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# Design support at the front end of the New Service Development (NSD) process

The role of touch-points and service personality in supporting team work and innovation processes.



Arkitektur- og designhøgskolen i Oslo  
The Oslo School of Architecture and Design

PhD avhandling



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## Abstract

This article-based PhD explores the earliest stages of the New Service Development (NSD) process, and how it can be improved and supported through the emerging field of Service Design. It identifies two specific aspects of Service Design as being important, and describes the development and evaluation of process-support for each. The first of these is the development of process support for innovation in services through touch-points, and this is described through the development and evaluation of a touch-point toolkit. The second of these is the development of tools and process support for the transformation of brand strategy into customer experience during NSD.

The work takes a research by design approach, utilising case studies with commercial service providers. Service innovation workshops have been the research vehicle for this work, and tools have been developed, trialled and evaluated through an iterative process during more than 72 workshops.

Its findings contribute to research in the emerging field of Service Design in two ways. Firstly it contributes to the how of service design through the development and evaluation of two tools to assist in NSD. These are shown to improve the performance of the team, both in terms of team dynamics and in the generation of novel ideas. The contribution here is both theoretical and practical.

The findings also contribute to an understanding of Service Design as an emerging field of design. It does this by discussing the materials of Service Design, using touch-points as an example of a key material. Further, it relates brand strategy to customer experience in a service dominant logic perspective, and describes a model for the semantic transformation at the front end of NSD.

The work has primarily looked at business to consumer services provided by Norwegian service organisations. This may limit the generalisability of the solutions. Further, since the work has followed the performance of cross-functional teams during the front end of innovation it has not measured or evaluated downstream utility, and the results have the limitation that we cannot evaluate their innovation performance over the long term.

# PART ONE: Introduction

## BACKGROUND AND MOTIVATION

During the past 15 years, service innovation has gained considerable attention. Services employ nearly 90% of the U.S. non-farm workforce, and account for over two thirds of world GDP (U.S. dept. of labour, 2013). In Europe, nearly all European employment growth between 1995 and 2007 was due to growth in services (Pro Inno, 2009). At the same time, the majority of innovation measures show that industrial innovation is outstripping service innovation for almost all indicators (CSO, 2012). It is not surprising then, that service innovation is high on the agenda of both organisations and governments alike.

Design has been shown to contribute to innovation performance in product-related industries (Government, 2003, Design Council, 2009) and there is now a considerable amount of knowledge about how design does this (Martin, 2009, Verganti, 2003, Von Stamm, 2008). However, the same information for the service sector does not exist. The field of *Service Design* is recent, and *Service Design research* is a new field of study. The first recognised PhD in the field arrived as late as 1998 (Pacenti, 1998) and the first research conference with focus upon Service Design was held in 2009. In 2013, Service Design research now covers domains such as Service Design Leadership (Gloppen, 2012), prototyping (Blomkvist & Holmlid, 2010), visualisation (Segelström, 2010), Service Thinking (Sangiorgi, 2012), and through this work, tools for New Service Development (Clatworthy, 2010).

Many of the characteristics of services seem to fit well with the competencies of designers. Services are highly experiential, and we should expect a very good match between the user-centric, experience-oriented discipline of design, and the needs of the service sector. Indeed, there is considerable room for improvement. A study from Bain in 2005 showed that 80% of surveyed

firms believed that they offered a superior customer experience. However, their customers did not agree, and only 8% of their customers said that these companies delivered on their service promises. More recent data shows that this has not changed. In 2012, on average, banks in the UK received a complaint every 12 seconds (Mail online, 2012) and recent information from the Consumers Association in the UK showed that over a fifth of those who complained to their bank were unhappy with the outcome (BBC, 2013). This data has spurred organisations to focus upon improving the customer experience as part of their innovation efforts. However, as I will show, there is a lack of literature regarding the *how* of service innovation, particularly when it comes to design's contribution to innovation in the service sector.

### **My motivation for starting this PhD journey**

In 2001 I was introduced to service design. I had been working with service innovation for many years as an interaction designer, had just completed an MBA in Design Management and was director of a large IT consultancy. One of my employees, Lavrans Løvlie, was leaving the company to start LiveWork (now a well known service design consultancy). He described service design to me at that time as the design of experiences that happen over time and across touch-points. This description, and the discussion that I had with Lavrans gave me a terminology and structure for something that had frustrated me for some time. I became acutely aware that I had been innovating in services using a product-based approach, rather than a services based approach and all of my previous work on team creativity, complexity and design management fell into place.

Shortly after this, I started at the Oslo School of Architecture and Design (AHO), tasked with the development of a master course in Interaction Design. Service Design, was immediately developed as a module in one of the semesters. From that point onwards, the part semester developed into a full semester and now a full master's course at AHO. It further developed into research projects, a central role in the Centre for Service Innovation and a collection of PhDs.

This was the start-point for my work, an understanding of the relevance of service design, and a need to better understand how design can contribute to service innovation. From teaching, and from past experience, I had multiple questions that were unanswered in the literature: why is design suited to facilitate service-innovation workshops, how do tangible tools improve group work, what kind of innovations does service design enable, and finally, what is the core of service design?

To answer these questions, I developed a research design to explore the area. I focused upon exploration within the context of designing services, choosing to research through designing, together with project teams from commercial organisations in relevant innovation projects. This enabled me to understand the richness and multi-layered nature of innovation projects in context, and to be able to contribute to them also. Using multiple design iterations, I was able to rapidly understand context and need, suggest solutions, prototype and evaluate them, whilst at the same time collect empirical material, develop theory, reflect over results and contribute to the growing body of service design literature. Accordingly, the research informed the design and the design informed the research in an interwoven, and in retrospect, somewhat messy way.

That was the start of my PhD journey. The remaining part of the introduction will describe the focus area of my research in more detail, present the research questions and describe the remaining structure of this doctoral research.

## NEW SERVICE DEVELOPMENT (NSD) AS THE ARENA FOR INNOVATION IN SERVICES

New Service Development (NSD) is the structured development process that is implemented by service organisations to organise their innovation projects and portfolios (Goldstein et al., 2002). NSD involves two key elements. Firstly a structured process, often termed a stage-gate process (Cooper, 2002), leading from idea to launch. This is a structured set of steps that a project follows, with check points along the way. At each check-point an evaluation of progress is made, and a decision is taken to either continue the project or stop it. Secondly, NSD generally utilises a cross-functional project team (Mc Donough, 2000), tasked with carrying out the project. Their use is associated with managing the complexity of innovation projects and ensuring knowledge transfer from different parts of the organisation (Edmondson & Nembhard, 2009). Commonly, a designer will participate in a cross-functional team and therefore become one of many actors influencing the degree of innovation resulting from the New Service Development process.

### **The fuzzy-front-end of NSD pulled into focus**

The first stage of the NSD process is particularly interesting and important. It moves a project from its initial brief to the presentation and choice of one or more service concepts, which are evaluated for possible further development.

This is often termed the fuzzy-front-end of a project (Smith & Reinertsen, 1998). It has been described as fuzzy, since there is considerable learning involved for all team participants - learning about each other, the brief, and the context of the problem to be solved. However, the outcome of the front end, the service concept (or concepts), has major importance, since it describes the what and the how of the service to be delivered (Goldstein et al., 2002). According to Berliner and Brimson (1988) approximately 66% of life-cycle costs are decided during this phase of a project, whilst only about 5% of development costs are utilised. The front-end of NSD can therefore leverage limited resources to have a major impact upon the outcome of a service. While many organisations have focussed upon developing a structure for the later stages of the NSD process, the front end is shown to offer great potential for improvement (Koen et al., 2002).

## EXPLORING THE FRONT END OF NSD

This PhD is one of the first service design research contributions specifically focussed upon improving the front end of the NSD process. It contributes to a body of research into service design in two ways. Firstly, the attached articles explore and discuss the application of service design to NSD. Secondly, further reflection upon the findings of my work are presented as a contribution to the ongoing discourse regarding service design itself, including a specific discussion of service design and services branding.

This exegesis or ‘kappe’ therefore has two layers. The first of these is a discussion specifically related to the NSD process and is presented in the articles. This contributes to the *how* of service design. The second is a contribution to an understanding of the nature of service design, and is presented in the body of this text. It opens out the findings from the articles to contribute to the *what* of service design.

## DESIGN AND THE FRONT END OF NSD

My work focuses upon the front end of the NSD process, and covers the stages of NSD from project start until concept description. In a stage-gate perspective (Cooper, 2002) it covers stage one, idea generation and preliminary investigation, and part of stage two, detailed investigation and business case. This is described as the first diamond of the double diamond development process in the British Standard for Service Design, BSI 2000:Service

Design. This first diamond is a divergent/convergent phase that is described as ‘discover and define’. Figure 1 shows the focus of my work in the context of the BSI double diamond process.

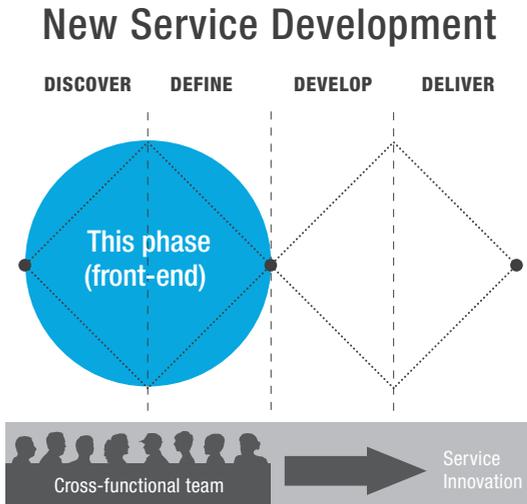


Figure 1: This shows the focus of my research in the context of the British Standard double diamond service design process (BSI 2000). Its focus is the front end of the New Service Development process, and explores how design can support cross-functional teams as part of the structured NSD process to innovate in services.

## RESEARCH QUESTIONS

This kappe presents three successive layers of research action and reflection.

Firstly, a broad research question was used to gain an understanding of the research and practice context:

*How can Design support cross-functional teams during the first stages of the New Service Development (NSD) process?*

This is a broad research question, with an explorative character. It places the work within the emerging field of Service Design and its application to the front-end of service innovation projects, often called the fuzzy front end. Further, it explores how cross-functional teams, working at the front end, can innovate new services.

Secondly, I identified two specific areas of interest for further research:

- a) Supporting innovations through touch-points.
- b) Support for transforming brand strategy into customer experience.

The research thus became specifically focussed upon the following two questions:

*How can design contribute to the way that cross-functional teams innovate services through touch-points, during the first stages of the NSD process?*

*How can design contribute to the way cross-functional teams, transform brand strategy into relevant brand experiences during the first stages of the NSD process?*

These questions are answered in the attached publications and show how design contributes to the front end through the development of tools to support the design process. Evaluation of these shows that the tools stimulate the production of novel solutions, supports brand alignment of solutions and improves group performance. The research questions presented above are not discussed in detail here in the body of this kappe, as they are discussed in the articles themselves.

Thirdly, I used the findings from these questions to explore and reflect upon the nature of service design itself. These are the main substance of Part Three of this kappe. These relate to 1) the materials of service design, and 2) service design and branding and are described in two related research questions. The first of these questions is:

*In the context of service design, how can a discussion of the term materials contribute new knowledge to an understanding of service design?*

In investigating and answering this question, I discuss what I term ‘the materials of service design’, using touch-points as an example, to give new insights into the emerging field of Service Design, and to contribute to the emerging discourse about the nature of this emerging field.

Secondly, I go on to discuss the construct ‘service personality’ and how it ensures a transformation from corporate brand strategy into service manifestations, whilst contributing to a shared understanding within a project team. In doing this I posed a second question:

*How does the service personality construct contribute to the branding of services during the front end of the NSD process?*

Through this discussion, I show how the branding of services contributes to team performance during the first stages of the New Service Development process, and how service personality can have particular relevance to the emerging marketing paradigm of Service Dominant Logic.

## RESEARCH BY DESIGN AS METHODOLOGY

A research by design (Sevaldson, 2010) approach was taken to develop tools aimed at supporting teams at the front end of NSD. The tools were developed and evaluated through multiple iterations, together with commercial partners, through a continuous process of exploration, development, evaluation and reflection. Altogether, 72 workshops were carried out jointly with the commercial partners. They were carried out as part of a research project, the AT-ONE project. AT-ONE was a three and a half year collaboration between research institutions and Norwegian service providers, with the goal of investigating and improving innovation processes in service organisations.

During the first series of workshops, and the first phase of exploratory research, two particular areas were identified that had research interest. The identification of these two areas led to further, more focussed, research, which investigated how these two areas supported innovation and in what way.

## DEVELOPMENT OF TOOLS FOR CROSS FUNCTIONAL TEAMS

From the initial explorative research, two directions were chosen for further research. These were explored through the design of tools to support the innovation performance of cross functional teams at the front end of the service development process.

### **Development of a tool for touch-point based innovation**

The first area chosen for further investigation was the role of touch-points, particularly the development of a card-based toolkit, and how it supported the NSD process. Touch-points are the points of contact between a customer and a service, and are considered a central part of service design. However, although identified as important in service design research, there is little knowledge regarding how touch-points facilitate innovation during NSD.

Further, there was a lack of knowledge regarding how touch-points can be utilised at the front end of NSD.

Research was therefore carried out with specific focus upon how the touch-point cards support innovation and enable team performance. The results showed that the cards assist with multiple aspects of team building in cross-functional teams, assist with analysis and mapping of existing situations, and idea generation for novel solutions. Further, the findings identified a cyclical process of moving between one particular touch-point and the holistic orchestration of all touch-points for a new or improved service. This cyclical process of moving between the parts and the whole is shown to be central to what it means to design a service.

### **Development of a process tool for service branding**

The second area specified for further work was the area of service branding. I identified a need within NSD to introduce branding into the front end of a project, and show that introducing a service branding perspective changes how a project views the customer experience. This led to the development of a structured method and development model called the ‘brand megaphone’. An evaluation of the model and its use within NSD projects shows that it assists with brand-experience congruence, provides service relevance to a brand, supports team coherence and innovation culture, and supports the development and communication of service concepts.

### **The publications contribute to the *how* of Service Design**

These two topics were taken up in papers and articles (See Part 6 Publications) and contribute to the emerging literature on the *how* of service design, through the development and evaluation of design tools.

## REFLECTIONS UPON SERVICE DESIGN AND SERVICES BRANDING

A reflection over the content of the articles revealed a further layer of findings and contribute to the ongoing discussion of the nature of service design itself. These emerged during the reflective process of writing the articles, and are two specific views on service design that have not yet been explored in the research literature. It is these two aspects of service design that are presented as the main findings in this kappe. They are 1) A discussion of the materials of Service Design and 2) A discussion of the service personality construct and its role in the design for customer experience in services.

### **A discussion of the materials of Service Design**

The first aspect concerns a discussion of the materials of service design. Through a discussion of touch-points as a material, the research reflects upon the design materials of what is essentially something immaterial, namely service. It asked the question: if design is a conversation with materials (Schön, 1992), what then are the materials of service design?

### **Service personality as a way to develop for customer experience**

Secondly, the service personality construct is presented and discussed. It was developed as a step in the process of transformation from brand strategy to customer experience, and was identified as a central means by which a project team can, early in a project, discuss the customer experience of services. I show how the service personality construct was developed and how it can be used during the front end of an innovation project to transform brand strategy into a customer experience “target”. In particular I indicate how a team can, at the start of a project, align the customer experience for a new service to a company’s brand strategy.

In this way, the thesis contributes not only to NSD but to an understanding of service design itself. It does this by identifying key elements of service design, and by showing how service design facilitates innovation through collaboration with other disciplines. This then develops an additional layer of insights into service design, and offers perspectives on the emerging understanding of how service design contributes to service thinking.

## STRUCTURE OF THE THESIS

The overall thesis is arranged in five main parts. PART ONE covers the Introduction, the broader context for this work, research questions and outline of the overall study and document.

In PART TWO I situate the research, theoretically, as design and with reference to design and research methods employed. The section situating the research discusses service innovation and how this is formalised within organisations through the New Service Development process (NSD). NSD is discussed, with particular focus upon the role of cross-functional project teams at front end of the New Service Development process. I describe the rich context of designing at an early stage of a project and how design has to fulfil multiple and interrelated requirements in order to contribute to team and

project success. Here the designer is not only designing, but team building, facilitating shared understanding and supporting the development of a shared vision of a future service. This section describes each of the interrelated factors and positions the research in relation to them.

The context of the research is then described, through a description of the AT-ONE project. This was a research project involving multiple partners from research and business, and offered the arena through which this work was carried out. This section describes how the project offered multiple opportunities to collaborate with business partners on commercial innovation projects. This allowed for iterations in which needs could be understood, tools designed, evaluated, redesigned and again evaluated.

Third, the methodology and methods are described. This describes the research by design approach employed in this study which is an action-research based approach that uses designing and reflection as a central means of knowledge creation. This included an exploratory phase to identify specific research questions and a focussed phase of in-depth research. Further, this section describes the choice of methods through which the empirical data were captured and analysed. A reflection upon methodology and method is given, which discusses the degree of invention, relevance and extensibility of the research results using a framework described by Zimmerman (2007).

In PART THREE I focus more specifically on the findings and key contributions. The two main findings of my work are presented as a further reflection upon the findings from the individual publications. The first of these discusses the materials of service design, and what materials can mean for a field that is highly immaterial. It does this using touch-points as an example. Second, the importance of discussing the alignment between brand strategy and customer experience at the start of a project is shown, and how service personality offers a means of doing this. This is then related to the emerging paradigm of Service Dominant Logic (SDL) to show how the service personality construct fits into an SDL approach to service.

Then, in PART FOUR I present some main conclusions and offer some pointers and implications for further work. The implications that this work has for the emerging discipline of service design are discussed, and the conclusions presented. This discusses the work in the light of recent discussions regarding service thinking (Sangiorgi, 2012) or service orientation (Gloppen, 2012). Further, the section discusses the limitations of this research, and provides suggestions for further work.

PART FIVE covers all references used in the kappe.

Finally, PART SIX extends beyond the exegesis to present a short summary of the attached papers and articles, submitted as part of this thesis. This is to give additional context to the work. The papers and articles are then also themselves presented.

## PART TWO: Situating the research

I have chosen to focus upon the first phase of New Service Development (NSD) projects. This phase of a project, often termed the fuzzy front end, has several interesting and challenging aspects. Firstly, tactical decisions are made during this stage that can have profound consequences for the company's future, although little or no development work is carried out here. Secondly, the project team members making these decisions do not always know each other. The team comprises representatives from different areas, trained in different disciplines, from within and outside the organisation. This makes team dynamics important. Thirdly, services are complex, and their success can only be judged upon launch - in use, through the customer experience. This complexity means that service innovation problems can be considered 'wicked problems' (Rittel, 1972) with a whole host of characteristics that make their resolution difficult, particularly at the front end.

This section describes each of these interrelated aspects and positions my research in relation to them. It has the following structure. Firstly it gives some background about service design, service innovation, the (fuzzy) front end of innovation, cross-functional teams and wicked problems. Then, the AT-ONE project, that formed the basis of this work, is described.

### S E R V I C E S

Services dominate the economy. In the EU, in 2007, services represented 69.2% of total employment (77% in the UK) and 71.6% of the gross value added by the EU (Pro-Inno, 2009). In the US, more recent data shows that services now account for almost 90% of non-farm employment (U.S. dept. of labour, 2013), and during the past 20 years have shown a rapid growth, whilst goods are on the retreat. For the top-ten largest U.S. corporations (excluding energy companies), 66% of their revenues and 85% of their profits come from services (Tekes, 2005).

Four characteristics have traditionally been used to differentiate services from products. These characteristics are often referred to as ‘IHIP’ (intangibility, heterogeneity, inseparability, and perishability) and were originally described by Fisk et.al, (1993). These have been defined as “Intangibility—lacking the palpable or tactile quality of goods; Heterogeneity — the relative inability to standardise the output of services in comparison to goods; Inseparability of production and consumption — the simultaneous nature of service production and consumption compared with the sequential nature of production, purchase, and consumption that characterises physical products; Perishability — the relative inability to inventory services as compared to goods.

This traditional view of services has been challenged recently. Lovelock and Gummessen (2004) discuss the IHIP characteristics and suggest that services do not result in a transfer of ownership, rather, they offer access or temporary possession. They suggest a rental/access lens through which to view services and focus upon time as being an important part of services. This has been described as the non-ownership paradigm (Wild, 2007).

Vargo and Lusch (2004a) chose not to compare services with products, but to identify characteristics of services in their own right. They felt that it was unhelpful to compare services to products in today's strong service economy and proposed a Service Dominant Logic (SDL). Vargo and Lusch define service as “the application of specialised competencies through deeds, processes, and performances for the benefit of another entity or the entity itself” (Vargo and Lusch, 2004a, p. 2).

SDL is a description of service in which value is co-created with the customer and experiences are outcomes. One of the key attributes of SDL is that of value-in-use, which is described in the following way

There is no value until an offering is used – experience and perception are essential to value determination (Vargo and Lusch, 2006, p. 44).

Although SDL has been criticised regarding some of its detail (eg. Gronröos, 2008), there is an emerging consensus that it is now the accepted paradigm for services. The following table, from Lusch and Vargo (2006) describes the key attributes of service within the SDL framework.

Transitional concepts	Service Dominant Logic
Services	Service Dominant Logic
Offerings	Experiences
Benefit	Solution
Co-production	Co-creation of value
Financial engineering	Financial feedback/learning
Value delivery	Value proposition
Dynamic systems	Complex adaptive systems
Value chain	Value creation network/constellation
Integrated marketing communications	Dialogue
Market to	Market with
Market orientation	Service orientation

Table 1: Service dominant logic identifies specific service aspects and has focus upon value-in-use, ie. the interaction between customer and service.

From Lusch and Vargo (2006).

SDL is particularly relevant to my work, since there are many similarities between SDL and Service Design. This view is supported by Wetter Edman (2009) in her comparison of SDL and Service Design and by Sangiorgi in her description of value co-creation (Sangiorgi, 2012). Key to this is the importance of how value is produced through interactions. Sangiorgi describes this in the following way, “when value is recognised in the process of use, the focus shifts from the units of output to the interactions” (Sangiorgi, 2012, p. 97). Touch-points therefore become central, as does the brand-based customer experience. Duncan and Moriarty (2006) describe this in terms of touch-points becoming operant resources (i.e. producers of effects), and as such, central for value creation.

#### *Positioning this work in relation to services*

The descriptions above describe services through a services marketing lens and are presented here to give a description of services and their characteristics. I note these different views of services, but do not take a specific position regarding these services marketing terms. This is because my work lies within service design, rather than services marketing. Although there are multiple points of similarity, I use the above descriptions of service as a

means to relate my design work to discussions that are occurring in related disciplines. I particularly note the emerging services marketing paradigm of Service Dominant Logic (SDL), and its similarity to many aspects of service design. Within service design research, the SDL paradigm is the one most commonly referred to in contemporary discussion (e.g. Wetter Edman, 2009, Sangiorgi, 2012). Indeed Sangiorgi looks to integrate the two with her views of service thinking (Sangiorgi, 2012). I therefore discuss my findings in this kappa in respect to Service Dominant Logic, without taking a strictly SDL view of services through my work.

## S E R V I C E   D E S I G N

Service Design has emerged during the past 15 years as a means to support innovation in service organisations. Although all services are designed in some way, and have always therefore been designed, Service Design describes the application of design as a creative and culturally informed approach to services. By this I refer to the following definition of design:

Design is an activity of creative reasoning that is dependent upon flexibility of ideas and methodologies informed by an awareness of current critical debates. It ranges between the expressive and the functional and can be, for example, stylistically driven or socially motivated or mediated. It is also an iterative process based upon evaluation and modification. Design is reliant upon constantly evolving dialogue and negotiation between the designer (working individually or within teams as proactive collaborator/mediator) and the client, manufacturer, audience, user, customer, participant or recipient (QAA, 2008, p. 6)

Service Design is a design domain in the process of finding, defining and redefining itself as a field of design. It is rapidly evolving both in depth and breadth, and now spans areas as diverse as the service designer as a participant in service development (Koivisto and Miettinen, 2009, Stickdorn and Schneider, 2010) to the designer participating in the transformation of service organisations (Sangiorgi, 2012, Gloppen, 2009). This is not surprising, since there appears to be a tighter connection between service development and organisational development when concerning innovation within the service sector. Indeed, this is commented by Kimbell (2009), who describes how service designers link the strategic and operational levels of a service organisation. This seems to be a core aspect of service design, and it fits well with both an

understanding of design as being both the whole and the parts (eg. Schön, 1983) and with the specifics of service innovation (eg. Miles, 2008).

There is no single definition of Service Design accepted within the design or research community. One of the early definitions emerged from practice and summarised the core aspects of Service Design at that time:

Design for experiences that reach people through many different touch-points, and that happen over time (servicedesign.org).

This has been utilised many times, but has been criticised as being too simplistic. It does not explicitly cover such areas as organisational transformation for example. The Service Design Network developed an internal white paper, that formed a definition used within the network, and later became published in the dictionary of design. It offers a good description of the what and how of the field:

Service designers visualize, formulate, and choreograph solutions to problems that do not necessarily exist today; they observe and interpret requirements and behavioral patterns and transform them into possible future services. This process applies explorative, generative, and evaluative design approaches, and the restructuring of existing services is as much a challenge in service design as the development of innovative new services. When seen from this angle, service design stands in the tradition of product and interface design, enabling the transfer of proven analytical and creative design methods to the world of service provision (Mager, in Erlhoff & Marshall 2008, p. 355).

This is a more complete definition, but one that is less operative than the one offered by servicedesign.org.

Holmlid (2007) notes that many elements of Service Design have emerged from Interaction Design. He compares the two disciplines and identifies differences and similarities. He describes the characteristics of Service Design as:

- Highly explorative, and somewhat analytical
- Representations are depictive and symbolic, highly enactive
- Production is physical, clearly virtual and ongoing
- Materials are tangible and virtual
- Aesthetics are somewhat experiential, highly visual and active

- Dimensionality is somewhat spatial, highly temporal and very social
- Deliverable scope is somewhat product, pronounced in use, highly performance
- Deliverables are somewhat final, highly customizable, and definitely dynamic

Kimbell (2009, 2011) describes Service Design not from views collected from other researchers, but from practice. Since Service Design is a practice-driven field, this can give an important insight into some of the driving elements of Service Design. She argues that the attention paid to the role of design for innovation in services is focused on the designer's creative input in three explicit areas: a) human-centered approach and methods, b) iterative processes of idea-generation through modelling and prototyping, and c) competence in aesthetics and visual forms (Kimbell, 2009). Kimbell (2011) observes that Service Design approaches services as entities that are both social and material. Further, she notes that designers "approached designing a service through a constructivist enquiry in which they sought to understand the experiences of stakeholders and they tried to involve managers in this activity" (p.41). Designing for service is described by her as an exploratory process that aims to create new kinds of value relation between diverse actors within a socio-material configuration.

Wetter Edman (2011) identifies two main characteristics of service design: designing transformation (which may be on an individual, organizational or societal level) and designing value creation by "moving from seeing the outcome as products or single interactions and instead understanding service as value creation" (p. 70). This is an interesting view, but one which does not adequately describe what a service designer does in relation to NSD, nor how the service designer operates.

Sangiorgi (2012) describes service design within a value co-creation framework, and links service design to service dominant logic (Vargo and Lusch, 2004a). She sees an "evolution of the service designers' role from a tactical one to more strategic and lately transformational ones" (p. 98). She describes service thinking in a service design context as focussing more on interactions, benefits and exchanges rather than tangible or intangible goods.

Although moving from tactical levels to strategic or transformational levels, Sangiorgi also recognises the importance of how value is produced through interactions: "when value is recognised in the process of use, the focus shifts from the units of output to the interactions" (Sangiorgi, 2012, p. 97). Touch-

points therefore become central, since they are the means of interaction, and a link can be seen between touch-points, value and customer experience.

