Co-design and cacophony

Case studies of the Library Hangouts and the Metanomics Second Life projects

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Co-design and cacophony – case studies of the Library Hangouts and the Metanomics Second Life projects

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Abstract

Results from two case studies of user-driven innovation in virtual worlds, i.e. Second Life, are presented in this paper. The observations are part of the ongoing research project "Sense-making strategies and the user-driven innovations in virtual worlds," 2008-2011 (worlds.ruc.dk). Several cases have been followed among these the "Library Hangouts" and the "Metanomics" projects both of which are Second Life cases. Libraries are public institutions with societal obligations as to the general education in society. As such they are worthwhile following, when they move into the virtual world of Second Life. The Metanomics shows deal with the economic aspects of the Metaverse.

Questions dealt with in the case studies are concerned with if and how the creators of the projects and places under study have dealt with possible gapinesses and/ or have developed bridgings (Dervin and Foreman-Wernet 2003) in the process of making the user-driven innovations a reality in Second Life. Results from the Library Hangout's case study show that, gradually, the project's open co-design vision of the Second Life version of the library is modified as building rights become privileged. The project team increasingly has to take control of the activities of the place. In the Metanomics case, the well-known framing of a serious TV talk show is remediated to become a Second Life show and project. Recurrent observations make visible some of the innovative steps that are taken in the project with the aim to attract many and different audiences. A new form of communication denoted "constructive

cacophony" (Bloomfield 2008) is developed. The innovative steps taken in the two cases are analysed based on inscriptions of the programs and anti-programs (Latour 1991, 1998) of the case studies.

The paper concludes that the two case studies make clear the importance of reflecting on how best to make use of the new medium, that is, to build up the knowledge and skills necessary to be able to balance the recognizable with the experimental in the user-driven innovation and design of a virtual world such as Second Life.

Introduction

In this paper, case-based observations and analyses of user-driven innovation in virtual worlds are presented. The observations result from the ongoing research project "Sense-making strategies and the user-driven innovations in virtual worlds, 2008-2011" (worlds.ruc.dk). At the time of writing, several cases have been followed among these the Library Hangouts and the Metanomics projects both of which are Second Life cases. The case studies deal with user-driven innovation, knowledge construction, and communication forms.

The general idea that guides the Linden Lab design of Second Life is the user-driven creation of the virtual world's content – be it buildings, islands, environments, eco-systems, virtual products for sale, events, meeting places or other kinds of agency and virtual artefacts – the Linden Lab vision being that the general framing should deliver only the tools for such user-driven agency and innovation (Au 2008; Boellstorff 2008). Tools that may help the residents create their own content and worlds with none of the usual limitations of the other life world.

Underlying this idea is the pre-understanding of users and user-driven agency that given the tools then the creativity and vision of the users – the Second Life residents – will unfold and create interesting content in the world. As such, the designing idea and strategy of the Second Life virtual world is rather daring. As opposed to the role-playing games where not only the framing and the tools but also the template and plots for the role-playing agency are delivered, the Linden Lab project and the Second Life grid has to rely on the user-driven creativity and innovation. Also, part of the original vision is a democratic ideal of an open virtual space that enables residents to create their own world (Ibid). Thus, it is up to the residents of the world to consider and resolve, which agencies are relevant to the virtual world and to create a design that make them a reality.

Agent Asp is a Danish Second Life entrepreneur and virtual estate agent in Second Life (Jensen 2008a). The Second Life business provides for his means of living. In his view, most of the user-driven innovations and creations of the Second Life mainland are pointless, and they make no sense; rather, they may discourage his customers thus

threatening his business. In his case, the overall design idea of Second Life's virtual world generates problems when running a serious business. In the Library Hangouts case, the project team faces problems similar to those reported by Agent Asp, whereas in the case of the Metanomics shows, the questions of user-driven innovation are dealt with as part of the concept of the show as it will appear from the findings presented below.

Research question

In the context of the project about user-driven innovation and sense-making strategies, user driven innovation is understood as the meaning-generating and sense-making strategies of innovative *practices*. In this paper, design denotes the processes whereby the users, the residents, make meaningful the geometric and abstract grid of Second Life as they turn the grid into places for Second Life residents' being and agency. If we accept this understanding of design processes, then it is likely that gapinesses evolve that need be bridged to create meaningful design (Dervin and Foreman-Wernet 2003). To design a place, particularly so a Second Life island, it is a very complex and difficult task, if the place is to make sense to the other residents of the world. To create meaningful design is a skilled craft – or art – that, ideally speaking, takes professional knowledge with regard to construction, design idea, craft, animation, and scripting. In other words, designing a place or an island takes complex meaning-generating processes that require vision, innovation, and highly skilled competence. Gapinesses may evolve between on the one hand the idea of the open and user-driven co-design that transform the abstract grid and space into contextual places, and, on the other hand, the user-driven design of places given that such design is to be meaningful to other residents. The question is, if and how the creators of the projects and places under study have dealt with the possible gapinesses and with ways to bridge the gaps? In order to answer the question, we will first present observations from the two cases, subsequently, reflect on the observations. Moving on to the analysis, inscriptions (Latour 1991, 1998) are drawn in the shape of diagrams to translate the observations and reflections into analyses of steps of

