpersonal communication. This may be used as a hyper-personal media through which consolidated community could control relation and it could contribute to advanced spatial formation depending on use and application method of mediator. It plays a mediating role of connecting audiences who wish that more people would hear and appreciate their own story. Multi-sensing mediator that forms bond of sympathy and

makes other people pay attention to their own story has an attribute of being able to show audiences of random majority as a connected structure depending on passing of time in a designated space. In addition, it connects diversified messages by re-plotting instant messages and re-analyzing it as an art work so that it could be understood in a new perspective. As a lot people express their own thinking and story through SNS, instead of this, an effort of trying to form a band of sympathy for the messages is being exerted through expansion of diversified media in reality.

2. Relevant Study

In the existing traditional media, if we say that a method of exposing one's own self by a writer was temporally and spatially restrictive due to limitation of media, such restriction was lifted owing to rapid development of technology. In online, private personal story is opened to random majority and appreciated. In particular, in early net-art, network structure could be found. In Figure 1, we could read a short love story being connected with hyper-text of 'My boyfriend came back from the war, 1996' of Olia Lialina, Whenever encompassing frame of audiences and clicking it, story is developed and visitors are anxious to know how their relation would end up. This work implying happy ending through a marriage proposal emotionally shows an image of lovers under a special situation called war. This story may be a story of a writer or a virtual story. However, this story is shared by everybody who visit this site based on a private story. Even at present, when visiting this site, it could be appreciated online. It is composed of several frames of black and white and even though it is a personal situation, as some part of it handles confidence or belief, audiences show sympathy over the story of writer.
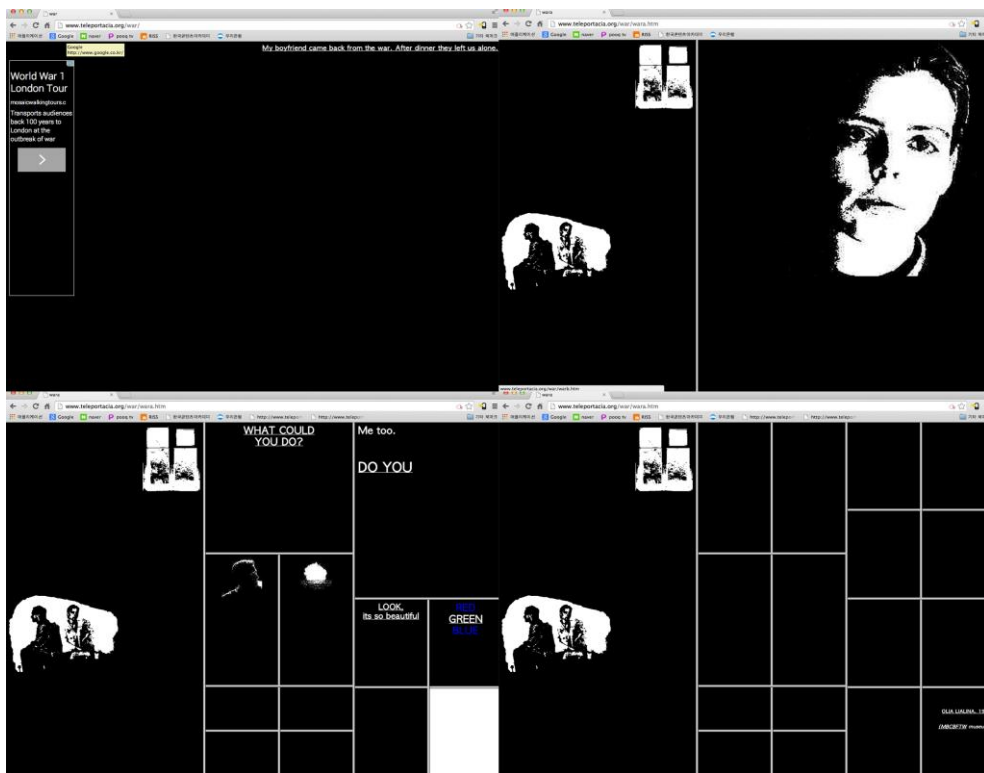

Figure 1. My Boyfriend Came Back from the War, Olia Lialina, 1996

In early net-art, if the visitors should read the work based on scenario that had been already plotted by a writer, it has been evolved to complicated aspect under the present time when network technology has been developed. Interaction in a process of collecting and re-analyzing information in real time becomes more dynamic. Personal information acts as an independent element but it was born again as a new form under the flow of time within the relational geography of such individual.

