

SUMMARY

Man is a collector. All people surround themselves with assorted artefacts. Things that appeal to them, trigger their memories, or intrigue them. Designers collect visual materials as a *source of inspiration*. They use these materials in the design process when making *collages* or *moodboards* that early on communicate the direction of a design project.

This thesis and the designs described in it explore how designers use such visual material in the conceptual phase of design, and how new media can support this.

The research follows a *research through design* approach, explained in chapter 1. Research methods form the basis of design solutions, which receive a concrete existence in the form of prototypes. In turn, these prototypes become the instruments in experiments. Both design and experimentation generate knowledge.

The thesis explores the phenomenon of designer's collections from three perspectives: *theory*, *technology* and *practice*. At the start (chapter 2) a theoretical framework is developed integrating expert knowledge and literature that could be expanded and attended to, throughout the research. Two working prototypes have been developed – the *TRI Setup* and *Cabinet* (chapters 3 and 5) – exploring the possibilities of new media and interaction technology, from the perspective of the designer as user. Two field studies have been performed (chapters 4 and 6) at designers' workplaces to find out how designers collect visual material and what new tools can do to support this.

The theoretical framework described in chapter 2 introduces notions from different disciplines. It covers literature on creativity, categorization, media aspects and interaction. Literature describes *categorizing* as a *creative act*. Especially when the categories are not clear, or when *friction* occurs by mapping different concepts onto each other. Such friction often is the source of new insights. Furthermore, creativity is not described as a purely mental act, but also as something dependent on bodily expression.

With collages, designers can create fuzzy categories and force fit concepts onto each other. This, combined with the designer's ability to spatially organize visual material, makes collages a powerful tool for creative exploration.

Following the *research through design* approach, the possibilities of new media in supporting creative activities were explored through working prototypes. The *TRI Setup*, described in chapter 3, offers a body-scaled interaction in a low-threshold, approachable *sketchy VR Setup*. Designers can use the *TRI Setup*

to experience, discuss and test their design concepts, using projected light, together with physical models and sketches, as design material. The TRI Setup is based on insights from perceptual psychology, that people interact and experience differently on different ranges, which in interaction design is hardly explored.

Current needs and practices regarding collections of visual material were studied in a *contextual inquiry*. This practice study, described in chapter 4, was conducted at five design agencies. The contextual inquiry used methods from *participatory design* to get more insights than more passive interview techniques would provide, into the often subliminal activity of collecting visual material. Using a *cultural probe*, a package sent out a week in advance, containing a booklet, an instant camera and visual material, designers were asked to expressively record their daily interactions with visual material during the week.

Designers were found to keep *two collections*; a physical collection of magazine snippets, photos and material samples, and a digital collection of images on hard discs, CD-ROMs and on the Internet. The *physical* visual material was *collected for inspiration*, whereas the *digital* images were often the result of a *goal-directed search* for materials used in presentations and collages. These two collections showed hardly any overlap in value and use, and were never used side by side. This inquiry led to *six considerations* for a tool to support collecting by designers.

- 1) **Active collecting.** Building a collection without a predefined structure and a low threshold to add material.
- 2) **Merger of physical and digital collections.** Both in interaction and in the value of the collections for the user.
- 3) **Visual interaction.** No need for verbalizing during the visual thinking process.
- 4) **Serendipitous encounters.** Stumble upon discoveries both in physical and digital material, without especially looking for them.
- 5) **Inspiration by breaking the working rhythm.** Involving the body and breaking away from the desk.
- 6) **Social aspects of visual material.** Sharing material and inviting colleagues to use the collection.

The work up to here laid out a framework of theory, technology, and practical experience. These insights were united in a working prototype named *Cabinet*. Cabinet helps designers to collect, organize and use visual material in their daily work. Cabinet, just as the cabinet of curiosities or *Wunderkammer* that

were kept by the well-to-do of the 16th and 17th centuries, gives the collecting activity a flexible place to store and organize collections. Cabinet does this by addressing the six considerations. It *merges* the physical and digital collections, supports *expressive interaction* by involving the whole body, and allows for *shared* and *collaborative* use.

Cabinet consists of a table-sized interaction area, with an overhead projection and capturing system. Any kind of visual material that is placed on the tabletop area can be captured using a digital camera. The digital image is then projected over the original, resulting in an almost magical transfer from the physical to the digital realm. The collection itself is projected on the table as compositions of thumbnail images and stacks. With a special pointing device, designers can directly manipulate composition and groups in large, expressive gestures with a purely visual interface.

Cabinet was developed as an instrument in the *research through design* approach. It demonstrates how technology can support designers collecting visual material. To validate the design solutions it embodies, and to further explore its effect, Cabinet was sent out of the lab into a crucial practice test at design studios – where few other design prototypes had gone before. In the experiment, described in chapter 6, Cabinet is placed at three design agencies over a four-week period. The designers used Cabinet at their own initiative for their own design projects, without guiding experimental protocols or fictitious assignments.

The functionality and interaction style of Cabinet were readily accepted. Cabinet helped bridging the digital-physical divide in designer's collections.

Cabinet had one unexpected effect that occurred with all designers; they combined their source material, normally used for collages and moodboards, with their design solutions. Where currently solutions were compared by comparing them to their collages, they now became *part* of the collages.

Finally, in chapter 7, I reflect on this PhD project as a whole. What did we learn about inspiration? And how do the designerly ways of research fit into the picture of *doing science*? Central in the conclusions is the role of the research prototype. Traditionally, a prototype is deployed to evaluate a proposal after it has been completed. In this project, two other functions of a prototype are more important: 1) its ability to demonstrate (rather than experimentally prove) a principle, and 2) a means to develop discussions and appeal to experience. Prototypes can be used to generate knowledge, also through the many design steps it embodies.

A prototype is a *vortex*, which both pulls in knowledge and experience, and spinning off new ideas for other solutions and research opportunities.