innovations. In the analyses of the two cases, four stages of translations are undertaken: 1) from observations to descriptions, 2) from descriptions to reflections, 3) from reflections to analytic inscriptions, and 4) from analysis to conclusion. Those are the stages that will guide the presentation, but first we will briefly present the methods applied to the case studies.

Research methods

Virtual and innovative *practices* are pivotal to our understanding of the innovation processes of the Second Life case studies, thus, the method of participatory observation is applied to the study of practices. Participatory observation is the prevailing method together with in-depth video-interviews, real life video-recordings, and archive studies.

The Library Hangouts case is followed in depth in participatory observations carried out at their virtual place in Second Life combined with active participation in the planning of Second Life events arranged for together with the project team and in video-interviews carried out at the project team's work place. The case has been observed in the cycle of a 'life time' from the start to the closing of the project.

The in-depth and in situ video-interviews of the Hangouts case have enabled us to follow the project members as they move back and forth between the virtual worlds and their work life. With a handheld camera, the participants of the video-interviews have been followed "into" their virtual place – in live pictures of their screens – while they act online, and, simultaneously, offline discuss their interaction and agency, as we together move along in their virtual world. The method of simultaneously acting online while discussing and interpreting the actions offline has been developed during the last fifteen years of studying networked communication, and especially so, in the study of virtual worlds since 2002 (Jensen 2005, 2007a, 2008b).

In the Metanomics case, observations of some of the shows have been combined with archive studies of the 50 shows conducted from medio September 2007 to primo October 2008. The archive studies have made possible an understanding of the development of the show from the beginning until the current status. Active

participation in an interview "On the spot" in the opening session of one of the shows is also part of the study (Metanomics, 22-09-08). Video-based data are included in the case study although not yet in the form of in-depth video-interviews. The video-based data come from video-recordings of the host while running the show in a real life studio (see: worlds.ruc.dk, streaming).

Observing the places in-world snapshots have concurrently been taken and written notes attached to the snapshots.

Case studies: observations and reflections

Library Hangouts

The majority of Danish residents and projects move into Second Life over spring 2007, which is also the case with the Library Hangouts project. It is the media coverage of Second Life issues in 2007 that inspires the curiosity of the manager of the library's development projects. Immediate action is taken and a Second Life project team is established almost the day after the project manager has taken notice of the Second Life world due to this coverage. Therefore, the project gets public mention as they are some of the first movers among the Danish public institutions in Second Life. Early in 2007 they start transforming the abstract Second Life grid to turn it into a contextual place meaningful to the end users of the library's services.

Animated chairs and meditation bubbles

Visiting the Hangouts' place for the first time, strikingly, there are no buildings neither offices or assembly halls nor neatly arranged gardens or a charming tropical paradise. A wall with the inscription Library Hangouts, some pillows to sit on, chairs, and an open plateau constitute the main part of the place. The place is observed with frequent intervals. It turns out that a group of librarian avatars meet on a regular basis to discuss questions with regard to their profession (Jensen 2008a, 2008b). Libraries are public institutions with obligations as to general education and the question

discussed is whether Second Life has a part to play in this, and if so, how best to play the part.

> "Really, when we started out, the question we asked was: what makes sense and fascinate the residents of this world? What is funny about the world? Quickly we realized that being together, meeting other avatars, chatting, controlling and using the virtual figure and designing it, all of this made sense and fascinated many residents. So, we focused our attention on these aspects of living the second life. It made no sense to introduce our traditional services from the library's homepage to make them accessible in this new environment. Our point of departure was to create something new, preferably, a virtual staging or framing for avatars in which to meet with each other." *Mads*

> "Some of the really useful library services accessible in real life they are of no interest, if you enter into this world. In here, you would expect some sort of experience or something funny. Well, I don't know how funny our place is, but at least we are experimenting." *Janne*

The design is developed over time, spontaneously, and in some cases together with occasional visitors. In designing the place together, the team carries out experiments asking what the design "feels" and looks like. An animated chair is bought with a script that rezzes a new chair each time a newcomer joins a meeting. Automatically, the script adjusts the new chair to a meeting circle. The animated feature of the chair has great effect. The chair makes one feel welcome and not intrusive, if joining one of their meetings.

