Beyond skin deep Exploring the contribution of communication design within interaction design projects

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An exegesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (Communication Studies)

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Beyond skin deep Exploring the contribution of communication design within interaction design projects

This research has explored potential ways for understanding the contribution communication design makes within the field of interaction design; specifically projects that have involved the design of web-based interactive systems. As a practice-based design investigation, this research has been conducted through a series of interaction design projects within the context of a Collaborative Research Centre, and have often included working with industry partners. I will refer to these as projects throughout this exegesis. In this exegesis, I will argue that communication design can make a valuable contribution to interaction design projects, and that this contribution can be facilitated by understanding interactive systems in terms of the role that they play in our everyday experience of the world.

This exegesis presents the central argument of the research and how the research questions were investigated. It presents the projects through which the research has been conducted, and through discussion, presents the discoveries and knowledge gained through this research. The total submission for this research consists of the exegesis, exhibition, and oral presentation. Throughout each mode of delivery I will share how the research questions were investigated.

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the exegesis is the result of the work which has been carried out since the official research program; and any editorial work, paid or unpaid carried out by a third party is acknowledged.

[Signature]
To my Dad
I would like to acknowledge the Australasian Cooperative Research Centre for Interaction Design (ACID) for its financial support and the unique project opportunities which have served as the context for this research. I would also like to thank the people of ACID for their guidance, input and support.

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This research has explored potential ways of understanding the contribution communication design makes within the field of interaction design, specifically projects that involve the design of web-based interactive systems. As a practice-based design investigation the research has been conducted through a series of interaction design projects within a Collaborative Research Centre and often included working with industry partners. These projects were managed by multidisciplinary teams comprised of developers, anthropologists, business analysts and communication designers. Throughout these projects I have been an active member of the research team. Through my practice of communication design I have contributed to the delivery of project research and outcomes; I have also used these projects as the sites for my meta-investigation of the contribution of communication design to these projects. In this way I have been both the subject of research in projects and a researcher on projects. This text is the account of my research process and evolving discoveries. Since completion of this research and through reflecting on the projects and some of the broader issues surrounding interaction design, I have come to believe that communication design can and does make a valuable contribution to interaction design projects, and that this contribution can be facilitated by understanding interactive systems in terms of the role they play in our everyday experience of the world.
My interest in this field emerged from my own concerns as a communication design practitioner employed within interaction design projects where the only ‘interactions’ I ever got to design were with the outer look, or ‘skin’ of the product. In this way interaction was limited to the act of viewing or seeing, which is arguably not really interaction. As a then recent graduate of design school, I had been taught that the focus of communication design was in affecting some kind of change by facilitating communication through visual artifacts—a view that is reflective of Frascara’s (2004) definition of communication design. However, in my emerging commercial practice of reskinning software products, I felt as though the only change I was affecting was in making people momentarily look at a product and say ‘ooh’ before using it and saying ‘huh?’.

It is possible to argue that there are many similarities between the practices and intentions of interaction design and those of communication design. As Ehn (1990) argues, the objective of the design of interactive systems is to facilitate a change in the practices of people. This is similar to Frascara’s (2006) definition, whereby the focus of communication design is affecting change in the attitudes, behavior and knowledge in the audience. In light of this, the practice of ‘skinning’ in which I was engaged seemed as though it was on the outer of what could be a richer process of designing to engage people in the use of interactive systems.

I began this research by interrogating the activity of ‘skinning’ through my own practice. It was through discovering Löwgren and Stolterman’s description of the aesthetics of interactive systems (or ‘digital artifacts’) that I was able to look at the role of the visual not as a separate layer to be designed, but as an integral part of the larger aesthetic whole. They describe this as follows:

*It is common to assume that aesthetic aspects are rather superficial—related solely to shape, form, and colour. However, the aesthetic qualities of digital artifacts go far beyond the surface. One of the most fascinating aspects of a*
digital artifact is that it must be understood aesthetically as an experience over time.
(Löwgren & Stolterman 2007, p. 53)

This simple expression of aesthetics embodied what I felt might be a way to explore the contribution of communication design practice to interaction design projects. This ‘hunch’ led me to develop the following research questions:

*What is the contribution of communication design within the context of interaction design projects?*

*How do understandings of the aesthetics of interactive systems shape the process of designing them?*

*How might this shed light on the role of communication design?*

In this research I specifically focus on Löwgren and Stolterman’s notion of aesthetics of interactive systems as a way to both inform and understand my design practice. Their concept emphasises a wholeness and an orientation towards people as active participants. In order to better understand experience, I draw on McCarthy and Wright’s (2004) pragmatic philosophical account of the way in which we experience technology.

In this exegesis I will argue that it is through an orientation towards experience that communication design can make a significant contribution to interaction design projects. To achieve this it is essential that communication design be an active participant in the early stages of a project, from the conceptual sketching of experience, the shaping of interactions which give rise to experience, and the shaping of prototypes that enable us to put experiences out into the world.
How was this research conducted?

This research was conducted through a communication design practice within interaction design projects. My investigation of this practice was informed by theories from interaction design and human computer interaction, which also enabled me to better understand what it is that communication design contributes to interaction design projects. This practice-based approach to research has allowed me to access the richness and complexity of practice, the context of my investigation, as both a practising designer committed to the goals of each design project and as a researcher observing these projects.

Fallman (2008) argues for the importance of practice-based inquiry within interaction design research, stating that researchers must engage in design practice in order to ‘get at the tacit knowledge and competence that are involved in the discussions and critiques that eventually lead up to a final artifact’ (p. 6). Rather than take the position of outside observer, researchers should take part in design projects as designers. Fallman argues:

*This process calls for a certain level of participation and commitment on the researcher’s part— involvement and participation in a team effort, and a commitment and engagement to build successful products and services—that is unobtainable by an outside observer.*

(Fallman 2008, p. 6)

Fallman’s reasoning is that through participation, the researcher becomes directly exposed to the complexities of an interaction design process that may otherwise be inaccessible. Such complexities represent, as Fallman points out, the essence of what constitutes interaction design (2008). Simply engaging in a design process is not enough, and he stresses that researchers must enter practice with explicit research questions guiding the research investigation (Fallman 2008).
Fallman argues that with a design practice driven by a design exploration, the researcher is more able to acknowledge and examine issues of aesthetics, which he believes are of central concern to interaction design (2008).

While suppressed by functionalism for decades, we believe aesthetics to be a central concern for interaction design research. Understanding the role of aesthetics means being able to deal with issues of what is beautiful, harmonic, and fitting in the digital world; using synthetic processes that deal in a holistic way with the complex issues that make up a user experience including representation, sense perception, experience, conformance, and infringement, to tradition and culture, materiality, and genre. Particularly when it comes to interaction design research, issues of aesthetics concern not only how something looks and feels, but also the aesthetics of the whole interaction including how something works, how elegantly something is done, how interaction flows, and how well the content fits in. Thus, design exploration is the activity area that allows the interaction design researcher to work with wholes—with complete, dynamic gestalts. (Fallman 2008, p. 8)

A third aspect of design research which Fallman describes is ‘design studies’ (2008 p. 9), whereby a design practice is both unpacked and informed by an engagement with the theory, methods and philosophy of design. This mix also allows the research to be contextualised and engaged with by the intellectual communities whose goal is the production of knowledge (Fallman 2008).

There is discussion about whether such practice-based research can produce valuable knowledge. Löwgren (2005) puts forward the notion that design can be seen as knowledge production, not just artifact production, and thereby produces knowledge that is ‘novel, grounded and criticizable’ (p. 3). He argues that the activity of design can be the means to explore the potential inherent to a ‘certain design material,
design principle or technology’ (Löwgren, p. 4). Design actions become the means for exploration, and the results are articulated through critical reflection. Löwgren acknowledges that design knowledge is constructed in discursive communities of joint knowledge construction (Löwgren 2005; Löwgren & Stolterman 2004), where the production of a design and the sharing of knowledge that accompanies it constitute a contribution to the design community and can be seen as a statement in an ongoing debate. Similarly, van Schaik (2003) emphasises the role of a design research community in supporting practice-based research through his description of the masters of design program at RMIT University in Melbourne. Twice yearly, at the Graduate Research Conferences (GRC), researchers present their research-in-progress to their peers and a review panel comprised of industry practitioners and theoreticians (van Schaik 2003). This, as van Schaik points out, not only becomes a chance for research students to ‘reflect’, but also becomes a critical framework within which students’ contributions are critiqued and debated by a community of peers and invited guests from the field. Further, this can be a way for researchers to ‘test their critical paths’ through their research (van Schaik 2003). In emphasising practice-based research as a unique mode of inquiry, van Schaik points to the problematic nature of the observer. In complex systems—which practice may be considered to be—the role of the observer in observing a system becomes cyclical, implying an ‘unsupportable objective authority for the observer’ (van Schaik 2003, p. 12). Because the observer or the researcher is also a subject of the investigation, maintaining a critical disposition becomes an important part of conducting research that may contribute knowledge. Engagement with knowledge-producing communities becomes a means through which practice-based research is able to orient itself towards what might be acceptable contributions to knowledge.
Design projects

Three projects have formed the basis for my investigation. They are called Codocs, Cantata, and Protopace, and in this text they are discussed in chronological order. I provide a detailed account of each project later in this text in the section titled Summary of the projects.

In order to understand how communication design may contribute to interaction design projects, I have conducted my research through a communication design practice situated within interaction design projects. My contribution within each of these projects has been informed by a commitment to the goals of each project, whilst simultaneously driven by the exploration of my research questions. To explore these questions I use my practice as a way to propose what communication design may contribute to interaction design projects. By reflecting on this practice and evaluating the outcomes in a critical way, I have aimed to progressively understand the effects of my design actions, and in turn to use this understanding to shape further actions.

My actions within the projects have been informed by my personal beliefs and motivations, as well as prior practice. Through reflecting on my practice in these projects I have attempted to delve into the personal motivations, beliefs and habits that have shaped these actions in an effort to maintain a critical subjectivity about them. These reflections have then been shaped through my engagement with theory as a way to further illuminate my practice and the results of my actions so that I might better understand how my contributions to the interaction design projects affected the outcomes. In turn, these understandings have influenced the way that I engage in design practice in these projects. My reading in the area of the aesthetics of interactive systems shed light on the ways in which I may perceive the role of the visual within interactive systems, which in turn shaped the way that I later engaged in the design projects and in the critique of the outcomes.
Critique

I have mentioned van Schaik’s description of the GRCs at RMIT University in which candidates present and critique their work through a peer-review format. I am a student of that university, and as such have participated in the biannual GRCs alongside my peers to present research-in-progress. In doing so, I have been able to obtain important critique of the ideas and methods employed in this research, which has been an important scaffolding for a critical disposition. Through the review of my work conducted by panellists who were invited from both within and outside the university I have been able to compare my research to that of the broader community of researchers. Similarly, the guidance I have received from presentations at the OZCHI Doctoral Colloquium (2006), as well as a conference presentation at the New Views 2 conference on communication design in London, 2008 has been valuable for understanding where the progress of my research is headed, and where and how it may offer valuable contributions to knowledge within existing communities.

Writing

An important aspect of the establishment of my research practice has been the development of my writing practice. Prior to undertaking this PhD research I had had little experience writing in an academic fashion, or in developing an academic argument. To foster this practice and skill, I maintained a blog throughout the research. I intended the blog to be a space in which others could participate and contribute to my writing, but I suspect the lack of clarity of my expression put my peers off, and the blog did not end up being used as I had hoped. Instead, it became a dumping ground for my thoughts and reflections as I practised on projects, which later evolved to be a source for further reflection. The tool that perhaps helped me most to develop my writing practice and think through my ideas was a wiki. Through the wiki I could write more openly, link ideas together, essentially creating a map of reflections from my own practice, and concepts from theory. Using the wiki allowed me
to undertake the writing of this text. As such writing evolved to become a core part of my methodology, as it is through this means that I was able to integrate the complexities of forming an argument with the complexities of practice and the need to maintain a critical disposition.

**Reading**

Reading has been an important element in shaping both my design practice and research practice. Through reading into the fields of interaction design and HCI, I have been able to change the way in which my practice engages with interaction design projects. Through this reading, and through the research, a number of different authors have helped me to make sense of the challenges faced in these projects and to find ways to conceptualise future actions. Throughout this process two texts have emerged as major sources for illuminating and understanding my research, and for considering the two key concepts which underpin my research proposition: that the two components of experience and aesthetics can help designers better understand relationships between people and interactive systems, in order to enrich the interaction design process.

The two main texts I have used are Löwgren and Stolterman’s Thoughtful Interaction Design (2007) and McCarthy and Wright’s (2004) Technology as Experience. These have been read, analysed and applied to design practice in relation to other theorists with the intention of informing and understanding future practice. Löwgren and Stolterman offer an account of interaction design that aims at positioning this practice as a thoughtful activity that incorporates the richness and complexity of the social, aesthetic and practical aspects of designing digital artifacts for use. McCarthy and Wright present an account of technology as experience, as a means to further understand the way in which we interact with interactive technologies in our everyday lives. Both of these texts conceptualise the aesthetics of digital artifacts and interactive technology in terms of how they are experienced. These perspectives may
be positioned within what Udsen and Jørgensen (2005) categorise as an experiential approach to the aesthetics of computer–human interaction.

As Udsen and Jørgensen (2005) point out, such approaches to aesthetics within HCI address a perceived need to consider the role of interactive systems within our everyday lives. Experiential approaches to aesthetics can be seen to address what Udsen and Jørgensen categorise as ‘functionalist approaches’ (2005). Such approaches represent more traditional HCI work, where aesthetics are viewed in terms of how they may be empirically tested. Experiential approaches criticise functionalist approaches for seeing aesthetics predominantly as mere appearance. Usability and empirical evidence have primacy, and notions of taste are seen as problematic and are therefore avoided. The experiential approaches upon which I draw for this research adopt a critical and philosophical approach to aesthetics, and emphasise a more holistic picture of the role of interactive systems in our everyday lives.

Löwgren and Stolterman’s approach to understanding interactive systems and how we may design and shape them asks us to consider the aesthetics of interactive systems as experience emergent through use. This perspective builds on the earlier work of Ehn (1990), who through investigations into designing interactive systems for work suggests that we should understand artifacts as defined by their very use. For Ehn, the end result of an interaction design process is not simply the production of an interactive system, but also reforms the practice of the individuals who use it (1990, p. 170).

Ehn’s work represents an area of HCI and interaction design that has sought to investigate the role of interaction design inside complex organisational and social settings. This work is exemplary of a participatory design focus in HCI prevalent through the late 1980s and 1990s. This movement in HCI represented a theoretical shift from the 1970s, when the user was considered as a solitary individual sitting in front of a computer terminal, carrying out prescribed actions. The goal of HCI
in these early stages was to understand the interactions between people and computers in such a way as to produce generalisable theories to predict future situations (McCarthy & Wright 2004). The problems with the theories that evolved out of this period was that once people and computers were moved out of the controlled environments in which they were first tested, the theories broke down. In response to this, the work which emerged during the late 1980s and early 1990s turned towards considering the complex social environments and the situatedness of action between people and artifacts (Suchman 1987). This shift was marked by the research by Suchman, who brought a social science perspective to the field, complementing what had been influenced largely by cognitive psychology. Suchman argued that human action, mediated through interactions with technology, should be understood as situated not only within the private psychological processes of one’s own mind, but also the broader social contexts in which people live (1987, p. 2).

McCarthy and Wright (2004) explicitly acknowledge Suchman’s work in exploring the complex social settings that shape human actions, and attempt to build upon this theoretical ground to provide a more holistic account of interaction. In Technology as Experience (2004), McCarthy and Wright propose that in order to better understand our interactions with technology, we must look towards the ways in which we experience technology in our everyday lives. They argue that ‘we don’t just use or admire technology; we live with it’ (2004, p. 2), noting that academic accounts of technology ‘resist discussion of personal experience’ (Pacey 1999 in McCarthy & Wright 2004, p. 2). They observe that in recent years there has been a shift in human–computer interaction (HCI) and interaction design towards considering the ‘user experience’ of interactive systems, yet there has been little discussion of what might be understood as constituting such experience. Central to their account of technology as experience is the notion of ‘felt-life’, a term which refers to the emotional and sensual feltness of everyday experience. In emphasising this, McCarthy and Wright seek to bring the personal meanings of our experiences to the fore.
They draw strongly on pragmatist philosophy, specifically on the works of Dewey and Bakhtin, using the notion of ‘aesthetic experience’ from Dewey (2005) as a way to understand a refined sense of experience. For Dewey (2005), aesthetic experience is characterised by experience whereby people and objects are engaged in a creative and dialogical process, where people come to a situation already engaged (Dewey 2005; McCarthy & Wright 2004). Dewey emphasises that aesthetic experience is not confined to the gallery, but instead should be seen as a part of our everyday lives, incorporating fully our sensual and emotional faculties. McCarthy and Wright (2004) build on this work to present an understanding of interactions with technology as experiences that are situated in the everydayness of life, thus highlighting the sensual, emotional and social aspects of life which we bring to experience. I use McCarthy and Wright’s work as a way to more fully understand the notion of experience in the aesthetics of interactive systems. If Löwgren and Stolterman (2007) argue that we should understand interactive systems in terms of experience, McCarthy and Wright’s (2004) work aims to further illuminate what it might mean to have an experience, and what it is about this understanding that may shape the way we design interactive systems. In all, it is the holistic treatment of people, artifacts and situations which draws me to these authors and their texts. As a communication designer, I had felt as though I had been left out of the bigger picture within interaction design projects, and have thus conducted this research in order to understand the ways in which communication design may contribute to design projects with respect to that bigger picture.
**Why have I conducted this research?**

I trained as a communication designer at a school which has an emphasis on a traditional graphic design approach to producing well-finished artifacts, combined with a focus on the importance of conceptual development in the early stages of practice as the foundations of the design process. At design school I had little formal training in web design or interactive media apart from a short course on interaction design, which allowed me to focus my final year project, in conjunction with another student, on the design of a hypothetical interactive system that combined instant messaging with media-sharing and genealogy to allow families to share and capture their lives together on both small and large time scales.

