

# eSphere: a new approach to a clickable world

an inspiration document

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## eSphere: dash in, do more

This most certainly seems to be the era of social media. The fast adoption of the smart phone has allowed a great number of people to continue tweeting, updating their Facebook or checking in with Foursquare at any time they want. Grouping these developments under 'web 2.0' has proven instrumental in suggesting that the development of the web has taken a significant new direction: one towards connecting people and the shared creation of content. It has also inspired speculation about the next paradigm shift, predictably under the heading of 'web 3.0'. Yet for all the benefits of the browser becoming portable via your phone, it may not be in the direction of more web functionality that the next development will take place. By making browsing independent of a desktop monitor, by enabling people to surf-as-they-go, a new turn may have been introduced: connecting the physical world with the web.

This year at STRP Festival (Eindhoven, The Netherlands) the field trial of the 'eSphere' will be conducted. The eSphere is a prototype of a festival interactive experience to share together actively (FIESTA) that seeks to explore how the hard boundary between the physical world and the virtual world might start to blur. In the eSphere, festival visitors can 'dash': using an RFID chip participants can connect to a physical object (e.g. an art work) thereby simultaneously establishing a virtual connection. Dashing enables participants to describe the meaning and value the art work has for them (using key words and points), helping create a key word tag cloud as well as an overall picture of what dashing visitors value in the STRP Festival in its entirety, and why.

The eSphere was inspired by the assumption that it would be interesting to combine two trends:

- (a) the development from broadcast information transmission, to interactive and shared communications towards collaboration and
- (b) the trend sketched above (from accessing the web behind a computer, to being able to browse everywhere on your smart phone to the phone helping to connect with the real world). Ideally the field trial will help explore to what degree both trends can be combined.

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Collaboration	Salesforce.com		eSphere
Communication	Forums	Facebook LinkedIn	Foursquare
Information	Google Sites		Layar
	website	+ (mobile) social media	+ reality interaction

1. The position of the eSphere in the web development trend space

See figure 1. for an attempt to visualize this trend space and to position the eSphere in it.

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In short, it is believed there may be three characteristics that distinguish the eSphere:

- (1) its starting point: an attempt to facilitate a meaningful interaction with a real world object ('checking into' a space on Four-square can be a –fake– virtual activity in a virtual environment only), preferably one that can be enriched by interpretation, like an art work
- (2) its functionality, by combining festival services to the individual participant (e.g. an event recommender) and facilitating the interaction with his or her friends, it becomes possible to get visitors to collaborate in jointly interpreting and making sense of the art they experience and
- (3) its target experience (the experience it aims to provide) is approached and introduced as something unique (eSphere) in which a new type of activity (dashing) can create a new type of experience

This document is intended as a white paper, to provide background information about the eSphere and its 2010 field trial. The eSphere will be described in more detail, including the activities that can be performed by the visitors and the consolidation of their results. The main questions governing the field trial will be clarified. Current ambitions for additional functionalities are described (e.g. the current level of collaboration is, although innovative, limited to creating a collective representation of a festival experience; what could people really do together on a festival? What type of collaborative work is really possible? Those are rather intriguing questions...) Participants and descriptions of their contributions and their expectations can be found in the addendum.

# 1. eSphere: what is it?

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**In its simplest formulation, the concept of the eSphere is: an open environment where physical and virtual reality come together, where participants are stimulated and inspired to collaborate and co-create in a way that intensifies the interactive festival experience.**

Clarifying this concept in more detail, with 'open environment' we mean that in principle everyone can participate and also that the application that creates the environment is 'open' on the application side, meaning that other parties will be able to develop additional functionalities for the eSphere. The eSphere is not intended as a virtual experience only, or a virtual representation of a physical world; the eSphere seeks to explore how the physical world can be enhanced with virtual functionality – this is what we mean with 'where physical and virtual reality come together'. The intended effect of the eSphere is 'social', i.e. more than providing extra services to individuals: the effort is dedicated to realizing a new type of collaborations and new types of knowledge creation and sharing. The eSphere isn't a stand-alone activity or application, it plays a role in exploring the 'festival of the future'. That is the reason it is made explicit that the eSphere should intensify the interactive festival experience.

The insight the eSphere was based on, the basic motivation behind its development, was the observation that new ICT (internet, intranet, email, groups, forums, personalized mails, real-time streams, non-stop social media updates etc.) not only brings more information to people. Quite a few people spend a substantial part of their professional life these days obsessed with the necessity to avoid their inbox growing out of control. Sometimes it seems that the more emails you reply, the more replies trigger new emails. Perhaps a cynic might even argue that the net result of web 2.0 is too many emails, an unmanageable number of friends and too many passwords to remember for all the applications that need to be kept up to date...

It was believed that a potential consequence of this observation could be individual's needs to not spend so much time on-line, but to spend it in the real world, with actual friends, doing something that is enjoyable rather than avoiding a panic attack that goes with an exploding in-box. This assumption of 'place matters' fuelled the development of the eSphere concept (for more elaboration on this point, see the theoretical background paragraph 4.1).

*A 'dash' is a punctuation mark used to illustrate a relationship between two things. (Source: Wikipedia)*

## 1.1. How does it work?

Visitors to STRP Festival are provided with an RFID chip they can use for dashing. An RFID-chip they already carry is enabled (e.g. one from the national public transportation card in the Netherlands or the city card from the home town of STRP Festival Eindhoven) or a visitor is provided with an RFID festival-bracelet.

Across the festival space there are different places where visitors can dash. 'Dashing' is what we've called physically connecting with a real world object. It was inspired by realizing that the word hyperlink uses a material metaphor (associated with e.g. chain, link, metal) to make a virtual connection sound as solid as possible. We wanted to introduce a verb that could give a physical act a connotation of connection. A 'dash' is a punctuation mark similar to a hyphen (–), used especially to illustrate a relationship between two things (according to Wikipedia). When you dash an art work, you physically connect with it plus a connection is also made virtually. This connection is, if possible, associated with a meaning.