Imaginative, almost magical and fantastic experiences are also part of the purpose with the design of the place. Meditation bubbles with relaxing and psychedelic music are created, and again, they are created in a process of mutual experience. Events and arrangements are organized, and audio books made available.

"We call them meditation bubbles. Inside the bubbles, you can sit down and listen to music while meditating; looking at flying fish and ladybirds." *Mads*

"I think it is really cool to include such 'bling' in here *(ssj, the meditation bobbles)*. Something funny that creates a cool experience. If I turn on the music in here then an almost psychedelic experience evolves, a kind of out of body all-embracing experience as if taking drugs. It is the same experience thing that you get when reading a book or watching a movie. This experience thing may be the link between what we do in here and the library's services out there. At least something that is not about hardcore information." *Janne*

The vision of co-design

The initial idea of the project is to create a place open to the concurrent co-design together with other residents and not only with the members of the project team. A design idea that is given up as it, apparently, results in chaotic and pointless design.

"Initially, the idea was to let people build and try out things on our place, furnishing the place. But, little by little, we had to give it up, because it messed up the place, and, actually, not many residents did create something serious." *Mads*

Located on the mainland of Second Life, the Hangouts learn – in the hard way – that also the surrounding places and the landscape has an impact on their place and activity. The project's place is fenced in by neighbours, who build tall walls that hinder the entrance to their place.

"Brandts *(ssj,one of the project's neighbours)* bought an island, because they were in need of more space. So, we promptly bought their land. We wanted to ensure some space around our place. Our neighbours, Brandts, had built a three floor building with grey walls towards our place. Due to this, we had to rearrange our place." *Mads*

The project, however, stays on the mainland as they find it more likely that occasional visitors will pass by on the mainland rather than on an island, possibly, to engage in the Hangouts' debate about the libraries and Second Life. Over time, as mentioned above, it turns out that their visitors primarily are librarians and students.

Over summer 2007, the project is closed as one of the team members employed in a temporary position is not reappointed due to the lack of resources of the public institution.

Reflections: openness and control

The vision and the ideas of the Hangouts' project are to design an open place for visitors and residents to create and co-design things and framings and also to arrange for events and cultural experiences – all of this in mutual agency. No plan is made, and no designing firms are contacted to create and build the virtual place. Rather, a creative and mutual designing process in itself is part of the purpose. This approach to design may be denoted "participatory designing in mutual practices of explorative processes". Metaphorically speaking, the place is designed out of animated chairs and meditation bubbles rather than offices and main buildings. Neither the web based services of the library nor the more traditional ones are included in the virtual world. It makes no sense to the team members of the project.

However, the vision is confronted with the conditions set by the abstract grid. To take full control of the virtual place requires the ownership of an island, which is out of reach for the project. Gradually, the building rights become privileged as it turns out that the open co-design approach in many cases entails pointless design, if not disruptive.

Over time, the place develops into a meeting place for a group of regular visitors and as such, it is very successful in initiating a debate – at times a very critical debate – about the role of libraries in Second Life. Yet it turns out to be a debate not with the end users of the library, rather, it is a debate in a rather closed meeting circle of

professionals of the field. Visiting the place, it is difficult to see and visualize the purposes and activity of the place. Only because of returning visits with frequent intervals is it possible to get the point, if one is outside of the meeting circle and the profession.

The open and democratic ideal seems to generate gapinesses in the Library Hangouts' project. Credibility and trust are important qualities for public institutions. Pointless and unattractive design does not visualise such qualities. Thus, the openness of co-design turns into control. Also, the lack of control with the place turns out to be a problem, when neighbours fence-in the project's place surrounding it with a grey wall. The case-study raises the question of how best to deal with the possible gapinesses between on the one hand the vision of user-driven collaboration, exploration and co-design, and, on the other hand, the possibility of maintaining the control and orderliness necessary for serious agency to appear trustworthy and credible. In the Library Hangouts' project, profoundly, the original vision and purpose is changed, when confronted with the tools put at their disposal by the Second Life grid. In this case, it seems that the idea of the user-driven content creation and design is difficult to make a reality. The gapinesses that evolve are bridged by taking control of the place and the open co-design vision is ended.