Gloppen (2012) views Service Design in its relation to Design Management and identifies four key areas of interest: a) multi-disciplinary collaboration, b) visualization, c) service perspective vs. product perspective and d) awareness of the value of service design through experience. These findings support many of those above, and identify many aspects of service design. However, these findings do not mention the outcome of service design. Rather, they focus on areas of interest, without identifying their forms of outcome.

The above definitions and descriptions highlight some characteristics that they have in common. Service design takes a *designerly*<sup>1</sup> approach to the challenges facing innovation within Services. From this, the following can be identified. Firstly that Service Design is practice-oriented. By this I mean that it has an orientation to the practice of Service Design within projects and therefore has a close relation to both innovation in services, and the application of design to the NSD process. Secondly, it is inherently customer-centric. It places customer needs and customer behaviour as a core part of any work. Service Design often aims to understand and influence a customer's experience of a service. Thirdly, it works at the strategic, tactical and operational levels within an organisation, and does this using a collaborative and cross-functional approach. Further, it moves between these levels and links these levels together during a project. Finally, Service Design is highly visual, collaborative and enactive in its approach.

During the AT-ONE project, the core context for this thesis, the servicedesign.org definition was adapted to also encompass many of the above aspects, by adding a focus upon design of the service offering. This is because we found that service design is as much concerned with the service offering as with the points of service delivery. However, both are concerned with the customer experience, or value in use (to use the Service Dominant Logic term). In this work, I therefore define service design as follows:

Designed offerings to provide experiences that happen over time and across different touch-points (Adapted from servicedesign.org).

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<sup>1</sup> By this I refer to both the Nigel Cross book (Cross, 2007) but also the ongoing discussion of Design's core characteristics. These are discussed later in this work when discussing the materials of Service Design.

This definition is an informative one that is well suited to the area of New Service Development (NSD) and has been chosen due to its explanatory character. It was applied within the practice of the AT-ONE project and is also used analytically in my research reflections. This places my research position as understanding the designer as part of the design process, namely NSD. It also places the work within the tactical and operational sphere of an organisation, although of course, innovations that occur during NSD do have strategic, organisational and leadership implications (Gloppen, 2011).

### *Service Design Research*

Service Design research has emerged from different schools during the past 15 years, and draws upon each schools' own core disciplines. This leads to the core of service design being similar, although with slightly different approaches. The following diagram shows the emerging directions within Service Design research by showing the most active research groups within the field. In addition to this, there are several individual researchers (e.g. Lucy Kimbell), but who are not part of sizeable research groups. I will now describe each of these schools in more detail.

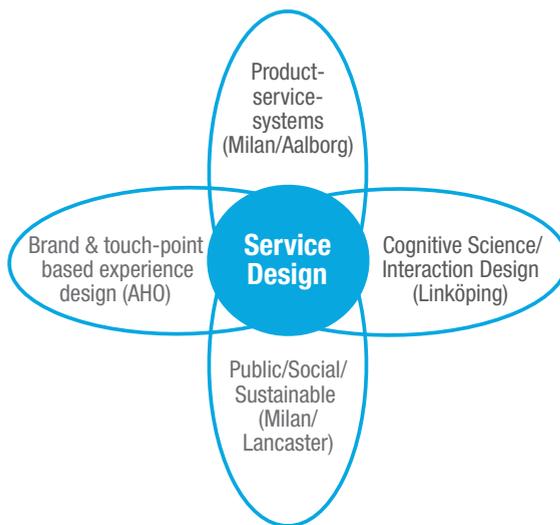


Figure 2: Service design research has a common core, but has different approaches, or schools of thought. This figure shows the main approaches as of 2011.

### *Product-service-systems (PSS) - Milan/Aalborg*

Much of the research that describes product-service-systems can be traced back to the design school in Milan. Manzini started working with product-service systems in the 1990s, and his recent work has taken a more sustain-

ability/social dimension. Manzini's work is referred to by Morelli (2006) with reference back to Manzini's original article; *Il Design dei servizi*, written in Italian in 1993. Morelli, who studied under Manzini, and now works in Aalborg, has further developed the product-service-system (PSS) view (Morelli, 2002, 2003, 2006). He describes the PSS view of service design as one in which the bundling of products and services is central and where there is a dependency between both elements - one cannot exist without the other. He describes the relation between product and service in PSS as a variable entity, in which the product/service mix can vary due to technology, time and need. However, key to Morelli's definition of PSS "is that they are conceived and offered as products, which are designed by taking into account a series of economic and technological criteria" (Morelli, 2002, p. 4). In other words, in Morelli's view, the product is the central part of the offering. Morelli does not give examples of a PSS, however, but the iPhone is often given as an example of a product-centric PSS.

#### *Cognitive Science/Interaction design – Linköping*

One of the major research efforts in Service Design has developed from Stefan Holmlid at the Human Centred Systems group at Linköping. Their approach has been to explore service design from an Interaction Design/ Cognitive Science start-point. Holmlid has written widely on service design, including its relations to interaction design, visualisations and participatory design. Holmlid is one of the few researchers actively discussing and defining what service design is (and is not). He, together with Sangiorgi and Kimbell, takes an analytical view, with a focus upon defining and developing the field analytically and conceptually. Holmlid's research group also work specifically with New Service Development, focusing upon visualisation within NSD and upon the prototyping of services.

#### *Public/Social/Sustainable - Milan/Lancaster*

The work in Milan has been influential in two ways. Firstly Manzini's early work developed the product-service systems approach mentioned above, which has now become established in Aarhus. Secondly, it has developed a research approach that focuses upon public service design, moving towards design for social change and latterly, sustainable design. Manzini talks about the need to enable "communities to achieve a result, using their skills and abilities to the best advantage and, at the same time, to regenerate the quality of living contexts, in which they happen to live" (Manzini, 2007, p. 6). This has later been transferred to the Lancaster Imagine centre, where Sangiorgi now works. Here the focus has related to public services, primarily health services (Carr. et al., 2009). This has further developed, through the work of

Daniela Sangiorgi into discussions relating service design to value co-creation and its relation to Service Dominant Logic (Sangiorgi, 2012).

*Brand and touch-point based, experience design (AHO)*

Service design research carried out at AHO, and described in this document, has evolved from an interaction design perspective into a focus upon the customer experience. Further, its focus is especially upon the roles of the designer in the development of new services, particularly at the front end of the innovation process. This direction has been strongly influenced by the AT-ONE project (Clatworthy, 2008) which is described later in this section. This has further developed into focused research within Service Design Leadership (Gloppen, 2012), brand experience (Filho, 2012) and the meaning of special experiences (Matthews, 2012).

*Positioning this research within Service Design*

Research into service design is still emergent, but developing rapidly. The different schools of research described above, have each developed their own focus, but there are still major areas still unexplored from a research perspective. This research contributes to an area that has received little research attention within service design, that of the contribution of service design to the NSD process. As such it is closer to the work carried out at Linköping related to service design process. There, Blomkvist has been examining the role of prototyping in service design (Blomkvist & Holmlid, 2010), and Segelström has been looking at the role of visualisation in Service Design (Segelström, 2010). Although both Blomkvist and Segelström have worked in Service Design projects, their work has not aimed to develop tools to improve those processes. This work differs, since it has as a goal to improve NSD processes through design, by developing process support. It has a focus upon developing tools to support the service innovation process and through this contribute to both service innovation and service design.

## S E R V I C E I N N O V A T I O N

New Service Development (NSD) is the process by which an organisation develops innovative new service outcomes for an organisation. Since the outcome of NSD should be innovation, it is valuable to understand what innovation means in a services perspective. The term innovation, and particularly service innovation, has evolved over time and has had geographical variations. Pro-Inno (2009) an EU initiated report on service innovation con-

cludes that “there is a growing consensus that much of innovation in service sectors is not adequately captured ...” (p. 30). This is due to the way services are categorised for statistical measurement, and due to innovation measures being historically derived from a product-based context. The OECD has used considerable resources to standardise both the term and the statistics it gathers and utilises, and has developed an accepted term for innovation as part of what became termed, the Oslo manual. In my work, I use the latest (3rd) edition of the Oslo Manual (OECD and Eurostat, 2005) and its definition of innovation. It defines innovation as

The implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations (OECD and Eurostat, 2005, p. 46).

They describe four types of innovation in relation to services:

- a) Product innovation: the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.
- b) Process innovation: the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.
- c) Marketing innovation: the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.
- d) Organisational innovation: the implementation of a new organisational method in the firm’s business practices, workplace organisation or external relations.

One of the main characteristics of recent innovation definitions is that an innovation requires implementation, rather than just invention. This can be problematic when attempting to measure innovation at the front end of the development process. The Oslo Manual notes that a key element of innovation is novelty, and thus creates a link between innovation and novel solutions that are not yet implemented. They distinguish three types of novelty: an innovation can be new to the firm, new to the market or new to the world. The first covers the diffusion of an existing innovation to a firm – the innovation may have already been implemented by other firms, but it is new to the firm.

Innovations are new to the market when the firm is the first to introduce the innovation in its market. An innovation is new to the world when the firm is the first to introduce the innovation for all markets and industries. I therefore focus upon novelty as a key indicator of innovation when discussing innovation at the front end of the development process.

When considering innovations in the service sector, Miles (2008) proposes four different types of service innovation. These are based upon den Hertog's (2000) categories. These are firstly, the service concept or, in Edvardsson's (2010) terminology, a "new value proposition." (p. 122). Secondly, he mentions the client interface, which he describes as "changes in the way clients are involved in service design, production, and consumption" (p. 122). Thirdly, the service delivery system - "changing the ways in which service workers perform their jobs delivering critical services". Finally, he mentions technology, since "it is especially important to services because it allows for greater efficiency and effectiveness in information processing".

#### *Positioning this research within Service Innovation*

Service innovation is the context within which I frame the service design work presented here. Service innovation is the desired outcome from utilising service design in the structured NSD process. I therefore use the definitions and categories of service innovation as a means of evaluating the outcomes from the design tools developed.

My work has a reciprocal relation to the area of service innovation. Firstly I use the definitions and categories as an input to the evaluation of results from the design tools I have developed. Secondly, since there is little research linking service design and service innovation, I contribute to the area of service innovation with a design-based study that provides tools and process support for NSD.

## NEW SERVICE DEVELOPMENT ( NSD )

The process of developing and launching new services is termed New Service Development (NSD), and "is concerned with the complete set of stages from idea to launch" (Goldstein et al., 2002, p. 122). NSD can be seen as the structured process that an organisation implements to develop a new service, such that it maximises its innovation potential. It is a complimentary term to NP

(New Product Development), and developed from this to take account of the specific characteristics of service.

Service Designers often participate during NSD and are usually hired in for specific tasks or periods of time. It is therefore important that the context within which Service Design operates is understood, and that any tools or support developed within service design fit within the NSD context.

New Service development (NSD) is not as richly researched when compared to the development process for products (NPD). Indeed early NSD approaches were based upon simple adaptations of NPD and core aspects of NPD are still visible today in NSD practice. It is therefore worthwhile summarising the history and core of NPD, so we can have a contextual understanding of NSD's development.

The structured development process for products came into focus during the 1980s. A major contributor to this was Robert Cooper (1986). He identified that companies did not have structured processes, and that this led to serious inefficiencies and risk during product development. From this, he developed the structured stage-gate NPD process that has become the accepted NPD process within most organisations. The stage-gate process divides the development process into specific stages, and the completion of each stage and successful continuation of a project requires specific evaluations at each gate. This focus upon structured processes initiated much research during the 1990s into the NPD process, and several best practice handbooks were published by the Product Development Management Association (Belliveau et al., 2002, Belliveau et al., 2004).

The development of services, NSD, has not had the same research volume, nor is there a service equivalent of the PDMA toolbooks. Cooper attempted to produce an NSD model (Cooper, 1999) but this was simply a stage-gate model mapped to services without showing a real understanding of the nature of services. Kelly and Storey (2000) carried out a study similar to Coopers study from 1986, that focussed upon services. They identified how New Service Development (NSD) was different from New Product Development (NPD) and found that that only half of their sample had a formal NSD strategy, that idea generation is undertaken on an ad hoc basis, and that idea screening is failing to support NSD strategy. They also found that over 40% of the revenues for the majority of companies surveyed came from the sales of services released in the previous three years. From their work, it is clear that the field of NSD lags that of NPD by over 15 years. In addition it showed

the need for structured processes that take account of service characteristics rather than just mapping NSD upon the existing NPD approach.

New Service Development is closely related to innovation management, since it describes how an organisation can internalise and structure innovation activities. Brophay and Brown (2010), summarise the extensive research into innovation management concluding that three schools of thought have developed that aim to help practitioners focus upon achieving the best results from their innovation efforts. The three schools can be described as: 1) Manage knowledge in order to innovate; 2) Develop a climate of innovation; and 3) Develop your innovation process into routines.

When placed in the perspective of service organisations, Miles (2008), supports these findings, stating:

In contrast, where service innovation is formally organised rather than treated opportunistically as a by-product of on-the-job activity, this tends to be through project-based teams, set up for the specific task at hand (p. 125).

Miles questions however the applicability of traditional product-based approaches stating “One major question is how far these features are reflecting innate features of services, for instance, their distinctive types of innovation...” (p. 125).

Edvardsson et al. (2000) specifically suggest an NSD process based on specific service aspects. They suggest four phases: service idea and generation, the service strategy and culture fit, service design and service policy deployment and implementation. Stuart and Tax (2004) discuss this model, and other NSD research, claiming they focus upon efficiency and reliability rather than customer centric experiences. They conclude:

These recent conceptual models provide important perspectives into elements that broadly support the orderly design and launch of services. However, these models, while helpful in a broad sense, are still focused on the development of efficient and reliable service encounters, not memorable experiences and are therefore incomplete and inconsistent with more recent industry trends towards service experiences (p. 611).

Papastathopoulou and Hultink (2012) summarise NSD research up until 2011, and note that neither service design, nor service dominant logic yet are integrated into the NSD process adequately. They conclude that "... service design is a rather neglected research area within NSD that would require multidisciplinary inputs" (p. 713). Further, :

It is anticipated that the effective design of service systems will be increasingly important in the coming years as a result of rapid developments in information technology, globalization, changing customer needs/preferences, and the changes in relative wealth between the developed and newly developing economies. **Some relevant and interesting avenues for future research may include the key success resources needed to develop a winning service design, and the role and optimal interaction of new service designers from different disciplines** (p. 713).

This becomes particularly important now that service dominant logic has become the dominant understanding of service. In such a situation, taking account of service dominant logic should increase the focus of NSD upon co-creation, cross-functional teams, value in use and customer experience (Lusch and Vargo, 2006). Jaworski and Kohli (2006) argue that with a service dominant logic will come a need for a new customer orientation in NSD processes. They call for "co-production at the front end of the value chain in which a firm and its customer co-create the voice of the customers as contrasted with the more traditional process in which a firm hears the voice of the customers" (p. 109). They do not however provide tools, methods or procedures to achieve this. In terms of Service Dominant Logic having a focus upon customer interaction and the customer experience, Johnston and Kong (2011) describe an experience-centric road-map or organisations that enable organisations to improve the customer experience. Unfortunately they do not go into detail regarding the implications for NSD other than noting the importance of an experience team as part of service development. Berthon and John (2006), when considering service dominant logic, call for a focus upon interfaces and interaction. They do not, however describe how this should be achieved as part of NSD.

#### *Positioning this research within NSD*

NSD is an area that has emerged from product development and only recently has received research attention in terms of developing service specific processes. It is an area that is beginning to discuss the implications that Service Dominant Logic has upon NSD, but has not developed a body of knowledge

regarding what this means nor how this should occur. There is an awareness *that* Service Dominant Logic should impact NSD, but little research available about *how* this should occur.

When it comes to service design, the majority of practicing service designers can expect to meet formalised NSD processes within collaborating organisations. It is worth noting that all of the organisations involved in my work had formal NSD processes, and they were all based upon NPD approaches. None considered the specifics of services.

There is little research available showing how service design should relate to NSD, and a need to see the two in relation to each other. Further, the integration of Service Design, Service Dominant Logic and NSD has not yet been discussed, although Sangiorgi calls for such an integration (Sangiorgi, 2012). My research contributes therefore to the knowledge and practical application of Service Design to NSD, specifically tools for the first stages of NSD - the fuzzy front end. Further, although not specifically focussed upon service dominant logic, my work can be seen to contribute to an understanding of NSD processes in an experience focussed perspective. It therefore contributes to bridge the gap between NSD, Service Design and Service Dominant Logic.

## THE “FUZZY” FRONT END

The work presented in this thesis has particular relevance to the “fuzzy” front end of the NSD process. The fuzzy front end describes the very first stages of the development process - the front end. The term “fuzzy” became added to describe the nature of these early stages. The term originated in the late 1990’s when companies began to look for efficiencies in the New Product Development Process. This led to the understanding of the characteristics of, and critical importance of, the first stages of a project.

The front end of a project has three important characteristics. Firstly, major decisions are made here. According to Berliner and Brimson (1988), approximately 66% of life-cycle costs are decided during this phase of a project, whilst only about 5% of development costs are utilised. This is because the front end decides *what* is to be developed, but does not develop anything other than the concept for a solution. With an increased focus upon innovation in organisations, there was an increasing realisation that the front end is where the major innovations can occur. Dorval and Lauer (2004) suggest that the front end needs to be rethought:

However, as important as generating new ideas are, organisations are learning that consumer insights and idea-generation efforts are wasted when standard analytic approaches are used to evaluate the ideas generated (Dorval and Lauer, 2004, p. 270).

Koen et al., (2002) consider the Fuzzy Front End to be different from, and prior to, New Product Development. The following table shows how they view the differences between the two phases.

	Fuzzy Front End (FFE)	New Product Development (NPD)
Nature of work	Experimental, often chaotic. Eureka moments. Can schedule work - but not invention.	Disciplined and goal-oriented with a project plan.
Commercialisation date	Unpredictable or uncertain.	High degree of certainty.
Funding	Variable - in the beginning, many projects may be “bootlegged”, while other will need funding to proceed.	Budgeted.
Revenue expectations	Often uncertain, with a great deal of speculation.	Predictable, with increasing certainty, analysis, and documentation as the product release date gets closer.
Activity	Individuals and team conducting research to minimize risk and optimize potential.	Multifunction product and/or process development team.
Measure of progress	Strengthened concepts.	Milestone achievement.

Table 2: The characteristics of the Fuzzy Front End, in relation to New Product Development, (from Koen et al., 2002).

Secondly, the front end is always the start-up phase of a project in which a project team is constructed specifically for the project in hand. It therefore involves the team getting to know each other, to know the brief and to plan the details. This is why it is called the “fuzzy” front end.

Smith and Reinertsen (1998) describe the phase as the bargain basement when making the process more efficient, since they consider that the start-up phase of a project is very inefficient. They state:

There is, however, one place that we could call the “bargain-basement” of cycle time reduction opportunities. It is the place that we consistently find the least expensive opportunities to achieve large improvement in time to market. We call this stage of development the Fuzzy Front End of the development program. It is the fuzzy zone between when the opportunity is known and when we mount a serious effort on the development project (p. 49).

Thirdly, the front end is the phase in which customer input is beginning to become vital. Belliveau, Griffin and Somermeyer (2004) describe it in this way:

The NPD process is probably mistakenly visualised as a linear process beginning with the FFE (Fuzzy Front End) and ending with commercialization. Perhaps a more useful picture is a loop showing a linkage between the market-place and the FFE (p. 165).

#### *The fuzzy front end of service innovation projects*

The fuzzy front end phase of projects came into focus for product development from the late 1990’s, but it is still a poorly understood area in service development (Kelley and Storey, 2000). It is described as the most important part of service innovation by innovation managers (Allam & Perry, 2002; Allam, 2006) yet still a black art, as described in this way by Kelley and Storey (2000):

While previous management disciplines have rationalised and routinised the back end of the new service development (NSD) process, the front-end of the process remains a knowledge-intensive black art that appears, from all industry studies available, to be consuming an increasingly large portion of the total concept to cash-flow cycle time (p. 45).

The fuzzy front end is increasingly being focused upon by designers as they are given a more explorative and open brief (Sanders & Stappers, 2008). This phase is also seen as an opportunity to lift design up to a strategic and tactical level of an organisation. Clearly, in terms of the characteristics of the phase, there is a good fit between the skills of the designer and the needs of this phase. This is discussed later in the document, regarding the results from the tools developed.

*Positioning this research in terms of the front-end of NSD*

Within NPD, a recent focus has been upon the development of toolkits for the front end of innovation. Some of these have focussed upon the use of design within design teams. Von Hippel (2001) describes a user-based toolkit for product innovation. Franke and Piller (2004) describe toolkits for user innovation and design within the watch market, whilst Lockton (2010) has specifically developed a design tool for project teams, the design with intent toolkit. Within design practice, IDEO, now followed by many other design consultancies have developed toolkits that support the design process, idea generation and design thinking. These tools can be seen to be practical support for project teams when carrying out their work.

Within NSD, there is a lack of research upon the front end of NSD, and this is particularly true when relating service design to NSD. From practice, the focus has been more visible, with the publication of multiple tools to support service design during the front end of NSD. The major textbooks (Koivisto, and Mietinen (2009), Stickdorn (2010) discuss the importance of the front end and offer tools to support innovation there. In practice there has been a development of tools to support service design. There are several online resources, such as Trassi (2009) and the Engine social innovation tools for Kent County Council in England (Engine, 2010). These have become popular, but there is a lack of research regarding their effects.

My research contributes to the gap in research regarding service design and the front end of NSD. It does so by exploring the role of service design during the front end, and by developing and evaluating tools specifically developed for the front end of NSD. It therefore brings a research understanding to how service design contributes to NSD, and how the service design approach through collaborative tools contribute to team performance and service innovation. This therefore brings a theoretical perspective to what is primarily a practice-led area, and helps explain how and why service design contributes to the front end of NSD.

## C R O S S - F U N C T I O N A L T E A M S

Cross-functional development teams are project teams comprising relevant stakeholders from inside and outside the organisation that are put together to carry out specific NSD projects. They are commonly used in innovation projects within NSD or NPD and all of the commercial partners in the AT-ONE project utilised them.

Cross-functional teams became a popular way to develop new products as a result of the work carried out by Cooper on NPD in the late 1980s (see previous sections). They are now the expected way to develop new products or services. The teams are put together for each specific project and include relevant stakeholders representing different functional areas within (and from outside) an organisation. Due to the nature of the team, they usually also represent diverse disciplines. McDonough (2000) describes the motivations for why organisations have embraced cross-functional teams and comments that:

These results also indicate that not only are cross-functional teams associated with bringing new projects to market quickly, but that their use is associated with meeting development budgets, developing high-quality products, and team member satisfaction (p. 231).

There has been a great deal of research carried out regarding the relevance of cross-functional teams in an innovation perspective, with a range of proponents and critics (de Jong & Vermeulen, 2003; Ancona & Caldwell, 1992; Sethi, Smith, & Park, 2001). I have chosen not to question the use of cross-functional teams since the majority of commercial innovation projects utilise them. My focus is to develop tools to support such teams as part of the new service development process and thus I am interested in research regarding team performance, particularly identifying areas where design can contribute during the front-end process.

Within the area of team performance there is an immense amount of research which has been initiated through broadly three areas of focus: team management, creativity and NPD. Each of these three areas has a strong research production, but the areas do not refer to each other, and have each developed their own terminologies and approaches.

#### *Management literature on cross-functional teams*

Management literature on cross-functional teams takes a perspective on managing teams, often in a broader context. The literature relates to cross-functional teams in situations broader than just NPD or NSD and can relate to management teams, customer service, organisational structure and operations. Issues such as diversity and Human Relations Management are themes within the management literature on teams. When considering team effectiveness, a main focus, and the primary model used for understanding teams is the input-process-output model, which more recently has included time as a factor. This model is surprisingly not found or utilised within NPD literature or the creativity literature, although similar models have emerged.

Mathieu et al. (2008), summarise the body of research in the area and identify main aspects of management research on teams. Graf et al. (2011), take a theoretical perspective from management on cross-functional teams in relation to design and learning. They describe how at the start of a project, each team member is limited in their ability to collaborate by what they call functional walls. These are described as a particular functional perspective that prevents cross-functional collaboration in teams and which limit team effectiveness. At the start of a project, these walls are particularly dominant. However, they only describe a theoretical model from management and do not show how such walls can be removed, nor the role of design in such a process.

The management approach to teams is broad, and although has some relevance and overlap with the specific needs of NSD teams, I have chosen not to use it. This is due to the broad nature of the issues covered in the because of the availability of a large body of research with specific relevance to NPD work on teams (see below).

#### *Creativity research on cross-functional teams*

Creativity literature has a thread which focusses upon creativity in cross-functional teams. It is a smaller body of knowledge in relation to the other two approaches mentioned here, and has three main proponents, Teresa Amabile, Robert Sternberg and Scott Isaksen. Amabile takes a sociological view and has focussed upon the conditions for creativity at the individual, group and organisational level (Amabile, 1996, 1997). Sternberg (1988) takes a broad look at creativity, including its definitions, characteristics, cultural characteristics, cultural differences, measurement and organisational context. Isaksen has focussed upon creative problem solving (CPS) which can be seen to be a combination of process design, similar to NPD, and creativity in individuals and teams. He has developed a means of measuring creativity climate within an organisation (Isaksen, 2001) and has summarised 50 years of CPS in his summary paper (Isaksen, 2004) showing how creativity processes have moved through at least five generations.

The AT-ONE project, which formed the context for this work developed its processes in part based upon Isaksen's and Amabile's work. However, in terms of identifying how design influences cross-functional team performance, their work can not be directly applied, since it relates to contextual factors not within the scope of this project. I have therefore chosen to focus upon NPD or NSD studies of team performance.

*NPD and cross-functional teams*

There is a large body of research specifically covering cross-functional teams in NPD and I consider that in terms of team performance, the dynamics of cross-functional teams in NPD can also be applied to NSD. I therefore use research into team performance within NPD as a means of understanding the issues relevant for the work carried out and described in NSD.

Edmondson and Nembhard (2009) completed an exhaustive review of existing research on cross-functional teams in NPD and identified five main challenges.

Firstly, managing the complexity of a modern project was considered something that both was a reason for using cross-functional teams, but also a challenge for the team itself. This can be seen as supporting the view taken here, that service innovation projects can be considered wicked problems (see next section).

Secondly, communication across functions was seen as a challenge, particularly aspects of group culture and interpersonal climate. This is supported by Sarin and O'Connor (2009), who showed that challenges facing cross-functional teams include the development of team collaboration, internal culture and team communication.

The third challenge was seen as the temporal nature of team membership. This showed that many project teams did not have enough time together to gain an awareness of each team members knowledge, therefore reducing the organisational learning opportunities and limiting outcomes.

The fourth challenge was related to fluid team boundaries, which relates to how a team develops a shared sense of identity, cohesiveness and purpose. Molin-Juustila, (2006) calls this the development of a common understanding and shared vision of the object of development. Sethi (2000) uses the term the superordinate identity, which is needed because “a major source of concern is the presence of deep-rooted biases and stereotypes that individuals from one functional area hold against people from other areas”(Sethi, 2000, p. 330). Bstieler (2006) sees this as being central for the establishment of trust within a team and between individuals. His work shows that trust gives a greater chance of success and higher performance from teams. To add to this, the process can be as important as the outcome. Kleinsmann and Valkenburg, state that “the process of creating shared understanding might be as important as the shared understanding itself” (Kleinsmann & Valkenburg, 2008, p.371).

This is particularly relevant during the front-end of a project, since it is here that the team needs to build this shared understanding. This area is mirrored in management research into teams also. Mannix and Neale (2005) state:

We believe that another way of obtaining the full benefits of a diverse team—and ultimately building trust and respect—is through bridges that connect team members in some way that is meaningful to the particular team (p. 56).