*Illustration 2 Icon of the eSphere*

## 1.2 The ant and the ant colony

It may appear to some that social media, at this stage of their development, are still strongly influenced by an underlying 'broadcast model'. Facebook and Twitter, to single out a few, enable people to individually broadcast their message to their friends. Although there is significant progress in the speed with which individual messages and updates can be delivered, the model basically is one of omni-directional message-transmission.

What is missing seems to be the collaborative component of 'social'. Individual actions can be followed and traced, yet the collaborative result does not become visible as collaborative result. Where it does happen, the self-serving purpose is rather obvious: the Amazon top 100 is merely another way for Amazon to present things you may buy. In the eSphere an attempt will be made to make the collective effort visible. Dashing participants give their opinion of the works of art at STRP Festival, yet by doing this all simultaneously, a kind of 'superorganism' is created, similar, if you will, to individual ants together forming an ant colony that has a logic of its own. Together participants create a new type of picture: an interactive festival or event panorama (that is constantly updated real-time). In 2011 the attempt will be made to create an art work from all data traffic.

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In the eSphere, individual 'dashers' can vote (quantify the value of the art work), can provide key words (create qualitative tags), fuel recommender software to receive tailored suggestions to visit other art works or events. Dashing activity of others can be mashed with a floor plan of the festival, creating a 'friend finder'. Updates can be provided as a permanent stream, based on the dashing activities of people you follow. When Facebook or Twitter accounts are connected to the participant's profile, their dashing actions can automatically generate tweets or updates. In the eSphere, the individual dasher will be provided with quite a few of today's web functionality they expect. Plus an attempt will be made to present him or her with the continuously developing result of all collective actions.

***Live event achievements.*** Achievements have been designed to reward participants. They can be rewarded for giving a lot of feedback on the art works. They can also become the participant with the most valued feedback.

***Live event recommender.*** Based on votes given to an art work, the TU Delft has developed a recommender that will suggest which other works of art or festival events a participant is likely to also enjoy.

***(Collective real-time) on-line event panorama.*** It may be the first time for a collaborative event panorama to be created. After the 2010 edition, STRP Festival 2010 will still be accessible on-line as the first festival world mind map.

### 1.3 A full experience

In this field trial, we are (1) building on the starting point that people want to or can meaningfully interact with objects in physical reality (as opposed to virtual representations of those physical objects in virtual reality), (2) providing state of the art web functionalities (such as voting and feedback mechanism, recommenders and interactive maps) together with new 'collaborative functionalities' and there is a 3rd ambition. By creating, during STRP Festival 2010, an 'eSphere' as a temporary domain where the real world and virtual activities merge and where new shapes to give meaning to what visitors do together are explored, the notion of such a blending of physical and virtual reality can be explored. On the production side, it requires a great number of preparations to present the eSphere sensibly to visitors. It also makes it possible to research the acceptance with participants and non-participating visitors of the notion and approach.

## 2. Inspiration for the eSphere

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**Where did the notion of the ‘eSphere’ come from? What was it inspired by? The history of the eSphere is rather diverse, originating in both different fields of practice as well as propelled by different theories from several disciplines: sociology, philosophy, gaming theory, cultural studies etc.**

### 2.1 Theory

What may happen if all social media become action-driven? What if the world would really be clickable? What would that look like? How would that work? To explore that, in parallel with conducting the field trial of the eSphere, a conference has been organized, titled ‘Living in the Cloud’. Kevin Warwick, professor of Cybernetics (Reading University) will be speaking, as will Aaron Koblin (an artist who specializes in using social and infrastructural data to visualize cultural trends and emergent patterns) and Semir Zeki (professor Neuroesthetics at University College London). Hopefully STRP Festival 2010 will lead to an evaluation of the eSphere concept and execution, as well as an increased theoretical background and academic feedback on the approach taken.

#### 2.1.1. Openness in art

In 2005 the business world was rocked by a book titled ‘democratizing innovation’. Eric von Hippel argued that, thanks to advances in ICT, users increasingly can develop their own products and services. In art, a blog like Museum 2.0 started in 2006 to explore the ways that the philosophies of Web 2.0 can be applied in museums to make them more engaging, community-based, vital elements of society. Just a few years later, in Eindhoven (The Netherlands), during a meeting on the topic of the ‘The Future of the [Media] Lab’, 35 participants from media art labs and programmes concluded that the need to operate in a networked way, the ambition to be open, introduces a reality that is practically very complex. In the same year, in the same town of Eindhoven, the contemporary art museum Van Abbemuseum started a research project ‘The Curious Museum...’ (by Hadas Zemer, working with her ‘Live Encounter Tagging System’) allowing visitors to share their own interpretation of the displayed works by ‘tagging’ them – physically adding a relevant keyword to the work’s title card. The notion of being open, inviting people to participate in the sense making of art, is still being explored collaboratively on-line, researched off-line and modestly challenged for its practical implications by art labs.

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#### *Inspiration*

*Our conclusion was that for an art & technology festival, the use- of web technology to involve people in sharing their meaning could be a valuable experiment. We also concluded that ‘open’ should in any case mean: ‘with partners, in a network’.*

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### 2.1.2. Philosophically speaking

The notions of ‘democratizing innovation’, ‘engaging museum’ and ‘open lab’ from the beginning of this Millenium, can be traced back to postmodernist starting points. In 1979 Lyotard proclaimed that the end of the Big Stories or Grand Narratives had arrived: no one was fighting anymore to Free the Worker, Progress of Civilization was no longer something to believe in, all ideologies written in capitals were at their end. He followed up that insight with an exhibition in 1985 in Centre Pompidou, called ‘Les Immatériaux’. Lyotard wanted Les Immatériaux was not to display objects, but to make visible a kind of ‘post-industrial’ technoscientific condition, at once artistic, critical and curatorial. Experiencing it must have been rather odd: “Far from the informational ideals of ‘communication’, Les Immatériaux presented a condition of unease, a sense of disarray, itself given and facilitated by the great aesthetic figure of the labyrinth” (Rajchman, 2009). Simplistically speaking, the American response to European post-modern and deconstructionist confusion, was Richard Rorty’s observation that intellectuals who criticize without giving alternatives may not be as helpful as those who make realizing progress their goal (1998). He points towards Dewey as a source of inspiration to help focus on what has not yet been achieved.