The Metanomics shows

On the international scene, early in the Second Life participatory observations, the Metanomics project appear to be worthwhile studying. In the project, interviews are carried out with decision-makers influential with respect to the in-world as well as out-world economic realities and politics that influence the development of the virtual world. The interviews are carried out by the avatar host Beyers Sellers, who is also the organiser of the show. The show is presented in this way:

> "Metanomics refers to the study of the business and policy aspects of the
> "metaverse" of virtual worlds. Metanomics can focus on issues arising within
> virtual worlds, such as how developers manage the economy of a game world

(like World of Warcraft), or how residents of virtual worlds manage and regulate business. Metanomics also includes the study of how real-world businesses can use virtual worlds as part of their strategy, and how real-world law and regulation might apply to virtual-world activities. Finally, metanomics includes the use of virtual worlds as laboratories in which to study real-world business or policy issues (Beyers Sellers (avatarname), Robert Bloomfield, Metanomics, 17-09-07)."

Members of the Linden Lab firm, researchers, developers, chief executive officers from IT firms such as IBM and Microsoft, artists, designers, etc., they are some of the interviewee's of the shows broadcasted in-world and streamed out-world to the Metanomics project's blog. Support from sponsors is a pre-condition for running the show. The project stands out as it appears well organized, the avatar Beyers Sellers is a skilled Second Life interviewer taking the realities of the new medium into consideration, and the show is focused on matters of interest to many residents of the Second Life world.

Figure 1 and 2. Interviews in one of the Metanomics shows. Figure 1 (left) depicts Beyers Sellers in an interview with David Wortley, Director of the Serious Games Institute of Coventry University. The interview is about the role of serious games in training and education, the nature of SGI's unusual public/private partnership, and how they work with the developer community in their region of the UK (Metanomics, archives 28-01-08). In figure 2 (right), invited interviewees jointly discuss Beyers Sellers' interview with Philip Rosedale, who is the founder of Linden Lab and now chairman of the board. The interview with Philip Rosedale is made public in a transcript on the Metanomics website (Philip Rosedale's vision. Metanomics 29-09-08).

The remediated talk show

Visiting the scene of the show, the design and framing immediately makes sense. One recognizes and understands the forms of communication made possible by the framework. It is a remediation (Bolter and Grusin, 1999) of serious television interviews and talk shows. Accordingly, the scenarios and framings allow the visitors to automatically adjust their expectations. The framing refers to communication forms that are transferred from a well-known medium with which we are familiar and it remediates the well-known in the new and still somewhat unfamiliar medium of Second Life. Interviews are carried out virtually with two avatars "face-to-face" in front of a live audience or with a group of invited avatar interviewees (figure 1 and 2). At first sight, the forms of communication seem formal and they indicate the social status, rituals, and norms that one expects given the TV talk-show framing. Everything appears to be orderly and under full control. The design conveys the impression of participants, who are seriously engaged with Second Life business and enterprises.

Gradually, it appears that the Metanomics show and project is much more complex than first anticipated. It takes several observations to understand the complexity: the multi-modal forms of communication, the organisation of the project, and the many different audiences addressed (figure 3 & 4).
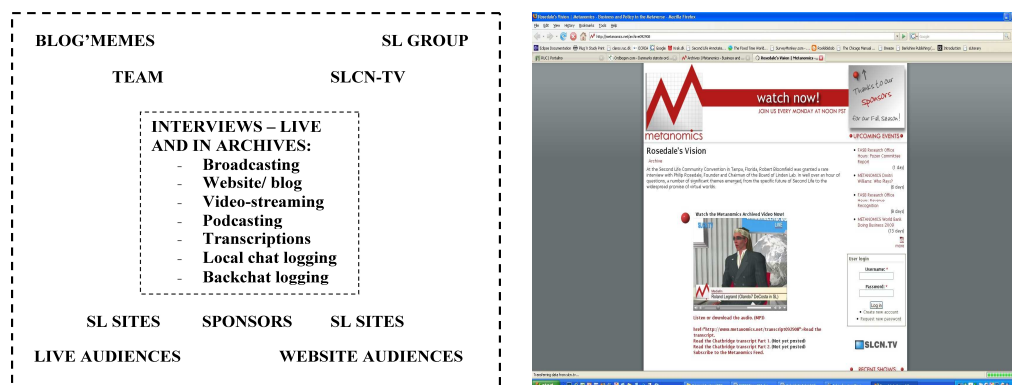

Figure 3 and 4. In figure 3 (left) there is an overview of the Metanomics project with many different Second Life sites (Sage Hall, Metapartners, New Media Consortium, Rockcliffe University, Colonia Nova, Muse Isle), different media, and many audiences. Figure 4 (right) depicts one of the pages in the archive with video, transcripts, and downloads (Metanomics, 29-09-08).