The fifth and final challenge is that of a team being embedded in organisational structures that inhibit teamwork. This covers aspects such as individually based reward mechanisms, departmental resource allocation and geographical distribution of resources for development. This challenge is similar to the findings from a team management or organisational creativity approach and relate to external factors that are not relevant for the focus of my study.

#### *Cross-functional teams and Service Dominant Logic*

There is little specific research available regarding cross-functional teams and the development of services. There is however an explicit focus upon the importance of cross-functional collaboration as part of Service Dominant Logic. When considering a service dominant logic perspective of services and service innovation, the cross-functional team and cross-functional business processes become central. This is due to the value proposition being co-created across knowledge specialisations. Lusch and Vargo (2006) state:

However, cross-functional processes are key to delivering compelling value propositions. All cross-functional processes will be managed by teams ...it will be important for the cross-functional business processes to be managed across the functions. This is because no entity will perform all functions (p. 107).

Lambert and García-Dastugue (2006) support this, stating that “the integration of activities across multiple corporate functions (in Service Dominant Logic) is implemented using cross-functional teams and cross-functional business processes”(p. 151). It is therefore important to understand the dynamics of cross-functional teams in NSD, and how their performance can be improved.

#### *Designers as part of cross-functional teams*

When it comes to the role of design and cross-functional teams, there is some research available to help understand how design influences team perfor-

mance. Stumpf (2012) has studied the role of design in developing a shared cognition in distributed NPD teams. He found that physical prototypes act as a strong means of providing shared understanding. This is a finding supported also by Capjon (2005). Kim and Kang (2008) explore the role of the designer in cross-functional NPD teams. They conclude:

In summary, the key success factors include “unified vision and goals,” “unified culture with partners,” and “building trust and cohesion,” showing that design co-work requires improvements in the climate of the work environment, beyond those that support the system or infrastructure (p. 51).

They further show that “this research empirically proves the positive impact of cooperation within design teams on product development performance” (p51).

Lopes (2008) studies design as dialogue within teams in her PhD on design and interdisciplinary collaboration. She concludes that designers are central to dialogue within teams and that “designers establish a common meaning of a design through dialogue” (p. 294). Further, she states that, “Dialogue was considered a core competency because of its main purpose for team effectiveness and team learning” (p.299) and concluding “Dialogue thus created a team based culture of cooperation and shared leadership” (p.300).

I have not been able to find specific research regarding service design as part of cross-functional teams. As already mentioned, Kimbell (2009) discusses service design practice as a broad process, but does not specifically focus upon the role of design and team performance. This study therefore contributes towards an understanding of the role of design in cross functional teams as part of NSD rather than NPD.

The existing literature identifies key aspects regarding design and the performance of cross functional teams. If we look at issues other than innovation, which is covered in a previous section, the existing literature points to design as contributing to team performance through dialogue, where important outcomes are the development of shared understanding, a shared vision and collaboration across disciplines. This is particularly important at the front end of the NSD process, since this is the period in which major decisions are made and where the teams are still getting to know each other. Further, dialogue across disciplines is seen as central to the resolution of wicked problems (see next section). This therefore identifies key performance indicators for

my work as being shared understanding, and shared vision, and that design contributes to this through dialogue.

*Positioning this research in relation to cross-functional team performance*

I take an NPD-based approach to understanding the performance of cross-functional teams and apply this to the NSD process. Of particular interest at the front end are measures of team cohesion, shared understanding and a common vision. These are aspects where I believe design can contribute, and my research aims to understand how service design contributes to this as part of the front-end of NSD. I consider that using NPD research as a basis for understanding teams in NSD is acceptable, since much of the focus within the area is upon cross-disciplinary collaboration rather than being specifically product-based. I consider the issues of team collaboration, shared understanding and common goals as being equally applicable to NSD as NPD.

## WICKED PROBLEMS AND SERVICE DESIGN

I now move on to address two important related areas for Service Design: wicked problems in design and abductive logic that enables us to resolve them. These two relate to service design in that they describe the nature of service development challenges and how service design might have a highly relevant role in their resolution. They also suggest and support the dialogue-based approach to design as discussed in the role of design and teams. From this we can show that a service design approach has an important role in the resolution of wicked problems, how it is relevant at the front end, and how its role as facilitator is particularly relevant.

Wicked problems were first described by Horst Rittel in the 1960s, and became central in articles he published early in the 1970s (Rittel, 1972, 1973). In the following table, the characteristics of wicked problems are presented. Here I summarises Rittel's characteristics of wicked problems and have developed a column that describes their relevance to new service development. This column is based upon a synthesis of knowledge from wicked problems, services marketing, NSD and service design. The table argues that innovations in services are essentially the resolution of wicked problems. To date this has not been taken up in service design research and this table therefore contains considerable potential for further research.

Wicked problem characteristic	Short description (in Rittel's own words)	Service relation
1. No definitive formulation	"You cannot understand the problem without solving it, and solving the problem is the same as understanding it."	Service innovation problems at the front end have broad formulations with complex interrelations and consequences.
2. Every formulation of the wicked problem corresponds to a statement of the solution	"This means that understanding the problem is identical with solving it. Whichever statement is made about the problem is a statement of solution".	Project briefs in service projects often describe a "desired" final state, such as an insurance project to develop "simple insurance", further defined as a maximum number of clicks on a website to achieve a task.
3. There is no stopping rule for wicked problems	"You can always try to do better and there is nothing in the nature of the problem which can stop you".	As in the example above, "simple" insurance can always be made "simpler".
4. To wicked problems, correct/false is not applicable	"... we cannot say that this (solution) is correct or false. We can only say that it is good or bad, and this to varying degrees and maybe in different ways for different people ..."	In the example above, the term "simple" cannot be shown to be correct or false. Terms such as simpler or more difficult can only be used, and need qualification in terms of for whom, to which degree and in relation to what. As services begin to focus upon specific market segments, this is increasingly true.
5. There is no exhaustive, enumerable list of permissible operations	"For tame problems, there is an exhaustive list of permissible operations. With wicked problems ... everything goes as a matter of principle and fantasy".	In services, the complexity of a problem and the underlying technological development open for endless innovational opportunities, both incremental and transformational.

Wicked problem characteristic	Short description (in Rittel's own words)	Service relation
6. In wicked problems, there are many explanations for the same discrepancy	“ ... and there is no test which of these explanations is the best one. ... The direction in which the solution goes depends on the very first step of explanation ... which is the most decisive step in dealing with a wicked problem”.	The question, “why is insurance perceived as complex by the customer” can have a multitude of answers from mental models, touch-point interactions, risk assessment or more. The front end of a project identifies which explanation(s) are most plausible and give best value for least investment when worked upon.
7. Every wicked problem can be considered a symptom of another problem	“you are never sure that you are attacking the problem on the right level. ... Every problem can be considered a symptom of another”.	Service provision requires a complex collaboration between multiple actors over time, with IT-platforms from multiple generations confounding the problem. It is therefore difficult to identify the “core problem” and indeed as #1 states, identifying the real problem is a major step in solving it.
8. There is neither an immediate nor an ultimate test to the problem	“... because each action ... can have consequences over time”.	In services, the focus is increasingly upon value in use, i.e. the customer experience over time. The distance in time and investment from identifying a potential solution to understanding its effects is great, and can have unexpected consequences. This is why prototyping is important, but also still risky.
9. Each wicked problem is a one-shot operation ...There is no trial and error	“... one can only anticipate or simulate potential consequences to a certain extent in order to get an idea whether something is or is not a good response to a wicked problem, for a wicked problem cannot be repeated”.	The context of service innovation in terms of market development, technological development and the complexity of organisation and delivery mean that there is no “undo” button.

Wicked problem characteristic	Short description (in Rittel's own words)	Service relation
10. Every wicked problem is essentially unique	"... you cannot easily carry over successful strategies from the past into the future since you never know if the problem ... is sufficiently different from the previous problems to make the old solution no longer work".	The pace of change and market competition in services makes each problem context unique, and therefore each problem unique.
11. The wicked problem solver has no right to be wrong	"In contrast to the tame problem solver who may lose or win a chess game without being blamed for it ... The wicked problem solver has no right to be wrong. He is responsible for what he is doing".	This is difficult to translate specifically to services, although it can be applied to cross-functional teams as being responsible for the way they approach and attempt to solve a problem.

Table 3: This table shows the 11 characteristics of wicked problems, in which I have added their relevance to services. Column two is taken from Rittel (1972, pp. 392-393).

The key points in the table are that service organisations and service innovation problems have similar characteristics to the planning processes that Rittel researched. This includes such aspects as multiple stakeholders, complex systems with multiple interrelations, difficulty defining the problem, lack of stopping rules and consequences over time.

The relationship between Rittel's descriptions of wicked problems and the characteristics of services in the above table are my own, but are informed and supported by the literature on NSD, service innovation, service design and design texts (Miles, 2008; Koen et al., 2002; Roberts, 2000; Head and Alford, 2008; Keast et al., 2004; Bourgon, 2008; Parsons, 2006).

Rittel does not describe in great detail how wicked problems should be approached in terms of what he calls their resolution. He implies that inductive and deductive logic are insufficient to solve these problems alone and states that the traditional approach to problem solving should be replaced by an "argumentative process in the course of which an image of the problem and of the solution emerges gradually among the participants, as a product of incessant judgement subjected to critical argument" (Rittel, 1973, p. 162).

He later discusses the importance of dialogue within a team as being central to the resolution of wicked problems.

*Wicked problems and their resolution through abductive thinking*

Abductive thinking was first described by Peirce (1931) in the following way:

Abduction is the process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea; for induction does nothing but determine a value, and deduction merely evolves the necessary consequences of a pure hypothesis.

Deduction proves that something must be; Induction shows that something actually is operative; Abduction merely suggests that something may be (Peirce, 1931, Section 6, para. 171).

The link between the resolution strategies Rittel sees necessary (synthetic, political, social and iterative) and the characteristics of abductive thinking was originally identified by Buchanan (1992), but more recently taken up by Liedtka (2000), Camillus (2008), and Martin (2009). This has profound implications for the support of innovations in services.

Abduction is often described in isolation, as an alternative to inductive or deductive thinking. I believe it is important to understand abductive thinking and its relation to inductive and deductive thinking. Indeed, Peirce does not see abductive thinking in isolation, rather that it is part of the scientific process and a partner to deductive-inductive thinking. Abductive thinking is therefore not an alternative to inductive and deductive thinking, it complements them and is dependent upon them. Firstly, it shows that the combination of thinking modes together forms a strong unit, and therefore, indirectly argues for the role of cross-functional teams, i.e. combining people with different modes of thinking. Secondly, it supports the traditional divergent/convergent process within a workshop, such that idea generation is followed by idea filtration. This fits rather well with the abductive+deductive combination, as described by Peirce.

*Creative abduction and selective abduction*

Magnani (2001) differentiates between creative abduction and selective abduction and describes how Peirce differentiates the two but is sometimes unclear regarding the boundaries between them. Magnani uses the distinction to help explain this ambiguity in Peirce's writings, by distinguishing creative abduction as the creation of multiple hypotheses (or ideas of what can be),

whereas selective abduction is a subset of these, filtered to a degree regarding their relevance. Magnani states:

All we can expect of our “selective” abduction, is that it tends to produce hypotheses for further examination that have some chance of turning out to be the best explanation. Selective abduction will always produce hypotheses that give at least a partial explanation and therefore have a small amount of initial plausibility (p. 10).

This supports the importance of abduction in cross-functional innovation workshops, in which a large number of ideas are generated (creative abduction) and then sorted (selective abduction) through dialogue. It can also be seen as supportive of the divergent/convergent approach to NSD that is described in creativity literature and the double diamond service design process in BS 7000 (BSI, 2000).

#### *Positioning this research in relation to Wicked Problems*

I consider that service innovation projects have the same characteristics as wicked problems and can therefore be considered as such. I base my work therefore upon this, and use the research regarding design and wicked problems in the design of the tools chosen for investigation. This means that the approach taken to design is one of dialogue and collaboration and is therefore participatory. Further, that abduction does not take part in isolation but occurs through dialogue and discussion within a team. When combining the theory of design and wicked problems, it becomes important to develop team based processes for cross-functional teams that encourage dialogue around a problem. Further, that this dialogue encourages shared understanding and a shared abductive phase, leading to a shared vision of the result.

#### **Summary regarding research position**

My work approaches service innovation problems as wicked problems, and focuses upon how design can, during the first stages of the NSD process, support their resolution. The research takes the position that resolution of wicked problems occurs in a dialogue within a cross-functional team, in which abductive thinking is central, and bases itself upon research regarding cross-functional team performance from the related area of new product development (NPD). The resolution process is based upon the development of design tools to support innovation processes, based upon research into design tools from NPD. The outcome of innovation performance is considered to be a combination of novelty, as defined by OECD, and measures of team performance as described within NPD research.

## T H E   A T - O N E   P R O J E C T

This doctoral research has been carried out within the context of the AT-ONE project. AT-ONE was a practice-based research project that developed a structured front-end process, specifically to integrate Service Design into NSD. It developed process support and tools using a structured series of workshops.

I will now describe the AT-ONE project and process in more detail, since it formed the context for my work, and then describe how the results presented in this thesis emerged from the AT-ONE project.

The AT-ONE project was initiated due to identification of gaps in research and practice regarding the first phases of NSD. Research showed that the front end of service innovation was important, yet there was little research knowledge available regarding this. In terms of practice, I discussed innovation processes with several large service providers and found that all had structured processes for innovation, and that this involved use of cross-functional teams. However, all had processes for service innovation that were based upon product innovation and none had specific service focus in the process. In addition, all had processes that became structured *after* the front-end was complete. None had a structure for the front-end. Further, none had a clear structure for the use of design in their innovation projects. Not only this, the organisations considered that they were good at implementing solutions using their structured process, but were not good at identifying the right things to implement. There was therefore both a gap in research knowledge and a corresponding gap in practice regarding potential improvements for the front end of NSD.

I was project leader for the project, and one of the main researchers. The project ran from 2007-2010 and involved collaboration between several research institutions, one service design consultancy and multiple service providers. The project combined research, innovation and teaching and was a natural case for my research. The innovation workshops that were run as part of the project became the vehicle for driving my research forward. This is discussed in more detail later in this section.

A PhD position was created as part of the project which focussed upon strategic aspects of service design. Several papers were published during the project (Gloppen 2009a, 2009b, 2010, 2011) and Judith Gloppens research was completed in 2012 and looked in detail at design leadership for services (Gloppen, 2012). She and I discussed the project and our respective findings

regularly. This informed each of our work, since although the research questions were different, there were several points of overlap between our work.

Each of the letters of AT-ONE relates to a potential source of innovation in services, and the letters can be seen as a set of lenses through which a service can be viewed. AT-ONE is run as a series of workshops, each with focus upon one of the following lenses:

A - New combinations of ACTORS who together can provide improved services

T - Orchestration and development of TOUCH-POINTS to provide innovative services

O - Developing new OFFERINGS that are aligned to brand strategy

N - Understanding customer NEEDS and how new services can satisfy them

E - Designing for customer EXPERIENCES

The AT-ONE process is visualized in figure 3.

### **The theoretical basis for each of the AT-ONE letters**

The letters of AT-ONE were specifically chosen to give a service orientation to innovation projects at the front end of the NSD process. It is described in more detail in my first paper (Clatworthy, 2008). Here, I describe the theoretical basis for each of the AT-ONE letters.

#### *Actors had a focus upon co-creation of value through value networks*

The A letter, Actors, was influenced strongly by contemporary work on value constellations (Normann & Ramirez, 1993) and value networks (Holm et al., 1999; Stabell & Fjeldstad, 1998; Allee, 2000) together with work on value co-creation with customers (Prahalad & Ramaswamy, 2004). When developing AT-ONE it became clear that there was a great deal of discourse regarding the importance of value networks and co-creation, but little practical advice regarding how to operationalise this in design processes. Verna Allee, through [valuenetworks.com](http://valuenetworks.com), was one of the few people who discussed how to map value networks and innovate in value constellations, and her work was central to the development of the Actor tools. Much of the theoretical development of the Actor work was carried out in the project by BI, the Oslo based school of management.

#### *Touch-points had a focus upon the customer journey and touch-points*

The touch-point letter, T, was strongly based upon practice within service design. I had been working together with Lavrans Løvlie from Livework for several years, and it became clear to me how touch-points when linked

to a customer journey gave a very different understanding of the customer experience than a product-based, point of sale approach. Little research could be found regarding how to innovate through touch-points, so the touch-point approach was influenced strongly by practice. Some research was available from marketing in a general sense (Shostack, 1984) and specifically from Integrated Marketing (Fortini-Cambell, 2003; Dunn and Davis 2005; Voss & Zomerdijk, 2007) and this was integrated.

*Offering had a focus upon the semantic transformation for services*

The choice of the letter O, Offering, was a combination of practice based experience and research into branding, particularly services branding (De Chernatony et al., 2003). In terms of practice, it was based upon branding platforms I had developed for several commercial organisations and the development of an “in-house” branding method for a large Nordic IT-consultancy. This was combined with research into branding, and was strongly influenced by Karjalainens work on design and branding as part of the semantic transformation (Karjalainen, 2004), coupled with brand personality (Aaker, 1997) and an approach to branding suggested by Ellwood (2002). This was integrated with work from De Chernatony (2001, 2006) specifically regarding services branding.

*Need took a user centred design (UCD) approach to services*

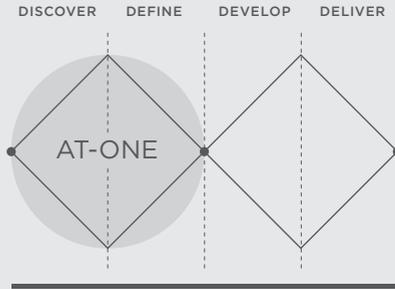
The letter N, Need, took a user centred view of the design process, and was based upon contemporary approaches to involving users in the design process (Abrams et al., 2004). SINTEF, an applied research organisation developed the majority of the tools that were trialled in the N workshops, and their work was based upon the approach described in ISO 9241-210 Human-centred design for interactive systems and ongoing work from EU based COST networks COST 219 and Cost 294.

*Experience focussed upon the customer experience*

The experience workshops were based upon the work by Schmitt on experience management (1999, 2003) and specifically upon research into the customer experience of services (Berry et al., 2006; Verhoef et al., 2004, 2009; Smith, 2002; Shaw & Ivens, 2002; Zomerdijk & Voss, 2010). The tools for the experience letter focussed upon experience prototyping (Bucheneu & Suri, 2000; Benedek & Miner, 2002).

Figure 3. An overview of the AT-ONE workshop process

# HOW TO DESIGN BETTER SERVICES

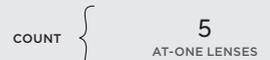
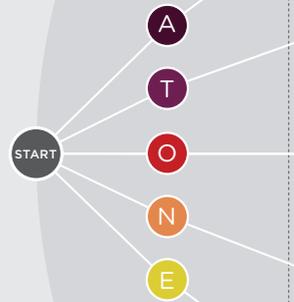
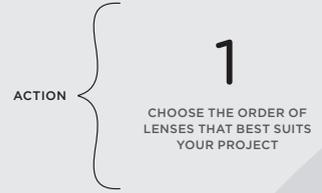


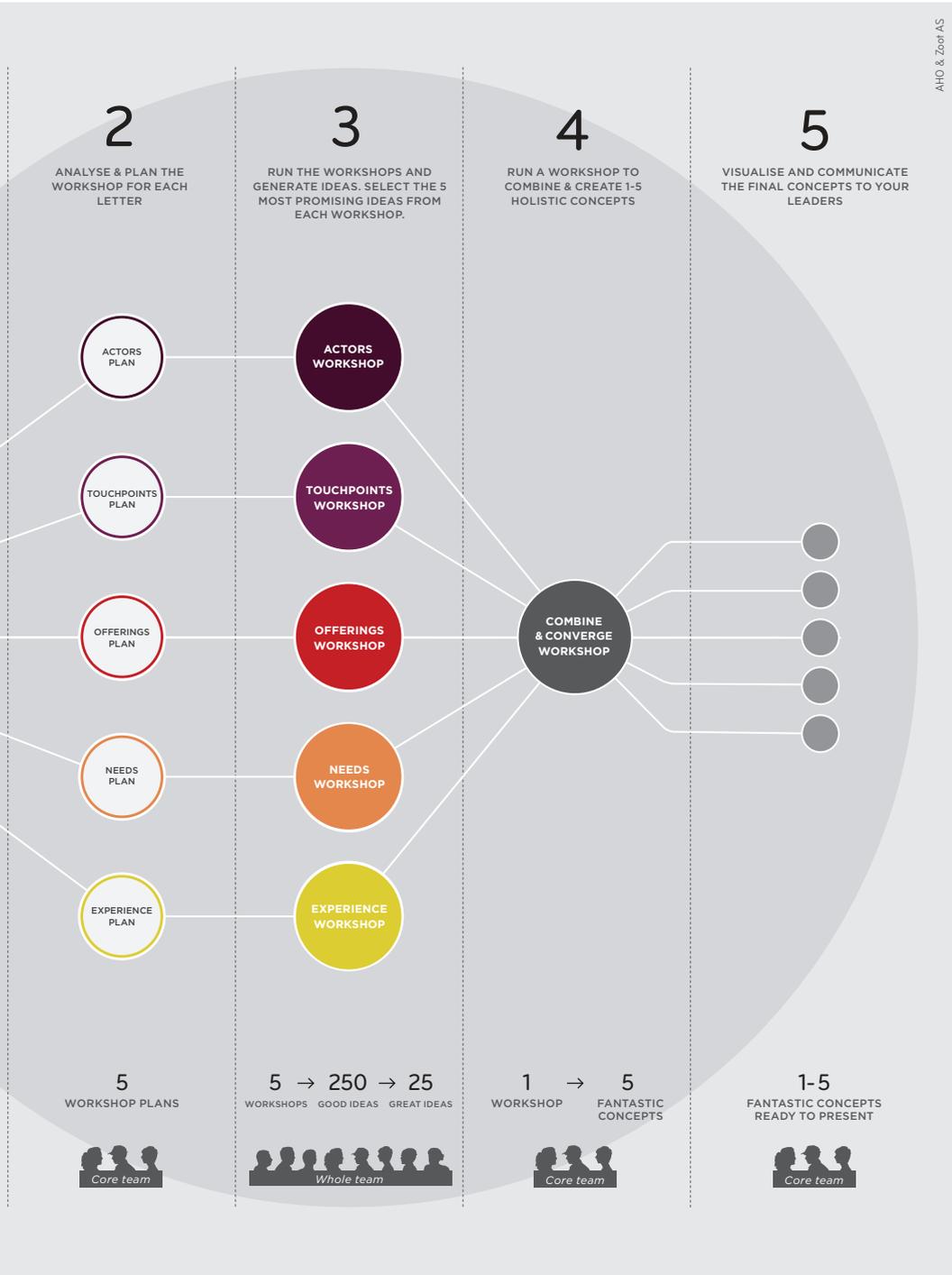
Designing Better Services is a service innovation process using AT-ONE. It strengthens the first two stages of the traditional double diamond innovation process, as described by the British Design Council. Making sure you "do the right thing, before doing the thing right".

This process has emerged as a response to industries' need to improve service innovation. It uses design skills such as customer insight, cultural understanding, creativity and holistic thinking to create solutions that are attractive and desirable. If you use the AT-ONE approach, you will focus the early stages of service innovation and get your project off to the right start - customer focused solutions that build upon your brand strengths to create desirable service experiences.

- A = ACTORS
- T = TOUCHPOINTS
- O = OFFERINGS
- N = NEEDS
- E = EXPERIENCE

[www.service-innovation.org](http://www.service-innovation.org)





### **The AT-ONE process**

The process is based upon an assumption that service innovation problems can be characterised as wicked problems (Rittel, 1972) (see earlier section on wicked problems). As such, their resolution requires dialogue between different disciplines and use of abductive logic (Peirce, 1955). The AT-ONE process is therefore workshop based, in which different competences from within and external to the organisation collaborate, and through dialogue, resolve the problem. This is strongly influenced by earlier research I carried out into creativity in cross-functional teams (Skundberg and Clatworthy, 2001).

One of the key aspects of the process is that of using a designer as a process facilitator for a team. This is key, and integrates several important aspects. It integrates creativity knowledge from most notably Isaksen, Dorval and Treffinger (2000), Cougar (1996), Amabile (1996), Design Thinking (eg. Kelley, 2001; Leonard-Barton, 1991; Brown, 2005), Co-Design (Brandt 2004, 2006; Muller et al., 1994; Kensing et al., 1998) and workshop techniques (eg. Chambers, 2002; Kaner, 2007; Highmore Sims, 2006). It also recognises the changing role of design in organisations and in particular in innovation (Valtonen 2007). Further, it operationalises the wicked problem approach requiring dialogue across disciplines for resolution (Rittel, 1972; Roberts, 2000). The importance of abductive thinking as a means of resolving complex problems (Peirce, 1955) is incorporated through design (Buchanan, 1992; Liedtka 2000, 2004), and finally, it incorporates a design approach based upon a dialogue with materials (Schön, 1992) through visualising/prototyping.

Each workshop has three phases (see figure 4). Firstly a knowledge platform is developed for the specific lens (or letter) which is the focus of the workshop (eg. Actors). This is established through presentations from invited participants. Secondly, a divergent phase, with focus upon abduction is carried out using various design tools. Thirdly, a reflective, synthetic and convergent decision making phase summarises findings and concludes with the identification of promising directions. Prior to each workshop an input document is often created to summarise existing knowledge or to prepare tools. After a workshop, a summary document is produced including key findings, the most promising directions and a scanned version of all ideas. At this stage, conclusions are not made, since other workshops, based upon the other letters are yet to be carried out. A concept phase and evidencing phase is then carried out to synthesise all results and develop suggested concepts for decision making at a stage gate.

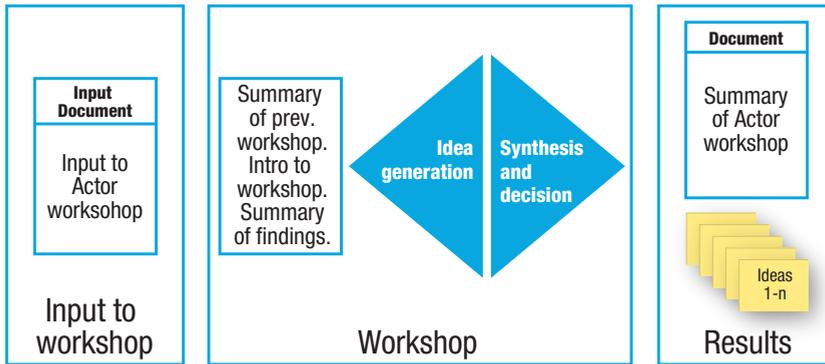


Figure 4: Each workshop had three phases: 1. Creating a common ground 2. Divergent thinking 3. Synthesis and Convergence. Prior to a workshop, an input document was produced, and after a workshop, a summary document was produced.

#### *Relation to service dominant logic*

AT-ONE's combination of letters fits well with a service dominant logic view of services, with its focus upon co-creation, value proposition, interactions and customer experience. However, service dominant logic was not formally incorporated into AT-ONE and the combination of letters was arrived at independently of this. AT-ONE can be considered a service design approach to a service dominant logic view of services, something that Sangiorgi calls for in her view of design for service (Sangiorgi, 2012).

#### *Commercial partners in AT-ONE*

Four commercial partners participated in the AT-ONE project. These were:

- Telenor, an international ICT provider (participated during 2007 and again in 2010)
- Norsk Tipping, the Norwegian national lottery organisation (participated all years)
- Gjensidige Insurance, Norway's largest insurance company (participated all years)
- DigLib, a start up company, looking to offer educational content to schools in Europe and owned by ItsLearning, an educational learning environment with a European market (participated in 2009).