John Dewey (1859 – 1952) was a pragmatist, meaning that the significance of words, concepts and practices for him was determined by the impact they had in real life. That can e.g. be seen by his definition of communication: the establishment of co-operation in any activity in which there are partners and in which the activity of each is modified and regulated by partnership (John Dewey, 1958).

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#### *Inspiration*

*Being a festival for technology & art, we decided to aim for a constructive approach and to explore the eSphere from the question ‘What might it become?’ rather than ‘To which philosophical observations does it point?’. To do that, we aimed to introduce communication in a Deweyan sense: as a way to establish co-operation.*

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## 2.2 Technology practice

In the late nineties the semiconductors industry moved from analogue chip production to fully digital methods. This had a tremendous implication, namely, in the simplest of terms, that the ‘craft’ of individual chip-design was replaced by architectures, design methodologies, libraries and other production practices all geared to speed. Like in the automotive industry, ‘platform’ became a buzz word. Once you have a platform, making derivatives becomes possible fast. Once LEGO has been invented and you have a few boxes, making a house, a car, a plain or any other object becomes

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**significantly simpler! It inspired Ad Huijser, CTO of Royal Philips Electronics (2001 – 2006), to have a single title for nearly all his speeches: ‘Technology is not the issue’ (the issue being ‘speed’).**

Based on that development, in combination with the ever progressing trend of miniaturization, it became foreseeable that chips could be embedded anywhere and attached to everything. Due to their industrial base, this vision was conceived in the United States as ‘ubiquitous computing’ (Mark Weiser coined that phrase in 1988 when he worked at the Xerox Palo Alto Research Institute; <http://www2.parc.com/csl/members/weiser/>), also called ‘pervasive computing’. It travelled across the little pond known as the Atlantic Ocean and became known in Europe as ‘ambient intelligence’. The Information Society Technologies Advisory Group (2001) was less computer-oriented and focused more explicitly on ‘people’:

*“The concept of Ambient Intelligence (AmI) provides a vision of the Information Society where the emphasis is on greater user-friendliness, more efficient services support, user-empowerment, and support for human interactions. People are surrounded by intelligent intuitive interfaces that are embedded in all kinds of objects and an environment that is capable of recognising and responding to the presence of different individuals in a seamless, unobtrusive and often invisible way.”*

These visions have driven industry, have propelled the development and adoption of what is now the ‘smart phone’ and have evolved into its current articulation ‘the internet of things’. Imagine every object in the world having its own Internet Protocol (IP) address, responding to calls from the web. Such a world is possible, through the use of Radio-Frequency Identification (RFID) technology: minuscule chips basically identifying themselves through a unique code.

RFID chips are quite common nowadays; the London Underground uses the Oyster card that contains an RFID chip. In Eindhoven, The Netherlands, citizens carry a ‘city card’ with RFID. Coca Cola organized the world’s first Facebook event in 2010, enabling kids to use RFID to update their Facebook profiles. What seems to be the most publicly visible application scenarios, are logistics or distribution scenarios, tracking or enabling people or objects in their movements.

That would suggest that current implementation practices and imaginative habits are characterized by ‘the horseless carriage syndrome’ (McLuhan, 1967): the content of the new medium is the old medium. The first cars looked like carriages. The very word auto-mobile only makes sense if you remember the significance of ‘auto’ in relation to being pulled by horses. We still talk about the stuff that the internet is made of as ‘hypertext’, although there’s very little text to internet content these days. Thinking about the ‘internet of things’, a similar conceptual revolution seems to still be imminent... The significance of a world in which everything is connected, is not that it will be an internet of things. In that reality, the world will be clickable.

In 2005 an experiment was conducted in Philips Research, using cards with Near Field Communication (NFC) chips. Visitors to the Corporate Research Exhibition (CRE), since 1959 the annual innovation event of Royal Philips Electronics, were given the possibility to 'invest' in innovations with 'innovation currency units'. That year, without active promotion, 2/3 of the participants invested 1/3 of their individual innovation budget. The next year, every visitor was given such a card, the innovation budget became unlimited and again roughly the same



results were realized (66% participation with a slightly lower average investment of 5 i.so. 7). In 2007, 73% (nearly 3/4) of the visitors participated and the average investment nearly doubled to 9 ICUs per visitor. (In that year, people were also given 'trees' to 'invest' in projects supporting sustainable development) In 2008, the innovation event being visited by 4.000 of Philips innovation community, participation rose to 78% (nearly 4/5) and the average investment was 11 ICUs.