The weekly show is prepared for by a group of avatars – Beyers Sellers, Bjonlyn Loon, JenzZa Misfit – who are the core team. During the week, research on topics and the background of interviewees is carried out in order to ensure high-quality interviews. The project is distributed as several in-world sites are involved, and it is broadcasted in-world by the SLCN TV.

To reach a wider audience, a comprehensive multi-modal archive documents each of the shows. At the time of writing, 50 shows are documented in video-streams, audio podcasts, full-text transcriptions of each show, log of the local chat as well as the backchat. A Second Life Metanomics group is organised (approx 1000 members) and a group of bloggers in a "blog'memes" are actively engaged in discussions about the themes of the interviews also commenting on the shows.

Judged by their design, looks and appearances, the audiences of the show are experienced Second Life residents, who have made an effort to present themselves as such. From elegantly and exquisitely designed avatars and business-like looks to the mysterious, fantastic and adventurous semi-human figures, they all bear witness of experience and Second Life skills. Designers, event makers, skilled scripters, business managers, they are some of the returning audiences of the shows.

Figure 5 and 6. Avatars who attend the Metanomics show about the vision of Philip Rosedale, the founder of Second Life. The live audience depicted above attends the show in a reconstruction of the Sage Hall of Cornell University, Johnson's Graduate School of Management (Metanomics, 29-09-08).

A cacophony of voices

At the beginning of each show, the host Beyers Sellers encourages the audiences to chat with each other during the voice-based interview. Surprisingly, the audiences are not asked to only focus their attention to the in-voice interview; rather, they are encouraged to undertake a multi-voiced form of communication among and between the different audiences attending and watching the interview.

> "We encourage you also to keep up a lively chat during today's show. In my own personal view, one of the signature advantages of conducting live events in Virtual Worlds is the ability to what would have to be called a cacophony of discussions in text chat simultaneous with a more focused conversation in voice. We use [...] system to transmit local chat to our website, website chat into our event partners and so on. So backchat brings you in touch with people all around Second Life and on the web, wherever you are." (Metanomics archives, 07-04-08)

Concurrently, one of the members of the core team provides links to the multi-voiced conversations and discussions going on; links that are of relevance to the ongoing interview as well as the ongoing chat.

Reflections: order and cacophony

Recurrent observations make clear that Metanomics is a complex and multi-voiced experiment that addresses the audiences by making use of many different forms of communication. In the introductory presentation (Metanomics 101, 17-09-07), Beyers Sellers announces that the project will run every week for the next three month. At the time of writing, it is more than a year ago. Looking back at the past year, the project has achieved its goals as it has become a known in-world "brand". Understanding this seemingly success, we will follow the *bridgings* (Dervin and Foreman-Wernet 2003) of some of the user-driven and innovative steps taken.

Initially, the Metanomics show is thought of as a place for the hosts' students to meet with invited guests, whom they would not otherwise have the possibility to meet. One may say that the initial idea is a remediation of the traditional guest lecture at the host's university. However, over time, the host of the shows, who is a professor, changes his work and function in Second Life. He becomes a journalist in a complex Second Life project with thorough journalistic research and preparations for the interviews and the multi-tasking competence necessary to run a Second Life Metanomics show. To willingly undertake the learning and up-skilling in order to adjust the competence to new fields of knowing and performing that is one of the most important innovative steps taken to move forward the show and develop the brand.

Early in this process of innovation, the show further develops to become a remediation of a serious television interview and talk show. As the show remediates well-known forms of communication, the audiences that attend will know what to expect. However, not only the willingness to accept and adjust to new areas of knowing and performing, but also the ability to adjust the technology and the medium to new forms of communication, these are decisive innovative steps that are taken. One of the new forms of communication and norms of the social interaction in a virtual world may be denoted "transient" attention and awareness meaning that it is difficult to sustain the attention and awareness of avatars (Jensen 2008a). They may come and go as they please flying in and out of the scene. The norms guiding the behaviours as to how and when to begin and end situations in social interaction, such norms seem to change in a world of avatars. In order to adjust to some of the new forms and norms, the media and technology is applied in support of a cacophony of voices instead of sustaining the traditional audiences of silent and passive attendees. The interview concurrently runs in the voice chat, in local chat, and in the backchat of the show. The communication and social interaction *among the attendees,* who are chatting with each other discussing matters of interest that come up during the interview, it is a new form of communication that transforms the silent audience to become participants in the show. In order to sustain and further develop this cacophony of voices, one of the core team members is even continuously pasting into the chat links that are relevant to the interview.