As a work of inter-weaving even relation of audiences, the work of Alessandro Ludovico and Paolo Cirio could be cited as shown on Figure 2. 'Face to Facebook' was manufactured based on information collected from facebook and expression of faces were analyzed by bringing user profile photos numbered app. 1 million. By using algorithm of recognizing face, expression of smiling users was classified into climber, easy going, funny, mild, sly and smug and it applies to www. Lovely-Face.com that is a virtual date web site. Private information of users is stored and it is used in other form. In order to maintain essential interactive relation, communication system is required to be smoothly established and through connection between each object, human-oriented communication encompassing space is taken place. As appearance of interactivity does not end at aesthetic condition and its content at hedonic condition, a work that may generate a meaning by forming a real interactive relation is required to be produced.

Figure 2. Face to Facebook, Alessandro Ludovico $ Paolo Cirio, 2011

'People's Portrait, 2004, 2006', the work of Zhang Ga as shown on Fig. 3 shows interactive relation well. Information of taken photos is collected in real time and displayed at electronic display of Time Square, New York,, several cities and screen of art museum by installing booth of Kiosk type that may shoot and transmit one's own photos to various city space of the world (New York, Singapore, Notre-Dame, Linz, Brisbane) based on project that may bespeak identity and culture through network. Large-scaled tourism board that showed the works in a general form and has been faithful just to advertizing role creates even relationship among audiences due to interaction with real time audiences as it was connected with network.

Figure 3. People's Portrait, Zhang ga, 2004, 2006

3. Study on Interactive Art Work

3.1. Work Concept and Hardware Configuration

This work has been progressed through 3 kinds of version. First work is signal capsule. Its landscape obtained an inspiration from making a clear, tinkling sound of bell as it sways as

the wind blows by hanging a paper fish-shaped pendulum. While thinking about a work for expressing wind, outside design of wavering floccus and a form of glowing light and ringing sound when swayed by wind were implemented in the work. Emotion of the people is stimulated by tactile sense as it is covered with soft hair. In order to leave lingering imagery in movement during swaying, thin and elastic piano wire was used. Internal circuit was composed of tilt switch, led, buzzer, coin battery and PCB substrate and outside was covered with PVC capsule.
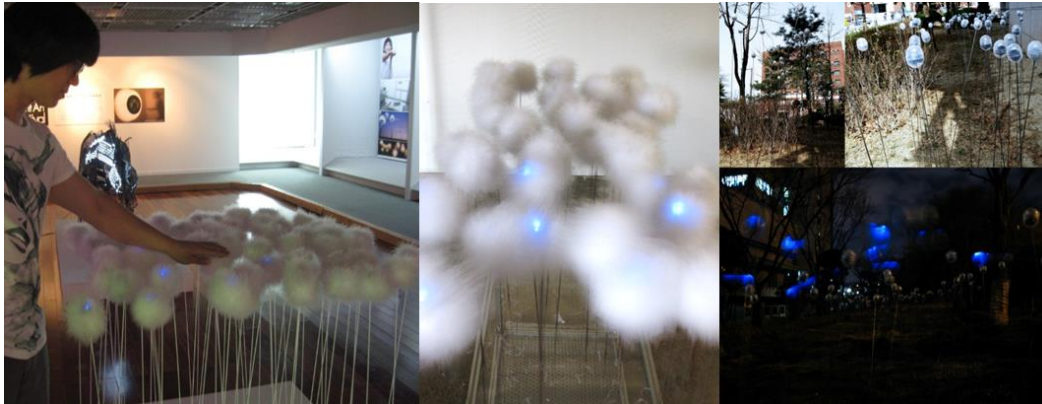

Figure 4. Signal Capsule

Developed work as a second version was to make storage system containing trivial story or confession of the people and in addition to this, other information was created as own information of audience becomes network and this environment creates another network. Personal instant message is stored and displayed in a designated space by random majority. Appearance of the system is very similar to the work of first version. Circuit board installed in capsule inside is made of mike, storage system, small speaker, tilt switch, mercury battery, pressure type button and LED. Sound created by audiences is transmitted to small built-in mike and its volume not more than 15 seconds is temporarily stored in main storage system and all the contents are continuously transmitted. At the same time, LED is operated and it lights only when tilt switch is operated and color change and strength of brightness are adjusted. As steel wire of 1m under capsule is connected to the part of wooden stand and it plays a role of fixing with floor.