	2005	2006	2007	2008
<b>Visitors</b>	3428	3905	4202	3923
<b>Participation</b>	66%	66%	73%	78%
<b>Average votes</b>	7	5	9	11

Several things were learned from this experiment. Firstly and quite surprisingly, the response to more or less asking people to make themselves known with project groups and to make their opinion about an innovation known was met with a staggering response. The level of participation was originally estimated to be 33%; in reality it was almost double. Very telling was also the Philips employee who gave the feedback: "You know I was in Research. And when I moved to Consumer Electronics [a division of Philips at that time], I also visited the CRE. So I've been coming here for years now. Yet I've never spend so much time consciously evaluating the projects as this year. I really wanted to invest my money in what I thought would be worthwhile for Philips." That dynamic continued to develop. One of the original challenges for the Corporate Research Exhibition, was the difficulty marketing and technology professionals had in talking to each other. When a marketer asked a researcher a difficult question, it frequently happened that the research responded in technology details that were perhaps quite interesting, yet irrelevant to the original question. Marketeers not wanting to illustrate their lack of understanding, would occasionally not pursue an answer but would walk away with rather mixed feelings. Introducing the 'Innovation Currency Units' (ICUs) radically altered that dynamic. It made projects put their most communicative spokespeople in front of their innovation to actively acquire the available innovation budget. After 4 years, the original inability to communicate had completely turned around.

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Different than with the usual large scale trials, the experiment here was more with the users than with the technology. The question was: how can people be seduced into participation? The answer came from applying the Thomas theorem: “If men define situations as real, they are real in their consequences”. To make people believe their opinion mattered, it was apparently enough to provide them with an ‘innovation budget’, consisting of ‘Innovation Currency Units’, in the form of a credit card, combined with an introduction that went along the lines of “Dear madam, sir. On this card you will find your personal innovation budget. You can use that money to show Philips senior management what you really believe in”. It looked like an innovation budget, it came on a credit card, it consisted of coins and it therefore was an innovation budget... How can a meaningful action for the users be shaped, in order for them to want to click on things in the world? When the world becomes clickable, that might prove to be the most relevant question.

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### *Inspiration*

*Technology-wise ideas for applications of Near Field Communication seems to evolve around existing paradigms: payment, logistics, transportation. Assuming that every innovation goes through a stage of ‘horseless carriage’-syndrome, it’s possible to imagine that the internet of things won’t be about ‘internet’ or ‘things’, much like a car turned out not to be about horses and the internet not about hypertext. The experiment conducted in Philips Research during the Philips’ annual innovation event explored what it may actually be about: finding ways to install in people the belief that their ‘clicking’ on the hyperlinks in the world (the things connected to the internet) is meaningful. As a cultural festival, the most meaningful interaction we could imagine was to actually involve people in sharing the meaning of art.*

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## **2.3. Cultural field**

In the Netherlands the Council for Culture (Raad voor Cultuur) advises the Dutch government in the domains of art, culture and media. In its 2003 advise on e-culture the Council stated: “Eculture isn’t just something related to computers. (...) Digitization shortly influences the entire spectrum of cultural production, distribution and presentation”. According to that advice, eculture in 2003 was regarded to hold the promise of rejuvenating culture, by making new forms of expression, reflection and exchange possible. Three main appearances were distinguished:

- 1) ‘informatization’: the application of information and communication technologies within the existing cultural frameworks
- 2) ‘cultural innovation’: the appearance of new representations enabled by digital technologies and
- 3) ‘role modifications’: the development of new practices and tasks leading to changes in the roles of cultural institutions and producers.

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The most essential change in roles of cultural institutions was regarded to be that of the 'end-station' towards an intermediate stop-over; more and more would original positions of the creator or the owner be replaced by the role of intermediary in a process of signification, as one player in a cultural space populated by a diversity of participants, including the audience and users. This would be strongly related to an institution's ability to share its knowledge, create crossovers and structurally collaborate with others.

Policy for eculture is created when an institution thinks about how informatization might stimulate cultural innovation, stimulating a modification of its role. When that line of thinking is brought back to concrete choices of hardware, software, digital collections or content, expertise, projects, partners etc. is when eculture policy starts to be implemented.

Whereas the 2003 advice focused on the potential of digitization, the advice of 2010 called 'Networks of significance. Networking in digital culture and media' started with the articulation of a problem: "There is a problem with meaning. This stems from a tension in the network society: individualization has progressed on the one hand and on the other have communities reconfigured themselves in both larger and smaller scale formats. (...) Digitization creates new forms and new relations and changes existing connections. The production and change of meaning – in the sense of content and value – play a key role in network processes in which information exchange and communication processes increasingly take place digitally. What the cultural sector does, since day and age, is to research the new forms and contexts for handling meaning."

The council expressed its belief that the new technologies have become available, the inspiring examples are visible and the knowledge exists, although it is scattered. According to the council, this is the moment to bring these developments together and to work towards large scale implementation. In order to make this happen, the notion of 'cultural value chain' ('culturele betekenisketen') is advanced. Along this chain three types of cultural research are consecutively conducted: experimental research (searching for new shapes and forms with new technologies), contextual research (assessing the application of those new forms in existing context within and outside of the cultural sector) and transformation research (aimed at the question how to sustainably anchor results from previous research in society). A vital cultural climate is characterized by the right balance of and coherence between these types of research. In relation to the type of research conducted and its place in the cultural network, organizations need to be clear about their 'network tasks', those activities they intend to perform resulting from their identity.

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### *Inspiration*

*The Council for Culture sketches a compelling vision with a great number of inspiration points. A major one for us as STRP Festival was to realize that we are trying to discover ways of working in eculture that may have societal significance. That lead us to conclude that the work we were doing should be 'scalable': that we should be in a position to turn our experiment into something accessible for more peo-*

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ple. It also meant that we realized we should collaborate with other partners, to increase the functionality of our application. The concrete result of this was to establish an open collaboration, called 'app-fab' (application 'fabriek', the Dutch word for factory).