Analysis: steps of innovation

In the diagrams below (diagram *a-f*), the two cases are now analysed with regard to three different aspects: design of the projects' places (form), the content provided for by the project, and the complexities of the form and content. The diagrams are in only 5 steps as it is not a finished analysis of the cases; rather, it serves to exemplify a way of understanding some of the dynamics of innovative processes together with the making of sense of such dynamics. In so doing, we will also seek to clarify some of the similarities and the differences of the cases.

In Bruno Latour's (1991) classic analysis of the innovative steps taken in the development of the European hotel key, a diagram is applied which holds together in an opposition the dynamics of processes of substitutions (x-axis) and diffusions (y-axis). The processes of diffusions are to be seen as "and"-relations whereas substitutions are processes of "or"-relations. In the processes of substitutions, symbols and artefacts are reconfigured and transformed in order to give weight to the aims of a meaning-making *program*. Processes of the diffusions may be seen as battlefields, where the program seeks to expand the connections necessary to fulfil its aims when confronted with a counteracting *anti-program*. Following the trajectories of steps taken in such processes, a front line is drawn between the program and the anti-program. Thus, the program is a process of transformations that drag innovations along the front line in a struggle for expanding the connections of the program. One may say that the innovative steps taken make heavier the weight of either the program or the anti-program and the frontline make visible the processes of opposite sense-making strategies.

In the Hangouts' case, the analysis is seen from the perspective of the project team, which means that the program holds the assertion that it is possible to attract the library's public of end users and inspire their interest in gaining knowledge about the virtual worlds, i.e. Second Life. The anti-program is end users, who know nothing about the virtual worlds and/ or are not interested in gaining knowledge about them, unless it makes sense to their life world; or end users who do not wish to have access to such worlds. In order to strengthen the program, steps of innovation are taken by the project team, steps that we will follow in the analysis.

In the Metanomics project, the analysis is also seen from the project team's perspective. Following this, the project's program holds the assertion that it is possible to attract avatars and actors – be they Second Life residents or inhabitants of other virtual worlds – who are interested in getting to know about the development of virtual worlds with regard to in-world as well as out-world economics and politics. The anti-program is residents, actors, and inhabitants, who do not attend the shows be it that they are not interested in the content or find that the show makes no sense to their in-world and out-world life; or actors who are not present in virtual worlds.

Design of places

In diagram *a*, the front line is drawn between the program H (Hangouts) and the anti-program P (public) (1).

Substitution   Substitution

1 H P P P P P   *1* M A A A A A
2 H D P P P P P   *2* M D A A A A A
3 H D Co P P P P P   *3* M D P A A A A
4 H D Co B P P P P   *4* M D P T A A A A A
5 H D Co B C P P P P P *5* M D P T W A A A A A

                       Diffusion   Diffusion

H: Hangouts, **P**: public, **D**: design, **Co**: co-design, **B**: blog, **C**: chair

M: Metanomics, **A**: audience, **D**: design, **P**: places, **T**: TV in-world, **W**: website
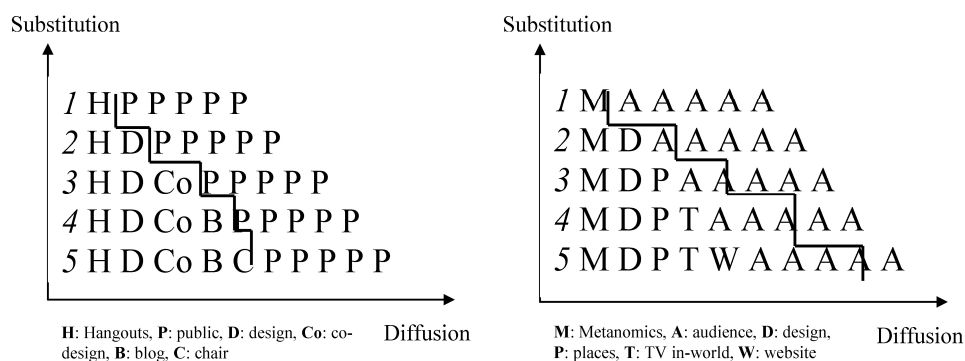
Diagram *a* (left) and diagram *b* (right). Design of places in the Hangouts and the Metanomics projects. The diagrams show the programs and anti-programs in the dynamics and sense-makings of innovative processes.