Upon graduating, I focused my communication design practice on design projects for the web, where I worked with clients to design websites, blogs and wikis as spaces for self-publishing. Part of my practice remained what might be termed a more ‘traditional’ design practice, designing visual identities and printed artifacts. In most of these jobs, apart from the client, I was the sole person responsible for the design process.

Once I commenced working within interaction design projects, I encountered difficulties in negotiating for what I believed were the important parts of my practice. Employed at the final stages of software development processes, I would be asked to make products more visually appealing to customers before they went out the door. With a limited knowledge of the technical language of software development, collaboration with the other software developers who were often managing these projects would be difficult, as any changes I might propose for the design would have to be framed in a technical language. With the combined power of a highly technical design space, the understandings they had of my practice, and what I had of theirs, the process would rarely go beyond addressing the surface.
What I had observed in such situations is similar to what Vetting Wolf et al. (2006) discuss in relation to the tensions between ‘engineering design’ and ‘creative design’. Engineering design assumes that the problem to be solved can be precisely described, and that the goal is to seek a solution (Vetting Wolf et al. 2006). Whilst creative design is as much about understanding the problem as it is about producing artifacts. Problem setting and problem solving do not follow logically, but rather are parts of a dialogic process that often involves parallel processes of investigation (Vetting Wolf et al. 2006). In many of these projects, the goal of the process was to engineer the software from specification to the final system, with little room for reconsidering the design of the system, apart from those elements which could be changed by the designer: colour, icons and typography. In this research I have sought to explore communication design as such a creative design process that can contribute to interaction design projects in ways that enrich them, leading to the design of products that may in turn enrich our lives.

By undertaking this research I have sought to change my practice in order to better understand the contexts within which I may design, and the contributions that I may make as a communication designer to those contexts. Thus, the contributions which I make represent such a change in my practice as a communication designer on interaction design projects. As such, this change in practice may be considered a deepening of an interaction design practice. In this way I would argue that my experience constitutes an example of what many other communication designers experience within interaction design projects, and that this research and the discoveries in this text are a contribution to the broader field of communication design and communication designers as they too make the transition into this new field of practice.

Along with a change in design practice, this research is also a journey of establishing a research practice. During the course of my candidature it has been said to me that ‘by doing a PhD one learns how to do a PhD’.
Through a practice-based inquiry, I have been able to develop this research practice, gaining along the way another vital skill: a writing practice. Previously, my principle mode of expression within design had been through the design process. A practice-based approach has allowed me to start with practice, to investigate it, to unpack the knowledge from within it, and further to build upon it with the knowledge of others so that I may offer new knowledge that is relevant to enhancing our understanding of design, which in turn may shape the practice of others.
What informs this research?

In this section I will outline the key areas that have informed this research, which are also the contexts in which this research seeks to contribute new knowledge. This will include brief descriptions of the particular design fields that are integral to this study, as well as an introduction to the areas of aesthetics which I draw upon within later chapters.

**Interaction Design**

It is widely accepted that interaction design is an interdisciplinary activity (Löwgren 2008; Saffer 2006; Cooper 2004; Isomaki et al. 2005; Preece et al. 2002). Interaction design projects typically enlist practitioners from diverse fields such as the social sciences, human factors and ergonomics, computer science and the arts amongst others. The make-up of any interaction design team depends on the philosophy of the design organisation and the specifics of each project.

Interaction design as an activity is concerned with the design of interactive artifacts, predominantly through the use of digital technologies, and how those artifacts affect people’s lives (Löwgren 2008; Löwgren & Stolterman 2004). As Ehn, a widely respected thinker in the field, reminds interaction designers:

> What we design is not primarily artifacts, but a changed or reformed practice.
> (1990 p. 171)

Löwgren (2008) notes that interaction design can be viewed as emerging from two slightly different intellectual traditions: one being a design discipline, and the other an extension of human–computer interaction (HCI).
As a design discipline, interaction design can be seen as having strong ties to other design disciplines such as industrial design, product design and architecture. All of these have contributed to the field through their gradual adoption of digital materials and the production of digital outcomes (Löwgren 2008). Graphic design can be seen as one such contributor, in line with Newman et al.’s (2000) observation in their study of web designers that most practitioners in their study had backgrounds in graphic design.

As an extension of HCI, interaction design is concerned with the design of interactive products to support human activities. In recent years, the importance of social science and in particular ethnographic methods for understanding contexts of human–computer interaction has become broadly accepted within the industry. For example, human factor research groups exist within leading organisations such as Intel, Xeroc PARC and Microsoft. However, technology can still be seen as a dominant element in interaction design in terms of process and product evaluation, such as can be seen in the usability approaches to the design and evaluation of systems (Isomaki et al. 2005; Preece et al. 2002). Preece et al. (2002) argue that interaction designers should concern themselves not only with the goals of making interactive products usable, but also with making products that are satisfying, enjoyable and motivating. Their perspective can be seen as representative of the recent shift within interaction design and HCI towards user experience.

The role of visual design, skins or what we may classify as aesthetics has been evolving. There is some tension between different groups in their understanding of the role and contribution of visual aesthetics in the design of interactive systems. Traditionally the surface or skin of a system was the last thing considered in the development of new products. Graphic designers were employed at the end to create a visual look and feel for a resolved system. This is what is referred to as ‘skinning’ in the industry. However, there is an evolving discourse surrounding the
impact and contribution of the aesthetics of interactive artifacts. This discourse challenges previous notions of aesthetics of appearance, in favour of the idea of aesthetics in experience. This marks a shift from seeing the aesthetics as something defined by the creator that focuses on the visual, to aesthetics as an experience that is co-created through use (Löwgren & Stolterman 2004; Petersen et al. 2004; Youn-Kyung et al. 2007). This does not deny or undermine the importance of the designer’s contribution or visual outcome, but accepts that there is a second order of aesthetic creation and a heightened experience of the system through engagement with the system.

With the increasing move in interaction design from being a specific area of software engineering to a broader area of digital production for both work and leisure applications there has been a heightened interest in how people use and experience these digital systems and objects. This has resulted in a number of different approaches to thinking about people and technology, in particular the rise of User-centred design (Vredenberg et al. 2001), Participatory Design (Suchman 1987) and User-Experience Design (Shedroff 2001). Each of these has slightly different theoretical, political and technological foci.

**From workstations to daily life**

Through the proliferation of the internet and mobile devices, the use of digital artifacts has shifted from being predominantly work-oriented activity reserved for trained professionals towards everyday people using them for fun, entertainment and recreation, as well as everyday work and communication activities. This change in contexts of use and the expertise of users has had a profound influence on the field that has required a shift from thinking purely about what the machine is and what it can do to exploring why, how and who is using it. This has resulted in a transformation from a focus on the instrumental qualities of the machine or system such as usability and usefulness to a greater awareness
of non-instrumental qualities associated with the experience of use, such as affect, pleasure and social connection. The evaluation of the use of digital artifacts has therefore taken a turn in HCI resulting in the rise of ubiquitous technologies (Weiser 1993). This marks a shift in computing and the role of computing in people’s lives from the computer being a number-crunching workhorse that is operated by trained staff to being a personal and ubiquitous device for everyday communication, entertainment and play (Dix et al. 2004; Bødker 2006).

As digital artifacts come to play a more significant role in our everyday lives, so too do digital artifacts form a greater part of our everyday experiences (McCarthy & Wright 2004). The aesthetics of digital artifacts in an experience-based approach is less about a static visual image, and more about the experience that may unfold between a person and a digital artifact over time and through interactions (Löwgren & Stolterman 2007). This experience is both temporal and spatial. The nature of the materials that enable this experience can shift according to diverse factors that enable people to interact with these environments. An individual’s overall impression of a digital system or artifact changes over time in response to these interactions. This is what Löwgren and Stolterman call the ‘dynamic gestalt’ (2007).

**Experience Design**

User-experience design, or UX, has recently emerged from the crossover between product and service design where there has been an increasing awareness of the need to consider the consumer experience. As Cooper (2007) points out, what we understand of an interactive system through use is often very different to how it has been constructed. Cooper explains these differences through two models: the implementation model and the mental model (ibid p 34). Many existing interactive systems conform to an implementation model, reflecting to users the underlying structures and functions that are used in implementation. A mental model, on the other
hand, is Cooper’s reminder that users do not need to understand the inner workings of an interactive system in order to use it effectively, and that in the design of interactive systems, designers must be sensitive to people and the ways in which they may make sense of things.

Throughout interaction design and HCI there has been an increasing acknowledgment that experience cannot be engineered, but rather that, like interaction, the conditions that facilitate experience and the context within which it occurs can be shaped.

Employing the phrase ‘user-experience design’ as a reminder or motivator to designers to pay attention to people’s experience of technology is one thing. Employing the phrase to indicate that a particular user experience can be designed is another thing altogether. The latter suggests a return to the simplicity of a technologically determinist position on what experience is. This neglects the agency of people interacting with technology...

(McCarthy & Wright 2004)

In the above quotation, McCarthy and Wright are responding to the growing trend to use experience design as a marketing buzzword, and particularly to works from professional designers such as Garrett (2002) who, in talking to designers, says:

*Everything the user experiences should be the result of a conscious decision on your part. Realistically, you might have to make a compromise here and there because of the time or expense involved in creating a better solution. But a user-centered design process ensures that those compromises don’t happen by accident. By thinking about the user experience, breaking it down into its component elements, and looking at it from several perspectives, you can ensure that you know all the ramifications of your decisions.*

(p. 19)

Experience design is a concept that has become central to interaction design in recent years (Shedroff 2001). It refers to the activity of modelling
and shaping the experience that a person has with a product, from the first impressions of the product, through its use, to the subsequent meaning that the product has in their lives. This can span from the overall impression a person may have about the product, to the effects that small details of the product may have on them.

One way of understanding the relationship between user, product and experience is through the idea of what Löwgren and Stolterman refer to as thoughtful interaction design (2007). This approach to design suggests adopting a pragmatist perspective on aesthetics in interaction design practice.

**Aesthetics and HCI**

Udsen and Jørgensen (2005) propose that it is possible to divide the field of HCI into four distinct approaches to aesthetics: the cultural, functionalist, experience-based and the techno-futuristic. The approaches that are central to this research are the functionalist and experience-based approaches to aesthetics. The term functionalist refers to an approach to aesthetics that is focused on being able to test for aesthetic qualities in an objective and measurable way. Udsen and Jørgensen (2005) cite Norman’s (2002) mantra ‘attractive things work better’ (p. 36). In contrast the experience-based approach focuses on the individualistic nature of experience, taste and engagement with an external object, which is thus seen as highly subjective. A criticism of functionalist approaches to aesthetics is that they often rely on factors that can only be empirically tested, thereby leaving out more ‘rogue’ concepts such as beauty and taste (Udsen & Jørgensen 2005) and their contribution to our experience of the world.

Petersen et al. (2004), building on the work of Shusterman (1992), argue for an alternative way of classifying aesthetics, stating that it is necessary to make a distinction between analytical and pragmatist aesthetics. Analytical aesthetics focus on the aesthetic value of artifacts, independent
of their social and historical contexts. From this perspective, aesthetics arise from the designer or artist shaping an artifact, and aesthetics arise as a property of that artifact, for example, when the artifact is defined purely by its appearance. Petersen et al. (2004) argue that this perspective can have limiting results for research which seeks to assess the success of interactive systems as it is based on a visual assessment alone and will be biased by taste (Desmet et al. 2003). This is a design approach which prioritises aesthetics in terms of visual appearance, removed from historical and social context, and from the people who use them.

Petersen et al. (2004) point to specific works within the HCI community that focus primarily on the design of interactive systems in terms of appearance. Fogarty et al. (2001) see aesthetics as an ‘added bonus’ (p. 141). Desmet et al. (2003) attempt to assess the aesthetics of wheelchairs based primarily on their appearance in images. Petersen et al. (2004) seek to challenge such assumptions that aesthetics of interactive systems are mainly concerned with the immediate visual impression of products. They point to exceptions to this, which include the work of Djajadiningrat et al. (2000, 2002), who assert: ‘Don’t think beauty in appearance, think beauty in interaction’ (2002, p. 132).

Conversely, pragmatist aesthetics build on the work of Dewey (1987), and of Petersen et al. (2004, p. 271) who state that the ‘aesthetic is not inherent in the artefact itself, but in the human appropriation of the artefact’. In this case aesthetics are not features of either the artifact or the viewer, but consist of a ‘particular kind of experience that emerges from in the interplay between user, context, culture, and history’ (Wright et al. 2008, p. 18).

Petersen et al. (2004) argue that adopting a pragmatist approach to the design of interactive systems allows the designer to have greater insight into the experiences of people and the specific contexts of their actions. Focusing on the visual aesthetic alone is counter-productive to designing effective systems. McCarthy and Wright (2005) follow on from this,
asserting that experience ‘is as much about what individuals bring to the interaction as it is about what the designer leaves there’ (Wright et al. 2004).

Experience includes the general flow of conscious life, but it also denotes that which stands out from this general flow as a particularly heightened moment of living that is reflectively appreciated as such—what is sometimes described as a real experience or an experience. (Shusterman 2008, p. 80)

**Technology as experience**

McCarthy and Wright (2004) adopt a pragmatist philosophical perspective to understanding human–computer interaction in their text Technology as Experience, and in later work published in the HCI community (Wright et al. 2008), in which they particularly draw on the works of Dewey and Bakhtin. Their notion of experience is derived from Dewey, an American pragmatist philosopher who wrote about experience in art and education. The main premise of Dewey’s theories is that aesthetic experience which is normally consigned to the gallery should take place in everyday life.

> Etymologically, ‘experience’ stands for an orientation toward life as lived and felt in all its particulars. It tries to accommodate both the intensity of a moment of awe and the journey that is a lifetime. These origins suggest the aesthetic potential in all experience.
> (Wright et al. 2008, p. 20)

They argue that aesthetic experience allows us to live life to the full, and to have meaningful experiences and exchanges (Wright et al. 2008, p. 59).

In contrast with analytical aesthetics, the emphasis is on the experience rather than the formal qualities of the object of experience. It is not about the formal qualities of the art object. Aesthetic experience for Dewey is a refined form of prosaic experience, where the relationship between people and the object of experience is particularly satisfying and creative. (Wright et al. 2004)
Between these two major texts, McCarthy and Wright propose a framework for understanding aesthetic experience with respect to technology. This is characterised by three key concepts:

- **A holistic approach to experience wherein the intellectual, sensual and emotional stand as equal partners in experience.**
- **Continuous engagement and sense-making wherein the self is always already engaged in experience and brings to each situation a history of personal and cultural meanings and anticipated futures that complete the experience through acts of sense-making.**
- **A relational or dialogical approach wherein self, object and setting are actively constructed as multiple centres of value with multiple perspectives and voices and where an action, utterance or thing is designed and produced but can never be finalised since the experience of it is always completed in dialogue with those other centres of value.**

(Wright et al. 2008, p. 21)

In this research I will draw upon McCarthy and Wright’s work as a means of understanding experience and orienting the design of interactive systems towards such understandings. The main goal of McCarthy and Wright’s work in bringing forth pragmatist philosophy is to bring a holistic perspective to conceptualising human–computer interaction so that we may design interactive systems that enrich our everyday lives (McCarthy & Wright 2004). As I have stated, it is this holistic treatment which has drawn me to this work, as the role of the visual is not seen as separate, but rather as folded in through experience.

**Communication Design**

The field of communication design can be seen as having emerged out of graphic design, through a shift in emphasis away from the production of graphic artifacts in and of themselves, towards the communicative intentions of those artifacts.
As a definition, the term ‘communication design’ refers to the activity of planning and coordinating the production of artifacts with the aim of communicating specific messages to intended audiences. This is done with the aim of affecting some kind of change in the knowledge, attitudes or behaviours of those intended audiences (Frascara 2004). Such a definition can be seen as having both historical and ideological underpinnings.

Buchanan (1992) argues that graphic design emerged during the late nineteenth and early twentieth centuries as an extension of the fine arts. Based in commercial and scientific applications, early graphic design or ‘graphic art’ was strongly grounded in personal expression and ornamental decoration. However through the rise of “communications theory,” the role of the graphic designer changed from being that of decorator to that of message encoder, whose role was to manipulate symbols in order to communicate specific messages. The graphic designer evolved to become a semiotician (Buchanan 1992, Frascara 2006).

The search for more efficient ways to present information led to a new functionalism that sought systematic ways to order information to create clearer communications (Frascara 2006). An example of this was the application of experimental psychological approaches to graphic design prevalent in the 1950s. Typography became less focused on ornament and more concerned with legibility and efficiency of information communication.

This emphasis on communication efficiency gave rise to the practice of corporate identity design. Prominent graphic designers such as Paul Rand became leaders in the corporate identity arena, opening up a whole new field of specialized graphic design whereby corporate messages were now a part of carefully constructed identity systems, or brands.

Corporate identity design (or branding), as an area of graphic design, spans beyond just the coding of specific corporate messages, and embraces a more systematized design of branding and communications systems that cross
over different media. This represents the kind of shift that Buchanan (1992) sees communication moving towards:

Recently, however, a new approach in graphic design thinking in graphic design thinking has begun to question the essentially linguistic or grammatical approach of communication theory and semiotics by regarding visual communications as persuasive argumentation. (ibid, p12)

Graphic designers are no longer, in Buchanan’s eyes, simply encoders of information. Audience-members are not simply passive decoders, but active participants in the reading of communications. A growing sensitivity towards the nuances of everyday experience and how such nuances affect communication has lead to communication design evolving as a field that takes experience into account within the design process (Buchanan 1992). Where graphic design can be seen as focusing on the grammatical aspects of design, communication design can be seen as a movement towards rhetorical design. The design of things that facilitate communication within, and to affect the everyday lives of people.

Bruce Mau’s work from the 1990s emphasises the shrinking partitions between form and content. As Poynor (2003) discusses, Mau was one of the major proponents of the idea of the ‘designer as author.’ In his work, Mau explores the crossovers between design and writing, whereby the decisions or actions of the designer in shaping or giving form to a visual artifact become integral to shaping the affect on the reader. Poynor (ibid) further points out the works of Ellen Lupton and J. Abbott Miller who further removed the barriers between design and writing, exploring the role of the designer as far from a detached producer or encoder of signs, but an active participant in the production of cultural artifacts.