Figure 5. Conception Diagram of the Record capsule Ver.1

As an operating order, audiences perform recording by pushing red button protruded in capsule hung at the end of steel wire and by shaking capsule with hand, stored sound playback information is heard. Information stored in several capsules is exposed to random

majority and tilt switch is designed to be operated even by sway of wind. Displayed works were installed so that those works would be distributed in diversified space of exhibition hall by making app. 100 capsules.
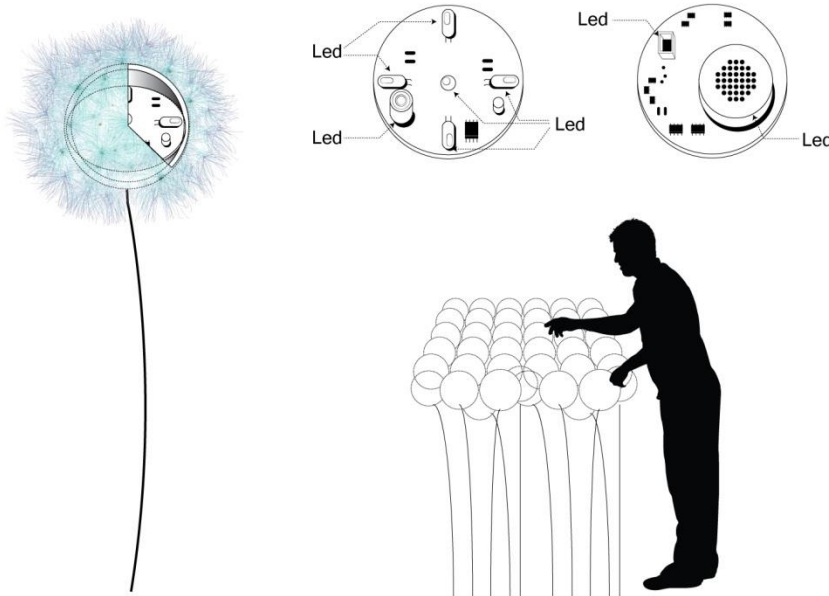

Figure 6. Record of the Capsule Ver. 1

Finally, thirdly produced work was made by supplementing shortcomings of second work. Mounting battery and touch sensor was a starting point of the biggest change. And so, internal pattern followed roly poly type so that it may be placed on any space. Outside design was also made in round shape by matching with such type. In a round part of upper side, PCB comprising LED, mike, tilt switch and touch sensor were mounted and in the lower part, pendulum for maintaining balance, battery, speaker, power and volume switch, charging cord were internally fitted. As an operating method, when touching lower part of round capsule of the upper part, touch sensor stored sound by sensing. And then whenever being swayed by audiences, stored sound is played back. Light expression of capsule in upper part repeats lighting and darkening in diversified colors like breathing when the system is fixed without swaying.

When touch sensor is operated, color at that moment shines most brightly and when sway is sensed, its color repeats lighting and darkening like breathing.