The design of the Hangouts' place is not immediately recognisable (2). It makes no sense unless one returns several times. Given the transient attention and awareness mentioned earlier, it is not likely that visitors will return to a place that makes no sense unless they have a special interest in doing so. The initial idea of the design is to create and co-design the place together with visitors (3). As it takes knowledge and

skills to build, the vision is not made a reality. Rather, it produces a need for control and building privileges. The idea of co-design does not attract a public of end users. Neither do the end users make comments about the project on the blog designed in order to support the exchange of ideas and critique (4) or sit down in the animated chairs (5). Although many substitutions are made from step 1 to 5 in the process of transforming the program to make the assertions a meaningful reality, the scope of diffusions is not broadened. The front line does not move along the diffusion axis, which means that no end users are convinced that it makes sense to visit the place and/ or take part in the creation and building of the design.

In diagram *b*, the frontline is drawn between M (Metanomics) and A (audience(s)). The design of the Metanomics' place is recognizable (2). It makes sense because the forms of communication one would expect are well-known. In the first step, the front line is moved along the diffusion axis connecting the program to the audience in a process of remediating the well-known communication forms. When the audience grows in number, the next step taken is to distribute the shows in connections with the SLCN TV in-world medium. Thus, the show is made accessible by transmission to in-world places other than the live show (3, 4). The frontline moves along both axes and connects the substitutions that continuously transform the design of the show with the diffusions, thus broadening the audiences that attend the shows. In step 5, a website is designed to stream the live show on the site in order to make accessible the show to attendees, who are not present in Second Life.

Content of the projects

Analysing the content of the projects (diagram *c* and *d*), it springs to the eye that the Hangouts' project (diagram *c*) attracts the attention of some colleagues (1) rather than the end users.

```
1 H C C C C C
2 H De C C C C C
3 H De E C C C C C
4 H De E F C C C CC
5 H De E F S C C C C C
```

H: Hangouts, **C**: colleagues, **De**: debate, **E**: events, **F**: face-to-face meetings, **S**: SL meetings.

Diffusion

```
1 M A A A A A
2 M C A A A A A
3 M C H A A A A A
4 M C H Ca A A A A A
5 M C H Ca B A A A A A
```

M: Metanomics, **A**: audiences, **C**: content, **H**: history (archive), **Ca**: cacophony, **B**: blog'memes.
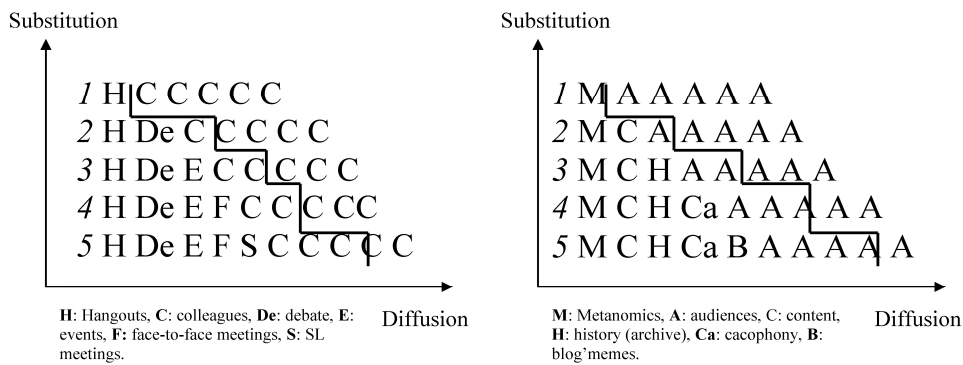
Diffusion

Diagram *c* (left) and *d* (right). Contents of the Hangouts and the Metanomics projects.

The discussion and debate about the roles of the libraries in Second Life is made the content of weekly Second Life meetings of librarians and students at the project's place (2). The discussion and debate makes sense to the group of librarians and their professional identity and work life. Thus, the Second Life place serves the function of a framing of the sometimes very critical debate about questions important to the librarians and students taking part. This said, the importance of the questions discussed means that the group of interested colleagues also participate in other events (3) such as face-to-face meetings (4), and in Second Life events with lectures and audio books (5). When seen from this perspective, the project expands the scope of diffusions although it attracts a different target group than imagined.

In the Metanomics case, the content is focused on the audience of residents (and students) (1) interested in the economics and the politics of virtual worlds (2), especially so, the future development and the questions of next steps to be taken living a life in virtual worlds. With a focus like this, the project quickly attracts an in-world live audience. Even so, the project takes further steps to develop the shows as more and more avatars attend. The complexity increases and steps are taken to make accessible the shows in a comprehensive archive (3) aimed at residents who for some reason are not present in-world or watch the stream on the website. Further steps are taken to develop the multi-voiced cacophony (4) and the organising of blog'memes that contribute to keep the pot boiling (5). The project continuously transforms the program, and it expands the connections along the axis of diffusions.

Complexities of the cases

In the Hangouts' case (diagram *e*), the complexity of introducing a virtual world such as Second Life to a public of end users with no prior experience is overwhelming (1).