Next to the concrete inspiration points, the reports also seem to suggest two paradoxes that we have been unable to resolve so far. When cultural institutes become intermediate stops instead of the end-stations they once were, when in other words 'culture' becomes a matter of being connected and managing the flow of people or culture, how can that reality evolve around the static notion of 'meaning'? Should it not evolve around a dynamic concept, 'experience', 'sense' or something that can evolve over time? Paradox number one is: if digitization introduces change and dynamic for cultural institutes, how can a static concept as 'meaning' remain the focal point of the cultural sector? The metaphor of industrial research also introduces another interesting question: who owns the production facilities? The council states that the new technologies have become available, the inspiring examples are known. This however does not mean that the production facilities exist, are stable, can be used or will be maintained, by the sector as a chain. The second paradox is: if culture arises from the growing number of digital cameras, blogs, mobile phones and apps on smart phones, how relevant is it to compare the cultural industry to a 20th century analog production chain? Especially when it causes industry, because of the same trend of digitization, to move to new innovation paradigms like 'open innovation', 'co-creation' and 'crowd sourcing' etc.

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## 2.4 Conclusion: distilling the inspiration

The perspective that the Council for Culture sketched of digitization and the emerging networked society to us seemed a very suitable one. That partially overlapped with the post-modern philosophical observation that all Grand Narratives had become fragmented. Beyond the experience of that fragmentation, as we have understood Lyotard realized in Centre Pompidou in 1985 with 'Les Immatériaux', we thought the philosophical pragmatic approach put forward by Rorty (inspired by John Dewey) was quite elementary. Simply put: when nothing makes sense any more, you can always make it make sense. Especially since we saw that type of experiment already being conducted e.g. in the Van Abbemuseum with the Live Encounter Tagging System (LETS) by Hadas Zemer and starting even before that in 2005 at Philips Research where RFID cards were used to give people an individual innovation budget of which the investment choices were managed and fed back through an internet application.

It seemed to us that this aspect is not quite the same as what is usually understood with 'participation'. When that word is used, the event as a whole has been put in place and people become part of a pre-arranged script. In our case, we wanted to explore something else: we don't know what the art works mean to our visitors and neither do they. That picture only emerges based on

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the individual contributions they make. Participation diminishes the role of the participant; contribution (as in our approach) gives the participant a lot of room to play.

Our focus, in short, was to maximize contribution, from participants individually and collectively, from festival-qua-festival (in relation to the direct experience during the festival) as well as from festival-as-network (i.e. with other institutes and organizations that could help to enhance the short and long term experience of the contributing visitors).

## 3. Why a ‘field trial’?

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In chapter 1 we described what the eSphere is. In chapter 2 we clarified various thoughts that inspired our development of the eSphere. In many ways this year’s eSphere at the STRP Festival is a first of a kind, not in the least for ourselves. So rather than presenting it as a finished application, we wanted to be explicit about its experimental nature.

A field trial is usually referred to, says Wikipedia, as ‘field experiment’. The eSphere field trial is a rather severe test under normal festival circumstances, with several thousand participants, that will provide the information we need to evaluate our first version. What do people like? What works well? What doesn’t? What comes across as strange or not useful? What needs to be done before we scale up the application to the intended 25.000 contributing visitors in 2011?

### 3.1 Research questions

We conceived of a new type of environment: a domain where virtual and physical reality seamlessly integrate. We’ve called it the eSphere, where dashing (deliberately performing a physical act to connect) is how you simultaneously create a virtual link. The eSphere is built with a number of different parties, aiming to illustrate that the cultural sector actively can contribute to helping people make connections between what they do themselves and how that can be significant for others as well as to realizing innovations that may have economic significance. That’s quite a few (potential) innovations that may or may not work. In order to evaluate our prototype properly, these were a number of the questions we wanted to explore during our field trial in order to use them for our evaluation:

#### 1. Participation/contribution

- a. What percentage of STRP Festival visitors is interested in participating?
- b. How many actually do participate?
- c. How intensively do they participate?
- d. What are the opinions of fellow curators and art professionals? Do they regard this experiment favourably or unfavourably?
- e. Do fellow curators and art professionals participate themselves?
- f. How intensively?
- g. Does the virtual extension of participatory works add value for the visitor? (e.g. making pictures of works people are part of at that moment)
- i. Is that functionality being used?
- ii. Do people collect the results created (e.g. photos, virtual photo album, brain wave report etc.)
- h. Can we determine which kind of people participate more than others? There will also be high school students coming to



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STRP Festival. It will be interesting to see their response and compare it to e.g. art professionals.

- i. Can we establish what type of activities they like to contribute to?
- j. Is there a coherence between tags used by people and the type of visitor that they are?

## **2. The experience of ‘co-‘**

- a. Do people use the fact that we've helped them determine what type of visitor they are?
  - i. Do they change that assessment and chose another type?
  - ii. Do they re-do the self-assessment?
  - iii. Do they compare themselves to other visitors of the same type?
- b. Do they connect with others?
  - i. What is the average number of connections made? In both people they follow as well as people following them?
  - ii. What is the spread? How is that distributed (Bell-curve or long-tail)?
- c. Do people use the mobile site to see what their friends are doing?
- d. Do people explicitly and spontaneously feedback that they like the additional functionality?
- e. Do people experience they are jointly contributing to something new?
  - i. Do they access or use the results of their joint efforts?

## **3. Experience dynamics**

- a. From our parallel experiments with facebook, it seems that social media dynamics evolve around ‘asking for active participation’, ‘rewarding active participation’ (e.g. through a contest with prizes or through some sort of ‘footprint’) and ‘joint creation of something bigger’. Is the same visible around participating in the eSphere?
- b. Which percentage of visitors dashes?
  - i. How many of them already had a profile? How many made a profile?
  - ii. How many participate?
  - iii. To what extent? All feedback functionalities? Only a few? Consistently the same? Apparently random?
  - iv. How many art works do people dash at?
  - v. Is there a relation between art works recommended, art works selected for the visit and art works dashed at? How strong is that relationship?
  - vi. Which type of visitor seems to be most active with dashing?
- c. To what extent are ‘social media’-applications used? Do they increase the time people spend looking at or interacting with art?
  - i. STRPwiser for self-assessment as type of visitor

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- v. The localizer
  - vi. Buzzing: connecting Facebook and Twitter to pass on messages
  - vii. Others...
- d. Is the introduction of game mechanics (i.e. achievements) evaluated positively?
- i. How many people seem to actively pursue them?
  - ii. How many people revisit the achievement pages?