Such works represent a growing sensitivity towards the form as well as the content. Aesthetics and communication are not in opposition, rather they are interdependent; both are subject to the various contexts of the design situation, such as the audience, or the environment in which the
communication is placed and the medium to be used (Frascara, 2006).

As Klein (2000) points out, branding has evolved in recent years to give up an old-fashioned reliance on images from advertising and logo marks as the major factors in establishing a brand. For Klein, a brand is the total system of a product or service. The experience that encompasses the consumption of the product, affects peoples attitudes towards the brand. Klein’s emphasis of the brand as experience illuminates the growing awareness of experiential factors within some areas of communication design, particularly branding and advertising. It also points to the breakdown of traditional barriers between product design, marketing, communication design and branding.

Frascara (2006) takes communication design into the social spaces of everyday life, positioning communication design as a human-centered design activity, whereby the nuances of human experience and culture become integral components to the communication design process. For Frascara (1997), the communication designer is no longer simply an encoder of signs or manipulator of visual grammar, but a facilitator of a design process that may make use of such processes in order to affect change in people. This turn towards human-centeredness responds to the growing awareness of the social impact of communication design (Akama, 2008). In responding to the complex social situations posed by such a shift, communication designers find themselves as collaborators within multidisciplinary teams (McDonald 2006).

The proliferation of new digital media technologies (such as video, the web and interactive computing) has given rise to new challenges. Whilst many of these media technologies can be seen to be predominantly visual, each medium brings its own unique quirks, opportunities and challenges for communication design. The medium of the designer’s practice has expanded, requiring new ways of working and new skills in both the practices of design and in communication. It could be argued that this has facilitated the context for the evolution of communication design, which
is the basis for my preference for using the term communication design over that of visual communication design. In this regard, I believe that by embracing the diverse media that we now practice within, the term communication design embodies openness to a more diverse range of media without needing to always emphasise the visual.

Within the design of networked media and interactive systems (web design and interaction design), new additions of time, interactivity, and the network to the equation have meant that exploring this territory has not been as straightforward as print design. Within web design, the move from the static to the dynamic has meant that traditional visual design has had to make this shift also. New sensitivities to networked media have changed what it means to communicate, and what it means to design for communication in these systems as dynamic content and interactivity have become more prevalent.

**Web design**

The rise of the World Wide Web as a popular medium, and the birth of web design as a profession, became a place where many trained graphic designers moved. Early web design was predominantly focused on producing static page-by-page websites, more similar to printed brochures than software programs. As the technical possibilities and professional knowledge and expectations of the web grew, websites began to expand to exploit the nuances of the medium. Web design became less about designing static, beautiful pages, to designing extensible templates, ready to accept and present dynamically published content to readers. The content management system, the technical concept behind the expansion of the internet as place for self and collective publication, meant that the web designer was no longer just a visual producer, but was also responsible for, or a member of a software development team.

The web continued to expand as a medium for the publication, sharing, and syndication of content, lead in large part by the rise in popularity
of blogging. It became a place where people could inhabit the web and perform actions in it. The graphic languages of websites that had emerged from graphic design, were merging with the functional languages of software interfaces with a new humanism. The ‘web 2.0’ aesthetic, as it is popularly known on the web, emphasises simplicity and readability, along with relaxed colloquial language. In this intersection between graphic design or communication design and interface design, we see many new products emerge out of this “web 2.0” category which make use of professional contributions from a number of different fields. Interaction design, HCI, graphic design, software engineering, these new entrepreneurs made use of their skills and knowledge from all of these domains, collaborating to produce products and services which are hybrid websites/software applications.

**Web 2.0**

In the entrepreneurial space surrounding web 2.0, we have seen the emergence of a new term “front-end-coder.” A person with the ability to design graphical user interfaces, as well as the skills to code and produce it and work with others to integrate it into the end software system. This term emerged out of the concept of the “outward-facing” parts of a software system. This concept had been around since early interface design of the 1980s, but perhaps took until 37signals (2006), a software development company from the United States, re- emphasised it. The idea is that “outward-facing” parts are all the parts of a software system that customers will see. In other words, the parts that people see, are the things that people think of as the product. So rather than develop software from a functional foundation, and gradually outwards towards customers, 37signals took an outwards-in approach, using prototyping and customer feedback to drive the development of software from an outward-facing perspective. The idea of the front-end designer emerges out of such approaches to software development where the interface, or the parts people will see and touch, become an important part of not only designing
the software, but of scaffolding it’s prototyping and construction. Suddenly, the graphic designer was no longer required to simply produce flat designs in Photoshop, but they were being asked to possess the skills to produce and progressively enhance the design using code.

**Interface design**

Echoes of Boyarski’s work from the 1980s on interface design can be heard here. The 1980s saw the rise of the personal computer, and with it, the rise of the term ‘graphical user interface’ (or GUI). In the shift from command-line controls and computer code to control computers, the interfaces became visual, asking software engineers and designers to work together to create interfaces. As Boyarski (1986) points out, the GUI becomes what the user understands as the software system. Boyarski then discusses the specific challenges faced as a graphic designer within software development teams, where the role of the graphic designer was predominantly seen as the icing on the cake, and thus not an integral component of the software development process. This is the first reference I have found to the experience of being a graphic designer within software development that is similar to my own experience of ‘skinning.’

**Communication design in interaction design**

Since then, Boyarski has gone on to explore the role of graphic design/communication design within the software development process, or more specifically interaction design/HCI. Boyarski et al. (1994) discuss the foundations of their approach to the education of communication design practitioners at Carnegie Mellon University, arguing for the importance of considering the communicative aspects of interactive systems as central to the practice of interaction design. They favour the communication design process commencing during the early stages of the design process. The all-too-common practice of bringing the communication designer in at the end of the process casts the role of communication design as one of styling.
prototypes. Buchanan et al. believe that the value of the communication
designer is as a collaborator in a design team which has broad but
overlapping knowledge sets. The communication designer acts to visualise
designs and make propositions that can further catalyse the design of the
system whilst also facilitating communication within the project team.

In the professional domain of interaction design, some consider the
contribution of the communication designer to be primarily concerned with
the visual design of interactive systems. Saffer (2006), in an introduction
to interaction design, describes communication design as the design of
the shapes, compositions, colours and typography of products. I believe
Saffer’s perspective on this role is overly simplistic, placing more emphasis
on the contribution of the communication designer in terms of what the
communication designer produces, rather than what the communication
designer seeks to facilitate. Saffer emphasizes the grammar of the
communication designer, but fails to incorporate the rhetorical aspects of
designing for communication that Boyarski et al (1994) bring to this context.

McDonald’s (2006) discussion of communication design within the context
of interaction design explores a more nuanced territory that is not so clearly
marked as Saffer’s. McDonald argues that in order to create seductive and
persuasive experiences with interactive systems, we can no longer rely
on the application of graphics onto superficial veneers, and that branding
and identity in this space has more to do with product behaviour—how
products responds to people, and how people respond back. McDonald
(ibid) urges designers to look past rational, semiotic or linguistic means
of defining communications within interaction design, and to embrace
phenomenological understandings that emphasise non-verbal, emotional,
sensual and experiential perspectives. McDonald’s take on branding and
identity design within the digital space is similar to Klein’s (2000) take on
branding in general: that a brand is about the experience that people have
with a product, not just the image that a product projects; and that the two
are indeed, inseparable.
Buchanan's (1992) discussion of the repositioning that communication design has undergone is important here. In the shift from signs to actions, and the emphasis on the impact of design on human experience, the differences between communication design and interaction design have dwindled. Between them a new, shared space emphasizing human experience has opened. It is in this shared space that this research is positioned. In interaction design projects where the role of the communication designer is not to shape the appearance of products as a superficial activity designed to ‘dress up’ interactive systems, but as a co-shaper of interactive systems sensitized to the nuances of communication within the dynamic environments of interactive systems.

Whilst the work of Boyarski et al (1994) and McDonald (2006) have seemed to cover such territory before, I believe that work such as Saffer’s (2006) and my own experiences of design practice show that we are still a long way off understanding communication design within interaction design in such a way. Recent work from McCarthy & Wright (2004) and Lowgren and Stolerman (2004) within interaction design suggest that we are only at the very beginnings of understanding how we may design interactive systems with regards for human experience, and I believe these works open up this shared space between these fields.
In this section, I will describe each of the projects, outlining the goals, my role, and critical incidents that occurred within each. I will present the projects in order of their undertaking. I use the label critical incidents to refer to points within each of the projects that have been of particular interest in this study, and will become reference points later on as I unravel them in each of the chapters which follow. To illustrate these critical incidents I use a combination of text and image to describe the relationships between people and actions, and the artifacts which emerged from the design projects. This section is intended as first a way for the reader to gain a sense of the projects, and later as a point of reference when the projects are discussed.

As a designer and researcher, I have engaged with these projects committed to the goals of each, but also driven by my own research objectives. Accordingly, my practice within each has been shaped by my research objectives, which I outline in the discussion of each project. For the most part, the overarching objective was to immerse myself in interaction design projects, making contributions and observing the results. Whilst progressing through these projects, I reflected on my actions which in turn shaped further actions on my part, as I became increasingly sensitive to each project and to what I perceived could be my contribution.
In the Codocs project, I was approached by a developer to help redesign a software system into a product for its first commercial release. In my engagement as a communication designer, the initial perceptions I had of my role within the design of the software were challenged by the client/developer's expectations of my role. Tight deadlines combined with the task of redesigning a system that had already been built by the developer meant that my contribution to the software became solely that of a ‘skin’.

In parallel to the skinning process, the client and I also engaged in a process of designing a visual identity for the product, which fed back to the design of the skin, as well as the development of a promotional website as a public portal for customers to access the interactive system itself. This identity design process did not suffer from the same collaborative awkwardness that pervaded the software design process. Upon reflecting on the complete product, I noticed that there was a distinct gap between the qualities we had developed through the branding process and expressed through the promotional website and visual identity, and the qualities related to using the interactive system itself. This project points to the limitations of a skinning approach when designing interactive systems.

Originally named Collaborative Online Desktop (COD), the purpose of the software was to allow people to share and collaborate around documents online. Through a web browser on any computer, people could create an online project space into which other collaborators could be invited. Within this space, people could upload documents or create new ones, and create and edit them collaboratively through a text editor very similar to Microsoft Word. The software was targeted towards community interest groups and organisations whose teams were geographically distributed. The client had developed the software as a member of such an organisation, in informal consultation with other organisation members. The goal of the project was to take this existing software and redesign it so that it could be released and sold commercially.
**The Project Goals**

- Take software prototype to first public release
- Make it more usable
- Bring greater consistency
- Create a brand identity for the product and representative organisation
- Logo mark
- Style guide for both visual and verbal communication
- Promotional communications
- Public website as a ‘portal’ to the product
- Brochures and advertisements

**The Team**

The team consisted of the client, who was also the developer and owner of the software, and myself, a communication designer with a background in web design and identity design.

**The Client (Owner/Developer)**

In charge of overseeing the project, as well as decision-making.
In charge of development: writing code, designing the system, and implementing changes into the system

**Myself**

Assess the existing software system.
Propose new designs.
Refine and collaborate with the developer to implement the design.
Develop a brand for the product.
Develop a style guide for visual and verbal communication.
Design a website and printed brochures to market the new product.
My Research Objectives

With little previous experience in designing for interactive systems, the objective of my engagement as a researcher in this project was to shift my practice into this new space and to closely examine the challenges I faced as I did so. This would be an opportunity to put into practice the work I had done previously in sketching and prototyping interactive systems in closed settings, to put those ideas to the test in ‘the wild’. Of particular interest was how the processes of branding and identity design, perhaps the strongest aspects of my practice at the time, might contribute to and improve an interaction design process.

Critical incidents

1. Evaluation and critique of the prototype

I began my engagement by evaluating the existing system the client had developed, which I conducted through first-hand use of the system after which I offered my analysis. This gave me a chance to experience the system from the viewpoint of a new user, but also to become familiar with the conceptual structures that formed the basis of the software.

The overarching critique of the software was that it was confusing to use. It was not easy to grasp what the system could do, let alone how one might begin to perform an action. It was clear from both the presentation of the system and through the performance of different actions within it that it had been developed in an ad hoc way using components from various manufacturers at different points in time to build the software.

The methods used for its construction were immediately apparent in its appearance, where an incompatible mixture of language—both verbal and visual—signifying actions and structures in the software had been combined in one screen, with little connecting these disparate elements together. This
visual complexity was reflective of the conceptual complexity underlying the relationships between objects, places and actions within the system.

2. Design propositions

Through a series of sketches I proposed concepts for the redesign of the software based on the above critique. The major focus of these was on simplifying the conceptual structures of the system so that people could simultaneously manage their documents and perform actions upon them. Rather than present all possible actions to people at once, only actions relevant to the documents they were currently viewing could be performed. Thus, I proposed two major contexts of activity for users: managing documents and writing documents.
3. The client’s response

The client did not respond to my propositions in the manner in which I had hoped he would. He felt that each of the proposals would require too much development work in re-engineering the software system. He had expected me to propose a series of new visual designs to reorganise the information already on screen.

In light of the nature of the software’s complex and mixed methods of construction, such changes would be costly, and could not be guaranteed as paths to success. Given the desire to get to market as soon as possible, my design propositions seemed too risky to my client.

For my part, I could not see that a visual redesign would iron out all of the problems associated with the use of the software. However, without experience in interaction design work on such complex systems, I could not argue effectively enough for the value of adopting a deeper approach.

One of the design proposals made in the early stages.
The client wanted to take the shortest possible route to the market, and felt that any visual design changes that could reorganise and improve the appearance of the software would make it a better product than it then was.

4. Deciding to ‘reskin’

The client decided that we should work with the basics of what we had, rather than try to reinvent it. I would design a new ‘skin’ for the software, and a style guide that would reorder and rearrange the shape and visual structure of the elements on the screen. This skin would be fitted over the top of the existing software, and to do this the developer would collaborate closely with me to implement the changes necessary through a process of negotiation.

5. The skinning process

The skinning process started with mock-up proposals for the overall appearance of the system, about which we negotiated and were then refined according to feasibility.

I then worked closely with the developer to go through all of the different ‘screens’ in the software and redesign them so that they appeared more ordered. Because of the mix of approaches used previously in construction, no consistent method had been adopted for presenting information and interface components to users, and thus the process of redesigning was often done on an encounter-by-encounter basis. Out of this process eventually grew patterns for presentation which, in the end, the client could implement himself based on what had gone before.

Concurrent to the skinning design process was the identity design process, in which we developed a logo mark and style guide, which we then applied to the software through graphical treatment using colour, image and typography.
6. The skinned result

Even though we had adopted something of an ad hoc approach to the skin design, the result of our efforts was that it definitely appeared more structured. A left-hand panel for organising files now became the single place for navigating and performing all actions in the system. The tabs running across the top of the screen that represented all the different modes of the software now ran down the side of the side panel, meaning that modes could be changed in the left-hand panel without affecting the currently viewed document on the right-hand side.

A set of actions that were once disparate buttons placed around the screen were consolidated into one toolbox, along with icons to represent their actions—alleviating some of the need for a text-heavy interface.
We even addressed some of the verbal communication problems of the original, using more informal language to suit everyday work environments, rather than the technical language which had initially been adopted. The identity design served as an effective guide, as the language we used to represent the product now felt more in line with that used in the promotional website to communicate about the product.

7. Identity and branding

In parallel to the reskinning, the client and I collaborated closely to develop a branding and identity design for the product.

We began by discussing the kinds of qualities with which the client imagined he would like his product to be associated, and how these qualities could become part of a marketing strategy to both attract customers and give character to the brand and the software.
We decided that the original name—Collaborative Online Desktop—was a mouthful, and needed to be dropped for something more simple, inviting and memorable. We brainstormed brand qualities and personality traits alongside potential new names for the product.

Hyphenated, the name COD was one candidate, as the ‘personality’ of a codfish could provide appropriate imagery and metaphors; but it was dropped after we realised codfish invoke a cumbersome image.

We eventually settled on Codocs—a bringing together of collaboration and documents—perhaps a little cheesy, but simple. The ideas that we generated alongside this were that the Codocs should be simple and straightforward, and focus on the bringing together of people and documents. We would use simple, informal language to bring a playful edge to the brand, backed up by an illustrative style which evolved in parallel to this. The brand would also sit nicely within the then evolving ‘Web 2.0’ productivity tool genre, well known for its playful and colourful style. This would help us to situate the product next to other similar products.

In contrast to the software design process, the identity design process was smooth and productive. It did not suffer from the same problems around the roles and responsibilities of the client and designer, and we were able to drive our process through the central concept of qualities.

The logo mark and style guide that emerged as a result strongly reflected these qualities, and I could see in the client’s proud ownership of his new business card that the identity design embodied the client’s goals for the product.
8. Website and marketing

The process of designing the website and other marketing materials flowed smoothly out of our branding and identity design process. We designed a website that would be the portal to the software, and would advertise the features and generate sales for the product. The new brand and style guide were easily applied to and represented in the resulting website. Simple, sharp copy accompanied friendly, bright illustrations, and the central theme of people and documents coming together shone through.
The marketing materials flowed smoothly out of this also, and soon we had a strong set of materials of which the client seemed proud. In particular, he was proud of the business card which clearly represented his brand and the ethos of the company.

9. The total experience
When the product was finally released, we were pleased that we had succeeded in making the software more usable than it had previously been. Yet this usability only went skin-deep. Accessing and using the software system via the website was still confusing, bloated as it was with visual controls vying for attention, albeit now better structured and organised on screen. The skin, whilst it could change the surface of the software, could not iron out the inconsistencies between the screens.
This became more evident when I reflected on the software as a part of the total intended experience of the product. We had designed the promotional website as the first place where customers would learn about the product, leading to a free trial and possibly subscribed use of the system itself. However, there seemed to be an experiential gap between the promotional website and the system, such that the two felt markedly different.

