Pockets Full of Memories:
The Collaborative Construction of a Digital Archive

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The talk will focus on the collaborative aspects of George Legrady's installation "Pockets full of Memories" in terms of its multinational production and audience contribution by analyzing the work process and the contributed objects and their descriptions.
http://legrady.mat.ucsb.edu/big_table.html

Case study: Pockets full of memories
The aim of the following case study was to apply this model to an international and interdisciplinary team working in digital media. The analysis addressed the development and the associated problems of a digital online art installation which was shown from April until September 2001 at the Centre Pompidou in Paris. George Legrady‘s installation “Pockets full of memories" consists of an archive of personal objects contributed by the audience. These objects were scanned and became part of an emerging data structure which has been organized by the Kohonen self-organizing map algorithm using attributes described in a questionnaire. Visitors described their objects with categories and keywords and evaluated them with a semantic differential between two poles, e.g. old/new, useful/useless. The ordering of the objects was based on the ways that the audience described them through the touchscreen questionnaire. The archive was projected large scale in the museum and could also be seen on the internet at www.pocketsfullofmemories.com. Visitors and internet users could retrieve the description of objects as well as add comments and stories to the objects via terminals.
The goal of the project was to include visitors in the development of the archive and to enhance interaction between the audience and the data structure.
This project was realized by a spatially dispersed team (Helsinki, Budapest, Stuttgart, Paris, Santa Barbara) with different nationalities and heterogenous disciplines (art, graphic design, engineering, cognitive sciences, computer sciences). Because of the spatial dispersion of the team, communication was done mainly via e-mail or telefon; team languages were English, French(curator/artist/Paris team) and Hungarian (artist/Budapest team). Due to the innovativeness and the integration of science and art concepts, the complexity of this project was rather high. The goal of the case study was to investigate whether the results of the teams in R&D could be transferred to other areas.

Development process
The artist met Dr. Timo Honkela at a EU CIRCUS funded meeting in October 1998 and was introduced to self-organizing maps. Timo Honkela worked with Kohonen and did his Ph.D. thesis on applying Kohonen‘s self-organizing map on data clustering. These algorithms are used to cluster biostatistical data in order to find sub-groups with similar characteristics. Since the artist is mainly interested in constructing archives, he was thinking how to integrate the capabilities of the SOM algorithm in his data oriented projects. They met again at the next CIRCUS meeting in Angouleme, France, and brainstormed on different project-ideas for EU-grants. At this time, the artist also met with Boris Tissot, a curator working for the Centre Pompidou to discuss an exhibition proposal and an initial version of the PFOM project came into being. Plans were made and funding requested from the Foundation Daniel Langlois for the Arts &Technology.
Production began in the early summer of 2000 even though the Centre Pompidou administration hesitated confirmation of the exhibitiuon due to the complexity of technological details.
The artist contacted different partners:
- C3, a Hungarian engineering/artist team based in Budapest, with whom he had previously worked together. Their part of the production consisted of the hardware/software development of the scanning stations.
- Projektriangle in Stuttgart, Germany, who were responsible for the visual identity and interface design of the installation.
- Timo Honkela and his team were responsible for the implementation of the SOM algorithm.
The project started in the beginning of July in the finnish forest with the Finnish team, where the first development and testing of the SOM took place. The first prototype was shown at the ISEA in Paris in December 2000, and the opening was on April 18, 2001 at the Centre Pompidou in Paris.

Team Structure
Overall, 12 persons were involved in the development of the installation, a group size which does not allow communication nets between all of the members. This situation was further complicated by fluctuations and an instable group structure, e.g. the leader of the Finnish team was involved only in the beginning of the project, afterwards one of his students carried out the task. The size of the team and the different languages also promoted the development of subgroups. In the beginning, the communication between the Finnish and the Hungarian team took place via the team leader, the artist, who forwarded all the informations. This situation caused misunderstanding since he lacked the knowledge about conventions concerning data formats.
Direct communication via e-mail between the two subteams solved these problems. Because of scheduling conflicts, there was no shared project‘s kick-off with all team members. Instead, the kick-off took place individually with all subgroups. This did not allow the establishment of precise rules and norms for communication and the development of a team spirit. Furthermore, most of the team members lacked concrete experiences with interdisciplinary

team work and only the Hungarian engineering/artist-team had knowledge about product development processes.