#### **4. Effect on festival & art**

- a. Do the social media and/or eSphere activities seem to positively effect the number of visitors or virtual attendees?
  - i. In terms of increased number or less decline in numbers other festivals seem to suffer from?
  - ii. Are there more visits to the website? Is there more buzz?
  - iii. Can that effect be compared to previous years?
- b. Does an extra layer like the eSphere...
  - i. Make preparing to visit the festival more fun?
  - ii. Make visiting the festival more fun?
  - iii. Influence how visitors perceive the festival?
- c. Do the question we ask help people form an opinion about the meaning of the art work?
- d. Does time spent looking at or interacting with art influence the appreciation of those works?
- e. Do tags enrich art works? In the eyes of the participants, the non-participating visitors, the artists and the professionals? Do they have another effect?
- f. How valuable are tags? Whereas it is statistically possible to determine certain values through the wisdom of the crowd, qualitative tags can probably not work in the same way as those mathematical statistics. To what degree can they be compared? What can be said about the wisdom of the crowd in relation to the meaningfulness of tags?
- g. Does enabling people to tag contribute to engaging people more actively with art? And/or actively promote the event afterwards?
- h. Is it possible for an application like the eSphere in combination with the tags play a role in educating high school kids about art? Does it change their involvement? Does it make their experience more meaningful? Do they learn more?
- i. Are there better ways to allow people to expand on their answers (those are now limited to key words). Can you e.g. automatically distill key words from larger replies?

## 4. What's next?

Conducting the field trial for the eSphere is quite exciting. We had many different thoughts as we prepared for it, a great variety of people have entered it so first of all we have to try to determine what we can learn from the response. At the same time, our thinking about what is possible and our planning to add more features and functionality seem almost impossible to stop...

To be able to structure our thinking and plot possibilities moving forward, we distinguished a few dimensions we would like to explore:

1. The art festival experience...
  - a. ...as an engaging, exciting and fun (art and technology festival) experience
  - b. ...as a serious and meaningful (art and technology festival) experience
2. The cultural trend of digitization (qua art and technology festival)
3. The creation of knowledge about the 'clickable world'
4. The collaborative development of the eSphere

In the table below, the current and initial ideas for 2011 are summarized. Below the table you will find more clarification.

Dimension for exploration	Field trial in 2010	Ideas for 2011
The festival experience: making stay and participation more fun and more convenient	<ul style="list-style-type: none"><li>• Using web cams to create souvenirs of participation in interactive art</li><li>• Using web cams to stimulate interaction and to create</li></ul>	<ul style="list-style-type: none"><li>• More interactive festival experience functionality &amp; applications (treasure hunt?)</li><li>• Live trophies (people coming applaud you or cheer you on when you've achieved something)</li><li>• Being able to buy consumptions with the same system/RFID chips</li></ul>
The art experience: making participation & contributions more meaningful	<ul style="list-style-type: none"><li>• Enabling people to tag art works</li><li>• Capturing quantitative evaluation of art works</li><li>• Collaboratively creating a tag cloud for each art work</li><li>• Collaboratively creating a world mind map for the STRP Festival</li></ul>	<ul style="list-style-type: none"><li>• Projecting keywords in Augmented Reality, e.g. as 'virtual graffiti'</li><li>• Partnering with other festivals (i.e. Incubate in Tilburg) and cultural institutions (i.e. MU in Eindhoven) to include their events and art works in the recommendations</li></ul>
Digitalization as cultural context	<ul style="list-style-type: none"><li>• Creating a profile</li><li>• Getting your personal Festival page</li><li>• A self-assessment application helping you assess what type of visitor you are (STRPwiser)</li><li>• Being able to construct your visit schedule (ProgramBuilder)</li><li>• Being given recommendations, based on your type and preferences (Recommender)</li></ul>	<ul style="list-style-type: none"><li>• Open sourcing the visual design and creation of skinable visual elements, i.e. 'types' and 'achievements'</li><li>• Open sourcing the specifics of achievements that can be won</li><li>• Creating art that uses the data generated in the eSphere<ol style="list-style-type: none"><li>1) Data visualization art work</li><li>2) An 'alternate reality game' (using the RFID/web infrastructure and application also for playful interaction)</li></ol></li></ul>

Dimension for exploration	Field trial in 2010	Ideas for 2011
	<ul style="list-style-type: none"> <li>• Giving rewards to actions and activities (Achievements)</li> <li>• Creating a mobile site to provide updates on friends during the festival visit (MobileSite)</li> <li>• Providing functionality on smart phones that allows people to see where their friends have dashed (Localizer)</li> </ul>	
Conducting research to create knowledge and make it explicit	<ul style="list-style-type: none"> <li>• Organising the 1st STRP Conference on the topic of 'eSphere: Living in the Cloud'</li> <li>• Exploring collaborations with Technical University of Eindhoven, Technical University of Delft and TNS Consult to analyse data and to explore new research methodologies</li> </ul>	<ul style="list-style-type: none"> <li>• Elevating the collaborations with technical universities and medialabs beyond occasional to longitudinal research program</li> <li>• Researching the (gaming) experience of the eSphere, preferably with gaming knowledge institutions</li> </ul>
Promoting technology and stimulating innovation	<ul style="list-style-type: none"> <li>• Collaborating with new start-ups and a mature multinational</li> </ul>	<ul style="list-style-type: none"> <li>• Collaborating with even more companies in an open way</li> <li>• Making the eSphere available as an open application</li> <li>• Realizing a secure and new way to guarantee privacy, through combining academic research with the eSphere project</li> </ul>
Digital functionality for appreciation & conservation of (media) art		<ul style="list-style-type: none"> <li>• Media art tends to present itself as 'something new'. This makes it difficult to interrelate works and to see and appreciate progress. Collecting tags, qualitative and quantitative, helps to document how people perceived it and creates a historical context.</li> <li>• Can the physical voyage of an art work be stored? Can the eSphere track an art work's provenance?</li> <li>• Would it be possible to store all art work related data in the eSphere? Archiving media art is quite problematic. Does the eSphere have potential for conserving media art and storing their meanings?</li> </ul>