10. The ‘gap’ between identity and use

Whilst the promotional website promised an exciting, easy experience, the software system did not live up to those promises. Whilst the website had been developed from the same qualities as the identity, the system’s skin shared a visual resemblance in terms of style, but lacked the crucial qualities that had driven our identity design process.

I call this a ‘gap’ between the identity and the software, such that the qualities of the identity are not reflected in the use of the system, creating a chasm between the identities, or the qualities of the promotional website and the interactive system.

As a whole experience: the promotional website and the final system feel different to use
11. Catalysing further design?

I hoped that my reflections on this disparity between aspects of the product experience might be mirrored by those of the client. I felt bad that I had helped the client to design an identity and website that sold a very different impression of experience to that which people would actually receive. (I also realise the naïvety of this thought, as most advertising works on this premise.) I hoped that the client might reflect on this, prompting further thought about how he could engage in redesign of the software in future, but this did not happen.

12. Technology and roles

I had felt that if our software design process had been driven by a set of qualities of experience developed collaboratively, we may have been able to centre our work around a common activity in much the same way as we did in the identity design process. The late engagement of communication design in the process and the presence of a highly technical system made such a focus impossible, as the task of ‘finishing’ the software became the most pertinent issue.

Our roles had been shaped by the presence of the system, affecting the assumptions that each of us had about the contributions we both could make. If I had been brought into the project earlier, this may have afforded us more time and space to ‘feel’ this out.
Cantata

*Cantata* was a research project conducted by the Australasian CRC for Interaction Design in partnership with RMIT University. The research was investigating how to better facilitate communication and collaboration within distributed networks—that is, networks of people who work and live in different states, countries or time zones. The project engaged a distributed network of communication practitioners from CRCs around Australia to design an online space where they could communicate and share in organising their activities. The goal of the project was to design a message board system as an online space through which the network could communicate, but also as a platform for trialling online software tools aimed at facilitating collaboration. The ultimate goal would be that the message board would remain as a place owned by the network and self-maintained by its members.

I was engaged in the project as part of a small team of three communication designers within a larger context of interaction designers, a creative producer with a background in events management, and researchers from the university. The role of the broader team was to co-design the online space, as well as plan activities to bootstrap participation and collaboration within the message boards. The responsibility of the communication design team was to ‘reskin’ the message board system in conjunction with the broader design process in order to create a sense of space that would facilitate the desired participation, and a unique sense of ownership of the message boards amongst members of the network.

The project met with a lukewarm response by the network of users. It failed to adequately engage participants in any sustained discussions or activities, and the study never fully got off the ground.

I had intended to investigate the role of communication design as a more integrated part of a broader interaction design project.
This project succeeded in demonstrating just such an integrated engagement in the design process, as the shaping of the final system informed and was informed by a conceptual design process conducted in the broader interaction design project. However, our failure to engage people points to the inadequacies of the project in terms of failing to understand for whom we were designing the project. In the end, our designs were perhaps really only initial sketches of what we thought might be a space for collaboration.

**Objectives**

To design and develop an online space for communication and learning. To develop both the technological system for communication and the activities required to engage the network. This design would need to facilitate the engagement of people who were using online communication and collaboration tools for the first time.

**Research Objectives**

My focus in this project was on investigating the role of communication design as a participant in the early stages of an interaction design project, right up to the production of an interactive system.

The questions driving this were:

*How could the visual appearance of the space be designed in such a way that it might support and encourage casual discussion as well as focused activities?*

*How could design of this ‘skin’ coincide with the design of activities to strategically facilitate this kind of engagement?*
Critical Incidents

1. A metaphor

The team believed that existing bulletin boards felt stark and uninhabitable. Our challenge was to create a space that felt familiar and comfortable. Seeding discussions and facilitating activities on the boards would help to bootstrap activities. The project team developed the metaphor of a café or speak-easy—a social space for casual conversation, but which could also facilitate business meetings.

‘Cantata’, a musical composition of one or more voices accompanied by musical instruments, was chosen as the name for the space, lending to the communicative and social aspects of the concept.

2. Developing a tone

I worked with the core web design team to develop a set of colours, images and textures that would help set the tone. We collected images of cafés, bars, rooms and doors in order to build an overall tone.

3. Separate spaces

The project team developed a set of defined ‘rooms’ for containing certain kinds of activities: from more general meet-and-greet rooms in which participants could introduce themselves, to more formal boardroom style spaces which facilitate critical discussion on specific topics.

4. The redesign of the bulletin boards

Each room would be given a separate colour scheme, or mood, with an image taken from such a space as the backdrop. For example, in the meet-and-greet room, we used a blurry image of a lounge area of a bar.
The use of light and dark would bring a greater sense of spaciousness, and help to immediately set the scene. Since the images were also slightly blurred, they would not demand too much attention and could also reflect a sense of abstraction.

5. The launch

The bulletin boards were launched, with each member of our project team as a member to help facilitate conversations and seed discussion topics. Participants from the network trickled in, and many conversations never got off the ground.
Specific games or activities designed to introduce people to the group, such as writing a short piece about oneself, were initially useful for introducing participants to the site and to each other. However, there was an overwhelming sense amongst our team members that people could not see the relevance of dedicating time out of their busy schedules to engage in the project at all.

6. Space and place

Harrison and Dourish (1996) explore how space is exploited by designers to help give structure to interactions. Rules and patterns from everyday experience with the physical world are reappropriated by designers for use in collaborative systems. The relational orientation of the physical work is one such aspect. ‘Up and down’ and ‘front and back’ are aspects of our spatial orientation to the world, and understanding that this orientation is shared with others allows us to place our interactions with things in reference to others. We can refer to ‘the document at the top of the pile’ (Harrison & Dourish 1996), for example. Spaces are partitioned for certain activities. In collaborative systems, this notion is exploited through the idea of ‘rooms’ or in bulletin-board systems, ‘forums’ or ‘topics’. These are spaces that comprise the larger space, but which are partitioned to allow certain discussions to progress. Whilst such features of ‘space’ can be exploited by designers in an attempt to facilitate certain types of behaviour, Harrison and Dourish argue that it is a sense of ‘place’ that becomes the key concept in framing certain types of behaviour.

Harrison and Dourish summarise the relationship between the two as follows: ‘Space is the opportunity; place is the understood reality’ (1996, p. 69). Place is more simply a point in space, but it is shaped by the people who occupy it and the activities that take place within it. The sense of a place is ‘a communally-held sense of appropriate behaviour, and a context for engaging in and interpreting action. This is essentially a cultural phenomenon’ (1996, p. 70). It is therefore, as Harrison and Dourish point
out, impossible to design a ‘place’; rather, a ‘space’ can be designed that supports notions of ‘place’. It is the activity that happens within a space that guides and constantly defines and redefines a sense of ‘place’.

7. Understanding the participants

One of the challenges we faced in this project was how to design a space that facilitates activities, and lends itself to a meaningful place for the network of communicators. Considering that our engagement with the network prior to launch was limited, we may have overlooked a fundamental aspect of our challenge: that we needed to better understand the people who would both occupy and make this place. For the design team, the creation of a skin and the shaping of the space had already engaged in a design process beyond that of styling a product simply to make it more visually appealing. The problems with this project point to the need for deeper engagement with the people who would use this space, and to how to enable connection between the surface of the product and the deeper facilitation of notions of place.
Protospace

Protospace was another research project conducted through the Australasian CRC for Interaction Design, in partnership with other universities and industry partners. The project began by looking at the ways in which online spaces might be designed to foster collaboration between creative professionals working on products and members of the public. It was first known as Rapid Virtual Prototyping (RVP), but was later renamed Protospace through an identity design process in which I took part. The focus of the project later changed to looking specifically at how we might design video annotation systems for creative professionals like video editors, film and television producers, advertising creatives and designers who communicate through video.

The project used design as a way to first propose visions of what an online collaborative space for product evaluation might be, later turning to prototyping to explore the specifics of designing an interactive system that supports video annotation conversations. Through the prototyping process, the project was able to engage people in the trial use of our proposed system.

The disciplinary make-up of the project team ranged from interaction designers and academics leading the project, a core design team comprised of communication designers, interaction designers and programmers, in conjunction with media, advertising and business specialists. My role on the project was that of communication designer, initially employed to design an identity for the project alongside sketches of the proposed system design. Later I became part of the design team, working on developing several iterations of the prototype, directly involved in the user trials. I was also employed to conduct research on other similar products, which fed back into the design process. The total time span of my involvement in the project was one year.
**My Research Objectives**

The main objective going into the project was to embed myself, and to participate, as a communication designer in the very early stages of an interaction design project.

Utilising branding and identity design in the foundations of a project to seed ongoing development of identity and visual language for the project internally and externally.

Sketching and visualising design concepts, and communicating them to stakeholders.

Participating in a prototyping process, involving the design, building and evaluation of prototypes.

**Critical incidents**

1. An identity for the project

I was employed to brand the project with a visual identity. The project at the time was looking at the potential of an online space where design concepts in 3D, 2D, sketch or video form could be shared and manipulated, annotated and discussed in communities of other practitioners or target markets. *Protospace* evolved out of the conjunction of ‘prototyping’ and ‘space’. The mark that evolved was chosen for its sense of openness in terms of form, but also in the combination of different colours. It is in one sense a box or form that is both closing and opening. The style was chosen to place *Protospace* with respect to other online ventures in the genre of online social software tools. Rather than focus
on the research component of the project, we decided it best to project the image of a business in this space, as it would be more attractive to industry partners and members of the public.

2. Communicating Protospace

I was partnered with a designer/web programmer to create a slide show for the project leader to help communicate Protospace and some of the key ideas in the project. We were asked to create mock-ups of how a space like Protospace might look and feel to people using it. We worked with the project leaders at the time to sketch and refine a series of screens illustrating the proposal for Protospace. It was finished with the development of an animated mock-up of one of the concepts of the system: the annotation of video. The scenario chosen was related to one of our industry partners, and depicted the annotation of an advertisement by a creative. It depicted a person playing an advertisement and pausing the video at certain moments to add text annotations onto the video, which

The final logo mark and style guide for Protospace
Hi All,

I would suggest to have the logo replace the word "powerbar" in the call-to-action banner. Otherwise the ad looks great.

Cheers,
Anika

What would be even better is to brand the banner itself. Use the PowerBar colours for the background as well.

Anna

Discussion: Branding of the call-to-action banner

Above: A sketch proposing how people may be able to browse active conversations
Below: A frame of the animated sketch showing comments placed within video
show up both on the video image area and in the timeline of the video. The animated demonstrator was designed to communicate the simplicity and ease with which interactions could take place, and how direct marking and play with media artifacts might be used in such a space to foster collaborative communication, perhaps even design.

3. A quick and dirty prototype

The project partners were interested in the concept illustrated by the video player, particularly within their own context in which they had a team of video editors who were constantly working closely together on video content. So we moved to explore the concept through a prototype, and test it with this group of video editors in order to better understand the video creation and refinement space.
I worked closely with a web developer over a few weeks to quickly build a (barely) working prototype of the concept. We used an existing content management system to manage the upload of videos and the management of accounts, and added to this our own video annotation tool.

4. Testing with the editors

After initially working with the editing team to map their workflows and practices, we asked the group of video editors to trial the tool over a couple of weeks. We requested that they try to use the tool in as many different ways they could given the day-to-day practices of video editing. We maintained a slight online presence within the space, which was accessible only through a web browser, in order to offer support and to observe the patterns of activity.

The editors found that this was not a particularly quick way to gather feedback from each another. Since they normally shared the same work space every day, if the editors needed to discuss something they would simply call each other over to their screen and play the video. Our system required rendering of their timeline and uploading onto the website before any comments could be gathered. Graciously, the editors looked past some of the inefficiencies of our prototype for the time being in order to see how the video annotations could function for creative discussion.

At the end of the trial, we visited the editing team at their workplace and conducted a workshop in which we asked for reflection on their experiences of using the tool, and how they imagined it might be incorporated into their practice in future.

Much of what we learned from the editing team included things we had felt ourselves in using the tool: that it was clunky, hard to navigate, had high barriers for uploading and sharing. The most significant discovery in these discussions concerned something the team had done, something entirely unexpected.
The first prototype of Protospace, where the team of video editors used the system’s in-built commenting feature more than the video annotation interface we had developed.
5. Surprise

When we designed the annotation viewer, we had simply placed it on top of a page automatically generated by our content management system. On each page for each video that had been uploaded, people could place comments through our annotation viewer, but they could still engage in discussion through the commenting feature we had neglected to disable.

We found that the editing team submitted more comments through the default comment system outside of the video than through the annotations inside and on the video. When we discussed this with the editing team, they told us that the video annotations were limited to always being placed at a certain point in time of the video. When discussing overall aspects of a video, such fine-grain comments were simply not appropriate. Another significant aspect of the commenting feature was that a threaded, time-based discussion could emerge—something not possible amongst the separate annotations inside the video.

Through our engagement with the editing team and our deployment of the prototype, we discovered that our original concept of video annotations at points in time may appear simple and easy to use, but that designing a suitable tool to support conversations within teams necessitated addressing more complex needs and issues than we had originally thought.

6. Ongoing prototyping

The next phase of designing and developing the prototype emerged from our discoveries during the trials. We expanded the team to include a web developer and a communication/web designer as part of a core design team, a supervisor, and myself as a satellite contributor.

7. What is a comment?

Every once in a while, the design team would reach a crossroads, or a point at which the design would need to be clarified and decisions would need to be made.
The best example of one such discussion resulted from the question, ‘what is a comment?’ In this session, we sat together for hours writing and drawing on a whiteboard to elucidate the precise set of attributes a comment (or annotation) might need in order to give power and flexibility to our design. From our initial trial, we learnt that comments need not be tied to one place, but instead could be about the video in general. However, we considered that accommodating this might mean that comments inside and outside the video would be separate.

Another problem we encountered was that comments on the video could obscure the image. In applications such as video editing, it was important
that all parts of the video could be seen. Our answer to both of these challenges was to develop a comments list: a box that contained all the comments for a particular video, each of which could be placed at a point in time, and also with an x, y position on the image area in order to mark points of interest.

From this discussion, we also developed a facility for threaded comments (comments that could have replies), and began to see the potential for ordering comments according to different rules.

A wireframe sketch of the new annotation interface: comments have their own separate list, and are mapped onto the video timeline and the video image area. All three work together.
8. Flexibility

By displaying the comments and video in parallel, I argue that this generated a new dimension and quality for our prototype which would become the core of our design: flexibility.

The comment list would enable people to view comments either according to the time in which they appear in the video, or the date on which they were created. This would allow people to navigate the comments as they relate to the video, or as a time-based conversation. This new design would honour the need highlighted by the editing crew: to have conversations whilst simultaneously being able to reference the video.

The design work entailed in realising this new concept involved organising the space so that the comment list, the video and the timeline could work together as though not separate. The team collaborated closely to design the system so that each element would communicate a change in another. For example, clicking a point in the timeline below the video not only ‘scrubs’
the video to that place to display the relevant marker, but also scrolls the comment list into position and highlights the relevant comment.

The important aspects here were communicating change and relationship between components. Animation was used to communicate that there had been a change made in the comments list; rather than simply skipping to its new position, it would smoothly but briskly animate. The team spent a lot of time perfecting this.

Communicating the relationship was also important. Highlighting the relevant comments or video markings using a change in colour was central to showing this relationship.

*Frames from the animated demonstrator of the Protospace use scenario*
The overall quality that emerges out of this is flexibility. People using the system are free to access the annotations as markings on the video, or delve into the most recent part of a conversation.

9. Communicating Protospace through an animation

In order to communicate to potential partners the work we were undertaking in Protospace, we created an animated short which demonstrated a potential scenario of use.

The hypothetical situation we devised was that of an internationally distributed production team working on a film. The team had only 24 hours to come up with a new location for one of the scenes in the film, before a meeting with the producers on the other side of the world. We illustrate how Protospace could be used to take new location shots and annotate them, allowing the team to comment and get approval without the need to bounce emails back and forth.

Whilst the video served the purpose of communicating outside of the project, for the design team working on the video helped us to clarify how the Protospace prototype might fit together as an experience that could easily be told as a story.

10. Pulling it together

After a few iterations of the prototype, we were asked to complete the project by releasing the prototype for the public to trial. Until this point, the team had primarily concentrated on the annotation viewer. Other aspects of use, like the creation of new user accounts or uploading of videos, had not yet been properly considered.

In order to release the software, we needed to adopt a holistic perspective on the system, and consider the design of the prototype in light of how people might experience it. This meant thinking about how to attract people to use it, their first use and the ongoing tasks entailed.
Negotiating between the original identity and the newly evolved identity of the prototype to create a more holistic design for the integrated online prototype.
One of our challenges was that the look and feel of the annotation viewer had evolved beyond the qualities of the original Protospace identity. I had designed the identity to be light and airy, and to allude to a spaciousness. Throughout the development phase, the team had focused on creating a system that felt like an editing room—darkened and restrained—to allow the video to be the main focus.

11. Redesigning the identity
When we brought the Protospace identity and the prototype together they clashed. To resolve this problem took the whole team a solid afternoon at the whiteboard once more to revisit our branding strategy for Protospace, not only as a research project with a possible product, but as a product that people could test.
We felt that the product was lacking a direction, and needed to make a statement to people about where it would fit in relation to other products. Its identity was confused or torn between being a social software application similar to the original Protospace concept, inviting sharing and input on video on social networks, and a video review tool targeted towards people who work with video and images every day. We decided on the latter, as more in line with the goals of the project.

Thus the identity was refined, and a new colour scheme was used to communicate this. Instead of light blue on white, we chose fluorescent blue on dark grey.

This new strength of direction helped us to focus the final design of the prototype towards the needs of video makers, both amateur and professional, in terms of the language we used in the design.
In this chapter I will discuss the practice of skinning, a practice which I think is problematic within interaction design projects and in particular for the contribution of communication designers to these projects. Throughout the projects in this research, I have engaged in the activity known as skinning— an activity that can be broadly described as changing the appearance of an interactive system. On the web, skinning has a particularly strong meaning, as the software systems which drive many of the websites, blogs and other web applications rely on templates or skins to define how they will look to users. It is commonplace in interaction design projects to find communication designers and web designers engaging in the development of skins, and it is through this practice that I discovered the impetus for conducting this research. I believe that the surface or stylistic nature of skinning can be problematic for communication designers working in interaction design for it relegates communication designers to making products more usable and pleasing in appearance, without exploring the deeper conceptual and experiential concerns of a design process and a design outcome.