Each partner contributed relevant innovation case studies to the research. These were projects that were commercially relevant for each partner, and the AT-ONE project ran innovation workshops for them. Each partner provided

internal cross-functional teams to the project. The AT-ONE project facilitated the workshops and took the ideas to the concept phase for each of the partners. Commercial service designers LiveWork were involved in each workshop in addition to the research partners in AT-ONE. Their role varied from workshop to workshop, sometimes they participated as designers in a team, for a process facilitated by AT-ONE, sometimes they had some training in AT-ONE and facilitated the workshops. This varied according to my role, sometimes as participatory observer, sometimes as non participatory.

The majority of the projects that used AT-ONE were business to consumer services, although the DigLib workshops were business to business. In addition to these projects and partners, the AT-ONE method was used for one interaction design project, and one public service project.

#### *My research as part of AT-ONE*

The methodology and methods for my work are discussed in part 3 in detail. This short section summarises how AT-ONE offered a context for my work, and how my work emerged from it.

The AT-ONE project had a rapid iteration approach and two series of workshops were carried out each year for each partner. In total, 72 one day workshops were carried out together with the partners in commercial contexts during the project period. In addition to this, regular meetings with partners discussed progress and further directions for development of the AT-ONE method.

As project leader and main researcher in the AT-ONE project I initially took an exploratory research approach, based upon the initial broad research question “How can Design support cross-functional teams during the first stages of the New Service Development (NSD) process”? Multiple research questions arose during this period, and the choice of detailed research question occurred late in 2008. At this point, it was clear from observation, interviews with partners, the existing research available and personal interest, that two areas were specifically of interest.

The first of these was the importance of touch-points for service innovation. The initial observations and results from the workshops identified touch-points as being of particular interest for two reasons. Firstly it was central to the partners’ understanding of service (rather than product), which was considered new and relevant by each partner. Secondly, it clearly introduced and assisted with the development of novel ideas.

The second area was the transformation of brand strategy into customer experience. It became clear early on that although the companies each had corporate branding initiatives underway, none of the corporate branding material was aimed at the NSD process. Research however identified interactions, value in use and behaviour as important to services branding. There was therefore a gap in research and practice that warranted investigation.

These two areas were then studied in detail during 2009 and 2010. The AT-ONE project did not change direction due to this, however additional focus was given to these two specific areas within the project. I now describe how the research into these two areas was carried out. It describes the research by design methodology that was employed, and the specific collection of methods that were utilised.

## Methodology and methods

This section describes the research context, methodology and methods used in the research and reflects upon them. It does this by describing and positioning my work within design research and practice, and how this influenced the choice of method. It then describes the research methods utilised. Finally, it critically reflects upon the choice of methodology and method and their relevance.

### DESIGN RESEARCH BY DESIGN

The work was carried out using a research by design approach (Sevaldson, 2010). This is described by Sevaldson as ‘practice research in action’ and is a methodological approach in which the researcher participates as a *designer*, involved in the process as part of a team (Fallman, 2008).

Fallman describes different perspectives of design research, and identifies three main research activity types; Design Studies, Design Exploration and Design Practice. He describes how these form a triangle of research perspectives, visualised in figure 5, below. Design studies describes design research that takes a distanced, and descriptive approach and which Fallman describes as akin to more traditional academic research. Design Exploration uses design practice to explore and develop knowledge, but does so from a designer perspective rather than in collaboration with industry. The designer explores through one or more pieces of work. Design Practice describes situations where the design researcher participates in “real life” projects as a means to understand the contexts, problems and potential solutions.

Using the framework from Fallman (2008), this research is firmly placed within the area of design practice, and with a strong relation to design studies. I will now describe this in more detail.

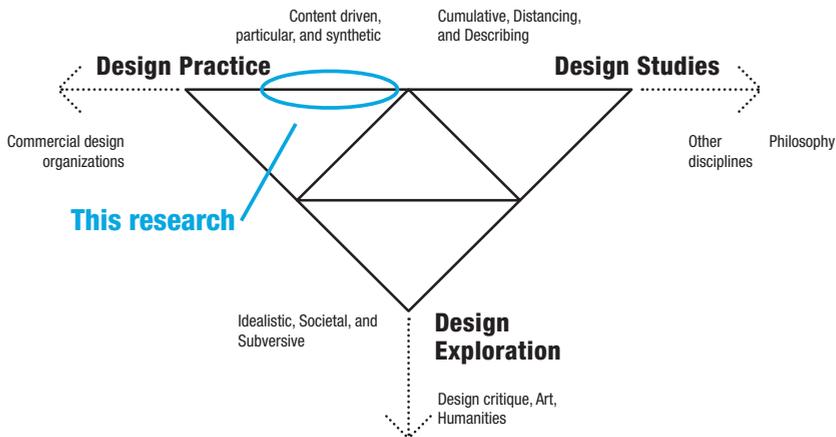


Figure 5 : The design research framework presented in Fallman (2008). This research, shown in the blue circle falls clearly within the design practice segment, but with a loop towards design studies. It is grounded in case study projects but identifies elements of theory and generalisable service design conclusions.

### *Combining design practice and design studies*

Fallman describes that the goal of design studies is to “build an intellectual tradition within the discipline, and to contribute to an accumulated body of knowledge”(p. 9). Further, “we note that, unlike design practice, it seeks the *general* rather than the particular, aims to *describe* and *understand* rather than create and change ...” (p. 9).

Fallman argues however that there is great value to be gained from moving in-between activity areas and not from taking a specific position. In this way, research informs research. With reference to interaction design they state “we believe that the most interesting results in interaction design research come not from taking a specific position in the model, but rather from moving or drifting in between different positions” (p. 10).

My work looped between design practice and design studies using the workshops in the AT-ONE project as a vehicle for this. Research and practice were intertwined and inseparable and moved from explorative to specific research and then through reflection, a discussion of service design. This resulted in the development of both new ways to develop service development projects and an understanding of the materials of service design and the nature of service design itself.

### *Research by Design*

I choose to use the term research by design since my research embodies key aspects of the approach as identified by Sevaldson (2009). I will now relate my research to the framework suggested by Sevaldson to make explicit the research by design approach. His work does not stand alone, and it builds upon the historical development of design research, from Frayling (1993); Cross (2001); Rust et al.(2004); Freedman (2003); Saikaly (2005); Yee (2009).

Research by design has two characteristics. Firstly, the research itself is *designed*. This means that the development of the tools has been framed, planned and carried out as part of a planned and reflective research process. This process will be described in the next section. Secondly, the research has taken a generative approach *by designing* new tools, using, evaluating and re-designing them in a case-study context. Coupled to this, there is a related analytical perspective that is applied to this ‘design’.

This gives the research an insider perspective. The researcher is within and part of the object of study, in this case, cross functional teams. Sevaldson describes this as follows:

... where the design researcher is also a practitioner and whose investigations are conducted within a ‘first person perspective’ combined with a reflexive mode of inquiry that helps make design knowledge explicit (p. 9).

Sevaldson explains how the design researcher alternates between first, second and third person perspectives and how the research has an output in terms of both designed solutions and communicable knowledge. For Sevaldson, and in my work also, the design process is central to the research itself:

The rich design space becomes especially important when looking into modes of Research by Design where the design process becomes the central device for research (p. 9).

The approach is explorative, combining abductive, deductive and inductive reasoning. This is fitting, since when working with wicked problems in service design, the design approach needs to be abductive. This fits well with the design research approach for service design in which there is little or no existing research, and where research solutions exhibit the same characteristics of wicked problems. Sevaldson notes:

The notion of the experiment in design is quite different from the traditional scientific experiment. While the scientific experiment is about isolating a limited and fractioned part of the world to create a repeatable output as validation, the design experiment is about provoking change and iterative imaginative steps forward. The design experiment often has an element of 'not always knowing what you are doing', a wicked problem approach and post-rationalisation (p. 9).

## Reflections on methodology, and method

This section starts by reflecting upon the nature of contemporary research in service design and what it means to research wicked problems. It then reflects upon the research by design approach taken in this work, specifically using a framework for evaluation developed by Zimmerman et. al. (2007). It concludes that the four criteria of process, invention, relevance, and extensibility are adequately fulfilled, and that the approach to the problem area, methods and finding are well suited to the defined problem area.

### *Few shoulders to stand on*

There is little research to build upon directly within Service Design, although much to build upon from related design fields. The two areas I chose to focus upon, touch-points and the semantic transformation are areas without a research tradition within service design. I have therefore had to bridge across disciplines and by doing this have produced transdisciplinary knowledge, that approaches what Nowotny terms Mode-2 knowledge production (Nowotny, 2004). This is knowledge developed through the context of application, including multiple actors that develops results with cross-platform relevance. I believe that these characteristics describe my work.

The lack of existing research has meant that this research is not incremental. This has made it difficult to clearly place this work within existing service design research frameworks. The field of Service Design is in rapid growth and so far, the professional field has grown more rapidly than the research field. This has led to a situation where Service Design research has been learning from practice rather than informing it. It has therefore been useful to base my research on practice within service design, using a research by design approach. I am happy to see that this work has contributed something to both research and practice, and has also managed to span disciplines from design to branding/services management.

Researching within a relatively new field allows for innovations in approach, and the drive of identifying new knowledge in a new field. It also exposes

the researcher and the researcher's decisions and carries an uncertainty with it that can be daunting. My work has therefore had a cyclical trajectory of exploration, reflection, design, evaluation and dissemination followed by a deeper and more focussed series of exploration, reflection, design, evaluation and dissemination. The choice of an article-based PhD was a wise one, since peer review, and discussion of papers and articles, both in preparation and at conferences has been central to the development of the research and its findings. I believe this is necessary when establishing new areas of research.

Indeed, as mentioned in the section on methods, writing has been a method of inquiry and reflection. Richardson states "By writing in different ways, we discover new aspects of our topic and our relationship to it" (Richardson 1994, p. 516), and I have found that publishing in a *Services Management/Brand* journal has also demanded considerable reflection and discussion regarding theoretical frameworks and research approach. This has assisted with my reflection and analysis.

## WICKED PROBLEMS AS A RESEARCH OBJECT

The majority of NSD cases encountered in this work have been wicked problems (Rittel, 1972). That is, unique problems which cannot easily be formulated, have multiple stakeholders, no stopping rules and in which the problem itself can only be understood when it is resolved. This makes research into wicked problems complex and multi-faceted. As such, wicked problems can be challenging for a researcher. Firstly, it is difficult and of limited value to isolate individual variables, since wicked problems are a knot of interlinked variables. The traditional positivist approach is unlikely to be of value if research is to be generalisable, and a hermeneutic approach is preferable. Secondly, the problem and the solution cannot be separated, such that research has to have a design element to be able to generate knowledge through designing - research by design. Thirdly, since resolution of a wicked problem requires abductive thinking, i.e.. a focus upon what may be, research into wicked problems needs also to have an abductive element, such that "what can be" becomes integrated into the research approach.

I am not claiming here that research into wicked problems makes the research itself into a wicked problem, although that may be the case. I am arguing, that research into wicked problems requires an approach that fits with the nature of wicked problems. This means that the researcher has to involve themselves

in projects, participate in problem resolution and develop tools that can only be evaluated within real-life case study examples. This is what Stolterman describes as design research being “to a large extent about handling complexity and a “messy” reality” Stolterman (2008, p.56). Stolterman further describes the holistic synthetic quality of design in light of research method:

In design you have to design the “whole,” and you cannot reduce design complexity by limiting yourself to those things that you have the time or resources to handle, or those things that you have sufficient knowledge and information about. For instance, you cannot limit the design of a new mp3 player to concerns about the shape and form of the physical object while ignoring its functional and interactive aspects. In science this is done by deliberate and careful separation of aspects, with the purpose of reducing complexity by focusing on one relevant aspect or variable at a time. In design, on the other hand, methods and approaches have to take the whole composition, the emerging qualities of the whole, into account, which of course creates distinct methodological requirements when it comes to testing and evaluation (p. 59).

I believe that the research by design approach I have taken, with a focus upon the whole rather than a specific part has been necessary, important and relevant. Due to the complex multi-layered context of the work, a holistic approach has been necessary. Indeed, the ability to think abductively has allowed for the development of new knowledge.

The touch-point research has been primarily inductive-deductive and has explored a phenomenon (use of physical representations in service design) from practice and further developed it in a research context. However, the research into the semantic transformation process has developed something that did not previously exist, either in practice or research. This has therefore been an abductive-inductive-deductive process as described by Peirce, and following his original intent, that all three combine in research.

Since I am using wicked problems as a basis for discussing methodology and method, it is worth noting one of Rittel’s main characteristics - there are no stopping rules (Rittel, 1973). This states that there are multiple resolutions available to any wicked problem, and this is also true of the tools developed in my research. The solutions I have developed have been shown to resolve specific problems during the front end of NSD projects. However, these are not the only means of resolving the wicked problems identified, and other better means of resolving them can be found.

## MIXED METHODS

*First, second, and third person methods combined*

The research approach has therefore taken the form of combining phases of action research in which I have been proactive, and designing tools for teams with periods of reflection and periods of distanced observation. This looping has been both sequential and in some cases inseparable. Using Sevaldson's description of first, second and third person approaches (Sevaldson 2010), the work has utilised all three. This has allowed for triangulation of results, but more importantly allowed for a change of perspective.

In the first person approach, I have actively designed a series of workshops and within each workshop developed tools for teams. I have run the workshops using participatory observation combined with reflection. In the second person, I have participated in workshops facilitated by others, but using the process and tools I have designed. This has given me a different perspective, that of project participant in a cross functional team, rather than workshop facilitator. In the third person, I have distanced myself from the workshops themselves and observed workshops from a distance. In addition to this, I have administered questionnaires to workshop participants and interviewed workshop participants using semi-structured interviews.

First person	Second person	Third person
Participatory observation as facilitator/designer	Participatory observation as co-design team member	Non participatory observation
		Semi-structured interview
		Questionnaire
Reflection and discussion	Reflection and discussion	Reflection and discussion
		Literature review

Table 4: Overview of methods used for data collection in this thesis

*AT-ONE workshops as a research vehicle*

The AT-ONE project was a practice based research project that explored and developed support tools for service design. It was run in close collaboration with commercial partners and used case projects from the partners as research material. The AT-ONE project used innovation workshops together with its

commercial partners as a vehicle for understanding the front end of innovation and as interventions within the front end process.

Some of these workshops were run by myself and others were run by external service design consultancies. The workshops had multiple intentions and outcomes. From a research perspective they gave the project input regarding the needs of the commercial partners and an understanding of their NSD processes. Further, it allowed us to trial and evaluate new service design tools in practical settings. Finally, it allowed us to combine research and practice and give the opportunity to design and integrate the research as part of design practice. This complex interweaving of research and design practice, together with commercial considerations is described in the following figure.

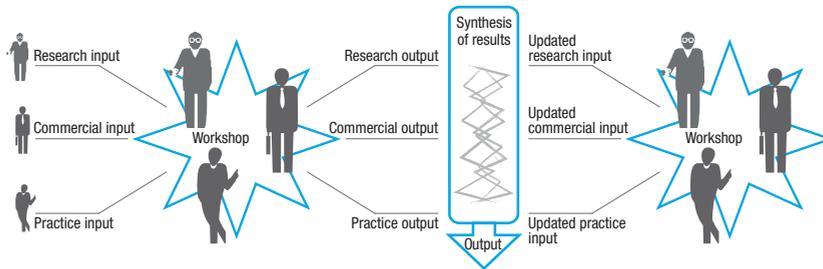


Figure 6 : The explorative research phase integrated design research, design practice and commercial contexts to explore the overall research question. These three ‘threads’ met through innovation workshops, that were carried out together with commercial partners. Synthesis of results provided outputs from the project and identified the two detailed research which then became the focus of my research . All together 72 workshops were run as part of the AT-ONE project.

The workshops in AT-ONE became central to the project and in particular to this research. They became a means to summarise up to date research as input that informed each workshop, and allowed for the collection of research data for later use.

The following table shows the business partners and the number of workshops carried out within the AT-ONE project during its lifetime. In addition to the AT-ONE project, the tools and process were utilised in several additional workshops for specific clients and during various courses.

Business partner	2007	2008	2009	2010
Telenor	6			4
The Norwegian Lottery	6	12	12	
DigLib		4		
Gjensidige insurance	6	12	12	
Sum AT-ONE workshops	18	26	24	4

Table 5: The number of AT-ONE workshops carried out together with business partners during the AT-ONE project. All of these utilised the workshop process for cross-functional teams and therefore developed process support, however approximately one third of these workshops were directly related to the two research themes of this PhD.

### *Choice and combination of methods*

It is important to consider the nature of the data-capture context when choosing suitable data collection methods. In this case, the research object was a process and method to support project teams at the front end of service innovation. This, as has already been mentioned had two aspects of interest; firstly the nature of work carried out at the front end of the NSD process, secondly the dynamics of the cross-functional team. Methods chosen would have to capture data relating to the impact of design interventions upon these two aspects, including also the resolution of wicked problems and abduction. This suggested a qualitative approach, in which the designer/researcher actively participated in relevant case studies, but with different roles at different times.

The methods for data collection and analysis were chosen to give a rich and complementary data set which allowed triangulation of data sources (Yin, 2009). This triangulation allowed for multiple measures of the same phenomenon, something considered important when collecting evidence about a multi-faceted research project.

The methods were utilised in a cyclical way, such that multiple perspectives were taken upon each iteration of the AT-ONE project. At first the methods were used in a general sense, to broadly evaluate the interventions and to allow theoretical constructs to emerge. Once the two strands of research were identified, the methods were tailored specifically to focus upon these two aspects.

The use of multiple case studies allowed for a cross-case synthesis (Yin, 2009), in which theoretical constructs emerged from multiple cases. This, together with triangulation of methods results in a strong empirical basis for the constructs.

*Professional practice and applied research as a foundation*

I have built upon existing knowledge and experience from professional practice, such that this work has a long historical foundation. The following list of previous work gives an overview of the areas that together formed the foundation of this research and framed the research question.

1. Research at Telenor research 1995-2000. During this period I worked with applied research in the area of creativity and service development. I also established a cross-disciplinary research group - VISLAB - that worked together developing concepts and strategies for the business units within the areas of UMTS mobile applications, Interactive TV and the future of Internet. As part of this work, we researched and developed methods and process support for innovation in teams (Skundberg and Clatworthy, 2001). This gave me practical grounding and experience of running cross-functional workshops and researching the issues regarding creativity in teamwork.
2. MBA (Clatworthy, 2001). My MBA dissertation was about strategy formation in ICT organisations. I wrote about wicked problems and abduction and this formed the foundation for understanding services as wicked problems and the use of abduction for their resolution.
3. Director of Design and Branding at large IT-consultancy. I was involved in many design projects within the area of interaction design and within branding during the dot-com period. This gave me an insight into branding in organisations and the factors influencing the innovation process - particularly participant roles during projects, decision making and process stage-gates.
4. Teaching and research at AHO. Since I started teaching and building up the interaction design and service design groups at AHO I have run courses on Service Design, Design Management, Interaction Design, and Creativity. These have each given me an up-to-date literature overview and identified critical issues. I have also participated in the Touch, Record and AT-ONE research projects during the period of this PhD, and been supervisor for interaction design, design management, branding, and service design master theses. This has given me an up to date knowledge of research and practice that is infused into my work.

It is difficult to estimate the importance of each of these strands of work, but I am aware that they have influenced the identification of problem area, and at the same time influenced the design of the interventions.

#### *Literature review*

The literature review (Marshall, 1999) has been continual and broad from the project start. It has focussed upon the key areas of; Innovation in Services, Design Research, Service Design, NPD and NSD, Services Branding, Customer experience, Cross-functional teams and the Fuzzy Front End. This is a broad area to follow, but it was considered necessary to identify the basis for design intervention and for the synthesis of knowledge needed to address the complexity of the research question. In addition, specific literature reviews were carried out in relation to the workshop themes and for the development of specific tools.

#### **Data collection methods**

##### *Interviews with workshop participants*

Semi-structured interviews (Fontana & Frey, 1994) were used to elicit information regarding subjective experience of participation in the workshops and their outcomes. The interviewees were chosen to be a representative cross-section of a cross-functional team. The interviews were recorded and transcribed. The interviews utilised the laddering technique as part of the interview structure (Reynolds & Gutman, 1998) in which the interviewer probes more deeply into specific statements from an interviewee.

##### *Observation - participatory and non-participatory*

The research by design methodology gave me the opportunity to design methodological interventions and to apply them within the multiple case studies described earlier. Observational techniques (Stringer, 2007) were found to be a valuable means of data capture, since I was immersed in the object of the research itself. By participatory observation I refer to two roles: firstly as facilitator of a workshop with responsibility for planning and running a workshop, and, secondly as a co-design team member, in which an external designer acted as facilitator. This gave two differing views of the interventions. By non-participatory observation I refer to my role as an observer who, although present in the workshop room, did not participate in the workshop itself. This gave the opportunity to observe aspects not possible when actively participating in a workshop. Raymond Gold (1958) proposed four participant observation roles: the complete participant, the participant as observer, the observer as participant, and the complete observer. My role has thus been as both the participant as observer and complete observer.

### *Questionnaires*

A questionnaire (Patton, 1990) was developed at the start of the project and was administered after each workshop. The questionnaire was developed in collaboration with other partners in the AT-ONE project and had two goals. Firstly it aimed to elicit feedback regarding the subjective experience of being a participant in the workshop, such that the following workshops could be improved. Secondly it was used to gauge the degree of innovation that the workshop offered. Since innovation is defined as the implementation of a new or significantly improved good or service, it was not possible to evaluate a workshop's innovation role directly - the front end of innovation does not implement, it conceptualises a solution. A measure of innovation was taken by utilising novelty of ideas. The Oslo Manual (OECD and Eurostat, 2005) links innovation to novelty and the questionnaires therefore focussed upon this. The Oslo Manual distinguishes three types of novelty: an innovation can be new to the firm, new to the market or new to the world. The first covers the diffusion of an existing innovation to a firm – the innovation may have already been implemented by other firms, but it is new to the firm. Innovations are new to the market when the firm is the first to introduce the innovation on its market. An innovation is new to the world when the firm is the first to introduce the innovation for all markets and industries.

The questionnaire asked participants if they had seen the idea before, and as such covered the term novelty in all senses of the above. Taken in consideration that a cross-functional team has representatives from multiple knowledge areas, it was considered that this view of novelty covered novelty in technology, marketing, business models and customer experience. In addition to novelty we also asked participants to judge the workshops based upon the number of ideas generated and the relevance of the ideas for the organisation or project. Together I considered these questions to give a good subjective evaluation of the innovation potential of ideas generated as a result of the design interventions.

### *Writing as a method of inquiry and reflection*

I have utilised writing as a method to both inquire and reflect about the themes of my work. This was inspired by Richardson (1994) in which she suggests multiple writing formats and that writing itself is “a way of knowing - a method of discovery and analysis. By writing in different ways, we discover new aspects of our topic and our relationship to it” (p.516). I have therefore written the following types of texts during the period of this doctorate: academic texts for conferences and journals, book chapters, student texts for courses, popular scientific articles, and multiple blog entries. Together

these have been important for the emergence and understanding of the issues finally focussed upon.

### *Reflection and discussion*

I use the term reflection and discussion to describe the process of synthesis that occurred in the emergence of the two research themes and to link to the work of Schön (1983), and also Rittel (1984) - the themes emerged from a reflective conversation with the situation. This conversation was a synthesis of multiple inputs derived from the methods already described. The theoretical directions emerged from this synthesis, initially as promising areas for further study. Exploration of these areas, and more data collection then gave more depth to the initial explorations. This emergence can be described as an abductive step (Peirce, 1955), since each emerging theme resolved a wicked problem - a problem that could not clearly be defined until it was resolved.

I use the term discussion to describe the continual discussions that occurred within the AT-ONE project. There were multiple forums for discussion; the workshops themselves, consortium meetings, formal validation meetings, group discussions and individual discussions. These discussions took place between many different stakeholders: researcher to researcher, researcher to service-designer and researcher-service provider.

### **Focusing the research**

#### *Moving from a broad research question to two specific research questions*

Through 72, one-day workshops, I was able to iteratively explore, develop and evaluate the AT-ONE tools. The combination of first person, second person and third person approaches, together with the associated methods gave a huge amount of research data and tacit knowledge. Friedman (2000) describes this as engaged knowledge, and how design research needs to convert this into design theory, whilst Fallman (2008) calls this looping from Design Practice to Design Studies.

Figures 6 and 7 show how the AT-ONE workshops acted as a vehicle for my explorative research. Figure 6 shows the role of the workshops in exploring the context of use, and figure 7, shows how two research questions emerged after the completion of multiple workshops.

It is not possible to identify the exact point at which the two detailed research questions emerged. They emerged from a synthesis of factors:

- Observation identifying interesting phenomenon
- Discussion with other researchers in the AT-ONE project
- Existing literature and previous practical work
- Discussion with commercial partners in the AT-ONE project
- Discussion with peers within service design
- Personal interest.

There were multiple research questions that could have been developed, but as noted in the introduction, two specific ones that were chosen.

It became clear that the touch-point letter in AT-ONE was particularly successful. By successful I mean that they generated novel ideas for commercial problem resolution, were seen as important for all workshop participants, and which quickly generated results. Further, the touch-point cards appeared to be a very useful tool to assist the innovation process. However, I did not exactly understand how or why. The importance of touch-points could be found in marketing and in the service design profession, but not in service design research. There was a gap in knowledge relating service design processes and innovation tools regarding touch-points which I considered important to fill.

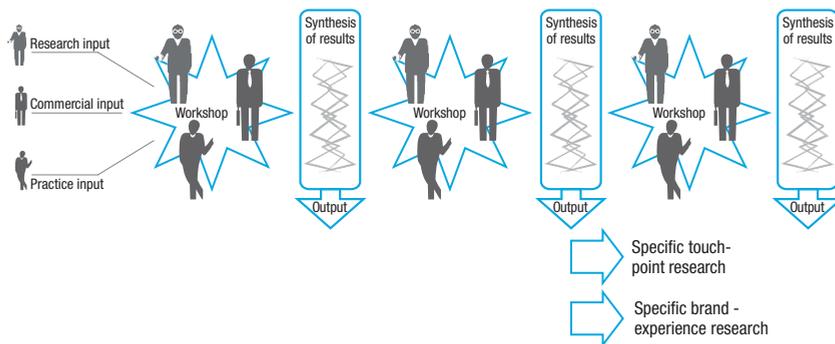


Figure 7: Two specific research questions emerged from the general research questions after multiple AT-ONE workshops had been completed and from a synthesis of the findings from them. Specific research was then carried out based on these specific research questions. This is shown here in relation to figure 6.

The transition from brand strategy to customer experience emerged from the workshops from an observation that many aspects were discussed regarding new service ideas, but rarely were questions about brand fit raised. Commercial partners were using the term customer experience without understanding how to integrate it into the NSD process. Further, terms such as “the Telenor experience” or the “Gjensidige experience” were regularly used within

the organisation, but when asked what these terms meant, the participants were unable to answer. This made me look further into research regarding how brand influences service development and specifically what is a service brand. I found that there was a gap in knowledge, not in terms of how to build a brand, but how to apply a brand strategy to NSD with a view to supporting a specific customer experience. This is something I wanted to work with further.

The identification of two areas for further and detailed research started a period of focussed research that ran specific workshops in the two themes and which applied specific methods to generate data and evidence for theory building. These workshops were still part of the AT-ONE project, but had a specific focus upon collecting evidence for theory building. This advanced the research from exploratory research into specific research to answer two specific research questions.

#### *Convergence of evidence to build theory*

The two specific research questions were investigated using multiple methods and multiple cases. This allowed for what Yin (2009) calls a convergence of evidence, using triangulation of methods and data. In addition, the data was collected and analysed using cross-case synthesis from specific workshops with different commercial partners. The following figure shows the different methods and data collection approaches used.