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Above all other priorities, being a festival for art & technology that seeks to make technology art accessible for all people, the eSphere should enhance people's festival experience. Next year, that festival experience should therefore be even more fun. We're thinking of 'live trophies': people coming to applaud for you at the event, or dancing around you, giving special attention to you because you've done something valuable or funny or outrageous.

Making people's festival experience more intense is clearly a direction for development. Another one is stimulated by the question: how will people remember that more intense festival experience? How can you provide triggers that help them remember and perhaps smile again? What type of objects should that be? How could they work? How can people use them? This is a second potential topic for research collaboration with the Technical University of Eindhoven (TU/e).

Another such topic is 'wireless sensors'. In the 2010 realization of the eSphere only you will be able to trigger virtual events, through deliberate action. What if we introduce into the festival environment wireless sensors that can pick up the number of people standing in a certain area, their excitement (perhaps through the volume of the noise they make)? What if the environment could read more (anonymous) signs? What type of application could we develop that could be tested in the eSphere of STRP Festival 2011? We are considering publishing a call with the TU/e, based on specifications of families of their wireless sensors.

We're also studying what other game mechanics we can introduce into the eSphere. This year we excluded 'levels': threshold values that people experience as a next step after they've crossed them. Whereas achievements can be hypothesized to intensify the experience or to add emotional experience value to an experience, levels can be hypothesized to accentuate the competitive game element. Is that helpful for a blended reality environment? Does that make the STRP Festival more fun? Or does that stimulate gamers and chases away non-gamers?

This year we actively pursued partnerships with others to increase the functionality of the eSphere, to learn more with more people and to make the whole experience on- and off-line richer for our visitors. We called that combination of partnerships the 'app-fab'. Next year the app-fab will work towards opening up the API, the application programming interface, even more, so that others can use it to work with us and to add more functionality.

We are also asking ourselves: what other applications might strengthen the functionality of the eSphere? In which other areas or which other locations might the eSphere be a good concept? Would enabling visitors to provide that type of feedback also work in a museum? Could it operate just through triggering with QR-codes (Quick Response)? What if the eSphere would scale up and introduce Reality 1.5 as an approach in a city, say for touristic routes around monuments or leisure tracks along jazz hot-

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spots? Can innovation in the cultural field really turn out to economically add value? Those are important questions for the further (economically sustainable) development of the eSphere and the app-fab collaboration.

The eSphere will also develop artistically. In 2011 we will be working with a data visualization artist who will use data created in the eSphere to make an art work.

Web 2.0 is a concept with strong ties to browsers and PC monitors or –screens. Reality 1.5 and specifically the concept of an eSphere try to introduce web functionality in real life, as a part of the e-culture lifestyle of tomorrow. Wouldn't it be really great to work with ICT-students, triggering them to think about the eSphere and how it could take shape outside of a festival environment, as an approach to how ICT could bring more functionality into the world around us. That's not just a dream, not just an ambition. That is actually the starting point of the open call 'the eSphere and its future' that follows from this inspiration document. Hopefully in 2011, STRP Festival can already show some of the concepts ICT-students came up with.

## 5. Conclusion

In 2004 the director of STRP Festival wrote a concept called 'Big Sister is loving you'. It was the time Big Brother created quite a stir, introducing a commercial and popular version of Orwellian image of continuous observation the TV formula got its name from. The 'Big Sister'-concept tried to be different from Big Brother in 3 ways:

1. Sister, not brother
2. 'is loving you' (not: is watching you)
3. Exploring an e-culture related angle of privacy

Whereas the point of Big Brother was to observe and monitor, the idea behind Big Sister was to interact, respond and behave socially. Big Sister didn't evolve around merely observing; the idea was for the environment to socially engage with you. The most radical concept was a computer starting to talk to you during you taking a 'biological intermezzo' in a rather private space. Input into that conversation would be all the things the system could have learned about you: what you saw at the festival, where you spent most time, the art works you participated in etc. etc. Simply because it would be totally unheard of, this particular scenario would most certainly trigger the kind of effect an art & technology festival would like to create.

The idea behind '...is loving you' would be to actively play a role in matchmaking. A part of the application would be dedicated to bringing singles together, by analyzing the data and manipulating the environment. On the dance floor, the idea was, the light would be blueish around singles and red around couples.

### ***Big Sister is Loving You***

*(This is a brief summary of the original concept written in Dutch)*

*Imagine a festival that is observing you all the time, using its information to give you a different type of festival experience. You enter the festival and make a profile with a lot of information you don't mind sharing: age, interests, preferences, marital status etc. As you walk across the festival, screens will greet you. The system will register where you are, how long you are there. Cameras will record how long you're watching which art works.*

*When you're in a different area, e.g. powdering your nose, the system might start to talk to you. It knows where you've been, it knows what you've done. Perhaps it can strike a meaningful conversation with you. As you leave the festival, an animated host will cry as you're saying goodbye.*

*Back home you'll find an email in your in-box, giving you access to the recorded data, the people you met, telling you what appear to be your art preferences and putting you in control of your profile, settings and history. Then the challenge would become how to build an interactive community with all people who want to participate, perhaps around matchmaking in relation to art...?*

*Frens Frijns*

*Eindhoven, February 20th, 2004*

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The 3rd aspect that would be different was the approach to privacy. Especially because some ideas were quite controversial, it would be key for people to fully be in control of their own data. Causing a stir around these new types of technology and the way they could practically (and also creatively be applied), would be directly of interest to STRP Festival qua festival for technology & art. At the same time, a cultural institution should be seen to take privacy serious in a completely different way than commercial enterprises were doing at that time.