Substitution | Substitution

1 H P P P P P   *1* A A A A A M
2 H De P P P P P   *2* A A A A A M C
3 H De E P P P P P   *3* A A A A M C H
4 H De E F P P P P P   *4* A A A A A M C H Ca
5 H De E F S P P P P P *5* A A A A A M C H Ca B

H: Hangouts, **P**: public, **De**: debate, **E**: events, **F**: face-to-face meetings, **S**: SL meeting   Diffusion

M: Metanomics, **A**: audience, **C**: content, **H**: history (archive), **Ca**: cacophony, **B**: blog'memes   Diffusion
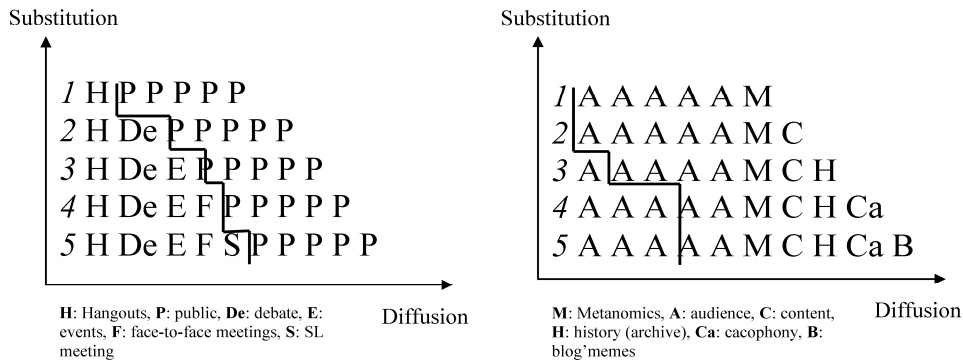
Diagram *e* (left) and *f* (right). Complexities of the Library Hangouts and the Metanomics projects.

The effort that is necessary to make this vision a reality does not correspond with the competence, resources, and knowledge of the project team. Also, the aim and content of the project with regard to the public is unclear (2). The vision of co-design, the debate about virtual worlds and the events arranged for in-world and out-world (3, 4, and 5) are complex and unfocused taking the initial target group into consideration. No matter how much the project team puts an effort in making the idea a reality, the program of substitutions never succeeds in expanding along the axis of diffusion. From the optic of the public, the Hangouts project is never made public.

Complexities also have important parts to play in the Metanomics' case (diagram *f*). Although successful in attracting the attention of many audiences – in-world and out-world – the project faces a risk due to the overwhelming complexities. To get an overview of the project, the many different media applied, and the multi-voiced forms of communication – all of this is demanding. Having succeeded in reaching out to ever widening audiences by continuously creating new substitutions, it expands along the diffusion axis, but the complexity of the substitutions that support the program may turn against itself thus threatening to narrow down the connections of the diffusion.

Conclusion

It is difficult to transform the abstract grid of Second Life into contextual places that are meaningful to other residents and visitors of the world. In both studies, gapinesses evolve. However, the gapinesses are bridged in very different ways. In the Hangouts' case, the project team's knowledge and competence and the resources put at their disposal do not enable the project to make into a reality the vision of co-design and to reach a target group of end users of the library. The project does not move the connections of the program along the axis of diffusion. In the Metanomics' case, resources are raised in the form of sponsorships, the content is defined, and the knowledge and new professional skills necessary to run a Second Life talk show are built up within the core team. Also, a multiplicity of media and communication forms are made use of to move the project's program along the axis of diffusion. To further develop the innovative steps taken in the Metanomics case, it is pivotal to make sure that the multi-voiced forms of communications do not turn into a chaotic cacophony. The *constructive cacophony* is the term suggested by the host of the show (Bloomfield 2008) to conceptualise the new forms of communication of the show.

In both cases, it is made clear that moving into a virtual world, starting up new activities, enacting new professional roles is as demanding as is otherwise the case – maybe even more so as there is only limited experience and familiarity with the new medium. It springs to the eye that the content of the activities has an important part to play, especially so, if it is of relevance to the life that residents live in the virtual world or deal with questions with regard hereto. In the Hangouts' case, the weekly meetings between colleagues of the same profession make sense as questions of the Second Life project and their professional job are discussed. In the Metanomics case the content is about aspects and prospects for the residents' future life in virtual worlds.

The case studies exemplify the importance of reflecting on how best to make use of the new medium, that is, to build up the knowledge and skills necessary to be able to

balance the recognizable with the experimental in the user-driven innovations and design of a virtual world such as Second Life.

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