Within this research the problematic nature of skinning was highlighted through the Codocs project. In this project the skinning process hindered a deeper exploration of the product. The reskinning of the project led to a product that looked different, but still suffered from many of the same
design issues and limitations which had initially been present. This contrasted with the Cantata project, where I sought to explore skinning as more than surface aesthetic and focused on user experience as a complementary component to be considered by the interaction design project team. The differences between my approaches and contributions in these projects—the first being limited to surface or identity design whilst the second explored a more comprehensive notion of communication and interaction—highlights the potential for communication design practice to contribute more than mere beautiful visual appearance to a project. By using a more holistic model of engagement in the design process, the Cantata project enabled me to explore potential ways for communication design to contribute to the experiential nature of interactive systems. This transition in understanding the contribution of communication design to interaction design projects is the focus of this research and will be expanded on in the latter chapters.

**What is skinning?**

Skinning at its essence refers to the activity of changing the visual appearance of an interactive system. It is underpinned by a technical concept drawn from software construction, particularly web design, which outlines how the elements of the software system that control the appearance are separated from the functions which do the work, and from the information which is used by the system. Based on this concept, each of the presentation, function and information features can be modified as separate components. This model underpins the way that web pages are delivered and displayed in web browsers when we use the web. HTML (the hypertext mark-up language) orders and structures the information hierarchically, with little mark-up pertaining to how this information should be presented by the web browser. Presentation is the job of the style sheet, or CSS file, which accompanies the HTML page. Within the CSS file is a set of style ‘rules’ which describe how the elements that make up the structure of the HTML file should be displayed within the browser. CSS
Design research knowledge and professional knowledge.

Design-based research must have relevant knowledge not just for the sake of knowledge, but for practitioners in the field of practice that the research is undertaken within. But what about so-called non-researchly knowledge, everyday practical knowledge? On the one hand, the ability to publish often automatically grants the ability to produce knowledge. I guess the ability to think and talk and reason can produce knowledge. Publishing in any medium can be dangerous if there is not a community of people to challenge the knowledge presented. Could it be argued that it is not knowledge if it is not acknowledged by a community of others? A single person could constitute a community, a community of one, and his knowing could well be acknowledged by that community. With more people, knowledge must be challenged and acknowledged by the community. His type of knowledge is still contained in the community.

Knowledge is not instantaneous, nor networked. Being networked means that it is nothing unless it is discussed, published, made to be known to others through different networks. I am trying to think about the knowledge that I am seeking to attain in my PhD. It is not ever entirely clear what shape this knowledge will take, as there are very few guidelines. A criticism of my research so far is that the findings are existing in a vacuum. I have not sought to network my thinking and participate in communities that are into similar things. This means my knowledge has no relevance. It is not ever entirely clear what shape this knowledge will take, as there are very few guidelines.

My blog (http://collabo.net/blog) with a default skin applied (top) and a custom skin developed by myself (below) describes the colour, dimensions and positioning of elements, as well as the graphical treatment of elements using imagery and the typography of the text within the page. CSS is what allows designers to create columns and grids for ordering the presentation of a website. The reason for separating presentation from information, as I have just described, is so that each can...
be modified separately. The benefit of this is that one CSS file can be applied across an entire website, providing a consistent basis for the presentation of a website or web application. In the process of skinning, CSS becomes one of the major components required for detailing a web-based interactive system. Yet CSS relies on a HTML structure that will allow the desired appearance to be possible. The way in which content is ‘marked up’ as HTML elements is also one of the important components for skinning. For the construction of a skin, the control of this HTML mark-up is like a template, a common format for mark-up that allows the designer to achieve a consistent structure as outlined by the style sheet.

The way that HTML and CSS work together. Content is ‘wrapped’ in HTML tags, which is then given style attributes by the CSS code and displayed by a web browser.

In the early days of the web, many websites were little more than a collection of static pages. In contrast it is now commonplace to find that websites are powered by content management systems (CMS) which allow website owners to publish, edit and order the content of their website. These content...
management systems are also able to power discussion boards, blogs and wikis, thereby allowing communities of contributors to submit content and have conversations. A plethora of content management systems are available on the internet, some of which are developed for specific applications like message boards, blogs or online stores, whilst others are more flexible, offering extensibility through a variety of add-ons. This move from static to dynamic methods of publishing and communicating on the web has resulted in skinning becoming an important aspect of the implementation of such systems. Many of the systems are developed to be reskinned, offering designers a simple language with which to develop templates, which talk to the system and guide the output and presentation of the interface and content to users. These templating languages allow designers to consistently guide the way a system will mark up the information that is being output into a HTML page. Through the use of ‘tags’ which are inserted into the designer’s static HTML mock-up, the system can understand where and how to insert dynamic content. Some of these tags can be within programmatic structures which, for example, may tell the system to loop through $n$ units of content in their database and insert the content from each entry using a common mark-up structure. Using such a method, the designer is able to template the display of information which can be repeated up to $n$ number of times. The templating language and tags available to the designer are dependent on the type of CMS used. A blog, for example, will have a set of tags that are tailored towards the common format of a blog. The common elements of blogs are posts, similar to diary entries, which are displayed in order of their date on the homepage. In Wordpress, a popular blogging CMS, posts are represented by the tag ‘$post’. Within each post are title, date, author and body tags which insert the content from each post.
This is a significant shift in how we design for the web and marks a shift in the role of communication designers and their ability to engage with the ‘back end’ of the product being designed.

Before beginning this PhD, many of my design projects for clients involved skinning content management systems to manage the publication and upkeep of their websites or blogs. Much of the design work involved the development of a strategy for how the website would be used to facilitate communication, eventually leading to the development of a design. Due to the fact that the client would be publishing content for the site themselves, the design of the website and the resulting skin would need to accommodate this requirement. Quite often, this would necessitate careful consideration of how the website might be treated to reflect the visual identity of the brand whilst not overpowering the content. In many ways this is not dissimilar to any other kind of identity design work in which a communication designer engages. In the design of a style guide for publications, for example, careful consideration is required on the part of the designer to account for the many contexts of use within which the identity will be seen. The design of visual identities for websites built on CMS raises many similar concerns.

The role of skinning within my practice has generally been to complement the strategic design of a space to support communication. Sensitivity to the clients’ needs and contexts means the difference between a readily available third-party skin that can be applied to their content management system and a skin designed specifically for their purposes and needs. Creating unique and identifiable spaces, or places, on the web is one of the major themes that emerges from the use of skinning within my practice. Skinning can be complementary to communication design practice, but, as I will now discuss, it can also be problematic.
**Why is skinning problematic?**

I believe that skinning is problematic because it encourages an engagement with communication design that only addresses the surface appearances of interactive systems, reducing communication design to a concern with styling and usability issues and thereby limiting the potential for design and its relationship to users and contexts. In the *Codocs* project I experienced first-hand what can happen when a communication designer is engaged at the late stages of a software development process. The client's desire to get to market quickly, coupled with the high costs associated with redeveloping the software, meant that my initial concepts for redesigning the software from a conceptual basis were considered too risky and time intensive. Instead, through skinning the client was able to engage me to redesign the surface of the existing system with minimal impact on the software's underlying functional code. In this way, skinning became a way to facilitate a surface engagement with the system, and my role was limited to addressing the usability and identity issues in the system from the surface.

The project became a source of much frustration, as my desire to pull apart and restructure the software conflicted with the client's desire to move quickly to get the product packaged and sold to customers. I felt confronted by the fact that I was considered a visual manipulator, employed only to make things look good. It became difficult to negotiate my role, as my limited experience of such projects hindered any means to delve deeper into what I believed to be a richer process beyond addressing styling. This deeper engagement was able to occur when we began the identity design process, during which the politics associated with the software could be forgotten as we got onto the task of designing an identity for the product and the organisation based on conversations between myself and the owner/developer which uncovered a set of desired qualities for the brand. It was through the identity design process and the skinning of the interactive system that I noticed that the interactive system itself lacked many of the qualities that the brand was purported to have. Casual engagement, a friendly style, simple language, a focus on people and the process of writing
collaboratively—these were the central qualities that we incorporated within the identity design. However, upon reflecting on the interactive system, even after we had finished the skinning process and the product was released to market for the first time, the system continued to lack any real connection to these qualities. The use of the system continued to be clunky, it lacked conceptual clarity and communicating to users how to perform simple tasks like creating a new document or sharing a document proved difficult.

The identity design process in which we engaged enabled us to uncover and develop a set of desired qualities for the product. However, at the end of the skinning process, we were unable to imbue the system with these brand qualities. The qualities of the system itself still shone through, and did not match the new identity we had created. The client had developed the software with a great deal of empathy for the kinds of people he hoped would engage in its use—community organisations working on reports and people in distributed teams—and his personal contact with members of such groups were his main focus in designing and developing the system. The focus of the system was on a ‘functional brief’ such that the emphasis was on discrete actions. Technically, the system may have had in place all of the functionality required to power a tool for this context, but the way in which people interacted with this functionality still suffered from the same problems as the original prototype.

At this point in the project I hoped that the client would recognise this ‘gap’ between the identity we had applied and the identity that emerged through using the system, and that perhaps this would be a catalyst for further design innovation. From my perspective, this gap emphasised the limitations of a skinning approach that remained at the surface, and that even in the design of a visual identity consideration of the qualities of the system was one of the central aspects that a communication design practice can bring to interaction design projects. Working at the level of the skin is limited to addressing notions of the aesthetics of appearance. This focus on the skin further encourages the perception of communication design as a mere
surface activity. In contrast, by looking at the interactive system as a whole product, the qualities that emerge through the use of the system effectively penetrate the skin to reveal the deeper identity of the product. The notion of the aesthetics of interactive systems as more than surface is echoed in the words of Löwgren and Stolterman:

> It is common to assume that aesthetic aspects are rather superficial—related solely to shape, form, and color. However, the aesthetic qualities of digital artifacts go far beyond the surface. One of the most fascinating aspects of a digital artifact is that it must be understood aesthetically as an experience over time. When you use a digital artifact, you do things, the artifact responds, you act back, and so on. It is an unfolding story. (2007, p. 53)

Löwgren and Stolterman claim that this notion of aesthetics in experience emerges from a Deweyan sense of experience. As discussed earlier in the introduction to this research, this conceptualisation of aesthetics has been highlighted by other researchers such as McCarthy and Wright (2004) who attempt to conceptualise the aesthetics of interactive systems in terms of the experience they elicit. The overall impression of an interactive system, or its character, as Löwgren and Stolterman point out, emerges through this unfolding story:

> Digital artifacts are every bit as temporal as they are spatial. In order to perceive this whole, or the dynamic gestalt, of a digital artifact, we need to experience it as a process, which is to say that we need to try it. The gestalt of a digital artifact emerges in the interaction with the user over time. There is no way for a user to get an idea of the dynamic gestalt without interacting with the artifact and exploring different possibilities and courses of events. (2007, p. 137)

It could be argued that in the Codocs project the skinning process had little effect on the overall qualities of the interactive system. The unfolding story of use of this system continued to suffer from many of the same problems
that were present prior to my involvement. The identity design process sought to create an identity that was based on a set of qualities that the client desired for the product. It was the process of designing with these qualities, whilst also maintaining a sensitivity towards the aesthetic qualities of interactive system, that has particular implications for understanding the role of the communication designer. This notion of aesthetics in experience serves to highlight the problematic nature of skinning as a practice that can only affect the surface of a system. This conception of skinning restricts the communication designer to a level of engagement that may be ineffective in bringing any overall change of character to an interactive system. In contrast to the perception of visual design as mere surface is the alternative that is presented by this notion of aesthetics in experience, where skinning must be connected to a holistic engagement with shaping the qualities of an interactive system. This will be discussed in greater detail in the next chapter.

Skinning is a means to an end. In projects where a system may have already been built, skinning can be a means by which the appearance of a product can be changed with minimal impact on the internal structures of the software, thereby making it a cheap way to engage communication.
designers in a process that will result in products that appear more usable and more visually appealing. In Codocs, the approach taken to the redesign of the software allowed it to have a new look, but its conceptual structures, closely linked to the way in which it had been constructed, left it almost as confusing as before. Engaging a communication designer late in the process through skinning reduces the potential for that individual to engage with the experiential qualities of interactive systems. Boyarsky et al. (1994) explore this territory, claiming that the value of communication design in the context of interaction design is not in the restyling of prototypes, but in the exploration of the nature of interactive systems in collaboration with other practitioners within interaction design teams:

*Designers have the ability to provide the stylistic embellishment of a product, but they also have the ability to join in an exploration of the nature of the product, particularly as it is adapted to human beings in concrete situations of use.... The designer helps to catalyze the team process and encourage every member, whatever their expertise, to become a designer.*

(p. 26)

Boyarski et al.’s notion of the communication designer in interaction design projects is counter to the kind of engagement encountered within the skinning process during the Codocs project. Through my initial design proposals, I had intended to explore the nature of the interactive system, by unpacking and proposing alternatives for the conceptual structures of the system. This process could have been the first step in a more holistic design process. However, in turning towards skinning as the means for reshaping the software, we were unable to deal with the deeper conceptual issues that affected the use of the software. Instead, we could only interact with a surface, restyling elements and reordering them to optimise what was there. Skinning as a means of redesigning an interactive system is not representative of what Boyarsky et al. put forward as the contribution of communication design to interaction design projects. Instead, it represents a surface engagement that separates the visual and the technical, rather
than bringing them together and shaping them together. Sketching, the act of proposing designs in order to facilitate deeper investigation, is an area which I will explore in the next chapter—understood as part of a communication design contribution. Sketching is engaged in communication design at a much earlier stage than skinning. Part of the problem with the Codocs project was that I was included so late in the process.

The problems associated with engaging communication designers late in the software development process are discussed by interaction designer and researcher Bill Buxton in *Sketching User Experiences: Getting the design right and the right design* (2007). In this text he discusses some of the problems with planning and processes in software development, particularly when engineering, design and marketing processes are separated into what he calls ‘silos’. He stresses that too many products move into an engineering phase too early, as though what requires to be engineered is a given. Yet when projects go over time, or over budget, and fail to deliver as promised, it becomes all too evident that there was not enough understanding of the product at the commencement of the project. Altering the product after it is built is costly, and typically this limits design to ‘styling and usability’ (Buxton 2007, p. 77). Contrary to such a linear process, Buxton suggests that we need more integrated approaches to engagement amongst the various teams and activities involved.

In his integrated model, the divisions between responsibilities are not so distinct as a linear progression from one step to the next, in which there is no turning back. Skinning is a key example of limiting design to styling and usability. To explore alternatives for communication design practice, and for the role of skinning, we must seek alternative ways to engage communication design as part of a whole process of software development or interaction design.
Exploring an alternative

If skinning is a means to an end, how can it become a complementary component of communication design practice? What would this look like in an interaction design or software development context?

These were the questions which framed my research engagement in the Cantata project. This was the first project in which the communication designers were engaged as part of a larger strategic interaction design team whose goal was to shape an online space to be inhabited by a community of communication practitioners. As can be read in the project summary, the design team worked with a shared vision of creating a space through the design of the interactive system itself and of the ways in which the project members might facilitate activities and guide participation within the space.

Whilst the Cantata project was ultimately unsuccessful in adequately engaging the client community, the project does demonstrate how
communication design can play an important role in an interaction design project. In particular, it shows how the process of skinning can be complementary to the design process, rather than simply the end product. Skinning was a way of detailing certain aspects of a system, which required a concerted effort during all stages of the design process. When the project failed, reflections from project members pointed towards the difficulties in designing such a space with limited understandings of the distributed network that we were attempting to engage. The network of communicators were distributed all over Australia, and most of the contact we had with the network prior to the launch of the message board system was through a single individual. It was therefore difficult to grasp the dynamics of the network since we could not obtain a first-hand view on their existing practices. Other methods of engagement may have helped us to gain a greater sense of the network as a community of practitioners. We had hoped that the online space might serve as the first point of contact with the network, and therefore provide an opportunity to build a relationship. Over the course of such a relationship, the design of the space and the activities could be further developed through ongoing communication. Unfortunately, our efforts fell short of making the initial contact and engaging the members of the network in such a way. It is a difficult scenario, because in order to design the space and become more informed by understandings of the network, we needed to be better informed by prior understandings. Reflecting on this, I feel that the work of the communication design team could have been better informed by such prior engagement. This way, we might have been able to design with a greater awareness of the kind of space or place that would have facilitated better early engagement with the network.

A critique of the Cantata design was that the notions of space and place within the system were literally depicted. It was as though we had simply cut a slice of physical space and pasted it into the web. Whilst the communication design team had engaged within a larger design context, the depth of our engagement with the design had not been sufficiently deep.
Returning to the idea of engaging users, if we had been more successful in engaging users in this process, I sense that our designs may have been challenged earlier on, thus pushing us to go further. Instead, we took a risk. Although we had attempted to develop a system using a holistic approach, the failure to engage users in the design process was akin to flying blind. We simply could not anticipate how people would respond. When we launched the system, its failure to engage users in participation led to the premature end of the project. This tells us less about the role of skinning, and more about the complex nature of communication design engagement. It might be easy to create a design and skin for detailing a new system, but it is the activity which these designs must support that renders the process more complex.

The *Cantata* project symbolises a communication design engagement in a complex design situation where what is being designed is not ultimately the artifact itself but, as Pelle Ehn (a founding thinker in the field of participatory design) asserts, ‘a changed or reformed practice’. *Cantata* marked the beginnings of what I had been exploring in communication design engagement with a focus on the use or *experience* of the use of interactive systems. In order to engage beyond the level of skin, *Cantata* showed that communication design can engage with the concerns of use by contributing to the conceptual development in the early stages of a project. Through the development of strategies aimed at engaging users in the interactive system, a communication design process of skinning complemented the design of the activities and the structuring of information in the space. Without a deeper engagement with users, and with the use situation, the depth to which we could explore and refine our designs was limited.

