Digital cooperation across disciplines.

Exchange of design data in inclusive, complex and hybrid processes.

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Computers have become a natural part of the everyday life of a designer and the hype has faded. It is now becoming clear that the computer has not totally replaced all traditional design media, but that many of the old techniques have survived and are practiced together with computer use. The new design process has become more inclusive and richer than before. At its most developed, computer driven emergent techniques are combined with traditional CAD and manual modelling and sketching techniques.

Information is stored in the computer in a binary form. This means that information appears as only abstract structures of two signs, the numbers zero and one. We need tools for interpretation to read the information as understandable media (text, images) This fact opens up the possibility to exchange information between different expertises. Sharing of data has changed the way we collaborate. The sharing of data and the development of design information through computational processing encourages multilayered and trans-disciplinary collaboration. It questions the meaning of the information we exchange. It moves focus from the exchange of meaning to the exchange of structure. The computer invites for a manifold of working methods and becomes a tool for bridging the different stages, techniques and expertises.

The paper demonstrates several cases of complex and inclusive co-operation where different expertises combine their skills. Central in these processes is the negotiation of individual and collective control and the monitoring of rich and partly fuzzy design data.

Is digital co-operation different?

The question is in a way hypothetical because do we really find cooperation today that is not in one or the other way supported by digital means? This goes at least for the vast bulk of design co-operation. But still it makes sense to pose the question just to speculate about the particular of digital enhanced co-operation.
What is digital co-operation? The technologies that influence co-operation in general and design co-operation specially include a large amount of different systems and software. What is central though is the exchange of information via digital media or infrastructure.
In many ways digital co-operation is not principally different from what was doen before. The media and the speed and amount of exchange has increased. But still I hypothesise that there are at least two remarkable ways co-operation has changed and led to partly new ways of working together.
Digital technology has changed co-operation in at least two fundamental ways:

1.) Electronic networking has enhanced the accessibility and document based contact and exchange of information in the design process. This has led to certain new ways of working together in complex processes. Sequential processes or parallel development has become relative normal. Distant cooperation is the standard even for people sitting almost next to each

other. Design problems are solved and solutions developed in an increasing rate via file exchange rather than round the meeting table. This has led to a new negotiation of individual control and editorship. Control is now less monitored by individuals than by the process at large. Information is reused by others and the authorship more diffuse.

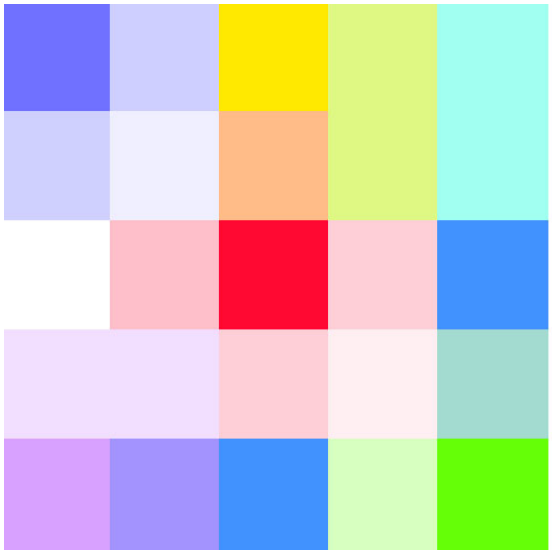
In the networked co-operation I have been practicing I managed to distinguish several different modes of information sharing resulting in partly new process forms:

- *Composite processes*
- *Parallel processes*
- *Sequential processes*

(Sevaldson 2005)

2). Digital information is generic and hence possible to interpret by different practices. This has led to a new form of cross-disciplinary collaboration that is able to share information in a more radical way than before. Information in it self is neutral and contains just structure. When we read the ones and zeros with particular software the information becomes a text or an image. We can exploit this fact for data sharing across disciplines. In my collaboration with several musicians and composers, especially the composer Natasha Barrett we developed this form of information sharing to use the same source material to inform both sound track and three dimensional spaces (Buene and Reinholdtsen 2000) (Sevaldson 1999; Larsen and Reinholdtsen 2000) and in the last case the organisation of both physical and auditive space.(Barrett 2004)

In this paper under development I will address both those modes of co-operation and discuss how it influences practices and how knowledge filtrates across the professional borders. The themes will be discussed in the light of several co-operation projects where I have participated.



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The same data read by two different software (media). The original information was made up by producing a 5x5 pixel gif image (to the left). This information was read as text by opening the file with notepad (to the right) what could be interpreted as a source for visual art is reinterpreted as some strange kind of digital Dadaism or concrete poetry. (Birger Sevaldson 2004)

Barrett, N. (2004). Emergence in musical composition. Oslo, Personal communication.

Buene, E. and T. O. Reinholdtsen (2000). Tidsrom: Composer Group Study: Preliminary report. Oslo.

Larsen, K. B. and T. O. Reinholdtsen (2000). Tidsrom: Group A: Study 1: Preliminary report. Oslo, Larsen.

Sevaldson, B. (1999). Tidsrom. Oslo, http://www.aho.no/staff/bs/tidsrom/.

Sevaldson, B. (2005). Developing digital design techniques. Institute of Industrial Design. Oslo, Oslo School of Architecture and Design**:** 357.