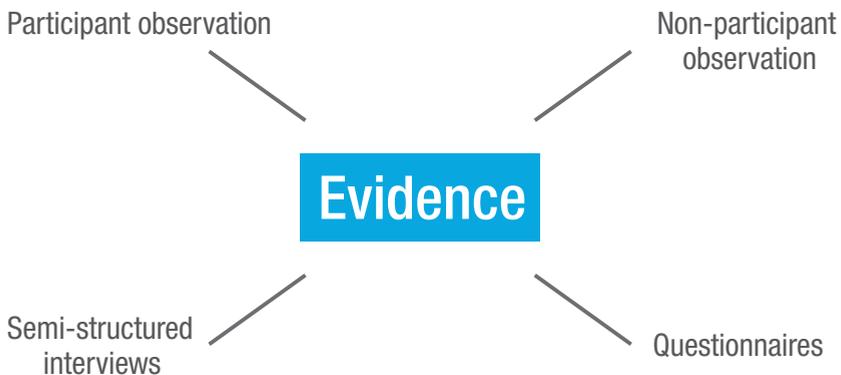


Figure 8: A convergence of evidence approach was taken to data collection to improve validity of theory construction. In addition, data was collected from several case partners to allow for cross-case synthesis.

For the touch-point work, specific evidence was collected in 2010 from five workshops, each of a minimum three-hour duration. Participant numbers in the workshops varied from six people to 24 people. The evaluation data all related to the final version of the touch-point cards.

A selection of participants with different backgrounds and project roles were selected for a total of 6 semi-structured interviews. The interview guide was informed by observation of several workshops combined with the insights gained from the literature review. It comprised interview sections regarding innovation performance, team cohesiveness, workshop dynamics and tool design. The interviews were transcribed for later analysis.

The questionnaire was a standard questionnaire developed for the evaluation of the AT-ONE workshops by the project team. It consisted of open questions requesting information about positive and negative aspects of the workshop itself, and multiple choice questions related to the innovation potential of the workshop at a project level. These questions were developed from literature regarding innovation metrics that could be used in projects (Perrin, 2002; Brusoni, Prencipe & Salter, 1998; Andrew, Haanæs, Michael, Sirkin & Taylor, 2008). Innovation could not be identified directly from the first stages of the NSD process, since innovation requires the implementation of a novel idea. The questionnaires therefore explored novelty (The Oslo Manual, OECD & Eurostat, 2005).

For the brand experience work, data was collected in a total of 6 workshops during late 2010 and early 2011. The model was evaluated through its use in 3 commercially relevant projects (Insurance, National Lottery and Telecom), employing cross-functional teams during the first stages of projects. Each workshop had a 4-6 hour duration. Participant numbers in the workshops have varied from 5 to 8 people, each with different organisational roles and backgrounds. The evaluation methods combined semi-structured interviews, discussion sessions, a questionnaire, and participative and non participative observation.

Questionnaires were filled out by workshop participants at the conclusion of each innovation workshop. The questionnaire was a standard questionnaire developed for the evaluation of innovation workshops.

A total of 7 semi-structured interviews were carried out with workshop participants. The interviewees were chosen to represent a broad range of disciplines and responsibilities across different organisations. Each inter-

view lasted approximately two hours. The interview guide was informed by observation of earlier workshops combined with the insights gained from the literature review. The interview had sections regarding services branding as part of NSD, branding and cross functional teams, the semantic transformation, the target experience tool and its relevance/performance. Interviews were transcribed for later analysis.

## RESEARCH BY DESIGN AS RELEVANT METHODOLOGY FOR SERVICE DESIGN RESEARCH

Brandt & Binder (2007) argue that the knowledge that springs from experimental design research inquiries should be of a type that makes it accessible to and arguable among peers stating: "... knowledge production in experimental design research involves a traceable genealogy, an intervention in the world and the articulation of an argument for others to engage with." (p. 3).

These are echoed, and described in more detail by Zimmerman et al., (2007), who propose 4 main criteria for evaluating design research. They describe these as four lenses for evaluating an interaction design research contribution: process, invention, relevance, and extensibility. I will now critique my work through these four lenses, since it gives some valuable insight into methodology, process, method and results.

### *Research process*

On *process* Zimmerman et al., write:

In documenting their contributions, interaction design researchers must provide enough detail that the process they employed can be reproduced. In addition, they must provide a rationale for their selection of the specific methods they employed (p.7).

In my work, I think that I have chosen a relevant and valid process, and utilised the correct methods for evaluation such that the work can be employed or reproduced. I have described the methods chosen, their selection, and presented a rationale for their selection. I have perhaps been conventional in their choice but this has had pragmatic reasons, since I have not wanted to disturb the case study contexts. Additionally, I have chosen to iterate multiple times (several times per year), thus demanding methods that do not require lengthy analysis.

*Degree of invention*

Regarding *invention* they write:

The interaction design research contribution must constitute a significant invention. Interaction design researchers must demonstrate that they have produced a novel integration of various subject matters to address a specific situation (p. 7).

I consider my work fulfils the criterion of invention. Firstly, within Service Design research, there is such a lack of published research in my specific areas that this research is clearly inventive. Regarding the subject matter, and its use in practice, both the touch-point cards and the experience-target work provide new tools, new processes and a new model for designing services. As an example, the touch-point cards have been made available to practitioners, and we have distributed several hundred of them due to large demand.

*Research relevance*

When it comes to *relevance*, Zimmerman et al. (2007), state:

There can be no expectation that two designers given the same problem, or even the same problem framing, will produce identical or even similar artefacts. Instead of validity, the benchmark for interaction design research should be relevance. This constitutes a shift from what is true—the focus of behavioural scientists, to what is real—the focus of anthropologists. However, in addition to framing the work within the real world, interaction design researchers must also articulate the preferred state their design attempts to achieve and provide support for why the community should consider this state to be preferred (p7).

When I relate this to my work, I consider that my research has a high degree of relevance for the practitioner community. The touch-point cards and the respective tools have been regularly used by others, and the brand megaphone model has led to new collaborations with service providers and service design professionals.

*Research extensibility*

The final term described by Zimmerman et al., is *Extensibility*, which is described as follows:

Extensibility is defined as the ability to build on the resulting outcomes of the interaction design research: either employing the process in a future design problem, or understanding and leveraging the knowledge created by the resulting artefacts. Extensibility means that the design research has been described and documented in a way that the community can leverage the knowledge derived from the work. (p7).

This criterion is difficult to evaluate at the present stage, since extensibility relates to a historical trajectory. However, I believe that the work regarding touch-points in service design has a general element that is being extended towards new tools and new use of the tools. This is apparent by the number of requests I receive for the touch-point cards and how regularly they are reprinted. Several hundred sets of cards have now been distributed to users who have requested them. The knowledge developed can also be used within service-design to develop new innovation based tools, and also tools to assist with user-insight work.

The research results regarding service branding can be further developed towards and understanding of the semantic transformation in services, the development of new forms for brand specifications and further developments within experience prototyping for services. There are signs that my work is being extended in a successful way; for example, Filho (2012) is continuing my work on the semantic transformation for services, through his exploration of the brand-experience manual for organisations.

I believe therefore that the criterion of extensibility is fulfilled, both through research and practice.

### **Concluding remarks**

The research by design approach supported both the design of new tools for NSD, and through this, the collection of research evidence. Each informed the other, and moved from initial exploratory research to specific focused research. A convergence of evidence approach was taken to improve the validity of theory construction, and the approach and results were evaluated according to criteria defined by Zimmermann et al., (2007). I show that the work fulfils the criteria of process, invention, relevance and extensibility.

In the following section, I present and discuss the research findings, and present the key contributions from my research.

## PART THREE: Findings and key contributions

This section presents and discusses two key contributions related to the findings from my research. Both of these findings have evolved from reflections upon the attached articles. These reflections generated a second layer of research questions, as follows:

1. *In the context of service design, how can a discussion of the term materials contribute new knowledge to an understanding of service design?*
2. *How does the service personality construct contribute to the branding of services during the front end of the NSD process?*

The following two chapters discuss these specific questions in turn. They briefly present the findings from the articles, then reflect upon these in a broader context. In this way, they are an extension and reflection of the articles.

The first of these findings discusses touch-points as a material of service design. It asks the following question: if design is a conversation with materials, what then are the materials in the service design conversation? The chapter identifies one such material, touch-points, and through this raises an important discussion regarding the materials of service design. Since services are generally considered immaterial, a discussion of the term materials for services required an exploration of the term material itself. A definition of material is thus used to give new insights into the area of touch-points and the field of service design.

The second of these findings discusses service personality as a key aspect of branding a service. It analyses the semantic transformation process that occurs at the start of a project, when brand strategy is transformed into a

service concept, and identifies the concept of service personality as key to this transformation. Service personality is a new construct, based upon brand personality, but specifically tailored to the characteristics of services. I describe the term and its development, and show how it is a necessary part of the NSD process. I then identify service personality as a boundary object - an object that transcends disciplines and creates a common understanding within a project team.

*Towards a service dominant design logic?*

The two findings are fundamental to the understanding of service design as an emerging field, and in some way move towards an understanding of the essence of what it means to design services, rather than products. I consider these findings contribute to a dialogue regarding a service dominant *design* logic. By this, I mean that they contribute to an understanding of what is at the core of Service Design from a service perspective, rather than from comparing services to products. This is something that is also emerging within service design research (Sangiorgi, 2012). It is appropriate, since design has spent considerable time discussing Service Design in relation to Product Design and Interaction Design. Perhaps it is beginning to be mature enough to focus upon itself in isolation and not in relation to these other disciplines? In such a situation, a dialogue regarding the materials of service design, and the boundary objects of service design would be natural points of departure.

# 1. Touch-points as a central material of service design

The research questions in my work went through three developments and iterations, beginning exploratively, then becoming specific to finally relate the results of the specific finding to service design as a whole. This section discusses the following research question:

*In the context of service design, how can a discussion of the term materials contribute new knowledge to an understanding of service design?*

The focus is upon an exploration of the term material when applied to service design. and I discuss the term here using touch-points as an example. This both furthers the discussion presented in my articles regarding the role of touch-points in service innovation, and uses this as a springboard to discuss the nature of service design itself.

Touch-points are the points of contact between a service provider and their customers. A customer might utilise many different touch-points when interacting with a service provider as part of what is often called a customer journey. For example, a bank's touch points include its physical buildings, web-site, physical print-outs, self-service machines, visual identity elements, bank-cards, customer assistants, call-centres, telephone assistance etc. Each time a person relates to, or interacts with, a touch-point, they have a service-encounter. This gives an experience and adds something to the person's relationship with the service and the service provider. The sum of all experiences from touch-point interactions colours their opinion of the service (and the service provider).

Despite touch-points being a major part of service design (Koivisto, 2009; Stickdorn & Schneider, 2010), there is little, or no, documented research within the area (Howard, 2007). The concept, however, of designing points of

contact between the service provider and the customer is not new. Shostack (1984) introduced thinking around touch-points as part of services, using the term tangible evidence as part of what she termed “service blueprinting”. She also used the term “orchestration” to describe how these points of contact should be designed. Shostack describes touch-points as:

Everything the consumer uses to verify their service’s effectiveness. The setting, including colour schemes, advertising, printed or graphic materials and stationery, all proclaim a service’s style. The design should not be carelessly delegated to outsiders or left to chance (Shostack, 1984, p. 137).

In the medical domain, the term emotional touch-points has started to appear in the research literature (Dewar et al., 2009). The use of the touch-point term here is more in alignment with usage in service design, since it relates directly to the customer experience along the customers service journey.

Within marketing, integrated marketing (Iacobucci & Calder, 2003) is the area that places most importance upon touch-points. Integrated marketing combines three elements that are closely related to service design; an understanding of consumer behaviour, focus upon brand and the link to customer experience. Integrated marketing takes a holistic view of services in which the coordination of touch-points is one major part of linking what is termed contact experiences to the brand. Fortini-Cambell (2003) describes this: “in a more complex consumer experience ... there may be literally hundreds of small elements of experience the consumer notices” (Fortini-Cambell, 2003, p. 63). However, here there is only the recognition of the importance of touch-point co-ordination within integrated marketing with no guidance as to how innovation processes can achieve such goals.

There is a clear lack of literature that provides methods, approaches or case studies describing how a project team can work to achieve the goals described in the literature. Much literature covers the importance of touch-point orchestration (Payne & Frow, 2004; Holmlid, 2008, etc). However, there is little literature available regarding how this is done, how this could be done or how this should be done. Holmlid (2008) states: “For design management the challenge becomes one of both coordinating multiple service channels, and the coordination between service channels” (Holmlid, 2008, p. 7). There is therefore a clear need for assistance that helps project teams achieve these two goals.

Paper 3 and Article 1 present the development of a card-based toolkit for use by teams. The toolkit was evaluated through use in five workshops, each lasting over three hours. Each workshop was carried out in a professional service design context with commercial project partners, and participant numbers in the workshops varied from 6 to 24 participants.

The evaluation of the touch-point cards employed semi-structured interviews with selected workshop participants, discussion sessions with workshop participants, a questionnaire, and participative and non participative observation. Results showed that the touch-point card toolkit assisted the innovation process during the first phases of the new service development process and helped develop team cohesiveness. The card-based approach developed novel ideas and offered a tangibility that teams found useful. Paper 3 and Article 1 describe the multiple functions that tools used in service innovation need to accommodate, and how design makes an important contribution to this.

The touch-point cards as a tool comprised visualisations of touch-points, and methods for how they could be used. The combination offered by these two aspects supported incremental innovations, transformational innovations as well as identifying organisational consequences of these. The results, showed that this supported rapid exploration of multiple alternatives and it was common that workshops generated innovations in organisational design as much as innovations in offerings. The use contexts and the type of innovations they encouraged are presented in Article 1. One use context was noticeably effective, that of combining the touch-point cards with the customer journey. I will now briefly describe this, since it is a finding that led to my focussing upon touch-points in my reflection later. Further details are presented in Paper 3 and Article 1.

### **Touch-points and the customer journey**

The customer journey (or service journey) is an approach used in service design to identify the phases of a service from a customer point of view, and further to divide these phases into steps. Customer journey mapping has emerged from service blueprinting as described by Shostack (1984).

One of the use contexts of the touch-point tool was the combination of touch-point cards and the customer journey. Workshop participants would develop one or more customer journeys and place the touch-point cards at points along the journey. This was done to explore several objectives, for example, to place the cards to identify the most important touch-point from a customer point of view, or the touch-point that performed worst from an experience

perspective, or to identify the touch-points that were already available or new touch-points that could be developed. Further detail about this is given in Paper 3 and Article 1.

The combination of service journey and touch-points worked very strongly together. They allowed for an iterative exploration of “what can be” through different combinations of touch points, but also an exploration of “what can be” through restructuring and reordering the customer journey. Not only this, they supported collaborative exploration and discussion, which gave a shared understanding and helped develop a shared vision of the final solution. This combination of touch-points and the customer journey enabled a multitude of combinations to be considered during a workshop. The tool supported and encouraged rapid exploration of alternatives regarding what can be, such that radical innovations could be explored as well as incremental innovations.

A typical workshop with the touch-point cards therefore explored new offerings that a touch-point/customer journey combination suggests, or the development of co-creation solutions. During the same workshop however, incremental solutions to improve the performance of a “pain-point” along a customer journey would also be discussed. There was a typical oscillation between detail and the whole in these workshops that afforded both detailed design discussions and transformative discussions. At the front end of innovation, this is desirable, since the offering is still to be decided.

This finding from the project was specifically commented by Judith Gloppen in her PhD regarding service design leadership (Gloppen, 2012). Gloppen interviewed managers and leaders who had been involved in the AT-ONE workshops and comments that service journeys together with touch-points are central in what she terms service thinking. She states

This new insight also changed their attitudes towards seeing their service offerings as holistic service journeys with a multitude of touch-points versus seeing their offering as a ‘single product’ (p. 167).

The findings were such that upon reflection made me realise that touch-points offer such potential for collaborative service innovation that they are perhaps one of the most central aspects of service design. This made me start to reflect upon the materials of service design. In Article 1, I briefly mentioned and considered the notion of touch-points being a material of service design. This initial reflection initiated a reflective process regarding the term material for a generally immaterial offering, which is further developed in this section.

This questions what a material is and from this questioning gives a better understanding of touch-points as part of service design.

Services are often described as immaterial experiences, so it might seem strange to talk about the materials of service design. However, in order to better understand the nature of service design, it is useful to consider the term materials, even though the outcome of a service may be immaterial.

The section is divided up as follows. Firstly I briefly discuss materials and design, and show how a discussion of materials helps understand, describe and characterise a discipline. From this, I discuss the term material in Service Design and using various definitions of the term, assess touch-points and their relation to service design. This identifies five aspects of touch-points and service design which are then described and discussed in turn. Together they show the centrality of touch-points as a material of service design. The following aspects are discussed:

- Touch-points as an important constituent of service design - a constituent material
- Touch-points as a characteristic material that gives a service its individuality - an innovation material
- Touch-points as something that may be worked into a more finished form - a negotiating material
- Touch-points as the object of study for a project team - a stage-gate material
- Touch-points as part of the service designers repertoire - as a rendition material.

### **Why consider the materials of service design?**

Donald Schön describes design as a “conversation with the materials of the situation” (Schön, 1983, p.78). It is timely to ask which materials a service designer converses with, and to discuss in what way a service designer has this conversation. A discussion regarding the materials of service design therefore may help us understand, describe and define what service design is. This can then have consequences for further research and for education in the future.

Within Product Design, a discussion regarding materials has existed for some time, and material exploration is now integrated into teaching. When talking about a conversation with materials in product design, it is clear which materials are being talked about. Indeed, there is a journal, *Materials and*

*Design* dedicated to discussion regarding the area, though it is centred on technical aspects of physical materials and their properties. Karana, Hekkert and Kandachar (2008) review the term materials in Product Design and show how the discussion has developed over time. In their article, there is no doubt or discussion of what a material is, within this discipline. Their focus is upon how designers choose and use materials. Similarly, when Capjon (2005) discusses the use of materials as an ideation tool, the meaning of materials within product design does not need to be described. Indeed, none of them define the term material, since they consider it an unnecessary question.

Within Interaction Design, a much younger discipline, a discussion regarding materials is ongoing and is helping define the discipline itself. Blevis, Lim and Stolterman (2006) discuss software as a material of Interaction Design, Gaver (1996) discusses the social as a material for design, Hallnäs and Redström (2006) explore deep into the foundations of Interaction Design through various materials, and Nordby discusses RFID as a material of Interaction Design (Nordby, 2010). These discussions help with the ongoing discussion regarding what Interaction Design is, and is not. Again however, they do not define what a material is, they assume that we understand the term.

Within Service Design, a discussion regarding the materials of Service Design has not yet emerged. Some early steps toward such a discourse are however appearing, although so far, no one has specifically discussed the term. Holmlid (2007) compares Service Design to Interaction Design, and this can be seen to be a parallel to the discussion regarding the differences between products and services. Kimbell (2009), who has observed and interviewed Service Design professionals, has described similarities across projects, and as such, started to identify commonalities of practice. Secomandi and Snelders (2011) explore the object of Service Design, and focus upon the tangible and intangible elements of services. They come close to a discussion regarding the materials of Service Design, but instead focus upon linking Service Design to the fields of service marketing, management, engineering, and economics. This, although interesting, does not engage with the essence of design, namely the conversation with materials. Meroni and Sangiorgi (2011) describe new ways for designers to work with services and how this will develop designers as facilitators of social and co-creation processes. They mention the need to work with processes, relationships and networks within a co-creation paradigm of designing for services. However, they do not identify the materials of design specifically. There is therefore a need to start a discourse regarding the materials of Service Design. If design is a conversation with materials, what then do service designers converse with?

From a development perspective, it is important to understand the materials that the designer has at their disposal that influence the success of a chosen service solution. Further, it is important to understand the materials that can be used to both explore, sketch and prototype a solution. This area is under-explored in a research perspective, and offers considerable potential for new insights, knowledge and perhaps a new paradigm.

This PhD did not aim to identify all of the materials of Service Design and has not developed an exhaustive list of them. However, during the work on the design and evaluation of the touch-point cards, the term material was repeatedly used. This made it apparent that there is a necessary discourse regarding the materials of service design that must emerge. This section raises the question and contributes to the discussion regarding service design as a field and potential discipline. It focuses upon touch-points as being one of the materials, and arguably, one of the most important. Hopefully, this can galvanise others to join the discussion, and, help define this emerging specialist area of design.

## ON THE TERM MATERIALS

The term material is a rich term with many connotations. In relation to design, it is often considered to be something that is physically formed as part of the design and production process. Originally, I considered the question of the materials of service design to be a somewhat metaphorical term, since services are highly immaterial (Fisk, Brown & Bitner, 1993). However, upon investigation it became clear that the term material has a richer and broader usage in today's language. Rather than specifically relating to physical and tangible properties of something, I discovered that the term material is commonly used for immaterial contexts. I have chosen therefore to explore the use of the term in its widest sense, specifically because the multi-faceted definition when applied to service design gives interesting insights. Further, since the term material is not commonly defined as part of design, but taken for granted, it is worthwhile exploring the use of the term as defined in the English language. A definition of the term shows that material does not reside only in the physical world, and, therefore, has relevance to services. I therefore take as a start-point the dictionary definition of material as a means to explore and consider the nature of service design, and show how it has particular relevance to the design of services.

The following definition of material, from Merriam Webster shows its richness and importance:

- a) (1) the elements, constituents, or substances of which something is composed or can be made (2) matter that has qualities which give it individuality and by which it may be categorised <sticky *material*> <explosive *materials*>
- b) (1) something that may be worked into a more finished form (2) something used for or made the object of study <*material* for the next semester> (3) a performer's repertoire <a comedian's *material*> (Merriam Webster, 2011).

This definition clearly defines material as something that does not necessarily have physical form, for example using terms such as “elements or constituents of something”. This makes the definition interesting as a basis for a discussion of service design. What are the “constituents” of service design, what is the “object of study”, and what is a service designers “repertoire”? Further when relating to Schön's conversations with material, we can contextualise this as being the designers' conversations with the constituents of services. This, I consider to be of great interest and relevance to service design. I will now apply the above definition of material in reference to my findings regarding touch-points, and show that touch-points can be considered a material of service design.

## TOUCH - POINTS AS A MATERIAL OF SERVICE DESIGN

The following table describes each of the facets in the above definition in summary form, and shows how touch-points can be considered a material in every sense of the word. The table relates each meaning of the word material to touch-points in service design, with comments and research references. The content of the table is discussed in separate sections afterwards.

Definition (from Merriam Webster)	Relation to touch-points	Comment	Research references
The elements, constituents, or substances of which something is composed or can be made	<p>Describes what a touch-point is as part of a service</p> <p>As services are experienced over time and across touch-points, services are composed of touch-points along a timeline when seen from a customer point of view</p>	Introducing touch-points over time changes the viewpoint of the provider to understand orchestration and the customer journey. This is not the traditional view taken by service providers. Touch-points are a central part of service thinking	<p>Kimbell (2009)</p> <p>Mager (2009)</p> <p>Koivisto (2009) Stickdorn &amp; Schneider (2010)</p> <p>Clatworthy (2011)</p> <p>Han (2010)</p> <p>Zomerdijk &amp; Voss (2010)</p> <p>Secomandi &amp; Snelders (2011)</p> <p>Gloppen (2012)</p> <p>Sangiorgi (2012)</p>
Matter that has qualities which give it individuality and by which it may be categorized	<p>Describes how touch-points are central to service innovation</p> <p>Touch-point design or the coordination of touch-points can give a service its individuality (or differentiation)</p>	It is not only the touch-point, but also its behaviour that together have potential to differentiate a service	<p>Maffei, Mager and Sangiorgi (2005), Miles (2008)</p> <p>Berthon and John (2006)</p> <p>Clatworthy (2010) Clatworthy (2011)</p>

Definition (from Merriam Webster)	Relation to touch-points	Comment	Research references
Something that may be worked into a more finished form	<p>Describes how touch-points are used in the design process</p> <p>Touch-points in a service have several aspects to their design: their choice, their orchestration and their behaviour</p>	The choice of a touch-point and the design of its behaviour can be seen as working (the material) into a more finished form. This is analogous to materials such as clay or wood in the product design process	<p>Clatworthy 2011</p> <p>Cross (2006)</p> <p>Schön (1983)</p> <p>Molin-Juustila (2006)</p> <p>Persson (2005)</p> <p>Pei (2009)</p>
Something used for or made the object of study	Describes how a project manager should focus upon touch-points - as a stage-gate material	The importance of touch-points for innovation has consequences for innovation management in services	Cooper (1999)
Material as part of a performer's repertoire	Describes how designers should view work with touch-points - as part of their repertoire	Designers should develop skills using touch-points in innovation projects. If design is to orchestrate, then designing is a performance	<p>Clatworthy 2011</p> <p>Steen, Manschot, and De Koning (2011)</p> <p>Kimbell (2011)</p> <p>Meroni and Sangiorgi (2011)</p>

Table 6: This table summarises the different definitions of the term material and briefly summarises its application to touch-points. Where relevant, references are given to relevant research that supports each description. Each element of the definition is described in detail in the following text.

## TOUCH-POINTS AS A CONSTITUENT OF SERVICE

In this definition of material, the term constituent is central. A constituent as both a part of a service (all services must have at least one touch-point), but also as something with qualities that make the service unique - a differentiating factor.

In design, it is often said that the designer has to focus upon both the whole and the parts. Schön (1992) describes how the designer must shift stance and “oscillate between the unit and the total ... and between involvement and detachment” (p. 102). In service design, the same is true, in that there is a focus upon the whole and the parts, but of what? Kimbell (2009), after studying several design consultancies, describes how service designers work, stating that:

The service designers paid considerable attention to the experience of stakeholders engaging with the service, both the service considered as a whole and the detail of the design of the various artefacts involved in constituting it (p. 250).

There is, however, little discussion within service design research regarding what the whole is in service design, nor what are the constituent parts, and how designers can best design them (or for them). There seems to be an emerging understanding that touch-points are an important constituent, but little understanding of how this constituent best can be designed or included in the design process.

As an example, the oscillation between the whole for a service offering, and the detail in respect to touch-points is interesting to discuss. There is clearly a relationship between the whole and the parts. A new insurance offering for young people might discuss the degree of co-creation or individualisation of the offering. This is a discussion of the value proposition that immediately can be discussed regarding which touch-points should be used for the interactions necessary for individualisation. Self-service or personal service for example. This further discusses the costs and potential for development of each of these touch-points. However, this can also be discussed from a touch-point perspective to generate new offerings. Using SMS mobile messaging as a touch-point can develop an offering with a low entrance threshold (just send an SMS to order insurance), but which requires a standardised offering and a different service journey. The touch-point toolkit, developed as part of

my work (see Article 1) allows for this oscillation as exploration during the front-end of the innovation process, enables it as a group collaboration, and results in novel solutions.

*Touch-point orchestration - oscillating between the part and the whole*

This section discusses touch-points as an important part of the whole, and as an individual part in its own right. It does this by using the term orchestration. This is a term initially used by Shostack (1984), and as a metaphor perfectly describes the whole/part phenomenon. The section argues that touch-point orchestration is a central constituent of service design and therefore that touch-points are one of the core materials of service design.

Orchestration is seen as central within service design practice. The orchestration of touch-points, can be considered the choice of an individual touch-point, the relation of one touch-point to other touch-points and their integration into a holistic service. The term is beginning to be commonly used in practice (Koivisto, 2009; Stickdorn & Schneider, 2010), and has its roots in the work by Shostack (1984). She described touch-points as tangible evidence and included them as a central part of service blueprinting.