In this chapter I have attempted to outline how skinning can be a problematic activity for communication design practitioners who engage in software development or interaction design processes. The potential for communication design within such projects is not in their engagement
in software development towards the end of a project's development process. Such late engagement only serves to keep the communication designer at the surface where it is unsafe or usually too late to explore the deeper experiential qualities of interactive systems. The potential for communication design practice lies in the exploration of such qualities which go beyond the mere visual. To fulfill this potential, communication design practice must be integrated earlier into a project's life cycle.

Throughout this chapter I have paid particular attention to a project in which skinning became part of a deeper level of engagement; however, this is only one area of potential development for communication designers. What are the other aspects of communication design practice that are of value, and how can they be put to use within interaction design projects? In the next chapter, I will look more deeply into notions of aesthetics as experience, and how such notions may inform an interaction design process, and how I have explored the role of communication design in such processes. To do this, I build upon Löwgren and Stolterman’s (2004) work which I have introduced here, and use this to articulate certain qualities of the artifacts which have emerged throughout my design projects.
In the previous chapter I explored skinning as an activity that can potentially limit the contribution of communication design in interaction design projects by relegating it to the detailing or styling of the surface of an interactive system. Through a consideration of the role and contribution of aesthetics within interactive systems I have explored the ways in which visual aesthetics inform the experience of using a system. Through this exploration it has become apparent that visual aesthetics not only impact on a person’s sense of pleasure in interacting with a visual interface, but also their physical experience of a system through such things as maneuvering through navigation systems or possessing a sense of personal identity when immersed in a system. To address such experience, it is essential that a communication designer engage in what can be termed a process of thoughtful design of an interactive system, and use their skills in skinning (creating a visual interface) as a way to create an identity for a system. In this chapter, I will develop this concept further through a discussion of aesthetics as emerging through experience and a consideration of how this can shape the contribution of communication design within interaction design projects. To this end, I look towards ‘experiential use qualities’, a term which Löwgren and Stolterman (2007) use to refer to the sets of overlapping aesthetic qualities that designers can use to articulate the aesthetics of interactive systems. I also adopt a specific focus on the quality of ‘seductivity’, a term used to describe the process
by which an interactive system, as a product, may entice, captivate and engage users in a meaningful relationship. This meaningful relationship refers to the development of products and systems that have longevity with their client/user groups.

This emphasis among designers within HCI product and system development on qualities such as seductivity highlights the industry’s realisation that there is a need to address the holistic nature of experience within interactive systems. Such a holistic treatment of experience is reverberated in McCarthy and Wright’s deep exploration of pragmatist understandings of experience and how these may help us to understand our relationship with technology. In the following section I describe in greater detail this conception of experience, and how experiential use qualities can be used to articulate the way in which my communication design practice has explored this area in the projects outlined in this study. This will be done through a critique of the key moments and artifacts which I believe help to conceptualise and articulate the possibilities for communication designers to be seen as valuable members of experience-centred interaction design projects.

Aesthetic Experience

As previously mentioned in the introduction to this research, my practice and the projects within this PhD have been strongly influenced by the work of McCarthy and Wright (2004, 2008), specifically their work on technology as experience. Through their research they have come to emphasise the ‘felt-life’ of people in the evaluation and design of technology, and have done so by drawing on a pragmatist perspective of experience:

In contrast to other philosophical approaches whose starting point is a theory of knowledge or subjective states, pragmatism starts with experience and, by committing to a holistic, relational worldview, tries to ensure that experience is never reduced to categories such as knowledge, behavior, or feelings. For pragmatists such as Dewey, experience is more
personal than behavior; it involves an active self who not only engages in but also creatively shapes action. It is more inclusive than knowledge because it tries to encapsulate a person’s full relationship—sensory, emotional, and intellectual—with his or her physical and social environment.

(2004, p. 54)

A pragmatist perspective for McCarthy and Wright presents a self who is present in a situation as a thinking, sensing and feeling person, who acts and reacts with a fullness of being:

...experience can be seen as the irreducible totality of people acting, sensing, thinking, feeling and making meaning in a setting, including their perception and sensation of their own actions.

(2004, p. 54)

They argue that viewing experience in such a way allows us to look at our experiences of technology not as detached workers succumbing to processes, but as human beings who bring the fullness of ‘felt life’ to our everyday technological experiences. It is through this shift in understanding that McCarthy and Wright believe we can formulate new ways of designing for enhanced experiences of technology that enrich our lives and allow us to engage creatively and fully:

...experience is constituted by the relationship between self and object—by concerned, feeling people acting and the materials and tools they use. The concerned person is always already engaged and comes to every situation with personal interests and ideologies.

(2004, p. 55)

McCarthy and Wright draw on Dewey’s (2005) and Bakhtin’s (1993) explorations into the conception of experience by emphasising the idea of ‘aesthetic experience’ as a paradigm for all experience. In doing so, Dewey and Bakhtin reclaim the notion of the ‘aesthetic’ normally reserved for art, believing that aesthetic experience can occur in the everyday,
demanding our attention, making us ‘come alive’ (McCarthy & Wright 2004, p. 58, emphasis in the original). Through aesthetic experience, the everyday can be elevated out of the dullness of routine, and energetically engaged in all aspects of felt life. The value of this perspective with respect to technology is best summarised by McCarthy and Wright, who state:

...our aim in this book is to present technology as experience in an effort to see relationships between people and technology in all their potential value, meaning, and vitality.
(2004, p. 78)

In their analysis of pragmatist accounts of experience, McCarthy and Wright identify four major identifiable threads of experience. They characterise this approach to experience as a holistic one, in which the threads of experience are intertwined. On this account, it is not truly possible to separate them yet they can be defined in such a way that we may think and talk about the interplay between these threads in the flow of experience. These four threads are listed below.

**The sensual thread** allows us to participate directly with the world around us. This thread emphasises the pre-reflective engagement we have with the world, that is, the immediate sense we might gather from a situation.

**The emotional thread** highlights the situated nature of emotions. It is understood that emotion cannot be removed from the situation in which it is felt, or be independent of an experience. Emotions pervade our sense of an experience, but they also shape our actions. Emotions are always directed at people, things or situations as an expression of a desire to change a situation to satisfy our goals, needs and desires. As such, emotions are closely connected to the situations in which we are experiencing, but also to our personal goals, needs and desires.

**The compositional thread** relates to the narrative structure of experience and the relationships that exist between the parts and the whole of an
experience. A good example of a bad narrative structure would be that of Codocs, where the experience of using the promotional website was very different to that of using the interactive system. As a whole experience, the early moments of learning and perhaps being excited about the product can shape our expectations about the use of the system, and it is only when these expectations are not met that we are presented with something unexpected. This is not to deny the value of the element of surprise within design environments, but surprise should not be confused with disappointment.

The spatio-temporal thread highlights the nature of time and space within an experience; it emphasises how an experience may modify our perceptions of time and space. It also refers to interactions with technology in which the pace and order of interaction may be important, and navigation and the manipulation of objects in space may be part of this.

Finally, the continuous aspect of these threads points to the notion that an experience is never fully bounded by the confines of an activity. This understanding accepts that every experience brings with it a past, present and future, all of which are modified through experience. This is reflective of the notion that people come to an experience already engaged with past experiences, as well as the idea that the way in which we recount an experience also shapes the way we think about an experience, which in turn shapes the expectations of others.

What I find attractive about McCarthy and Wright’s account is their emphasis on a holistic understanding of how people interact with technology. This approach builds on Löwgren and Stolterman’s argument that the aesthetics of interactive systems emerge through the experiences that we have, while also acknowledging what people bring to an experience. For my communication design practice, I believe that McCarthy and Wright aided my understanding of how and why we might design artifacts that support human activity in all of its fullness, as opposed to approaches which emphasise the technology and the evaluation of outcomes, such that the
artifact becomes the focus of development. It was not until the Protospace project that I was really able to understand the value of people in my design process. After engaging with the group of video editors and hearing about their experiences of using the prototype, I felt invigorated by a new sense of empathy for supporting the creativity and freedom of people within the interactive spaces that I helped design. I believe that McCarthy and Wright’s perspective can help us to conceptualise a role for communication design practice that positions it as a valuable part of the exploration and design of tools and systems that enable rich human experiences. Before I move on to describe the critical moments in my practice and the projects that demonstrate this, I would like to discuss another important concept, known as ‘experiential use qualities’ (Löwgren & Stolterman 2007), as a way to articulate the aesthetic qualities of interactive systems. I believe experiential use qualities are an important aspect of conceptualising communication design, because they allow designers to articulate where and how their actions and designs may be relevant to an experience-centred approach to interaction design.

**Experiential use qualities**

On the subject of the aesthetics of interactive systems, Löwgren and Stolterman (2007) emphasise the need for interaction designers to be able to articulate the aesthetic qualities of artifacts. They use the term ‘experiential use qualities’ to refer to such qualities, a term I believe works in connection with the notion covered in the previous chapter that the aesthetics of digital artifacts are not simply attributed to their appearances or functionality, but include the experience which they evoke through use. In this way, aesthetics are strongly tied to the contexts in which the artifacts are to be experienced. It is therefore never possible to fully predict the ways in which people will use and appropriate an artifact:

For example, a new digital artifact may be designed with the intention of facilitating internal communication in an organization in order to
overcome entrenchment and hostility. As it turns out, the new artifact is instead used as a forum for intense and upsetting debates, where employees anonymously voice unpleasant opinions about the organization and each other. (Löwgren & Stolterman 2007, p. 106)

Löwgren and Stolterman’s perspective is reflected in Petersen et al.’s (2004) work on ‘Aesthetic Interaction’ in which they describe how an artifact may have aesthetic potential, but its release is dependent on the context and use. In this conceptualisation we are reminded of McCarthy and Wright’s (2004) mantra that designing interactive systems is as much about what people bring to a situation as it is about what the designer contributes. Experiential use qualities can be thought of as potential aesthetic qualities. By articulating such qualities, interaction designers develop a language that allows them to sensitively articulate the artifact and its materials, the users and the social contexts in which they exist (Löwgren & Stolterman 2004; Löwgren 2004).

Löwgren discusses one such quality, which he calls pliability:

_The notion of pliability is an attempt to articulate a certain quality in using digital, interactive products and services. The use of a digital artifact is characterized as pliable if it feels like a tightly connected loop between eye and hand, between action and response. A pliable interaction is one where the user is drawn into a sense of shaping the digital information with her fingertips, even though the actual artifact might employ standard, non-tactile interaction techniques such as mouse, keyboard and a display monitor. Pliability is a sensuous quality, having to do with how it feels to use the artifact in the here-and-now of the use situation, and as such it plays a role in understanding the aesthetics of interaction._  
(Löwgren 2006, p. 3)
To support his argument Löwgren cites *Google Maps* as an example of pliability in action, where the action of panning around the map happens through a direct click-and-drag action on the map. Another example is the *Visual Thesaurus*, in which clicking through a network of terms allows people to navigate the relationships between the terms in a way that circumvents the conventional authority of a thesaurus. By clicking and traversing the network of words people develop a greater sense of the connections between words, which encourages further exploration. This is facilitated by the tactile nature of this thesaurus, in contrast to the ordinary format of online thesauri. This is not to say that other printed thesauri are not tactile, rather that in contrast to typical online thesauri which are heavily text-based, the spatial connections between words and the way in which the space can be navigated imbue the relationships between words with a new meaning. The tactile nature of the interactions changes the experience of using an online thesaurus.

*Left: the common format of online thesauri, with lists of words; Right: The Visual Thesaurus, where connections between words can be explored by users spatially. Reproduced from Löwgren 2006*
Considering experience in practice

In this section I would like to discuss my project work with respect to Löwgren and Stolterman’s notion of ‘experiential use qualities’ and McCarthy and Wright’s ‘pragmatist perspective of experience’. In doing so, my aim is to explore the ways in which a communication designer might engage in the design of interactive systems in light of the way in which they will be experienced.

Sketching in the early stages

In the early stages of Protospace I was asked to develop a visual identity for the project whilst at the same time developing a series of sketches and an animated prototype that would function as a possible imagining of an interactive system. The concept for the Protospace interactive system was an online space to facilitate collaboration between members of the public and the creators of products. The founding qualities of this space were that it would be open, accessible and join people in creative dialogue around objects such as design sketches, video advertisements and focus groups for products in development. Thus, the design of the identity was created to reflect such qualities and to communicate a sense of opening, of becoming, which was realised in a flower-like form as the logo. It was also designed to position the concept within the genre of social networking applications that were emerging on the internet at the time.

In Protospace, the identity design and sketches of the proposed system helped to explore possible qualities for the system.
The illustrations of the Protospace concept were designed to communicate the concept of this online space, as renderings of what might be. They took the form of mock-up screen grabs of a possible system, and were deliberately given a ‘finished’ treatment so that they would look as though they were real. Each image illustrated a different proposed aspect of Protospace, including features such as questionnaires, message boards and video annotation. Whilst at this point the ins and outs of the interactions did not matter, the use of realism in the depiction of the system required that a great level of detail be used. Wireframe sketches might have sufficed to communicate the various features of the proposed system, but I used the identity that we had developed to attempt to communicate a sense of the overall character of the system.

A problem with finish

Buxton (2008) argues that what characterises a sketch is its ‘throw-away’ quality (p. 303). Despite the fact that a lot of time and effort might go into producing a sketch, its preciousness should not get in the way of its purpose, which is to facilitate conversation and the critique of ideas. In this regard, Löwgren and Stolterman (2007) warn against the pitfalls of highly finished rendering styles, stating that people may confuse the level of detail with a level of resolve in the project, which may result in a reluctance to openly criticise the concepts inherent to a sketch.

If you find yourself violating any of the attributes that we associate with sketching (fast, cheap, plentiful, etc.), then you should question if you are doing the right thing, or if you are the right person to do it.

(Buxton 2008, p. 299)

Upon reading Buxton’s words, I felt worried about my own role. Had I gone too far? It made me stop and think about what impulses had driven me to automatically give the screenshots such a degree of finish. It was through a consideration of the context in which the sketches were to be used that I discovered more about this issue. The sketches were intended for use
by the project leaders with potential industry partners who were aiming to communicate a proposal of what could be. In this sense, we were less concerned about the details of each interaction, and more focused on the qualities upon which the system might be founded. By creating the added level of finish it was thought that the sketches could then be critiqued in terms of the overall qualities portrayed. A wireframe or low-fidelity sketch might not have captured this same essence. A wireframe could facilitate conversation around the specific features or activities portrayed—a stage at which the project had not yet arrived. In terms of experiential qualities, the sketches articulated a sense of the whole, and were an attempt to communicate the qualities of openness and community engagement.

It should be noted that it is not my intention to argue that communication designers should always produce ‘finished’ sketches. I agree with Buxton that careful consideration is needed in the selection of rendering style or finish as I have described it here, as the method used to communicate an idea will bring with it added meaning that may or may not be conducive to the reading or critique of ideas at a particular stage of a project or in line with the intention of the presentation. Through rendering mock-ups that appear realistic, it is possible to communicate a holistic sense of how a system may ‘look and feel’. Such a way of sketching is representative of how visual identity and visual language can be used to imagine and propose ‘what might be’ in the early stages of an interaction design project.

An animated sketch

Accompanying the static screenshots for Protospace was an animated sketch, also rendered in a realistic style. The aim of the animated sketch was to depict in detail a proposal of how people could have conversations through video annotations placed within the timeline of a video. The animation depicted a person playing and pausing a video at various moments to place text, audio and drawn markers on top of the video. Whenever a marker was placed, it left a mark on the ‘timeline’ below the video, communicating the position in the timeline where the annotations had been made.
The concepts underlying the proposed design included the ease with which people could have a conversation about specific parts of a video. The way in which the video could map annotations onto a timeline was the primary idea being presented in relation to this.

The aim of the animated sketch was to convey how video annotation of an advertisement could allow people to have conversations using annotations, at specific moments in the video. The style of the interface and the interactions depicted were intended to demonstrate how easily people could ‘drag and drop’ comments onto a point in time in a video and with an x, y position in the video frame. Alternatively, people could drop audio comments in the same way, or draw on the video using a pen tool. Whilst it may have been possible to show a series of screenshots depicting this concept, it was the aspect of time that allowed us to communicate a sense of tactility, or pliability to the audience. The way in which we depicted the creation of annotations was via a drag-and-drop interface, where small icons representing text, audio or drawn annotations could be dragged directly onto the point on the video to which the annotation referred. Rather than having to click on a button to make an annotation, and then click an area to mark the desired point on the video, the relationship between making an annotation and ‘touching’ the video was more direct. The reasoning behind the design was to emphasise the directness with which people could manipulate the video and simultaneously use the system to have a conversation with others.

As I stated earlier, it might have been possible to use a wireframe style for the animated sketch to facilitate the kind of critique that our concept needed. The finished rendering style that we used had already been present in the other static sketches, and it was easy to borrow from the visual language already developed to try to imbue our animated demonstrator with a similar sense of openness and identity consistent with the proposed space. In this way, the experiential use qualities proposed through the depiction of the animated demonstrator complemented
the realistic rendering style used to show the relationship between the visual, spatial and temporal aspects of the proposed development. Again, if this were not a proposal of what an online space could be, and what qualities might underpin such a space, this style of rendering may not have been appropriate. However, what our method does show is that adopting this kind of finished sketching, underpinned by consideration and communication of experiential use qualities of interactive systems, has the potential to engage people in a conversation about possible experiences of use.

Evolving qualities

After these initial proposals were presented to industry representatives, we were asked to develop a rapid prototype of the video annotation interface. The prototype was tested with a team of video editors, who used the prototype in their everyday video practice. The key discovery from this engagement was that whilst people liked being able to directly annotate the video, it did not provide adequate room for longer, more threaded conversations. By restricting annotations to comments inside the video, reading annotations required skipping through the video to gain a sense of the conversation contained within it—despite the fact that one of the activities we had original intended to facilitate was conversation.