Communication problems

Due to the spatial dispersion of the team members, meetings were not often possible. Instead, team members communicated via e-mail. This made it difficult to build up trust between team members, in particular because only the artist and the Hungarian team knew each other previously. Team members had little in common. They spoke different languages and came from diverse cultural backgrounds, they differed in age (between 25 and 51 years)and professional expertise (student to seasoned professional). At the beginning of the project, there was little mutual respect and acceptance to be sensed between the subgroups. The atmosphere was not very confiding and there were tensions and competition between the subteams. As a consequence, it was not possible to openly address problems in the team and it was difficult to compromise. This was mainly due to the high ambitions of the younger team members who had little experience with team work.

Coordination problems

The time schedule war very tight and there was time pressure from the beginning: team work started in June 200 and the prototype was presented on a conference in December 2000. The keeping of the time schedule was further complicated because team members were strongly engrossed by other projects. Due to the little experience with team work several subtasks took longer than expected and were not finished in time and agreements were not kept. As a consequence of the interdependencies between the tasks, subsequent tasks were delayed as well.

Further problems resulted from team member‘s different objectives for this project. Every discipline overemphasized their part of the project and tried to optimize their tasks. As a consequence, additional tasks were performed or the subtasks could not be integrated. This was partly a project management issue. The complexity of the project made it difficult to prepare team meetings thoroughly. There was hardly any documentation as project solutions emerged out of production due to a desire for innovation. As a consequence, the project development phases could not be defined precisely and the planning of the project was relatively rough. The project leader did not want to determine the individual contributions because he wanted to learn from the different disciplines and to integrate their contributions. This offers on the one hand a big scope for the development and realization of individual ideas; on the other hand this open situation created uncertainties and increased the subjective stress. Moreover, even the legal situation was unclear: in the beginning, there were no binding contracts with the team members or concrete work packages defined.

Knowledge sharing problems

Due to the different knowledge domains, it was difficult to develop a shared understanding for the project in the beginning. First signs of mutual understanding occured only when the first prototypes were visualized. In order to cope with the tight schedule and the high workload, new persons were brought into production work. With each new member of the team, a common ground had to be developed again. A further problem was the (disciplinary)use of terminology since there was a different labeling of the same content; the resulting misunderstandings could be clarified by defining the important terms and concepts. Especially in the beginning, it was difficult to overcome the disciplinary thinking and to take over the other discipline‘s perspective.

This was further complicated by using English as the team language; sub-teams had their own meetings before official meetings to agree upon a shared position which they presented afterwards. The lack of experience with interdisciplinary collaboration was overcome by the high motivation of the group to develop this innovative installation. Many of the participants pursued their own goals through this project, e.g. international visibility by participating in a Centre Pompidou exhibition. These individual goals were motivational even through difficult phases at times of doubts in the successful realization of the project. Overall, the development process was estimated by most team members as „very intense“ but felt it was worth their effort.

Conclusion

In this paper, we applied our model of interdisciplinary co-operation to an international team working in digital art production. In the case study, it could be shown that new knowledge and innovation result from the confrontation with and integration of different perspectives, here the integration of the SOM algorithm into the context of digital art production. The results also show that coordination and knowledge sharing need to be enhanced since these processes were most problematic. In order to optimize the innovative potentials of interdisciplinary teams and to reduce team member‘s stress due to budgetary and time constraints, strategies and tools to support coordination and knowledge sharing have to be developed.

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