In research terms, the orchestration of touch-points is mentioned but not focussed upon in great detail (e.g. Shostack, 1984; Payne & Frow, 2004; Holmlid, 2008; Zomerdijk & Voss, 2010). There is a recognition of the importance of touch-points and their orchestration, but no practical guidance as to how this could (or should) occur. Zomerdijk & Voss, (2010) underline this by stating "... the notion of designing customer journeys and their associated touch-points represents a valuable design perspective" (p. 74) . They also conclude that "design from the perspective of the customer journey and its associated touch-points" is one of six design principles for service design.

There is however one critical view to this approach. Secomandi and Snelders (2011) attempt in their paper to identify the object of service design. I find their view difficult to understand and self contradictory. They recognise the usage of the term touch-points within Service Design, but criticise Shostack's view as "... placing service design on the wrong track because it turns the design of services into a peripheral activity—namely, that of ‘accessorizing’ an essentially intangible relation between service providers and their clients” (p. 20). They then analyse various service development models (none from Service Design itself) with the objective to find the object of service design, only to conclude that their view actually “sits close to Shostack’s concept of tangible evidence” after all. However, they claim that “we go beyond this

view and claim that the service interface *materializes* an exchange relation between providers and clients, and that the design of the service interface, perhaps more than anything else, is the design of the service itself” (p. 33). They conclude that “closer attention to the interface would therefore appear to be a natural way for these disciplines to take up new grounds in service research and promote a deeper appreciation of design in services” (p. 33). I can only understand this as being supportive of the view held here in my work, and supportive of touch-points being a material of Service Design, even though they initially have a critical approach to the term touch-point. Indeed, they see the interface between the customer and the service as the *object* of service design.

Even though there is a broad consensus regarding the importance of touch-points, there is no guidance regarding how touch-points can and should be used. There is a gap between the desired outcome - an orchestration of touch-points in services (which itself is poorly defined), and what this means in practical project terms - how to get there. In two of my papers (Clatworthy, 2010; Clatworthy, 2011), I concentrate upon the development of tools to assist with touch-point orchestration and show how different approaches to using the touch-point cards assist orchestration. This could be orchestration of the touch-points themselves along a customer journey, or indeed orchestration of the actors involved in service delivery to coordinate the touch-points. The touch-point cards encourage these multiple views and approaches. This is variously commented upon by interviewees from cross-functional teams as a Lego approach or the ability to scale the interactions (Clatworthy, 2011). The findings from this work show that orchestration can be supported through card-based tools, using a guided, design-based, trial and error approach. This allows the project team to alternate between holistic service views and detailed views based upon individual touch-points.

I believe that the term orchestration supports the characterisation of touch-points as a core constituent of Service Design. Further, I see that the touch-point cards are an effective means to orchestrate touch-points as part of the service development process. This has significance if Service Design is to develop into a discipline in its own right, since it needs to identify its core constituents. Identifying touch-points as one of the core constituents goes a way towards this. This allows us to both assist the service development process in a better way, but also focus teaching and further research into the field.

## TOUCH-POINTS AS AN INNOVATION MATERIAL

A second definition of material is that of “matter that has qualities which give it individuality and by which it may be categorised”. The term individuality when applied to services can be understood in a business context to relate to novelty, uniqueness, differentiation and the value proposition. In other words, this is to do with *innovation*. This section therefore looks at how touch-points contribute to service innovation. It builds upon the previous section, which focussed upon the parts and the whole. It argues that touch-points are a central source of innovation in services and can give a service its individuality. This adds additional support to the argument that touch-points are a central material of Service Design.

As an example, and continuing the previous example regarding insurance for young people, the choice of a specific touch-point can give a service its individuality. One option regarding touch-points for insurance could be to develop an app for a smartphone that enhances the offering. It could, for example allow the customer to photograph important items that are insured, such that insurance claims are more realistic (it is common for customers to under-evaluate what they own for example or forget things). Alternatively this could develop a dialogue between the insurance provider and the customer based upon temporal or geographical information, allowing the sell-up of insurance services (travelling abroad, just add travel insurance), or just offering guidance (New Year’s Eve - advice regarding fireworks and first aid). In this way, the touch-point (the App) allows a different offering, and differentiates the offering from competitors. The touch-point is therefore the characteristic material of the service.

In an innovation perspective, touch-points are not directly identified within research as a key innovation driver. There is a research gap in terms of understanding how touch-point innovation in projects influences service innovation as a whole. However, there is indirect evidence of touch-points being important in a service innovation perspective. There is a research consensus that innovations in interaction between customers and the service, are a strong innovation source. Miles (2008) indirectly points to touch-points when identifying two core elements of service innovation. He summarises and updates the thinking from den Hertog and Bilderbeek (1999) who initially identified four key drivers of service innovation: the service concept, the service interface, the service delivery system, and technology. Miles suggests two superordinate terms for these: *intangibility* and *interactivity*. Interactivity

can be seen as one of the main parts of ‘value in use’ as described in Service Dominant Logic by Vargo and Lusch (2004a). Berthon and John (2006), using the value in use model, describe innovation as moving from entities to interfaces. They state that “when offerings produce results for the customer, value is realized through customers’ interaction experience with the offering” (p.197), and conclude “we propose that interactions lie at the root of the new dominant logic of marketing” (p.206). Further, that “the managerial imperative is to design and deliver a differentiated set of integrated interactions that create and capture value for both the customer and the firm”. The following table outlines the seven value dimensions of interactions that they propose.

Dimension	Definition
Content	The task fulfillment, outcome quality of the interaction
Control	The extent to which the customer - in real time - directs the interaction
Continuation	Long-term/integrative learning interaction
Customization	Individual tailored interaction, over and above time and place
Currency	Time (virtual and real) sensitive interaction
Configuration	Space (virtual and real) sensitive interaction
Contact	Experiential quality of the interaction

Table 7: The seven value dimensions of interactions (from Berthon and John, 2006, p. 204).

Touch-points are the points of interaction between a customer and the service. In this context, designing by using touch-points influences all of these seven value dimensions, and can also be said to influence all of den Hertog and Bilderbeek’s four innovation drivers. They can also be considered particularly central in Miles’ term interactivity (although in terms of branding, they influence the intangibility also). It is therefore clear that touch-points are a central part of service innovation. This therefore bridges the gap between a service design approach to touch-points and a services marketing approach. I argue that both conclude that touch-points are therefore an innovation material.

Maffei, Mager and Sangiorgi (2005) bring this closer to Service Design and describe how design contributes to innovations in the service relationship through its focus upon the supplier-user interface - i.e. touch-points. They frame this in the context of the user interface as being an important part in

forming the “service-relationship”. This is supported by Secomandi and Snelders (2011) who see touch-points as points of exchange between the various stakeholders in a service, which can lead to “innovative forms of exchange between providers and clients” (p. 29).

If the managerial imperative is to innovate through touch-points, the question remains how a manager can use design in relation to this clear innovation opportunity? Here, research has little knowledge available to assist, and it is here my contribution explores this question and provides an enabler for service innovation. The touch-point tools developed in the AT-ONE project can be described as enablers of service innovation. They assist project teams during the front-end of innovation in several ways. These are documented in my paper (Clatworthy, 2011), and are summarised briefly here.

Firstly, one of the ways that touch-points have such great influence upon service innovation is due to the parts and the whole, already discussed above. The inclusion or exclusion of a single touch-point can have a strong influence upon the service concept (for example the launch of an iPad digital newspaper). The design of a particular touch-point itself can strongly influence the customer’s perceived value, since touch-points are per definition the service interface. When it comes to the service delivery system, a touch-point can influence the whole system (eg. a move from personal service to self-service) or parts of the delivery system (the ability to call a person at a help-desk). They undoubtedly identify conflicts within an organisation in terms of who owns, maintains and develops a touch-point. Finally, technology develops new touch-points, and the choice, design and adoptions of these, (for example, NFC - Near Field Communications as a new payment touch-point) can potentially radically change a service offering.

To sum up, touch-points are a central constituent of service innovation, since they are the interface between the customer and the service. They encourage an organisation to view a service in a different way, form the parts and the whole of a service and can influence all drivers of service innovation. The touch-point cards enable this innovation, and offer a means of supporting each of the ways that touch-points can contribute to service innovation.

## TOUCH-POINTS AS A NEGOTIOTYPING MATERIAL

This third definition of a material, “something that may be worked into a more finished form” relates to its use as part of the design and development process - as an exploration and forming material. Such a material is used in design to explore a problem and model and express characteristics of the final solution. In service design, there is an emerging discourse regarding how service designers work, and how they “form” their solutions. However, there is a lack of knowledge regarding what materials are used. This section looks at the forming materials of service design, and in particular, how touch-points can be considered a forming material during the design process. It concludes that touch-points, and the touch-point cards, can be considered a material that supports and enables collaborative design processes.

The following discussion has the following structure. Firstly, the context for the front end of service design is briefly summarised. This identifies co-design as an important means of designing, and shows a need for tools and a material for co-design that can assist the development process. Then the role of touch-points as a material for co-design is discussed and the suitability of touch-points and the touch-point cards is shown. Finally, the term negotiotyping is discussed and defined in a service design context.

### **Designing and participating at the front end of service development**

The front end of service development presents two challenges for the service designer. Firstly, the nature of NSD places the designer into a cross-functional team. This brings with it specific needs in terms of ways of working (collaborative) and the challenges this brings. Molin-Juustila (2006) discusses the five critical elements that together create team cohesiveness during the fuzzy front end: personality barriers, different cultural thought worlds, language barriers, organisational responsibilities and physical barriers. Similar elements are identified by Persson (2005) and Pei (2009). The designer in such a team not only has to carry out design work, but also facilitate team cohesion. Since the nature of service design problems can be described as wicked problems, then the designer has to participate in their work through discussion and exploration together with others. This is conceptually described within design research, but not well examined within service design research. There is a research gap in terms of how service designers engage with co-design during the front end of service development projects.

The second challenge for the designer is that of engaging with the problem and solving it through exploration, representation and testing. Typically, a

product designer might explore a product form in clay, wood or cardboard as a means of exploring a problem and finding a solution. This process, of problem exploration together with solution-generation is well documented in product design or architecture. Cross (2006) goes into detail regarding the design process, particularly the problem exploration/solution process:

the designers very first conceptualisation and representations of problem and solution are therefore critical to the procedures that will follow - the alternatives that may be considered, the testing and evaluation, and the final design proposal (p. 34).

Cross shows how the nature of a design problem can only be found by examining it through proposed solutions and how there is a reliance in design:

upon the media of sketching, drawing and modelling as aids to the generation of solutions and the very processes of thinking about the problem and its solution (p. 37).

Schön (1983) describes this as a reflective conversation with the problem and more specifically as a “conversation with the materials of the situation” (p. 78). In service design, we do not have the studies of the design process that Cross or Schön describe, so although we know that there is a similar process at work, we have little information regarding what the ‘materials’ in the conversation are. The previous section has suggested that touch-points are one of the materials of innovation, and I propose therefore are one of the materials of the ‘situation’. Further, that this exploration of materials occurs through co-design, and that touch-points are a co-design enabler.

To illustrate, again using the insurance example from earlier it can be seen that sketching and rapid prototyping of the interactions with the app allows a rapid exploration of alternative solutions. However, when doing so in a cross-functional team, different facets can be negotiated between various stakeholders. The example of using location data as a means to sell-up travel insurance can be discussed from different stakeholder perspectives. An organisational perspective could discuss if the organisational silos can encourage or hinder such an option. The ICT specialist can discuss if a real-time offer can be developed and what it would entail. The legal specialist can consider the risk of offering such a simple and generic offer and what “small print” would be implied, whilst the designer can consider the ease of use and the customer experience of such an offer through an app. By discussing, sketching and prototyping together, the team explores, negotiates, evaluates in an additive context - a focus upon what can be. This has been termed negotiotyping

(Capjon 2004). Capjon (2004), uses the term *negotiotyping* to describe how physical prototypes function as a catalyser for group processes. He describes this as collaborative conceptualisation or more simply shared experimentation which is facilitated by the designer and supported by physical prototypes.

### **Touch-points as a negotiotyping material**

Service design utilises co-design as a process, and the designer often has a role as both facilitator and designer. Clatworthy (2011) shows that the touch-point cards function as a means of facilitating cross-functional collaboration for project teams. The physical form of the cards, and the way that they are used support multiple patterns of use in a collaborative context and allow for reification. Participants in the workshops commented upon the cards as being a way of forming a common point of reference or common understanding. Findings show therefore that touch-points are one of the service materials utilised when the designer has a conversation with the materials of the situation.

Capjon's focus is upon rapid prototyping and product design, but the term *negotiotyping* can equally be used to describe the use of touch-point cards in service design. Both relate to collective conversations with materials. In Capjon's case these materials are direct physical representations, whilst in the service design context they are with the touch-points of a service.

I use the term *negotiotyping* therefore in a service design context to describe the use of the touch-point cards rather than physical prototypes of the touch-points themselves. The cards facilitate the multiple negotiations that occur between the card and the mental imagery of its use at both the individual level and the shared understanding that occurs at the group level. In this context, touch-points can be described as a negotiotyping material and the touch-point cards the physical medium used to support this. The tangibility of the touch-point cards assist with the negotiotyping process. They can be described as objects with shared meaning for a team (Star, 1990), and form an important role in bringing together different disciplines and functions within an organisation.

## TOUCH-POINTS AS THE OBJECT OF STUDY - A STAGE-GATE MATERIAL

A fourth definition of a material is “something used for, or made the object of study”. I have already argued for the relevance of touch-points as a object of study in an innovation context and in a co-design perspective. There is, however, one more interpretation of the object of study, and that is for project management. I have shown that when touch-points become the object of study (in this case the focus of a workshop for a cross-functional team), they introduce new perspectives for the team and innovation opportunities and improved team cohesiveness. It makes sense, therefore, for a project manager, or external advisory board to have evaluation criteria relating to touch-points through which to view a projects success of failure. Cooper (2000) described the stage-gate process in which key project processes are condensed into project stages. He describes how:

Each stage is preceded by a decision point, called a *gate*, at which you decide whether the project is still in the game. At these meetings, management makes the Go/Kill and resource allocation decisions. Thus, gates can be seen as opening or closing the road ahead for the project (Cooper, 1999, p. 72).

All of the commercial partners in the AT-ONE project utilised a variant of the stage gate process, but none of the stage gates related to touch-points. There is therefore a need for the development of stage-gate criteria related to touch-points, and great potential for improving project team performance by doing so.

As an example, again using the insurance example from earlier, it would be useful to have a stage-gate after the front end of the NSD process that requires a deliverable from a project team in terms of touch-point mapping along the customer journey. This would have the effect of developing a specific service-based stage-gate process, stating the importance of touch-points for a service offering, and encouraging exploration of touch-points. Further, having a touch-point based stage gate would ensure that the multiple stakeholders needed to develop and implement a stage-gate have been involved.

To date I have not seen any research or practical development along this route, and this avenue should be explored in the future. Suitable criteria could be task-oriented, such as requiring touch-point workshops during the front end, or result-oriented, such as requiring a blueprint showing touch-point

orchestration. This has not been the focus of my work, so I have no empirical support for this reflection. However, the empirical evidence from the touch-point workshops shows the value of touch-points during the front end, and a natural extension of this is to develop stage-gate criteria to ensure compliance.

#### TOUCH-POINTS AS PART OF THE SERVICE DESIGNER'S REPERTOIRE

The final definition of a material is that of “a performer’s repertoire - a comedian’s material”. In the same way that a comedian may have their “material”, or “repertoire”, there is a need to develop the same for Service Design. At present, there is limited discourse regarding what service design is, and its constituent parts. Meroni and Sangiorgi (2011) see service design as a new sub-discipline of design, and Kimbell (2011) states “that designing for service offers an opportunity to rethink professional design and its role in organizations and societies more broadly ...” (p. 49). However the content of this sub-discipline is yet to be defined and discussed. There is therefore a knowledge gap in terms of content for a service design education/practice.

The findings from my work show that touch-points are central to innovation in services and that the touch-point cards enable this innovation. This, I believe, shows that touch-points should be considered a central part of the emerging field that is Service Design. For a designer, this would consist of two following aspects of touch-points. Firstly, knowledge of the characteristics of individual touch-points and how they can be orchestrated. Secondly, knowledge and experience of different ways of using touch-points to assist teams when developing services.

For Service Design itself, it supports the practice based focus upon touch-points as being central to the discipline. This can be an important aspect regarding the development of service design as a field. For a field to develop, there needs to be a consensus regarding its nature and characteristics. As mentioned earlier in this document, there are broad differences in how service design is defined and contextualised. If a consensus can be developed regarding the repertoire of a service designer, then this would help its further development. I contend here, that working with touch-points is part of the service designer’s repertoire, and the empirical data supports the importance of this in service innovation.

Finally, as mentioned in Clatworthy (2011), I believe that Service Design should explore patterns that can be utilised in practice and in education. Patterns were originally described by Alexander, Ishikawa, and Silverstein (1977) for urban design and architecture. A pattern can be described as a core solution to a common and recurring problem. In interaction design, patterns are becoming a common means of documenting proven solutions to recurring design problems (Borchers, 2000). It would be very useful if the same could be explored in Service Design, when it comes to touch-point interactions and orchestration. This would encompass an understanding of the characteristics of individual touch-points for solving specific problems, and how combinations of touch-points can be orchestrated together. Although Rittel describes each wicked problem as unique, I believe that when it comes to the detailed design of a solution, service design patterns related to touch-points would be beneficial. This is because in the studies of touch-point use, there seem to be recurring combinations of touch-points that are used in specific contexts.

Taken together I believe that this shows that touch-points should be a central part of the service designers repertoire.

## CONCLUSION - TOUCH-POINTS AS A MATERIAL OF SERVICE DESIGN

This section discussed the following research question:

*In the context of service design, how can a discussion of the term materials contribute new knowledge to an understanding of service design?*

I was unable to find detailed discussion of how the term material is defined when applied to design, and this led me to use a dictionary definition as a basis for exploration. This definition showed that the term material is commonly used in immaterial contexts, and the definition proved useful when applied to a discussion of touch-points. This different definitions of the term were used to investigate the nature of touch-points in service design and this gave new insights into service design itself.

This section shows that the touch-points are a central material of service-design and contributes to an ongoing discussion regarding what service design is, and is not. I show that the term ‘material’ can be applied to a field

that is highly experiential and essentially immaterial. This is because the term material itself has multiple connotations and does not only refer to physical manifestations. Each definition relates to finding the essence of something, and as such, this is a valuable discussion to have in service design.

I conclude and provide supporting arguments that touch-points are a material of service design, but I do not imply that touch-points are the only material of service design. I believe there are many more, and, using the definition of constituent parts, I think there are multiple constituent parts. I would suggest that time is also a material of service design, and so too are organisational structures. However, I do not have empirical evidence to support these suggestions, and therefore suggest them for further work. Indeed, I consider that the service design field should discuss the term materials, and I suggest the framework for evaluation of the term material that I use here to be useful for this.

The finding links to Sangiorgi's discussion regarding service thinking (Sangiorgi, 2012) which she describes as a term that combines service as a higher order concept with a strong focus upon value in context. She describes service thinking as "a way of thinking that focuses more on interactions, benefit and exchanges rather than tangible or intangible goods" (p. 99). This fits with the findings from AT-ONE as described by Gloppen (2012) in which it became clear that the touch-point workshops in AT-ONE were central to the development of a service orientation within the organisation. Wetter-Edman (2011) supports this, suggesting how tools used by service designers can influence the development of a service logic within an organisation, stating "design practice using designerly tools and methods might be a way to realise a service logic for the organisation" (p. 111).

Touch-points are particularly important in this context, since discussions regarding touch-points influence the interactions, the service system and the offering itself. This interlinking between the whole and the parts is due to the centrality of touch-points in service provision, and therefore underlines their role as a service design material. Thus, the discussion regarding the materials of service design has importance not only for individual innovations in a project, but the fostering of a service orientation within an organisation. Identifying the constituent parts of service design has therefore significance for the future development of service design.

## **2. Transformation from Brand Strategy to Customer Experience: The Service Personality as a boundary object**

### BACKGROUND AND INTRODUCTION

This section presents the second major finding of my work, and discusses how service design has particular relevance to the branding of services. The discussion is based upon the findings presented in Paper 2 and Article 2, but seen through a new layer of reflection. It discusses the following research question:

*How does the service personality construct contribute to the branding of services during the front end of the NSD process?*

The section has the following structure. Firstly services branding is presented, and I show how this has a close link to the customer experience. To do this, I present and discuss the term service brand and how it is applied to NSD as service branding. Then, the semantic transformation is described as the means by which branding occurs. The role of design as part of the semantic transformation is presented, and the service specific model developed in AT-ONE is discussed. Based upon this, the service personality construct is described in more detail and its role in the semantic transformation at the front end of NSD is described. This is then discussed in respect to the term boundary objects, which are objects that have attributes that enable a common understanding across disciplines. I suggest that service personality has the characteristic of a boundary object and discuss what this means for service design. Finally a discussion is presented regarding the role that service personality may play in a service dominant logic view of branding.

### **How branding emerged as an area of design research during the AT-ONE project**

During the AT-ONE project, it became clear that all of the commercial partners were focussing strategically upon their brand. However, at the project level, this was not at all evident as part of their NSD processes. None of the project teams I worked with raised brand as important during New Service Development (NSD). When I discussed this with the teams, there was general agreement that the brand was important, whilst at the same time a consensus that it seemed unusual to consider it at such an early stage of a project. There were two reasons for this. Firstly that there was no tradition or process for including brand during the early stages, secondly, the teams had an understanding that the service brand was expressed through front line employees, and that the organisation had a strong HR department with good selection and training of personnel. It seemed therefore that brand was something that somehow took care of itself later in the process. The branding departments were not directly involved in NSD projects in any of the organisations.

Within research, I found the same. There was considerable research regarding a brand, including some discussion regarding the specifics of a service brand. However there was little regarding branding, i.e. the application of brand to a specific solution, or specifically services branding as part of NSD. Much of the focus of services branding lay in selection and training of personnel. When looking at services branding and the role of design I found it was scarcely researched within design research, and was almost non-existent when considering design as part of branding in NSD.

At the same time, there was a major paradigm change occurring in services marketing due to Service Dominant Logic (SDL). SDL stresses the importance of value in use through interactions and value co-production between the customer and the service provider. Further, it focusses upon the importance of the customer experience.

In addition, in the market itself, there was a major change occurring towards increased implementation of self-service solutions with the consequence that branding changes from a manifestation through front line employees to a multitude of touch-points, and something now within NSD.

It was clear that there was a need for process support for branding, particularly linking the brand strategy of an organisation with the desired customer experience as outcome of a service encounter. I will now go into more depth regarding the branding of services, before discussing the role that design has in the semantic transformation for services.

## BRANDING SERVICES

### **Service Brands and Service Branding**

There are many different definitions of the term brand. In terms of services, De Chernatony and Riley (1998) identified 12 different definitions of service brand, based upon summarising over 100 articles and multiple interviews with experts. De Chernatony has since then published numerous articles regarding service brands, and has categorised these 12 into three categories of brand interpretations; input based, output based and time based. Input based interpretations stress branding as a way for managers to use resources to influence customers and include aspects such as logo, company, personality, vision, identity. Output categories describe consumers' interpretations such as image and relationship, whilst the time perspective focuses upon a brand as a continually evolving entity (De Chernatony, 2010). De Chernatony provides a unified, dynamic model that bridges all three of these and states that:

A brand therefore represents a dynamic interface between an organisations actions and customers' interpretations (p. 12).

This is the approach to a service brand that I take in this project. Firstly it describes a brand as dynamic, and this I interpret as being influenced both by cultural negotiation and individual interpretations, but also that these change over time. Secondly, it describes brand as being an interface, which fits well with a service view and particularly a service dominant logic view of 'value in use'. Thirdly it bridges the gap between an organisations actions and customers' interpretations, something that is key in my work since actions and their interpretations in services occur through touch-points.

An important aspect to note in services is the fact that service brands tend to be more monolithic than product brands. Sub-branding is therefore more unusual for services. Berry (2000) notes this, stating that "in packaged goods, the product is the primary brand. However, with services, the company is the primary brand" (p.128). This is supported by McDonald and Chernatony (2001) who state that service brands are usually the corporate brand. This has importance for NSD, since the service that is developed through NSD has to closely align with the corporate brand, i.e. since the service is the company, the service brand is the company brand. This again has implications since the company itself is rarely developed from scratch. NSD usually occurs within existing companies and as such, has to relate to an existing brand heritage. This is expressed by de Chernatony et al., (2003) "building a corporate brand from scratch is generally not an option when an existing company wishes to

develop a new service. It is more realistic to include the new service under the established corporate brand” (p. 5). This shows an important mutual link between branding the service and the corporate brand itself, and how NSD must ensure alignment between a chosen solution and the existing corporate brand.

*Branding* is a term used to describe the process of developing or delivering the brand. In this context, it can be understood as the process of communicating the brand to the services’ customers. In services branding, the staff have traditionally been in focus as central for delivering the brand. De Chernatony and Riley (1998) concluded “that there are two stakeholders involved in the branding process: the staff and the customer; thus the brand is understood as a value carrier that is enacted by the staff and interpreted and redefined by the customer” (p. 428). Berry (2000) echoes this, claiming: “with their on-the-job performances, service providers turn a marketeer-articulated brand into a customer-experienced brand” (p. 135). However, more recently, focus has been directed towards touch-points as being central to the interactions that deliver the brand. Berry et al.(2006), focus upon manifestations of the brand, calling them experience clues, stating that customers “rely on the numerous clues that are embedded in performance when choosing services and evaluating service experiences” (p. 43). Further stating, “clearly and consistently designing and orchestrating clues is a critical management responsibility” (p. 43). There is therefore a general trend in services branding to move from a focus upon staff to a focus upon multiple touch-points, or “clues”. This change has important implications for NSD since touch-points are chosen, orchestrated and designed as part of NSD, whereas staff behaviour has traditionally been something taken care of by the HR department (and therefore not explicitly included in NSD). There is therefore a growing need to consider branding as an important part of NSD, but little process support to do this.

### **Brand experience and value in use**

There is an increasing focus upon service brands as being closely related to the customer experience (Bitner, 1992; Berry, 2000; Prahalad and Ramaswamy, 2004; Sandström et al., 2008; de Chernatony, 2006). This is highlighted by de Chernatony (2006) who describes a service brand in experiential terms: “A brand can be regarded as a cluster of functional and emotional values, which promise a unique and welcome experience”. In Vargo and Lusch’s description of service dominant logic (Vargo and Lusch, 2004a), value is something that is perceived and evaluated at the time of consumption, so called value in use. Merz et al. later describe it in the following way:

Thus, S-D logic embraces a process-oriented logic (marketing with), which emphasizes value-in-use, in contrast to the traditional output-oriented models (marketing to), which see value in terms of value-in-exchange. Therefore, S-D logic acknowledges that value is always uniquely and phenomenologically determined by the beneficiary (Merz, He, & Vargo, 2009, p. 337).

Sandström et al. (2008), link this to the customer experience: “Value in use is the evaluation of the service experience, i.e. the individual judgement of the sum total of all the functional and emotional experience outcomes” (p 120). Further: “To fully leverage experience as part of a value proposition, organisations must manage the emotional dimension of experiences with the same rigor they bring to the management of service functionality” (p 119). It is therefore important that service brands ensure that the customer experience consistently delivers upon the brand promise.

Gad (2001) describes four distinct types of value: functional, mental, social and spiritual whilst Davis (2000), describes three distinct categories: features and attributes, functional and emotional benefits and beliefs and values: He views these as a pyramid, with beliefs and values at the top of the pyramid (most desirable, but difficult to attain). Jordan (2002), describes four elements of pleasure; physiological, social, psychological and ideological. This categorisation originates from Tiger (1993). These can be seen to be similar to the three types of experience clues described by Berry (2005), as being functional, mechanic, and humanic clues.