The challenge we faced then was how to design an annotation interface to support conversation, whilst maintaining the original connection between the video and the annotations, and thus a sense of tactility. We decided that annotations, now called ‘comments’, should be moved out of the video and into their own box next to the video. The detailed design work that followed this decision involved a close collaboration between the designers and the developer to work on how the prototype would communicate to the user the direct connection between the comments in the comment list, markings on the video, and the corresponding position of comments in the timeline. The visual organisation of the three elements—the comments list, the video and the video timeline—was crucial in allowing
Discoveries during user trials of the first prototype of Protospace lead us to design the next iteration of the annotation interface, to support richer conversations through annotation.

each to stand on its own but also, more importantly, for facilitating a sense of connection among them, through which most of the work was done.

The result, I believe, evolved to generate a new experiential use quality, expressed through a sense of flexibility. Comments could be read in the comments list in order of the time at which they were published, or they could be reordered to the point at which they had been made in the timeline. This simple concept arose out of the need to support conversation. Giving people the choice to read comments as a conversation, or as a stream
of annotations attached to the video, allowed for greater flexibility. When a person clicks on a comment, the video immediately skips to the position where the comment was made. Alternatively, clicking a marker on the video screen displays the relevant comment/s in the timeline, by scrolling the list into position and highlighting the comment/s with a colour that corresponds to the marker. Further, clicking a point in the timeline
of the video skips the video into position and displays the relevant comment/s in the timeline. These three elements of the interface were designed to be robust as separate elements, but the way in which they were closely coupled through action and reaction gave rise to a sense of deep connectivity between conversation and annotation. The resulting experiential use quality that emerged is what I have articulated as flexibility, because it gives people options to navigate by date, by timeline, to see conversations as they unfold, or to review a conversation as they watch a video.

A conceptual model of the mapping between comments by date, by timeline, and by their placement on the video frame
This deep connection would not have been possible without close collaboration and keen attention to the visual, temporal and overall experiential qualities with which we were working. Visual communication enables a language which allows for connections between comments and video markers, but this would not be possible if the temporal and interactive nature of acting, reacting and manipulating the materials in harmony could not be achieved. I believe that this demonstrates an in-depth engagement for communication design in the design of the communicative aspects of an interactive system. This should not be seen as an added bonus to a project, but rather must be understood as deeply rooted and inseparable from the spatial, temporal and behavioural aspects of an interactive system. What underpins this deeper, more integrated engagement is an attention to the activities which are being facilitated, and to how it feels to engage with these activities. In other words, it is through an engagement with, and care for, the experiential use qualities of an interactive system that quality experiential outcomes will occur.

I believe that the notion of threads of experience, as presented by McCarthy and Wright (2004), illuminates my observations in this project. Through the immediate appearance of, or action and response entailed in the interface and the resultant sense of tactility or directness, a sensuousness is experienced that helps people automatically understand the connection between the comments and their responding mark or place in time in the video. This sensuousness goes hand in hand with the spatio-temporal thread in which the two timelines—that of the video and the conversation—become the two axes upon which comments are mapped. A further dimension is added through the video screen itself, upon which markings are made. The comments list uses space to order its depictions of time, and the system uses animation to bring comments into position which then communicates that it has been changed by clicking another element. Finally, there is the intellectual thread in which sense-making happens between all of these dimensions, and between the content of the comments. Different meanings
can be generated through different methods of inquiry, realised through the user choosing a different pathway into the video and its annotations.

**Seductivity**

An experiential use quality that Löwgren and Stolterman (2004) discuss is ‘seductivity’, which is a quality of interactive systems that entices and captivates people to the ongoing use of a product through emotional promise. It is a quality that appeals to people’s hopes and desires, and delivers on those promises in small increments. The term ‘seductivity’ originates from Julie Khaslavsky and Nathan Shedroff’s (1999) introduction of the term to HCI. They summarise seductivity as a process of:

*Enticement—Grab attention and make an emotional promise;*
*Relationship—Make progress with small fulfilments and more promises, a step that can continue almost indefinitely; and*
*Fulfilment—Fulfil the final promises, and end the experience in a memorable way.*

(Khaslavsky & Shedroff 1999, p. 46)

Enticement occurs at the initial contact with a potential user or customer. It might be made through an advertisement or some other form of communication about the product; for example, there were the vital discussions of possibility of the iPhone long before it materialised. First contact may also occur through direct contact with the interactive system itself. No matter how it occurs it is during this first contact that a person’s attention must be captured for long enough for an ‘emotional promise’ to be made. This emotional promise, concerning the experience about to unfold, must tap into a person’s goals and desires. It might entail a feeling of surprise, giving way to a curiosity to further explore the use of a product. It may promise some way of changing an aspect of a person’s life, or offer a new way of seeing a situation. The next part of the process is the relationship, which involves delivering on the initial promises through the use of the interactive system, and in turn making more promises.
This becomes a relationship of promise and fulfilment—a process which can last indefinitely. The final stage, which may or may not always be necessary in a seductive process, is fulfilment; and the way in which this can create a sense of conclusion varies. What is important is that it is a positive and memorable experience, and that it allows a person to reflect and feel a sense of relief or satisfaction.

**Seductivity and the broader product experience**

Seductivity encourages a holistic way of looking at interactive systems. It even includes aspects that may ordinarily be considered outside the realm of an interactive system—which is precisely what first drew me to this notion. The notion of seductivity considers all aspects of a product, some of which might normally be considered separate to the software of a product, such as advertising and branding which may be ordinarily attributed to communication design. Its value became most resonant when I reflected on the Codocs project in which a concerted approach to the design of the various facets led to a disjuncture in the experience of the system. There was a marked difference between the user’s initial experience and the development of the relationship between the customers.

*The process of seductivity, whereby a person is enticed through an emotional promise, leading into a relationship with an interactive system through gradual fulfillment of the original promises, ending in a final fulfillment.*
and the product website on the one hand, and the unfolding experience of using the system on the other. This was the major impetus for my approach to my involvement in the Protospace project. It was in this project that I began to understand how my engagement in the project could affect the end user's experience. I attempted to engage in this way through combining an identity design with the design of propositional sketches and an animated demonstration of an online system which the project was seeking to develop. In order to shape an interactive system or a product to facilitate a sense of unity in user's experience, and to draw on a communication designer's understanding of the complexity of experience and communication, I would argue that it is more effective to engage communication designers earlier in the project and to include them in the exploration of aspects such the seduction of experience in order to generate a richer project outcome.

**Codocs as un-seductive**

How people engage with an emotional promise of a product will be informed by the outcome or the effect that the product may have on a person's life. In the Codocs project, the promotional website had been designed to appeal to people's prior experiences with technology, in particular their frustration surrounding email communication when exchanging documents. We designed the site to appeal to the hopes and desires of potential customers by making promises about what the product could do. In contrast, the Protospace project designed the public homepage to contain a demonstration of our technology, with a video embedded in it which guides users through how the product could be used within their daily lives. One was a site designed to gain interest based on disgruntlement, the other through an enticement for something new.
How experience was considered in Protospace

In conceptualising Protospace as an experience it was necessary that the entire project team work closely together. This team included designers, developers, video makers and business analysts. One thing that helped us was development of the animated demonstrator of the Protospace concept. At that stage of the project, most of what we had designed was the representation of a person annotating a video. We had yet to refine the other parts of the prototype that surrounded this core activity: signing up, signing in, uploading a video and inviting people to view a video.

The design team produced a video demonstrator of a scenario of use within a film production team. Originally the video was intended to show potential partners for the project, but it also became an important tool within our team for reflecting on the broader narrative of Protospace.
Video demonstrator as a communicative and reflective tool

Initially we were asked to create a demonstrator to show how Protospace could be used within a professional context. Whilst the video had been intended for potential partners and groups who might be interested in our research and development, internally the video triggered thoughts about how we could move forward with design of the system. The video created a situation where we could reflect on how the different aspects of the experience of using the Protospace system were fitting together.

It prompted us to ask: ‘How can we design Protospace so that its story of use could be told in a simple way?’ This is similar to Schön's concept of ‘back-talk’ (1983). Back-talk is the process whereby an externalisation of an idea or its material manifestation creates a situation that is able to ‘talk back’ to the user or designer. In this case, the situation was a representation of what Protospace might be if it could be represented in a minute-long clip. It thus tells the story of what Protospace does, what the user can do, and how it can be used in practice to facilitate communication. In this way the video provided an artifact that allowed this conversation between design and designer to take place. The concepts and the narrative communicated by the demonstrator facilitated critically reflective conversations between the object and person. This is an example of how a communicative artifact can feed back into the design situation to further illuminate it. The way in which a story might be told, that potentially excites or entices people into using the system, can become a means by which to design a means for a product to facilitate such an experience.

Compositional thread

The compositional thread refers to how the whole experience of a system or tool fits together. In the Codocs project it became apparent that the different aspects of the experience did not share a family resemblance. They did not fit together.

In Protospace, this was an issue that we did not consider from the start, but which became important towards the end of the project as we brought
the whole experience together. The project team wanted to find ways to communicate the Protospace concept as a complete experience. So we told it through a story—an animated scenario—communicated in the form of an advertisement. This became an important reflective tool for critiquing the prototype so that it could be better designed to make sense as an experience.

Communication as a part of seduction

The video is now a part of the homepage for the Protospace online trial. It is used as a method to familiarise people with the product, but also entices people to explore the product. Even though the scenario addresses a video editing team, the problem that the scenario presents may be familiar to other creative disciplines as well. It is intended to elicit an emotional connection to the scenario, and to enable people to imagine themselves in that situation. If we consider this in reference to seductivity, it becomes part of an emotional promise. By weaving Protospace into the story, we can demonstrate how Protospace could be used within other such problem spaces.

The emotional thread

We traditionally treat emotions, such as joy, hope, and fear, as entities that come on to the scene fully formed. Yet no emotion exists independent of the particular circumstances connected with it and the character of the experienced event permeates the emotion, whatever name we give it...

*The emotions at work in an experience belong to a self engaged in a situation and concerned with the movement of events toward an outcome that is liked or disliked. It does not exist separate from the person, the situation, or the feelings of the person toward the situation.*

(McCarthy & Wright 2004, p. 83)

During the development of Protospace, designing to facilitate seduction was one of the final intentions of the design team. The aim was to make
the process of signing up for an account to use the software as smooth as possible. When a person initially attempted to sign up, they were presented with a sample container with a video to try out annotation before having to upload a video. The intention of this design was to gradually ease people into using the prototype and to build a relationship with them.

Continuous engagement
This thread accepts that life and knowledge consist of an accumulative process and acknowledges that people come to any situation ‘preloaded’ with the baggage of previous experiences. In designing Protopspace, we attempted to think about a group of people who already had a problem on their hands. How might the identity or logo mark of an interactive system give people clues as to what they might encounter? This might shape their anticipation of the experience to come. Towards the end of the Protopspace project, the continuity between the qualities of the identity that had been designed at the beginning of the project and the qualities of the experience which had evolved through the design of the prototype became the focus of a critical moment in the final stages of designing the prototype into a holistic, functional system.

Evolving identity
A major aspect of redesigning the prototype at this point was the design of the skin and the identity. Until this point, the original Protopspace identity and style guide had been used for all of the project’s communications, but like the prototype this identity had begun to evolve. The communication designer working on the prototype had used a darker colour scheme, markedly different from the original light, blue sky style. As Protopspace had developed into a more focused tool for video annotation, the designer sought to evoke a sense of an editing room, as a more muted, slightly darkened space suitable for working with video. When I re-entered the project to design a homepage for the product to entice people to use the product, the identity of the system clashed with the original identity.
It was not until the design team sat down as a group to reassess things that we realised that our direction had changed. Instead of representing the initial concept of an open space for broad community engagement, Protospace had been designed for collaborative teams to work closely around a diverse range of rich media. As a result, we decided that it was necessary to transform the identity to become more in line with the new direction of the prototype: darker but still with a vibrant element. This new identity would evoke a sense of sophistication whilst maintaining an emphasis on video. This decision resulted in a sense of completeness for the prototype, and for the project. The role of communication design in this instance was to bring a harmony to the identities of the project and the interactive system with the intention of creating a more seductive and holistic experience.

Conclusion

Experiential use qualities can become a way to articulate the aesthetic qualities of interactive systems. They build upon the conceptualisation of the aesthetics of interactive systems as experiential, and they prompt designers to articulate qualities that rely on thinking about the use of artifacts in contexts.

Pliability prompts designers to think about the nature of the digital materials, and how people may interact with and manipulate interactive artifacts in tactile ways. Pliability can evoke a sense of playfulness and directness with information and objects that allows people to interact in new and meaningful ways. Such qualities are not attributed to visual appearance or function alone; they are created through an inseparable connection. In exploring such qualities in the Protospace project, I demonstrated how such qualities can emerge out of collaboration between designers and developers, and are informed by a close connection to users and a consideration of the qualities that may emerge through the design process.
In this chapter I have suggested that another such quality, seductivity, can be considered as a key aspect of the engagement of communication design in interaction design projects. This is because it suggests attention to a relationship between a person and an interactive system as an evolving relationship that can begin before a person is engaged in the actual use of the system itself. This practice of seduction is core to communication design across all media and can extend beyond the traditional areas of advertising and packaging to working with new digital media.

A sketch of the potential contributions of communication design to an interaction design project, and how they are interrelated with each other

The role of communication design in constructing notions of identity and communicating to potential users in the early stages of contact must be backed up by the design of the interactive system. As is true for all areas of product development a poorly designed product cannot hide or have
long-term shelf life simply because of its image. In order to orchestrate this flow of experience from one moment to the next, McCarthy and Wright’s account of aesthetic experience suggests that design in such a case attends to a compositional thread of experience. The family resemblance and notion that one experience with a product will flow onto the next will impact on a product’s success. I believe that McCarthy and Wright’s framework suggests ways in which designers might better understand the nature of experience when designing digital artifacts.

There are a number of different techniques that a communication designer within an interaction design project can use to design and exploit the aesthetic potential of experience of an interactive system. Based on my observations of the Protospace project I would argue that communication designers can utilise the practices of sketching and visualisation to facilitate idea generation, design refinement and communication of aesthetics. Identity design, as I have explored through my practice, can be one important way in which the outward image or surface perceptions of a product can contribute towards generating the deeper qualities of the experience of a product, by developing concrete manifestations of a visual language that attempts to communicate the product qualities. Such foundational work, which could be perceived as the practice of skinning, might be considered superficial or cosmetic. However, during an interaction design process, communication design can become a valuable part of imagining the aesthetic qualities of interactive systems. Where this leads to is the subject of the following chapter, which specifically asks the question: How can communication design become part of shaping an interactive system out of its digital materials?
In the previous two chapters I have shown that skinning can be problematic for understanding and enabling the contribution of communication design within interaction design projects. The practice of skinning can reduce the contribution of communication design to tailoring the visual appearance of a final product. This surface orientation limits communication design to serving notions of the aesthetics of appearance, whereby beautiful appearances are the key focus in attracting people to use an interactive system. As I discussed in the introduction to this text, communication design has a much broader potential for contribution to projects than the production of visual artifacts for such purposes. Communication design, as Frascara (2004) points out, refers broadly to the activity of planning and coordinating the creation of artifacts with the aim of communicating specific messages to intended audiences. This is done with the aim of affecting some kind of change in the knowledge, attitudes or behaviours of those intended audiences. With respect to interaction design, such a definition of communication design has implications beyond styling and appearances. If we consider the aesthetics of interactive systems as more than visual appearance, and instead perceive them as part of an experience that happens over time between a person and an interactive system, we then find a richer source of engagement for communication design with the aesthetics of interactive systems.
In the previous chapter, through a discussion of my projects and the writing of McCarthy and Wright (2004), I sought to show that in order to create a ‘seductive’ experience, interactive systems must first entice a person through sensory engagement intertwined with emotional engagement, and then establish expectations that are closely tied to a person’s individual goals and desires. Neither of these aspects of seductivity can be reduced to mere visual appearance, or to the functionality of an interactive system, but to an irreducible, holistic treatment of the relationship between an interactive system and the person/s using it. In the Protospace project, close collaboration between all of the designers and developers in the project, as well as an orientation towards end-user experience, allowed the team to create an interactive artifact that possessed the desired experiential qualities—an outcome which could not be attributed to any one of our roles alone.

In this chapter I wish to explore the activity of prototyping as a way of engaging with the digital materials of interactive systems and with shaping them with respect to their experiential use qualities. I have in the previous chapter discussed the prototyping process that we undertook in Protospace. In this chapter, through a discussion of this process I wish to focus on the ways in which communication design can contribute to interaction design projects through prototyping. This will include an exploration of the ideas which can facilitate a deeper engagement with prototyping with regard to experience, in particular how we understand the relationship between shaping the properties of an interactive system, and the experiences of people who use it.

**Digital materials**

The concept of digital materials in this research is borrowed from Ehn (1990) and Löwgren and Stolterman (2007), who use the term to describe the materials that comprise interactive systems. In the case of this research, I am specifically referring to the materials which constitute web-based
interactive systems. In designing for such systems, the primary mode of interaction for a user is through a web browser on a computer; but this can also branch out to use on a mobile phone, although none of the projects in my research have looked at mobile phone applications. In the first chapter on skinning, I described some of the elements of this digital medium, namely HTML and CSS. I talked a little about content management systems as being the part of the application that serves information to a user’s computer and handles communication back and forth between user and computer. In the first chapter I described alternatives to static websites, for designing a more complex and dynamic web application. The dynamic nature of the information, and the ways in which people can navigate, retrieve, modify and shape information add new dimensions to what it might mean to design for the web.

In contrast to web-based systems, designing for public touch-screen interfaces brings with it considerations of touch, gesture and environment amongst others, as these elements are unique to these particular technologies. Each technology, and the materials out of which digital artifacts are constructed, brings with it possibilities and challenges, thus requiring an awareness on the part of the interaction designer (Löwgren & Stolterman 2007) of how to engage with and exploit these possibilities.