The eSphere has now been conceived of a place where virtual reality and the physical world seamlessly blend. The orientation on media has shifted from a slight bias on screens (TVs and monitors) to an inclusion of the web. This can even more strongly be recognized in the STRP Conference titled 'eSphere: Living in the Cloud'.

At the same time, the issue of privacy has not really been resolved. Facebook and Google regularly appear to have made mistakes with your data. How will this develop in the future? Google announced, like Nokia earlier did, that it will integrate near field (NFC) technology in its future smart phones. Near Field Communication is the next generation RFID (Radio Frequency Identification). What is the consequence of those announcements? It means that future smart phones, especially if Apple also joins the group with its next generation iPhones, will all be able to dash – as we have described it in this inspiration document and have demonstrated it at STRP Festival. In the future, smart phones will be used the way a mouse is used now. Except that people won't be clicking on links on a screen, they will be able to click on objects, events, people in the real world. NFC technology is going to give us a clickable world. Privacy will then even become more of an issue. And the current US dominance of the web (Google, Apple, Facebook, Twitter are all companies in the US) is likely to be questioned even more. Clicking on things in the real world will need to have an immediate and therefore local and perhaps even a personal relevance to you. How close can far away companies, driven to increase shareholder value, come to deliver that?

These are some of the hypotheses STRP Festival would like to research, driven by its fascination for art and technology, working from its position as one of the biggest e-culture festivals in Europe. Sharing this document, partnering in the development of the eSphere with new web start-ups to learn fast about developing an open interface (API) are steps we are taking to make that happen.

In 2011 the eSphere should be bigger, better and more beautiful. All initiatives to help make that happen will be more than welcome. The App-fab, the network that has begun to grow around the partners for the eSphere, is eager to welcome new participants.

Big Brother and Big Sister both evolved around a system developed to know things about you. For STRP Festival a big question is: what can we learn from the experiment that the eSphere really is?

Big Brother is watching you. Big Sister is loving you. The eSphere welcomes you.



# ADDENDUM: the app-fab ([www.app-fab.com](http://www.app-fab.com))

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## Artistic-professional Open Innovation Partnership

STRP believes that the cultural sector, next to innovating artistically, can also innovate economically. The eSphere-project this year at STRP Festival is designed to test that conviction. With partners we want to work together to build new applications that will add value ('app' stands for application, a 'fab' is a fabrication facility in which chips are made; app-fab hints at a development center for applications triggered by chips).

The eSphere will have an open interface (API), developed on the principle of 'anonymous transparency' (advanced by a.o. Eelco Dijkstra). Other organizations will be more than welcome to join the app-fab.

App-fab's founding partners are:

- **Stichting STRP**, one of Europe's leading festivals for technology and art
- **Cox IT Producties** (they provided the core, developed and built the engine for the eSphere)
- **Made in Holland** (the design agency that created the interface)
- **Simple Concept Studio** (who built the mobile phone app and assisted in building the eSphere engine)
- **pluscommunicatie** (who came up with this approach to blending virtual and physical reality)
- **Womima B.V.** started in 2007 to pursue the challenge of building the 1st world mind map application. Inspired by the human brain, [www.womima.com](http://www.womima.com) is a tool to collect and disclose associations. When you think 'red', the world mind map will tell you that others thought 'bull', 'tomato' and 'love'. World mind maps can be used to kick start creativity, e.g. when you're a professional writer looking for inspiration or a designer looking for a new source of inspiration. It can also serve in research contexts, e.g. to investigate linguistic, sociologic or demographic themes. Womima B.V. wants to capture more associations and wants to increase the connection with real-time events. Its participation in STRP Festival in 2010 helps to clarify what all participating visitors think of the exhibited art works. Womima B.V. also welcomes partners looking for ways to make the collaborative association power of people practically relevant. Contact [k.van.overveld@wxs.nl](mailto:k.van.overveld@wxs.nl) to talk about your ideas.
- **memolio.com** (powered by Relate4u: [www.relate4u.com](http://www.relate4u.com)) is the brain-child of a small, diverse group of people with loads of creative, business and technical experience. The memolio™ core team is a group of seven who come from four different countries with backgrounds in design, web, print and communications. Our goal has been to pool our collective knowledge and create something new, something sweet & fun. We love the web & we love to print!
- **TNS Consult** (Amsterdam, the Netherlands, that helps us evaluate the eSphere project and researches the usefulness of the 'anonymous transparency'-principle; they even think the eSphere could lead to a completely new type of market research: Real-Time Research, or rt-research)

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- **Eelco Dijkstra**, who offers consultancy and project guidance for education, research, and innovation in the domain of ICT for people. He is driven mainly to advance Ambient Intelligence, Internet of Things, and Wireless Sensor Technology – where the virtual meets the real world. His emphasis is on applications in the areas of education and health. Especially in these areas the mentioned technologies could become really significant to individuals and society, yet require in many cases new value chains and ecosystems and adjustments to existing value chains. An important element of his consultancy therefore is to bring potential partners together around new applications, value chains, and ecosystems.

These technologies potentially generate a huge amount of data about persons, and hence may have a large impact on the level of the individual. A fundamental view is that these data should be used in a way that primarily serves the individual. For that reason, a good handling of privacy is essential, aiming at innovative ways to combine privacy with the use of personal data to its full potential.

- Another partner, who isn't officially a member of the app-fab but with whom cooperation is intensive, especially for interactive and immersive functionalities, is Royal Philips Electronics (notably its Lighting Sector)

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