When it comes to the customer experience, I use the following definition, which is adapted from work by LaSalle and Britton, (2003), Shaw and Ivens, (2005), Schmitt, (1999), and Gentile et al., (2007), specifically for services. This takes account of customer perceived value experienced from service interactions through a sum of touch-points. Customer experience is defined as:

The Customer Experience is the impression left with a customer from their interactions with the service offering as presented through the touch-points of a service over a period of time.

This identifies the need to manage the customer experience, and its fit with the value proposition, as presented through touch-points. Since I have already shown the close link between the company, the offering and the brand in services it also shows the importance of linking the brand identity to touch-points. This closes the circle linking brand identity, touch-points and cus-

customer experience in a services context. Morrison and Crane (2007) support this, stating:

Effectively managing the customer’s emotional brand experience means creating an environment in which the ‘clues’ that customers detect, collectively meet or exceed their emotional needs and expectations (p. 416).

## DESIGN AND THE SEMANTIC TRANSFORMATION IN SERVICES

The semantic transformation is part of the branding process, through which the brand strategy of an organisation is transformed into the manifestations of a product or service. It is a term introduced by Karjalainen (2004) in his PhD study that described the transformation process for products. He defines it as:

The relation between brand strategy and product design is established through acts of “semantic transformation” (Karjalainen, 2004). Through these acts, qualitative brand descriptions are transformed into value-based design features, and these generate the intended meaning of products (Karjalainen, 2010, p.8).

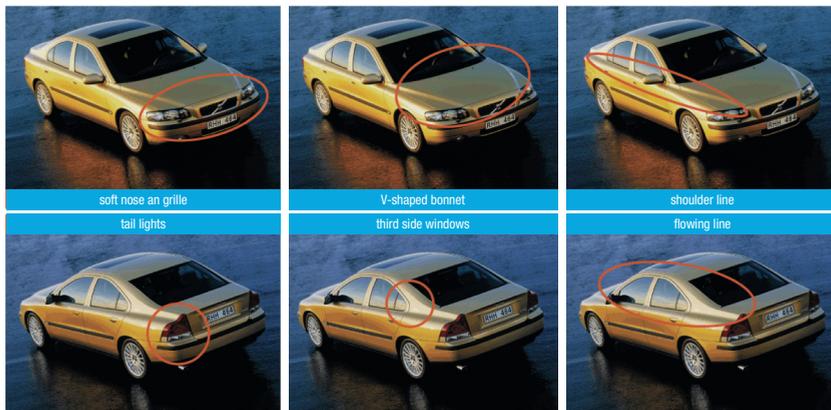


Figure 9: Karjalainen studied the semantic transformation process for Volvo. This image shows how product form elements with desirable symbolic associations were manifested for the Volvo S60. In services communicating brand strategy through symbolic associations occurs through touch-points, behaviours and tone of voice. (Image from Karjalainen, 2007, used with permission).

Karjalainen (2004) is one of the first to research the transformation process. He shows how this occurs in the form given to Volvo's new car series during the 'revolution' process, and through the design of Nokia handsets 'definitely yours'. His work is product specific, such that the manifestations he describe relate to product design features and communication through physical form, as can be seen in figure 9.

The following model, adapted to services from Karjalainen, describes this relationship and was a start point for my work with brand based offerings. It is a service based model, based upon the product-based branding model from Karjalainen (2004), and describes the relationship between brand associations and service manifestations. It is important to note here that this is a simplified conceptualisation of a goal for a service organisation - the alignment between manifestations of the service and the associations these elicit with customers.

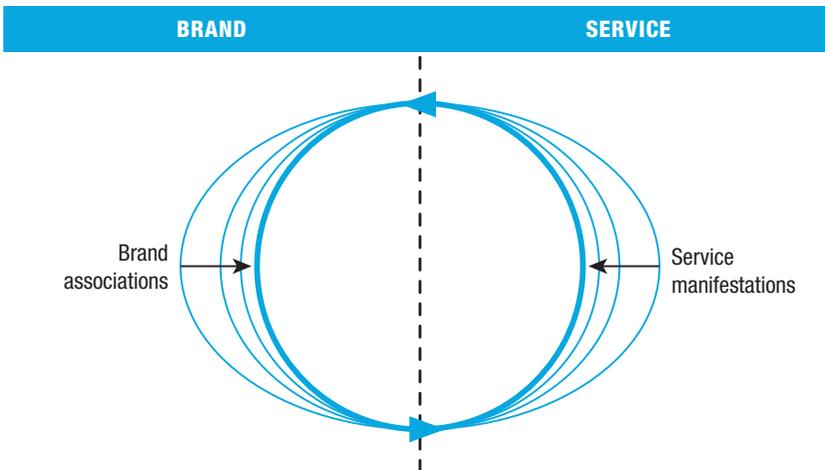


Figure 10: In conceptual terms, one of the goals of the NSD process should be to ensure total congruence in the transformation between strategic brand associations and service manifestations. In services, the manifestations occur through touch-points, and interactions with touch-points are central to the customer experience. (Adapted to services from Kajalainen, 2004, p. 207, and reproduced from Article 2, Clatworthy, 2012).

### **The importance of touch-point behaviour in the semantic transformation for services**

The semantic transformation for services relates to more than just physical manifestations. Pullman and Gross (2004) argue that service providers can generate predictable patterns of emotional scripts by altering aesthetic physical cues or symbols. As such, the touch-points can be designed to convey a

clear, relevant, and emotional theme. They suggest however, that the physical context of the service environment plays a much smaller role in generating emotion than does the behavioural performance of employees. They found that behaviour was a far more powerful generator of positive customer emotion.

This is of great relevance, since the behaviour of front-line employees is something that is specific to services. This is due to the inseparability of production and consumption in services (inseparability of production and consumption is central to the IHIP view of services as initially described by Fisk et.al, 1993). Tracking the evolution of the services marketing literature. *Journal of Retailing*, 69(1), 61-103) in which services are produced at the same time as they are consumed through a process of co-production. For example, when discussing a bank loan with a loan representative, a semantic transformation happens at the point of consumption during the meeting, as the bank employee transforms company brand strategy into behaviour and tone of voice during the meeting itself. Further, this occurs together and interaction with the customer. This can be termed a real-time semantic transformation, in which selection and training of employees is central to brand alignment. Hardaker and Fill describe this in the following way: “employees represent significant brand value and an organisation’s leadership has a responsibility to marshal this opportunity” (Hardaker & Fill, 2005 p. 375). This is supported by Chong (2007) who states:

Nonetheless, it is not good enough that employees understand the company’s brand values and have the right skills if the goal is to be ‘brand ambassadors’: they also have to believe in and internalize the brand values through the enactment of appropriate behaviors (p. 202).

De Chernatony (2003) highlights the importance of a consistent brand promise delivered through behaviours, processes and contact points. Further, the importance of organisational culture and staff behaviour for services branding are stressed: “Successful services brands thus evolve from a unique culture which is revealed both in the brand and in the attitude and behaviour of staff as they represent the brand to consumers” (p. 1107). Berry (2000) echoes this, focussing upon how staff transform a market proposition into a brand experience. Aspects such as behaviour and tone of voice are therefore central in services. This does not mean that other touch-points, such as buildings, signs, forms, letters, on-line support are unimportant, rather that an experiential synthesis occurs during the service transaction. In such a situation, designed enablers meet situational context and variability. In services therefore, the

semantic transformation has multiple focus points, each requiring design and delivery. The design of the offering, the design of the touch-points themselves, the behaviour and tone of voice of staff are all touch-points that are part of the semantic transformation, and therefore need to be co-ordinated. The difference between products and services is therefore significant. It is clear that a service model for semantic transformation is needed.

With the increasing use of self-service, the same is true of digital interactions - the behaviour of the digital solution, its user friendliness, pleasurable, utility and usability - all describe behaviours that need to be aligned with the brand. This shows that the choice and design of touch-points, and touch-point behaviours are central to delivering the brand experience.

This link between corporate brand identity and the customer experience is important. It is shown to be especially important due to the fact that, as already shown, *the service is the company*. Further, that customer perception of value comes from interactions with the service offering through touch-points, and that the behaviour of the touch-points is central to this perception. For services therefore, it is imperative that touch-point behaviours are closely aligned to the corporate brand identity. In other words, touch-points and their behaviours are the main carriers of brand meaning for a service company.

### **Service branding as part of NSD**

If we look at where decisions are made regarding touch-point choice and the design of touch-point behaviour, it can be seen that this occurs during NSD, particularly at the front end of NSD. However, the semantic transformation is not just one of form, but one of choosing and designing touch-points, the behaviour of touch-points, tone of voice and the organisational structure that supports this. The NSD process therefore becomes more important in a services branding perspective than previously considered, and NSD can be seen to be the central process through which a corporate brand is transformed into a branded service. However, as we have seen, this services perspective is neither dominant in practice nor in research. There is an emerging understanding of its importance, but little to assist with how this should occur. There is a need for practical support to enable the transformation of corporate brand into touch-points as manifestations of this brand.

Since the design of the service concept defines much of the service, then it is evident that an important semantic transformation occurs during the front end of concept development. Sandström et al. (2008), go into more detail about this development, describing enablers that can be designed, and situa-

tions that can only be designed for. This is due to individual and situational filters that are necessarily part of the co-creation of value. Pine and Gilmore describe this as staging services (Pine & Gilmore, 1998), and although they frame this in a hedonic context, the term ‘staging’ is valid when designing for all service experiences, since it allows for the individual and situational factors mentioned by Sandström and colleagues.

### **Towards a semantic transformation process for the front end of service innovation**

I have shown that the semantic transformation for products has different characteristics to that of products. It has also been shown that the concept phase of NSD is important in this respect. A process model for the semantic transformation in NSD is therefore required to ensure a successful, service-based semantic transformation.

Karjalainen identifies three clear phases of the semantic transformation for products: identification of desired strategic associations, transformation into visual associations and transformation into physical form. These terms can be described as generic project stages, independent of product or service development. Although the outcome of the semantic transformation is different between products and services, it was considered that the stages of the process described by Karjalainen are relevant for services. They therefore formed the basis for the development of the semantic transformation process for services presented in my articles. I summarise the process and its development here by reproducing its key steps from Article 2.

In the following table, Karjalainen’s 3 stages are reproduced from Article 2. It shows the steps described by Karjalainen, together with comparable steps for services. The contents of each step are based upon literature regarding service branding and upon several iterations during the model’s development.

This three stage process was simplified into a model that was used and evaluated in multiple NSD projects. The terms were shortened and the model was given a form and title that aids its communication to an NSD team; “the brand megaphone”. The final model of the brand megaphone is described in detail in Article 2 and is presented below. The metaphor of the megaphone is used to highlight the necessary alignment between touch-point behaviours and strategic brand identity. It implies that weaknesses in the semantic transformation will be amplified across touch-points.

Design phase	For products (Karjalainen 2004)	Suggested comparable steps for services
1. Strategic brand identity input - Summarising Brand DNA	The strategic brand identity is communicated to the project team as desired strategic associations:  in text and image  through the organisational culture  through design heritage	The strategic brand identity is communicated as desired strategic associations through:  text, image, touch-points, behaviours and interactions  organisational culture  experience heritage
2. Transformational exploration through associations	The strategic associations are developed into product character through iterations of verbal images, moodboards and sketches	The strategic associations are developed into service personality, and desired touch-point behaviours, using text, images and analogies.
3. Design concept	The visual images are transformed into physical manifestations such as sketches and 3D concepts for new products	Personality and touch-point behaviours are transformed into experiential manifestations and service concepts through experience prototyping

Table 8: The semantic transformation for products as described by Karjalainen (first and second columns) were the start point for suggesting steps for services and for developing this model. This is shown in column 3, using similar terminology to Karjalainen. Note that steps 2 and 3 are iterative, as exploration and conceptualisation are inseparable (Reproduced from Article 2, Clatworthy, 2012).

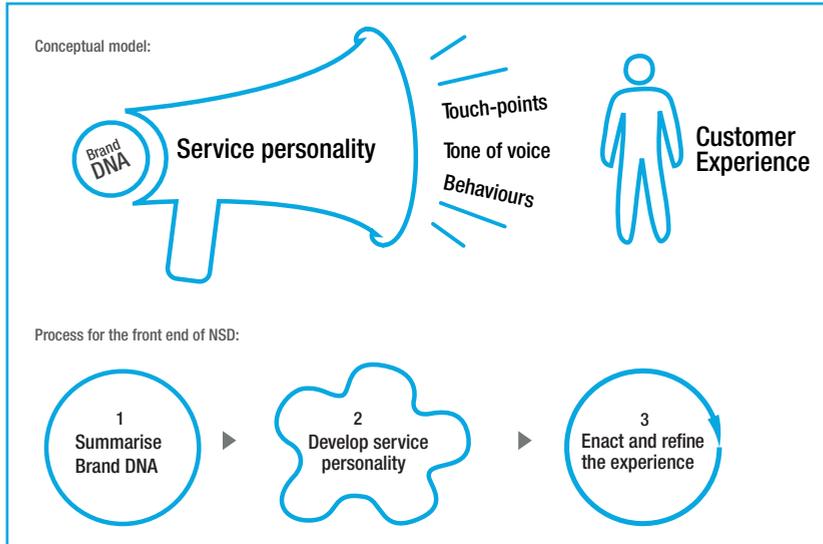


Figure 11: The brand megaphone model of the semantic transformation for services describes the conceptual model and its operationalisation as a process. It shows how the core of the brand, Brand DNA is amplified through the service personality and manifested through touch-points, tone of voice and behaviours (reproduced from Article 2, Clatworthy, 2012).

The model shows the logical relationship between brand DNA and service touch-points and their behaviours. As described in the Article, a model was developed that worked both conceptually and practically. It was found to be operational in workshops, and combined a conceptual level with a process level.

The evaluation of the model, from project team participants in commercial projects, shows that it operationalised the brand within a project team at the front end of the development process, and that project participants could understand and relate to it. Further, it contributed to brand and customer experience understanding at the front end of a project and built team coherence. This is described in more detail in Article 2 (Clatworthy, 2012).

The term service personality was introduced in the model as a bridge between brand DNA and touch-points/behaviours and thus became the central aspect of the semantic transformation. The next section describes the service personality construct in more detail.

## T H E   S E R V I C E   P E R S O N A L I T Y C O N S T R U C T

During NSD, the manifestations of a service are chosen, orchestrated and designed. Since I have shown that the manifestations of a service are central to services branding, it follows that the NSD process should have more focus upon branding. The service personality construct was developed to give this focus. Here, I describe the service personality construct and how it developed from the term brand personality. Further, I show that it has particular importance for cross-functional teams at the front end of NSD. First however, I need to describe and define the term brand personality and show how it has particular relevance to the branding of services.

### **Brand personality and its relevance to service manifestations**

Brand personality has been considered an important construct in branding for some time. Azoulay and Kapferer (2003) describe the history of brand personality, showing that the term originated in the 1950s within advertising, and developed during the late 1970s to describe non functional characteristics of a product. It became closely related to human characteristics at this time. They describe its use in advertising:

Brand personality was used as a common, practical, but rather loose, word for assessing non-product-based, non-functional dimensions of the brand; it captured the singularity of the source of the product as if it were a person (p. 145).

The term became widely debated and discussed in the 1990s, due to the work of Jennifer Aaker. She defined brand personality as “the set of human characteristics associated with a brand” (Aaker 1997, p.347) and presented quantitative research that identified key personality dimensions. Aaker’s article from 1997, became important for marketing and strongly influenced and changed the view of branding at that time. Aakers article provoked many within the branding community, and generated a huge amount of research. This research generally accepted the importance and relevance of brand personality, but criticised aspects of her work. Azoulay and Kapferer (2003) used personality trait research from psychology to question Aaker’s 5 personality dimensions, concluding that Aakers terms were too broad and should be divided up into personality traits (from psychology) and other aspects such as consumer mentalisation. Others questioned the stability of the 5 dimensions across cultures, and the universality of the terms in a global context (Aaker et al., 2001). This criticism led to the term brand personality becoming less uti-

lised in research, despite it still being viewed as important in branding. This change in fortunes is more based upon criticisms of Aaker's factors and their measurability rather than brand personality as a relevant concept. Guens et al. (2009) review the literature on brand personality and conclude that brand personality is "high on the agenda of academics and practitioners alike" (p. 97). They then summarise the criticism of brand personality, only to suggest a new measure of it.

There is therefore agreement of the relevance of brand personality in conceptual terms, but disagreement regarding its core factors, components and cross-culturality (Guens et al., 2009; Grohmann, 2009; Azoulay & Kapferer, 2003). This is due, in large part, to marketing, as a discipline, looking for reliable and independent quantifiable factors for use in quantitative research. In a design context, since each project can be termed unique, the term brand personality still has considerable potential as a qualitative conceptual term. It is commonly used in destination tourism, and is central to the destination branding model proposed by Ekinci (2003). Further, Murphy et al. (2007), show that tourists are able to identify and express the brand personality of tourism destinations. This shows that the term can be operationalised within the service field. Brand personality has also been evaluated in terms of the design of a particular touch-point. D'Astous and Lévesque (2003) use Aaker's brand personality construct and adapt it to a store context and show how it can be used to evaluate the brand personality of a store as a touch-point. Boudreaux, and Palmer (2007) base themselves upon this work and show that consumers can identify different personalities of a wine brand through the design of a wine label. They show the importance of design elements and the interaction of these elements upon brand perception. This view is supported by Poddar et al. (2009), who explore the relationship between web-site design and brand personality. They use corporate branding as a start-point for evaluating the brand personality of a web-site touch-point.

Azoulay and Kapferer (2003) link brand personality to behaviours, which has particular relevance to the branding of services. They note that:

Indeed, the personality of individuals is perceived through their behaviour, and, in exactly the same way, consumers can attribute a personality to a brand according to its perceived communication and 'behaviours' (p. 149).

The term brand personality is therefore shown to have a wide range of application and has relevance in branding, particularly services branding, and is suited to a multiple touch-point view of services.

### **The operationalisation of brand personality as service personality**

I describe here how the construct of service personality was developed to fit the needs of the NSD process, and show how it has relevance to the front end of NSD, particularly in a Service Dominant Logic perspective.

The service personality stage of the semantic transformation process was developed as a stepping stone to operationalise brand strategy and to give it relevance for the NSD team. It can be said that in a situation of brand congruence, (see figure 10), the brand personality can be equated with the service personality, and in an ideal world this would be true. However, I consider there to be a missing step in service branding, particularly in a Service Dominant Logic (SDL) perspective that provides contextual relevance of a brand to the NSD process. I describe here why this missing step is important, and how service personality was developed to provide this missing step.

If we consider the SDL term “value in use” as a key measure of service value, it can be argued in terms of value creation that branding the use situation is more important than branding the organisation. This implies that a service specific brand experience is central to value creation, and therefore that the service personality is potentially a more valuable term than brand personality. There are, however, also pragmatic considerations that support the term service personality.

Firstly, the organisations involved in my work (Telenor, Norsk Tipping and Gjensidige) had not defined their brand personality adequately for use in a project team. The brand was described in a non-experiential way, and thus it was not possible to understand the brand personality nor use it as an input to service development. Lacking a brand personality description, it was therefore natural to describe a service personality for the project in hand.

Secondly, a project team needs to contextualise the brand personality to the project they are working on. This can be considered an operationalisation of a corporate brand personality to a specific service, or a fine tuning of the brand personality applied to a specific service, in which it is related to specific touch-points and their characteristics. Since the goal of a project within NSD is innovation, it is likely that the brand personality will require application to this innovation, e.g. a new touch-point, service-journey, an interaction behaviour etc. In NSD it must be expected that innovations will regularly require a re-contextualisation of a brand personality. Therefore a service-specific application of corporate brand personality can be seen as ensuring that innovations align to the corporate brand.

Thirdly, since a success criteria for innovation is that cross-functional teams need to establish a common understanding and object of development, it was considered worthwhile that a team develop a service specific personality together. This would give the team a common understanding of the desired customer experience and its relation to the brand personality. Being described within a project context, it implies it is an issue for development by the project team, and therefore used as a negotiation and discussion platform. This could have particular value at the start of a project, since this common understanding can be utilised throughout the remaining design process. Thus it can be seen as forming a totem within the project (Dumas, 1994).

Finally, the importance of value in use in services, places focus upon the customer interactions and the brand as part of this. Focus upon the service personality enables a focus upon value in use to be developed, whereas focus upon brand personality has its focus elsewhere, at the corporate level.

*Towards a definition of service personality*

Aaker describes the term brand personality as “the set of human characteristics associated with a brand” (Aaker, 1997, p. 347). Initially, when working with service personality, I chose to adapt Aaker’s definition, and describe it as “the set of human characteristics associated with a service” However, upon further reflection, when it is applied at the service level, as service personality, it takes on a slightly different character. Since it is used during the early stages of NSD as a development step towards the customer experience the term service personality needs to reflect this.

In my work, therefore, I utilise the term service personality, and define it as:

the contextualisation of brand personality for a specific service, as described by its experiential manifestations.

The service personality construct has thus three elements to it. Firstly, it is grounded in brand personality, thus ensuring alignment between brand strategy and its application to a service. Secondly, it relates to the experiential manifestations of a service, such that it has a direct link to the semantic transformation, the customer experience and value in use. Thirdly, it is related to service manifestations. This means that the relationship between brand strategy, multiple touch-points and customer experience are taken into account.

The definition allows for the characteristics to be manifested through behaviours in a service (personnel or self-service), yet they can also be experienced

through a wide range of manifestations. These could be visual (logo, visual identity), tangible as in being defined in terms of materials (oak, aluminium etc) and they can also be metaphorical or analogical. It is the orchestration of the manifestations, their individual design, and congruence to the brand that describe the service personality. It is precisely this richness that makes it useful to a project team. It is a shared synthesis of multiple elements with an experiential focus and brand relevance. This is what makes it an important construct for the NSD process.

## S E R V I C E P E R S O N A L I T Y A S A B O U N D A R Y O B J E C T

### **A note on boundary objects**

Boundary objects have attributes that enable a common understanding across disciplines. Since services are intangible to a large extent (although they can have tangible touch-points) it means that discussing brand and customer experiences in projects becomes difficult, particularly when it comes to finding a common ground within a heterogeneous project team. Project teams therefore need some form for support to be able to work together on brand and customer experience. There is thus a need for boundary objects that could assist the teams with the semantic transformation at the front end of a project.

The notion of boundary objects was first introduced by Star and Griesemer (1989), and described in more detail by Star (1990). In relation to design, boundary objects are often used to describe “artefacts that maintain a common identity across all social contexts, thus allowing translation to take place across the boundary” (Gal, Yoo & Boland, 2005, p. 194). However, although there is often a focus upon the materiality of boundary objects, they do not need to be physical and can be conceptual in character.

Carlisle (2002) describes three classes of boundary objects; syntactic, semantic and pragmatic, with specific reference to product development. Carlisle follows this up by describing the enabling characteristics of each type of boundary objects: syntactic=transferring, semantic=translating and pragmatic = transforming (Carlisle, 2004). These are described in a model, showing how boundary objects influence team collaboration (see figure 12).

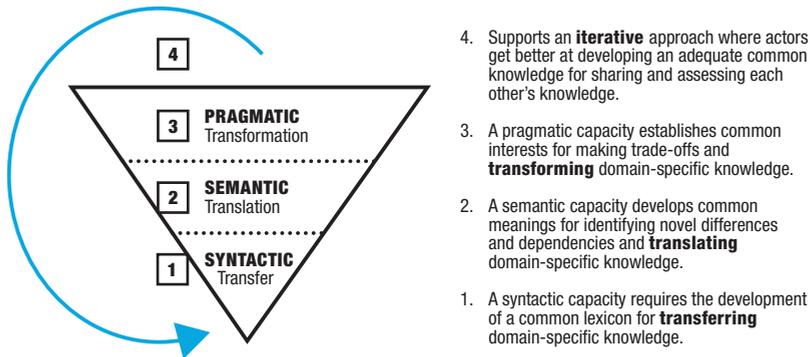


Figure 12: Carlile describes three characteristics of boundary objects, and shows how iterations in design improve the transformative effects of them. (From Carlile, 2004)

According to Carlile, boundary objects have the potential to transform thinking within a team. He describes this in the following way:

The ability of actors to change their own and other's knowledge only emerges when there is a pragmatic capacity, a way of representing the consequences of how the knowledge of one group generates consequences on the knowledge of another group, and then making changes accordingly (Carlile, 2004, p. 563).

Carlile states that for true transformation to occur, there is a need for iterations of design using boundary objects, such that: “addressing the consequences cannot be resolved with one try, but requires an iterative process of sharing and assessing knowledge, creating new agreements, and making changes where needed” (p. 563).

Brandt discusses the use of tangible objects as representations in the design process, particularly participatory design, and shows that not all representations work as boundary objects. Indeed she states:

a precondition for using representations as ‘things to think with’ is that they are so rich in content that different people can relate to them .... They have to function as boundary objects to be successful (Brandt, 2001, p. 207).

Gal, Yoo & Boland investigate the role of boundary objects as catalysts of change, showing that social identities and social infrastructure are influenced by, and influence boundary objects in a mutual dynamic interplay. They con-

clude that boundary objects, through this interplay can initiate change within communities and across communities (this can of course also occur the other way - organisational change resulting in a change of boundary objects). They therefore suggest that boundary objects are influential in organisational change, in other words, that boundary objects can function as *change agents*.

### **Service personality as a boundary object**

I argue that service personality, when used as part of the design process for teams can be described as a boundary object. In addition, this boundary object, when transformed into a target experience, has a quality that can be used downstream in the design process.

Service personality is not a physical object, rather a common understanding within a team, supported by diverse materials. A boundary object does not have to be physical (Star, 1990; Carlile, 2004; Jennings, 2005), and in this context, service personality forms a common conceptual understanding, implicitly understood and supported with tangible materials. In itself it is a stepping stone in the semantic transformation from brand strategy to customer experience, but an important stepping stone. In relation to Carlile's description of boundary objects, service personality can be described as both semantic and pragmatic, since it both enables a shared symbolic understanding and an understanding of the consequences this has for the service under development, for the different disciplines involved, and for the organisation as a whole. When transformed into a target experience, it also becomes syntactic, since it forms a common communication form for transfer later in the design process.

Jennings (2005) describes three characteristics that enable a boundary object to function at the strategic level. Firstly they need to: "push and pull the right types of information at the right level of detail and at the right time for the project" (p. 128). I describe this as a measure of contextual relevance. Secondly, they need to be able to function as moderators in situations of potential conflict or during power struggles. I describe this as measure of common understanding. Thirdly, they need to be adaptable to the specifics of the team. In relation to this, she states:

This involves a delicate balance of maintaining certain universal elements that provide the familiarity and trust from project to project, and certain adaptable elements that enable the object to adapt to the specific characteristics of the teams it serves (p. 128).

I label this as contextual adaptability.

My research shows that service personality fulfils at least two of these criteria: contextual relevance and common understanding. However, I am unable to comment upon contextual adaptability due to a lack of data. This theme was not covered in my interviews, and the tool for developing service personality has not been evaluated repeatedly enough to be evaluated for this criterion.

*Service Personality and contextual relevance*

Contextual relevance relates to the right information being discussed at the right time and the right level. For my work, this means that the service personality should have a focus upon service branding, and allow discussion of this at the right level, commensurate with the front end of a project. I have shown that the semantic transformation for services requires a greater experiential focus, and how this is manifested through behaviours and tone of voice of touch-points. Further, I have shown that the concept stage of a project makes major decisions regarding the service offering, its manifestations and how it is experienced by a customer.

Article 2 discusses contextual relevance and I show that the service personality fulfils this criterion. Firstly it gives a focus upon services. This was commented upon by interviewee 4, a telecom engineer who stated:

Before, our focus was upon the object, the technology. This (tool) comes at the right time, because it takes us in the direction of experience design (Interviewee 4, Telecom Engineer).