As I have discussed so far, the aesthetics of interactive systems are not simply inherent in the properties of an interactive system, as analytic approaches to aesthetics may argue (McCarthy & Wright 2004; Shusterman 2000). Rather, the properties of interactive systems should be considered to be a part of an aesthetic potential, which is released through experience (McCarthy & Wright 2004). Youn-Kyung et al. (2007) propose the notion of the ‘interaction gestalt’ as a conceptual bridging between the properties of an interactive system and the product experience. Their ideas are also founded on pragmatist perspectives of aesthetic experience drawn from Dewey (2005), which form the basis for considering experiential use qualities.
Youn-Kyung et al. put forward the concept of the ‘interaction gestalt’ as a thinking tool with which interaction designers may consider how to shape the properties of interactive systems with respect to experiential use qualities. In theory, the relationship between these artifact properties and experiential qualities may make sense, but in practice the act of shaping the materials in relation to experience is more complex. Youn-Kyung et al. suggest that designers should focus on the shaping of interactions by providing a sample set of attributes, which they suggest can contribute to ‘interaction gestalt’ interactions whose overall qualities can be considered larger than the sum of their parts. Some of the attributes which they identify are connectivity, continuity, directness, movement, orderliness, pace, proximity, resolution, speed, state, and time-depth (Youn-Kyung et al. 2007). According to Youn-Kyung et al., by focusing on the shape of interactions and then using such attributes, designers can place less emphasis on directly shaping the materials of an interactive system, and direct the design process more towards the emergence of experiential qualities.

Youn-Kyung et al.’s approach does not discount the importance of shaping the digital materials of interactive systems; rather it emphasises the need to shift focus from shaping the attributes of interactive systems for their own ends towards the shaping of interactions. I find this idea useful for conceptualising the role of a communication designer as not simply shaping the visual material aspects of an interactive system, but as being a co-designer of interactions with respect to experience. Examples of this run through my project work, such as in Cantata, where the focus on encouraging participation led us to create an interactive system with the attributes of physical spaces. Facilitating a sense of space and place was central to the design of the system, and shaping the materials through skinning became equally important as seeding discussion in the discussion boards. The way in which interactions may be shaped requires a concerted effort from all of the collaborators within an interaction design project. Prototyping can be seen as a way in which designers and developers can
collaboratively shape an interactive system in close contact with the digital materials, allowing an interaction design project to put an interactive system out into the world for people to experience. In the next section I will discuss these aspects of prototyping, and how my explorations of prototyping through my practice have informed what I will present as an important aspect of communication design’s contribution to interaction design projects.

**Prototyping**

Prototypes are representations of interactive systems that are made before the final interactive system is made (Buchenau & Suri 2000). They allow a design team to explore in general or in detail certain aspects of an interactive system. A prototype might be a sketch, or a working model, depending on the aspects of an interactive system that are being investigated. Houde and Hill (1997) stress that it is important for design projects to focus on the purpose of a prototype, in other words on ‘what it prototypes’ (p. 1). They suggest a model in which artifacts may explore three aspects of an interactive system to varying degrees. These aspects are: *role; look and feel; and implementation* (Houde & Hill 1997, p. 3). ‘Role’ refers to the role which an interactive system may play in a person’s life.

Houde and Hill’s (1997) model, where prototypes may explore one or more of three aspects. Reproduced from Houde and Hill 1997.
‘Look and feel’ refers to the concrete sensory aspects of an interactive system: what people see, and how interactions are timed and structured. ‘Implementation’ refers to the technical aspects of an interactive system, the underlying functional aspects that enable the interactive system to work.

The goal of their model is to emphasise that different prototypes serve different purposes and explore varying aspects of an interactive system. Their model serves as a way to visualise where prototypes may sit within a space in which we may explore one or more of these aspects to varying degrees. It is possible to explore all three (role; look and feel; and implementation) as prototypes move closer to the centre of their model, which are termed ‘integrated prototypes’ (Houde & Hill 1997).

The prototyping process within Protospace may be seen as producing such an integrated prototype, whereby the role, implementation and look and feel were shaped and explored together in order to create a holistic sense of what it might be like to annotate video within a creative practice. In a paper published on our design process in the Protospace project, Vaughan et al. (2009) discuss the similarity between our approach and Buchenau and Fulton Suri’s (2000) notion of ‘experience prototyping’.

For Buchenau and Fulton Suri (2000), ‘experience prototyping’ emphasises the experiential aspects of a prototype as a means to live, relive or convey the sense of the experience of using an interactive system. Experience prototyping becomes a way of putting experiences into the world, and allowing users, clients and designers to have an experience with a prototype in order to more fully understand the role of the interactive system and the qualities of experience being designed (Buchenau & Fulton Suri, 2000). In other words, experience prototypes can become a means for creating
shared understanding of experience. Wright et al. (2008) follow on from this approach by proposing their own experience-centred approach to prototyping:

In our approach, prototyping gives material form to an idea. It is a form of emotional expression. It serves to put aesthetic experiences into circulation, as an opportunity to recount them and, through this process, change and strengthen its meaning. The voice of the participant is present throughout this process.

(p. 19)

Prototyping thus enables us to get closer to the people and situations for which we are seeking to design. Ehn (1990) reminds us, in line with Houde and Hill (1997), that although we may construct a prototype out of the same digital materials as the final interactive system, prototypes serve in specific ways to explore a design situation:

Often, but far from always, the material or medium out of which we make design artifacts is computers. This is for instance the situation in prototyping. Hence the design artifact is made out of the same material as the computer artifact we are designing. I have heard the argument that this is what is specific about the design of computer artifacts, as opposed to e.g. architectural design. However, no matter how efficient the code in the prototype is, a piece of correct code is not the same thing as the final computer artifact. The computer artifact should be understood as its use. Hence, as long as the design situation does not entirely overlap the use situation, the design artifact is not identical with the anticipated computer artifact.

(p. 170)

Experience prototyping, as used in the Protospace project, served as a means to integrate the complexity of the interactive system and shape our design with a sensitivity towards the experience of having conversations through video annotation within the context of creative
work. The first iteration of the prototype allowed us to engage the team of video editors, who used it within their everyday video editing practice. Through this engagement, we were able to discover the need to support conversation through annotation of video in a way that could be flexible to the needs of the use situation.

One element that is crucial to prototyping is the way in which it requires a multidisciplinary and collaborative approach (Houde & Hill 1997). Depending on the kind of prototype being produced, its design and production may require practitioners from different fields to work closely and collaboratively. In Protospace, designers and developers worked closely as part of an integrated design team in order to produce an integrated prototype that users and other stakeholders in the design process could experience as though it were a working system. As I have described in the previous chapter, the close coupling between visual communication, time, movement and function within the annotation interface was crucial in the development of a sense of connection between the video, timeline and comments. Through this method, we were able to discover and refine a relationship between two kinds of time (video time and discussion time), giving rise to what I have articulated as an experiential quality of flexibility whereby people were able to flexibly inquire into a conversation through

The Protospace prototype is represented within Houde and Hill’s (1997) model.
either one of the interface elements on screen. Such a close, collaborative relationship is reminiscent of Buxton’s ‘silos’ concept (2008, p. 75), discussed earlier in Chapter 1. Buxton argues that the responsibilities of a product development team should not be clearly separated into ‘silos’, but instead integrated to account for the shared responsibilities across disciplines involved in addressing the complexities of interactive systems. In order to facilitate this collaborative shaping of interactions and give them material form, the project team adopted a ‘user stories approach’ (Vaughan et al. 2009) borrowed from Cohn (2004).

**User stories**

User stories, is a concept which has emerged out of what’s known as the ‘agile methods’ movement of computer science. User stories are descriptions of the functionality of an interactive system that is available to the user (Cohn 2004). They tell the story of particular features in a way that expresses how they make sense to a user, which becomes a way of prompting a design team to negotiate how each story might play out, and what actions on the part of the design team will be necessary to allow such stories to unfold through the use of the system. In Protospace, we adopted this method to foster a common ground for the designers and the developer to imagine and negotiate how particular actions in the interactive system could be carried out by users and integrated into the system. This would then become a process of negotiation, requiring the team to sit together for long periods of time to come to a shared sense of what each story would entail, usually through the use of a whiteboard. The following is an example of some of the user stories we used within the project:

- People can make a comment
- People can reply to comments
- People can mark a point in time for a comment
- People can read comments as they appear in the timeline of the video
- People can read comments as they have appeared by date
As you can see, each story points towards an aspect of what users can or should be able to do using the prototype. The conversations that occurred around each of these stories, and the negotiation between each of us in the design and implementation of these stories, became the primary means by which we were able to collaboratively shape the interactions that would enable these stories. This shaping of interactions took place in a similar fashion to what Youn-Kyung et al. (2007) put forward through their concept of the ‘interaction gestalt’. User stories, therefore, became a means by which the experience of using the system could be seen as being comprised of smaller stories, interactions to which we were able to give shape and form through close collaboration and engagement with the digital materials of the prototype, with respect to how they might also be experienced as a whole.

Building on the sketch in the previous chapter: prototyping represents a way in which communication design may contribute to shaping an interactive system and put it into the world.

Communication design in this setting, and through these methods, became a collaborator, closely engaged with the material and experiential nature of the interactive system, proposing and negotiating ways to design the details with respect to the whole. Löwgren and Stolterman (2007) discuss one of the fundamental aspects of a thoughtful interaction design practice as a ‘leaping between the details and the whole’ (p. 16). I believe
that in order to contribute to interaction design projects, communication
design practitioners must be able to share the same kind of concern for both
the details and the whole. In a problematic skinning process, such
as I have described in the first project Codocs, being limited to changing
the outward appearance of an interactive system denies the communication
designer a negotiative role—one which the prototyping process in the
Protospace project enabled. If communication design is able to make
a meaningful contribution to the design of interactive systems in terms
of how they may be experienced, then communication design must
be integrated into prototyping processes that orient design projects towards
experience. If communication design can be seen as an activity which
is oriented towards visual communication for the facilitation of change
in the attitudes, behaviours and knowledge of audiences (Frascara 2004),
then as a contributor to interaction design projects, communication
design becomes engaged in the facilitation of communication to support
and enhance user experience. An orientation towards experience within
interaction design projects for communication design entails a close contact
with the design of communication and interaction in order to holistically
shape interactive systems as experiences. Such an orientation towards
communication as supportive of experience resonates in the words of Ehn
(1990) in his description of the focus for interaction design:

> When designing computer artifacts we utilize the capacity for symbol
manipulation in this material, in order to design them as signs that remind
users of earlier experiences... Design concerns the practical rather than
the artificial. What we design is not primarily artifacts, but a changed
or reformed practice.
(p. 171)

Despite the fact that Ehn’s focus here is on the design of work-oriented
computer artifacts (1990), he reminds us that the primary concern for
interaction design projects should be on the interactions between people
and interactive systems within daily life. The artificial, as I have hopefully
demonstrated in this chapter, can become an expression of possible experience. For the contribution of communication design, what was once emphasised as merely visual becomes enmeshed into the greater whole of experience.
This research has sought to deepen our understanding of the role and contribution of communication design within interaction design projects. To do this, it has been essential that the research span the two fields interaction design and communication design. This has been done through an exploration of the practice, through practice, and through different theoretical discourses which have been used to help make sense of that which has been realized through action. As such, the research outcomes (ideas, theories and artifacts) offer insights that build upon existing academic and professional understandings of the similarities, differences and rich potential of integrating these two fields of design.

This research has illuminated the problematic nature of the activity of skinning with regard to understanding the potential of communication design within interaction design projects. As discussed in chapter 1 through the Codocs project, the understanding of skinning as a wrapping or packaging activity, will inevitably result in communication designers being included only at the final stages of an interaction design project. This practice limits communication design to the surface or outer layer of an interactive system, where the prime objective is to design with regards to visual appearance. In such late stages of a project, the pressure of deadlines and the complexity of existing systems leaves the communication designer with remit to make products more visually
appealing, and hopefully, more usable before they are released to market. Such an approach to design is reflective of analytical approaches to aesthetics, which seek to understand the aesthetics of interactive systems primarily in terms of their visual appearance.

In order to explore the potential for communication design beyond the surface level of skinning, this research has explored alternate approaches to understanding the aesthetics of interactive systems. This research has specifically drawn on the works of two groups of authors: Löwgren and Stolterman (2007) for illuminating the aesthetics of interactive systems as an experience over time between a person and an interactive system through use; and McCarthy and Wright (2004), for understanding our interactions with interactive systems in terms of our everyday experience of felt life.

It has been through these major texts, in conjunction with authors from the surrounding discourse in interaction design, that this research has critically reflected on each of the design projects to discover and understand the communication design contribution to these projects. This has been done with the intention of finding new or alternate propositions about the broader contributions that communication design can make within the context of interaction design.

The specific contributions which I have explored through this research and will summarise below, are by no means an exhaustive list of all the possible contributions; rather, they are the contributions that I have been able to illuminate as discoveries through my research journey. Overall, these contributions represent an approach to communication design that goes beyond packaging and branding as an afterthought in product development, and argues for the earlier integration of branding, identity design and advertising as ways to explore the creation of more seductive experiences for end users or consumers. Through the notion of seductivity, this research has explored ways in which communication design can contribute to a broader narrative of experience. Spanning from a person’s
first impressions of an interactive system whereby emotional promises may frame their expectations of the coming experience, through to the unfolding experience of using an interactive system, whereby initial promises are fulfilled and built upon to form a lasting relationship between a person and a product. It is by integrating communication design into the early stages of an interaction design process, that communication design contributes to shaping a more holistic vision of an interactive system with respect to how it may be experienced in use.

Rather than focusing on the visual for the sake of better appearances, communication design, as Frascara (2006) argues, is oriented towards the facilitation of some kind of change in the attitudes, knowledge and behaviors of the audience. Similarly, Ehn’s (1990) definition of interaction design, is concerned not with the artificial, but with facilitating a changed or reformed practice in the people who use interactive systems. It is this orientation towards experience that becomes the common ground between communication design and interaction design; it is experience that allows each field to bring a sensitivity towards people and their contexts within daily life. Communication design contributes to interaction design projects, a desire not just to package systems, but to design the way in which communication facilitates change in people with respect to the broader product experience. McCarthy and Wright (2004) remind us that the experience of interactive systems is as much about what people bring to experience as what the designer leaves there. As such, the contribution of communication design can be seen as helping to navigate, negotiate and shape the design of interactive systems with respect to how people may use them and experience the world with them.

Through undertaking the research and reflecting on the discoveries and the literature, I have identified four specific conceptions of communication design contributions to interaction design projects.
Sketching the immediate appearance of an interactive system in order to give a sense of how people may initially perceive it.

Sketching how an interactive system may look and feel to communicate the immediate sense of a proposed interactive system. This can be used in the early stages of a project to propose the immediate qualities of a system that shape people's initial perceptions and expectations of an interactive system. Identity design is particularly useful in such sketching, as the development of central brand qualities underlying a visual identity, and the visual language emerging out of this can be used to propose how an interactive system may identify itself with people from first-impressions.

Sketching the shape of specific interactions.

Sketching the shape of specific interactions aims to communicate the sensual and experiential qualities of interactions. By animating, storyboarding, and using visual language, communication designers can help visualize the shape of interactions. Considerations for the temporal shape of interactions (is it fast or slow?), the sensual aspect of interactions (does it feel tactile? Is there a relationship between a person's action and the materials of the system? How is change communicated?), can be composed and communicated to allow an interaction design team to gain a sense of the experiential qualities of an interaction in order to critique it and further shape it.

Sketching the broader narrative of an interactive system

Storyboarding or animating scenarios of an interactive system in use can enable an interaction design team to explore the broader narrative of a user experience. It can be used in the initial stages of a project to propose the kind of experience a project may wish to support; or in later stages such sketching can explore how the details of an interactive system, the interactions, work together and make sense as a part of a broader user experience. This is particularly useful in shaping a seductive experience, as it can consider how branding and advertising may be used in conjunction
with the interactive system to compose a more holistic experience. Such sketching may help a prototyping team to reflect on how practitioners may be able to work together to shape a complex system in relation to this bigger picture.

**Participating in a prototyping process.**

Through prototyping, communication design can work closely with other practitioners in order to collaboratively shape the digital materials of an interactive system, allowing an interaction design project to put an experience into the world. Skinning becomes an important aspect of communication design practice here, as one of the means through which the digital materials may be shaped by the communication designer. The tightly-woven nature of the visual into an interactive system is emphasized through prototyping, leading to the development of experiential qualities that surpass what can be achieved through skinning alone.

The objective of this research was to seek out and identify the contribution that communication design makes to interaction design projects. It was proposed that the aesthetics of interactive systems would be one way of exploring and articulating this and for shedding light on role of the visual in giving rise to user experience. Through the research projects and the subsequent discoveries, the above proposed scenarios of application were identified as a means for extending the contribution of communication design beyond the surface, the skin, of interactive systems. I believe it can be argued that the practice of communication design makes, and can make, a significant contribution to interaction design projects and user experience of these. To achieve this it is essential that communication design is understood and enabled to contribute beyond skin deep.

The ability of communication designers to draw on their depth of understanding of the consumer/user behaviour and a diverse range of communication strategies is vital when designing systems or tools that
aim to facilitate creative and meaningful experiences for people in their everyday lives.

**New Opportunities**

These contributions would not be possible if it were not for the converging foci of the fields of interaction design and communication design. In the introduction to this exegesis, I positioned this research within the intersection of the two. Through the growing emphasis within each field towards facilitating experience, a shared space has opened up, presenting us with new opportunities to shape new knowledge and practices.

In undertaking this research, my own communication design practice has changed and evolved to become what I would now consider to be an interaction design practice. It has changed the way in which I approach situations and negotiate with others, through the rich and complex terrain of human experience and the shaping of interactive systems. This has led to a greater sensitivity towards the materiality of interaction design practice, and with that a deeper understanding of how these materials shape everyday experience. I hope that the discoveries which I have presented in this text may resonate with other practitioners and in turn enable them to further develop their own knowledge and practices.

This research also represents a journey into the development of a research practice. In stepping back, I can now see what I could change about the research; but this is the beauty of hindsight, a part of the learning journey of a PhD.

To complement this text, I have created an animated video presentation that summarises the above contributions that communication design can make to interaction design projects. This is accompanied by an audio discussion of best practices with regards to the capturing and tracking of knowledge within interdisciplinary interaction design teams.

You can view them on my website at http://miek.com.au/beyondskindeep/