Figure 7. Record of the Capsule Ver.2

Figure 8. Component Manufacturing of the Record Capsule Ver.2

3.2. Multi-sensuous Media

As grass, reed or insects in the field makes sound while rubbing each other being swayed by wind, this work also shows diversified information in a simple motion of swaying. And as outside of capsule reacts as light similar to that of firefly, it was made to be touched or pay attention to capsule by audiences. Visual effect using soft tactile sense and light is satisfied at the same time. Affordance like this provides audiences with strong charm and transmissibility. While providing audiences with visual, tactile, auditory effect at the same time, interface of complex form is furnished and this provides audiences with an opportunity of diversified synesthesia. Interactivity between media comprising work and audiences empowers derivative media and makes it in a similar way as experience of consciousness that may be actually encountered by us. In case of derivative media without interactivity, by leaving audiences in a passive state, appreciation needs may be reduced. This work could be connected through repeated, simple learning and during its process, information stored by oneself could be heard again. In a process of reacting by perceived behavior, the work is completed. Afterwards, while naturally showing concern over information created by other person, communication among audiences through mediator could be guided. Human perception experiencing synesthetic stimulation is important for principal appreciating art work and this comprises mediator. Therefore, participatory features as multi-sensuous media are required to be emphasized and it performs a function of intervention among audiences. Audiences are affected by environment that induces immersiveness in order to experience immersiveness continuously while using multi-sensing media. Together with strong interaction depending on situation, feedback and continuous sensuous stimulation are required to be provided. In addition, by making audiences feel direct participation and

approach experience identification through personal experiental perception, participation level and satisfaction are increased based on story and experience of audiences themselves.

3.2. Evolved Network

Network being formed by feedback of interaction provides relationship among each media. Media affects thinking and communication mode of people who use such media and resultantly it changes pattern of art work. Characteristics of two-way communication network is that relation between media and users is complementary. The reason of real time flow of change being generated in interactive art is that behavior of audiences having communication in such art is reflected, rather than a technology applies. Art work connects all the personal information and makes audiences as component of network at the time of participation. It is completed by connecting with an essential human-oriented communication. Network features of interactive art basically enables interaction between audiences and art work, that among audiences through art work and that among art works. In addition, network structure enables communicative relation transcending time. Community under this relation has a process of generation, extinction, consolidation. In interaction between audiences and art work, community is generated and in order to provide a new generation, a process of extinction is provided.

And community among art work means community among audiences and this could be regarded as a process of its consolidation. This process of community has a meaning of dynamic network. Mediator having personal information of audiences performs a key role in network structure. Under this process of feedback being repeated, it could be seen that a new band of sympathy is formed and as communication space itself is activated, it is evolved. Art work space that provides direct connection from a simple interaction is made to have vitality having personal information and network structure at the same time and it plays a role of communication media at the center of diversified relation as an interactive art. Interactive communication becomes important and this communication space becomes a space of art work.

4. Conclusion

Result of diversified attempts of trying to include behavior of audiences into communication situation leads to suggestion of diversified interfaces. Realizing that human sense is perceived simultaneously in a multiple form, affordance for multi-sensuous media makes high participation level and immersiveness. It becomes a window through which diversified personal information is shared among audiences. A process of storing instant messages being occurred in the art works and regenerating it video-auditorily eventually becomes media connecting audiences. A new communication mode in 21c being experimentally suggested and determined as a media in art is required to become multi-sensuous media. As expression of sensuous element is added owing to development of high-tech technology, audience-oriented thinking is also required to be developed. Interactive art regards interactivity most seriously and in realizing this, network among audience, art work and writer is formed. In this study, while producing and developing art work in 3 versions, interaction with audiences was included and communication among audiences as a feedback of art work was considered at the same time. Art work of first version was implemented by multi-sensuous media but in its feedback, consolidation process of community was not provided. In the second version, communication among audiences was guided based on communication among art works by supplementing above and in third version, a process of arranging multi-sensuous media was progressed. As a result, an effect of participation level,

immersiveness and hedonic qualities of the audiences being increased was represented. It could be realized that diversified audiences experienced mediator at a designated place, produced personal information countlessly and shared it and boundary among audiences was demolished. It played an important role in providing art work space for communication in a way of forming dynamic network structure with multi-sensuous media having audience-oriented emotional intention. Historically speaking, along with development of a new technology, artists utilized this technology as a tool of art but technology media of today as a multi-sensuous media of complex form becomes an important element to an extent that it could specify thinking form and contents toward art from a simple tool in the past. In the future, it is hoped that feedback with art work would be taken place based on audiences through their direct participation in artistic activity rather than observation of art work. In addition, as a result of sufficient participation of expanded art is made even in cultural ecosystem, cultural communication process is intended to be realized based on artistic expressions of diversified forms.

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