This was supported by a brand manager within an insurance company who first explained that he had trouble finding a way of influencing development processes, and how the service personality allowed this to occur. He stated:

As responsible for the brand, I find we have few approaches we can use within the organisation, in relation to those we can use in purchased media. In purchased media we can use music, images and aesthetics. Internally, we have been very limited. When it comes to explaining our strategy etc., its very often written on a keyboard and presented in word or powerpoint. And that is, well, that is, especially for a service, just not good enough ...

When commenting the need for input at the front end of a project, he commented:

We should start with a platform that we can agree upon, with a visualisation of the experience. Something concrete, so we can work together to produce something that reflects this.

And specifically regarding NSD within the organisation:

This is an element that should be part of our stage 2. It should always be carried out, as long as the project has a certain size (Interviewee 1: Brand manager).

These findings are supported by other interviewees, and particularly by observation. The process of focusing the corporate brand upon a service at the start of a project gave a brand-based customer experience focus, that was useful and relevant to the context.

I conclude therefore that service personality has contextual relevance.

#### *Service Personality and common understanding*

Article two shows that the semantic transformation process develops a shared understanding within a project team. This is documented in my final article, from the interviews with project participants. In the article I comment this in the following way:

The model developed a common language within a team and reduced personality barriers. Interviewee 4 summarised it in this way *“It has a clear value. It develops a collective mindset for the team - how to translate word into deed”*. Interviewee 2 mentioned that *“it created a shared awareness”* something that interviewee 3 embroidered upon stating *“It gave the team a way to identify with the experience of the service... all could see what the experience was”*. Interviewee 6 focussed upon the experience of the experience claiming *“I had read the experience economy book, but through this process, all the elements fell into place. It opened my eyes to a lot of new things.”* (Clatworthy, 2012, p. 121).

I believe that service personality supports collaboration in a project team due to its use of analogy and metaphor during its formation. The project teams in AT-ONE found a common language to discuss human characteristics desired of a service, and non-human characteristics. For example, I observed two project participants discussing the nuances of their desired service experience using the analogy of car brands. They were discussing if their service

was more like a Citroen or like a Saab in respect to the experience of driving the cars. Through the discussion they were able to express aspects of their brand that they would most likely have been unable to identify through other means. The metaphor allowed them to find this common point of reference and discuss it in relation to their own service. This was observable for discussions that occurred during the development of the service personality.

The combination of metaphor when utilised in the context of a proposed service formed a strong shared understanding due to the nature of metaphor being in themselves a common understanding within and across cultures (Dumas, 1994; Lackoff & Johnson, 1980; Hay, 2007; Karjalainen, 2007; Supphellen, 2009). In this context, I believe that these metaphors, can be described as generative metaphors, as described by Schön (1993). He describes a particular use of metaphors as being useful when innovating due to their ability to facilitate a shared means of seeing things in a new way:

It is nothing less than the questions of how we come to see things in a new way. Conceiving a generative metaphor as a special case - a special version of SEEING-AS by which we gain new perspectives on the world (Schön, 1993, p. 138).

Hill and Levenhaugen (1995) describe the use of metaphor in the development of mental models in innovation activities, and describe how metaphor supports both sense-making and sense-giving. They show that metaphors “are particularly valuable for both sense-making and sense-giving in the emergent or pre-organisation phase of a new venture” (p. 1069). This is due to their nature of supporting what they describe as “Intuitive, holistic and contextual thinking that frames and structures an entrepreneurs’ intention and action”.

Indeed it seems that metaphors allow the instantaneous combination of sense-making and sense-giving when discussed in a team. In terms of the example given above regarding car brands, the discussion of Citroen or Saab is both sense-making (what does the Citroen experience mean in the context of an insurance service) and sense-giving (we want to give our insurance customers a novel yet luxurious comfort experience in the same way as a Citroen). The negotiation that occurs during the choice of a metaphor therefore allows both of these. I believe that this is essential when considering service personality. There is a need for a negotiation regarding the transformation from a brand strategy towards experiential manifestations of a service. Such a negotiation requires sense-making and sense-giving within a group, and metaphor enables this.

I conclude therefore that service personality supports a shared understanding.

*The benefits from utilising the service personality construct in a team*

I argue that introducing service personality into the front-end of service innovation has multiple benefits.

Firstly it introduces a services orientation, or what Gloppen (2012) describes as services thinking, by focussing a team upon customer experience, touch-points and behaviours.

Secondly, introducing service personality into project teams is a way to give a shared, service-based brand experience focus to a team from the start of a project. This has positive implications for later in the design process, since it creates a shared platform for later development. This allows the service personality to function as a totem, as described by Dumas (1994).

Thirdly, it and ensures brand congruence for the service concept, and therefore ensures brand relevance for the what and how of a service - its central characteristics.

Further, the use of the term *service* personality, rather than *brand* personality is, I believe, important. This is due to its framing in terms that have particular relevance to the project team, i.e. the object of development (Molin-Juustila, 2006) rather than the more distant corporate level. In a well branded organisation, it may be possible that the brand personality is so well defined and described that the service personality step would not be necessary. However, the advantages of service orientation and shared understanding from using the service personality construct may well be reason enough to use it, in preference to brand personality, even in such an ideal situation.

*The risks of utilising the service personality construct in a team*

Although I show that the service personality construct functions as a boundary object in a project team, its use does have some potential consequences attached.

Firstly, there is a risk that the construct is used within a project to deviate from the corporate brand, and that there occurs, what I term, a brand coherence gap. This could occur in situations in which the project does not adequately incorporate the brand strategy as part of the first steps of the semantic transformation process. This risk can be minimised through a combination of two elements. Firstly, a brand strategy document as input to the team that

takes an experiential approach. Secondly, the introduction of a stage-gate in the development process that considers brand congruence. Both of these elements would be natural consequences of a focus within NSD on the brand experience.

Secondly, there is a risk that the locus of control for the corporate brand would move from the branding department to the NSD project team, causing fragmentation of responsibility within the organisation. This was raised in an indirect way by the brand manager from the insurance company:

I think that in practice, the use of this tool might raise some concern with the branding department, in terms of what can be developed here. Is this solution within our brand or not? He, or she, may want to control the outcome.

He later returned to the issue saying:

The issue of control is something, well, you know better than me, is something that characterises branding. But, this does not mean it is the only way to Mekka. There are examples in which branding occurs precisely through allowing or should I say, having a clear strategy to not take control, and letting the brand have its own life (Interviewee 1, brand manager).

This comment raises perhaps a risk in utilising the service personality, but I think it raises a more general reflection - the fact that services branding requires the participation of the branding department as part of NSD. I will now discuss this, since it shows an important relationship between Service Dominant Logic and NSD.

### **Service Personality and Service Dominant Logic (SDL)**

One of the key aspects of SDL is the focus upon value being created in use, (Vargo & Lusch, 2004a). This has major implications for services branding and NSD since it shifts the emphasis from what Vargo and Lush term ‘marketing to’, over to ‘marketing with’. This shift will place increasing importance upon branding through the interactions with the service and therefore the touch-points of the service. Marketing with, implies focus upon the touch-point experience and identifies the importance of the service concept in this respect (Goldstein et al., 2002). Since the service concept is the what and the how of the service, encompassing operations, customer experience, service outcome and benefits, the service concept will become increasingly

important in a branding perspective. Therefore, there will be an increasing reliance upon the front end of NSD as being central to branding for service organisations. Ensuring brand coherence of service concepts will be more and more devolved to the project level of an organisation, and therefore something that is decided and implemented by a project team. SDL has therefore important consequences for team work. It is clear that methods and tools will be required to do this, and the service personality is one way of ensuring this.

The increased focus upon NSD for branding services will however demand a closer participation from the brand department within NSD. For branding departments this can be a challenge, particularly since a major utilisation of resources for branding has been related to advertising. Since the service dominant logic view of services places emphasis upon interactions rather than advertising in terms of customer perceived value we can expect therefore that branding personnel will have to take a more central role in NSD in the future.

Finally, SDL, places increased importance upon Service Design as a field. I have already shown that SDL places increased focus upon NSD to ensure ‘marketing with’, rather than ‘marketing to’. With value in use becoming central, NSD will need competences that have a customer orientation and a customer experience focus. From the earlier section describing the skills of a service designer, it is clear that the core skills of service design, as described by Gloppen (2012), Wetter Edman (2011) and Kimbell (2009), will have strong relevance for the branding of services. This again supports my earlier notion suggesting a convergence of SDL and Service Design.

*The limitations of the service personality construct*

At this stage, the service personality can be considered a ‘loose term for describing non-product-based, non-functional dimensions of the service’, if paraphrased in the context of the historical use of brand personality I used earlier (Azolay & Kapferer, 2003). It is loose, since it has had limited iterations in its development and would therefore benefit from further exploration. It may be that in the future it should continue to be a loose term for practical purposes, but in research terms it requires further validation work to add specificity to the term. At present, the number of cases it has been used in is too limited, and the research focus for each case has not specifically focussed upon the service personality (it focussed on the semantic transformation as a whole). The empirical data can therefore only indicate its significance as a term, until further validation repeat the findings. Further research is needed to validate the term and its use as part of NSD.

### *Further research*

Firstly, the service personality construct requires further research to validate its role as a boundary object. I have shown that service personality fulfills at least two out of three of the criteria describe by Jennings (2005) for boundary objects. However, the third, contextual adaptability could not be shown due to lack of empirical data. The construct therefore needs further work to validate it as a construct with generic applicability across projects and over time - contextual adaptability. Further evidence from its use in multiple case studies need to be collected before it can be adopted as part of the NSD process.

Secondly, I would like to explore the notion that the service personality could be a material of service design in the same way that I have argued that touch-points are a material. I do not have empirical data to support this view yet, but this would be an interesting direction for further research. Further iterations of the construct, and further empirical data specifically focussing upon the term material would be useful.

Further research should also consider how the service personality should be documented within a team and to an external stage-gate evaluation committee. Further, the downstream use of the service personality should be considered in relation to how it is implemented as part of a service prototype or blueprint. At present, I have found that it is most convenient and effective to utilise a telephone conversation as a means of transforming the service personality into an experience prototype (described in detail in Paper 2). However, behaviour and experience through self service touch-points is a desirable exemplification for teams, and I have not found a convenient means to do this yet at such an early project stage.

Finally, further research regarding how representatives from the branding department should relate to the service personality during NSD should be considered. This relates to the desired degree of participation during NSD, but also to the documentation of brand strategy such that it is usable by a project team. The locus of control between project team and corporate brand is also of interest in this respect.

### *Conclusion*

I am proposing service personality as an important construct to assist project teams with the branding process during the fuzzy period that is the front end of NSD. I show a theoretical and practical relevance for the term; it is theoretical in terms of branding services, particularly under a service dominant logic perspective. It is practical in terms of how it supports teams at the front

end. In combination, the construct has importance for service design and for services branding, particularly in respect to a service dominant logic view of services. However the term requires further work before it can be included as a recommended step within NSD.

## PART FOUR: Conclusion

### RESEARCH CONTEXT

This PhD is positioned within the emerging field of Service Design and is concerned with the *what* and the *how* of designing services. Specifically, the study inquired how design could contribute to the very first phase of the New Service Development process (NSD). This was investigated through a research by design approach, that developed support tools for the front end of NSD. The research was initially explorative, and tools were developed, and then evaluated through use in innovation workshops, which were carried out together with commercial service providers. This exploratory phase identified two specific areas for further investigation; firstly, the role of touch-points in service innovation, and secondly, how a project team can transform brand strategy into customer experience. Further, more detailed research developed practical tools, and theoretical perspectives on these two areas, and these are described in the attached papers. Together these papers contribute to both research and practice. They contribute to service design research through conceptual, theoretical and practice-based findings, and to service design practice through the development of support tools and process support. This is my contribution to the *how* of service design.

The two focussed areas of inquiry identified a further layer of investigation, this time one of reflection, to discuss the practice-based findings and how they contribute to an understanding of the very nature of service design itself. This is a layer of reflection with two specific findings. Firstly, I discuss the term ‘material’ in regards to the materials of service design. I explore different facets of the term material and relate these to a discussion of touch-points as a material of service design. Through this, I show that touch-points are a material of service design and how this ‘materials’ approach to service design contributes to the ongoing discourse regarding service design as a field of design. Secondly, I describe the construct ‘service personality’ and show

its key role in enabling discussion in a project team regarding the customer experience of services. In particular I show how this construct can align the customer experience for a new service to a companies brand strategy, and further, how this contributes to an emerging convergence of theory between service design and service dominant logic. These two reflection-based findings are my contribution to the *what* of services.

In this way, the thesis contributes not only to NSD but to an understanding of service design itself. It does this by identifying key elements of service design and how it facilitates innovation in collaboration with other disciplines. This is the basis for a further layer of insights into service design, and contributes to the emerging understanding of how service design contributes to service thinking.

## M E T H O D O L O G Y

I have explored this area using research by design. This is an action research based approach, in which I have taken multiple roles within commercial development projects, together with commercial partners. I have at times taken the role of designer and designed services, as design facilitator and run workshops, as an active participant of workshops facilitated by others and as a passive participant, observing processes. This has combined theory and practice in many different ways, and it is from this combination that the findings presented here have emerged. The findings are not incremental findings that add to an existing research theory, they are findings that are new and that straddle multiple research areas. In this sense, they are new islands of knowledge with connections to research in fields as diverse as marketing, services management, branding, design management, service design and innovation. In this way, the combination of practice and research have informed each other.

The research by design approach has been an appropriate methodology for the problem area that was investigated. The iterations of explorative research followed by specific focused research were necessary to both understand the rich area of study and to evaluate the design tools that were developed. Not only did it identify clear areas of specific relevance for NSD, the move from the general to the specific and then back to the general allowed for new insights into service design to emerge. The methodology is however messy, and has not followed a clear and necessarily easy to follow path. The results

and findings emerged from the situation rather than from hypotheses based upon previous research, and have developed a new direction through which to contribute to the emerging field of service design. This is an abductive approach to research, in Peirces tradition, in which new knowledge emerged in an abductive, inductive, deductive cycle. In this sense, this is a wicked problems research approach to wicked problems.

## FINDINGS AND THEORETICAL CONTRIBUTIONS TO THE *HOW* OF SERVICE DESIGN

This section of the conclusion discusses the findings that are presented in the articles regarding the *how* of service design. It discusses and summarises two research studies that were designed to investigate the first stages of the NSD process. Both of these resulted in the development of tools for service design, one, relating to touch-points, the other relating to the transformation of brand strategy into customer experience.

### **Touch-points and service innovation at the front end**

The development and evaluation of a card-based toolkit, the AT-ONE touch-point cards is presented in one conference paper and one article. Previous research had identified the importance of touch-points in services, both in theory and practice, but there was little research available that explored or described how a project could work with touch-points during a project. The AT-ONE touch-point cards were developed to assist project teams with precisely this, a structured approach to service innovation through touch-points. Multiple iterations of their development are presented, and an evaluation of the cards when used in innovation workshops is discussed.

The results show that the touch-point toolkit facilitates innovation at the front end of the New Service Development (NSD) process. The cards contribute to service innovation in terms of how they assist abductive thinking in a team to generate novel solutions. Further, they improve team performance by developing a shared understanding across disciplines and functions within a team. In addition, the methods that were developed to use the cards contribute an innovation typology to area of touch-points as part of service innovation. Finally, I show that the form of the cards and the way the cards are used, helps assist cognitive processes. This link between form, usage and cognition in Service Design deserves further research.

### **The transformation from brand strategy to customer experience**

A second contribution to provide support at the front end of the NSD process was the development of a service specific model to transform brand strategy into customer experience. Services marketing literature highlighted the importance of branding services using a service-oriented approach, rather than a product oriented approach. In particular front line staff were identified as central to services branding. Further, the literature highlighted the importance of the customer experience as being central for the customers perception of value. However, the link between a service brand and the customer experience was not well described. For a project team during the first stages of NSD, there was no guidance available as to how the team could transform a corporate brand into relevant customer experiences. This transformation, although shown to be important was not discussed in services research and was not evident in NSD practice.

Through my research I developed a conceptual model and a corresponding development process for the semantic transformation for services. The model, termed ‘the brand megaphone’ has three stages and utilises enactment as a means of developing an experience ‘target’. This target is used during the front end to identify the desired service experience and can then be utilised downstream during the design process, as a totem (Dumas, 1994) within the project. The brand megaphone model was developed and evaluated through workshops together with commercial partners. The findings show that the process gives a *services* branding orientation to a project team, provides brand-experience congruence, contributes to team coherence and innovation culture, and supports the team when developing experience-oriented service concepts.

The brand megaphone model that was developed contributes to theory and to practice regarding the NSD process by providing both tools, and a structured process to assist with the semantic transformation in services at the front end. When a project team talks about developing a service that offers the “Telenor” experience, they have previously been unable to describe what that is. Now, they have the tools to discuss and develop this, such that the “Telenor” experience can be understood and designed for. This can be seen to successfully introduce brand and customer experience as a theme in the design process, and to develop a common understanding of the desired customer experience that a service should give customers upon launch.

The work raises some interesting questions regarding branding of services. Firstly, it identifies that many service organisations today take a product-

based approach to branding, which has an emphasis on form and visual identity. Services require attention to additional aspects such as touch-point behaviours and tone of voice. To date, these are not identified nor discussed in Service Design research. Secondly, it identifies the need for a change in how brands are managed, such that the branding department are more tightly integrated into the NSD process. Thirdly it identifies that services have a continuum of semantic transformations during NSD, starting during the fuzzy front end and ending through a “real-time semantic transformation” during service delivery itself. Further, that this has consequences for the design and implementation of a service. Finally, it identifies the need to prototype experiences at the front end of the NSD process, and shows that enacting a target experience to develop a totem (Dumas, 1994) is a good means to do this.

## FINDINGS AND THEORETICAL CONTRIBUTIONS TO THE *WHAT* OF SERVICE DESIGN

The papers that are presented as attachments to this kappa initiated a further layer of reflection and theory. This resulted in two further sets of findings, each related to the two themes of the papers, which open out towards a discussion and contribution to service design itself, the *what* of service design. In this way, they contribute to the ongoing discussion regarding the nature of service design (eg. Gloppen 2012; Wetter-Edman, 2011), and in particular, the discussions that build a bridge between service design and service dominant logic in marketing (Sangiorgi 2012).

### **Touch-points and the materials of Service Design**

I contribute to the ongoing discussions regarding the field of service design by viewing service design through of lens of materials. If design is a conversation with materials, then what are the materials of service design? This discussion fits with other recent discussions regarding the nature of service design. Sangiorgi discusses the term “service thinking” as focussing upon interactions, benefit and exchanges (Sangiorgi, 2012). Gloppen shows how touch-points as part of AT-ONE, help develop a “service orientation” within organisations. My research contributes to this discussion by supporting the “thinking” approaches with practical “doing” processes, methods and tools. By discussing the multiple interpretations of what a material is within the field of Service Design, I show how touch-points are a material of Service Design in all senses of the term. This contributes to this ongoing discourse regarding the foundations of Service Design and I believe that I show how

touch-points are central to Sangiorgi's service thinking term and Gloppen's term, service orientation.

However, identifying one material begs the question - what are the other materials of Service Design? I believe there are many other materials - the service organisation, the service offering, the service personality and also time may also be materials. On first look, they fulfil many of the criteria I have presented for what defines a material in design and I hope that this question is taken up by the Service Design community and discussed, such that other materials are identified. This will undoubtedly further develop the field.

### **Service personality as a boundary object**

During the development of the brand megaphone model for the semantic transformation in services I developed a construct, the service personality. This was a service specific version of the corporate brand personality and research regarding its development contributes to theory at the conceptual level and at the process level. In terms of theory, it identifies a construct, the service personality, as an important bridge between brand strategy and customer experience. It develops and presents the service personality as a conceptual construct and shows that it assists with the semantic transformation in services. The service personality is shown to function as a boundary object in NSD, and that it establishes an important step in the NSD process, to ensure that brand strategy is infused into final solutions at the concept level. Not only this, I show how service personality introduces a service thinking (Sangiorgi, 2012) or service orientation (Gloppen, 2012) approach to service branding.

The work also bridges a gap between service design and services marketing through service dominant logic. I discuss the similarities between the two, and show how the service design approach that is developed can be a means to introduce a service dominant logic into NSD. Indeed there is an increasing understanding of the convergence of service design and Service Dominant Logic (Sangiorgi 2012). I believe that the findings I have presented are well suited to such a view of services, and that I provide an approach, together with tools that can be seen as a means of implementing this within NSD. This has consequences for brand management within an organisation and suggests a much closer collaboration between corporate brand and NSD.

## L I M I T A T I O N S

The findings presented here are focused upon the first stages of the NSD process, such that their full effects upon innovation are difficult to evaluate. Innovation involves the implementation phase of a product or service also, and the measure of innovation in this project relates to novelty of ideas (and therefore innovation potential) rather than their implementation. The effects of the support tools in a holistic innovation perspective have therefore not been evaluated and would require longitudinal studies, which are not covered here.

The cases used in this research have been primarily business to consumer services and the relevance of the tools for business to business services has had little evaluation. The touch-point cards have been used in a business to business context and indicate that they have relevance for B2B solutions, but this has not been evaluated here. Further work encompassing B2B solutions should therefore be carried out.

The contribution to branding through the semantic transformation requires further work. Although this is the first published work available regarding the *how* of the semantic transformation in services, it requires further development. It has only been evaluated in three projects, and has not been utilised yet in projects that have reached market. It therefore needs verification of its applicability to a broader range of projects and touch-points. At present, it is very reliant upon using personal interaction as a means of developing the experience target and it requires work to show a desired experience when applied to other touch-points. As such, it can be seen to be a means to introduce a services branding approach to NSD, and to have strong potential to do this. However, further use is needed before it can be incorporated as a stage gate in NSD.

In terms of relevance, it must be noted that all of the case studies that have been utilised relate to Norwegian companies, even though the majority of them have international markets. However, the company culture, particularly in the workshops has been Norwegian. The relevance of the results can only refer to the Norwegian cases. Anecdotal evidence from using the touch-point cards in Scandinavia and Europe do however indicate that the results can be generalised geographically.

## FURTHER WORK

The findings open up for research that extends the tracks identified in this thesis and for new areas of research within Service Design.

### **The materials of service design**

Firstly, further work regarding the materials of Service Design is needed. This will help further develop the field and identify more precisely what Service Design is, and is not. I would like to see this work develop towards a service dominant *design* logic, such that Service Design is not seen in comparison to products, but in its own right. I believe that viewing Service Design in relation to Interaction Design and Product Design has established an initial position for the field. However, this can also constrain the field from further development by always defining what it is not, rather than from being something in its own right. Further development of the Service Design field will benefit from this, in the same way that Services Marketing has benefited from a discourse on Service Dominant Logic. The term material might not be ideal for a field that designs for immaterial services, but I feel nevertheless that a discussion of materials in its widest sense would help develop the field towards a service dominant design logic. Such a development would perhaps integrate the ongoing work of Sangiorgi's "service thinking (2012), Wetter Edmans "service logic" (Wetter-Edman, 2011) and Gloppen's "service orientation" (Gloppen, 2012).

### **Boundary objects in service design**

Secondly, there is a need for further work regarding the boundary objects of Service Design and it would be useful to develop a better understanding of what makes a successful boundary object in service design. The results of this could be developed into a shared list within the service design community, in the same way that service design tools are shared. This can be both physical representations, such as cards, and conceptual representations such as the service personality.

Further, the relationship between tangible objects and cognitive and social processes in teamwork, as part of NSD should be explored further. The touch-point cards made this very evident in the way people held and manipulated the cards. A better understanding of physical boundary objects and cognition can have consequences that lead to improved service design processes and team support.

Finally, I would like to explore the link between boundary objects and wicked problems. I believe that boundary objects can be key to the understanding that is needed for what Rittel describes as the resolution of wicked problems. This link has not been described as yet, and offers considerable potential to unlock the multiple layers that are inherent in wicked problems.

### **The semantic transformation in services**

Thirdly, there is much still to do regarding the semantic transformation in services. There is great potential to improve the inputs that a cross-functional team have at their disposal to better communicate the brand strategy in a service perspective. Today's brand manuals are still focussed upon visual identity and there is great potential to develop brand manuals that include behaviours, touch-points and tone of voice. Although not directly identified in this work, such branding support should also include relationship building and social media.

Since there are a continuum of semantic transformations in NSD, I believe that there is a need to carry out research into the semantic transformation for the whole of the NSD process. From a design point of view, I think that the 'semantic transformation on demand' during service delivery needs further investigation. At present it is an area that is often the responsibility of the HR department, with a focus upon selection and training. I believe that this is a rich area of potential for design support, although at this stage I cannot identify what form it should take.

In addition, the semantic transformation between concept and detailed design requires further study. At the front end, the concept details a service at a high level, without detail. During detailed design, the individual interfaces for each touch-point are developed, and since there are multiple touch-points, I believe there is therefore also a multitude of design decisions at the detail level that each are semantic transformations. This needs further investigation, to identify their nature and characteristics within NSD and how brand orientation can be ensured. This is particularly important, since detailed design is often carried out by hired in consultants or freelancers who are not part of the culture of the organisation in question, leading to a hand-over of desired brand manifestations.

### **Experience prototyping at the front end of NSD**

The area of experience prototyping offers great potential in service design. Project teams benefit greatly from being able to experience a service before it is developed, although this is difficult to do with a fine level of detail.

However, the earlier one uses experience prototyping in a project, the more difficult it becomes. This is particularly evident at the front end, before a concept is chosen. At the start of a project multiple innovations are being considered at the same time, and it is challenging to prototype an experience when the touch-points have not yet been chosen. This therefore requires a meta-experience prototype, one that is valid across all touch-points. So far, this has proven difficult to create with the required level of experiential detail.

### **Concluding remarks**

These areas for further research emerged from a research by design approach to the complex woven cloth that is the front end of NSD. I started with an explorative approach to an open problem definition - how can design assist at the front end of NSD? By taking a research by design approach, specific research questions emerged at multiple levels and I had to prioritise the research contribution I was to make. I chose touch-points and branding as the area to focus upon and have contributed by developing process support, tools and models to each of these areas. During the development of these, research reflections developed into conceptual contributions that help position Service Design within NSD and as a separate field of Design. These contributions have, upon reflection again identified questions regarding the nature of Service Design itself that I will continue to explore. I hope that they also stimulate others to join me, to help further define what could turn out to become a new design discipline.

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## **PART SIX: Summary of, and reflections upon, submitted publications**

This section describes the thinking behind each research publication, the content and findings and a reflection over each one. They are presented here chronologically. Five publications are submitted as part of this document. The papers present the core of the work and the reflections presented in this document build upon them. The publications are therefore important in terms of understanding the main content of the work carried out as part of this PhD.

In this section I do not repeat and summarise each paper, rather reflect upon the nature of the paper, the reasoning behind its content and publication channel, and its contribution to my work as a whole.

### *Conference papers and articles: different audiences and messages*

I have specifically chosen to publish some work as peer reviewed conference papers and some as journal articles, with the intention of communicating different aspects of the work. Conference papers have been developed to share work in progress, develop a network and to present and share methods and tools. Articles have been developed with the intent to raise and reflect upon more theoretical aspects of the work. In addition, one of the articles was targeted towards a business journal, to develop cross-disciplinary discourse.

## PAPER 1: INNOVATIONS IN SERVICE EXPERIENCES: THE AT-ONE METHOD

Presented at the *Sixth Design and Emotion Conference* in 2008, this paper was written primarily to describe the AT-ONE project and to develop a network around Service Design and Experience Design. The Design and Emotion Conferences were established in 1999 by the Design and Emotion Society and have a strong product-based focus upon design and emotion. I wanted to introduce Service Design to the conference, and at the same time present and receive feedback regarding AT-ONE, which was in the early stages of development. Finally, I wanted to establish a network around customer experience and receive input regarding this field. The paper gave me the opportunity to write in an academic form and to make explicit much of the tacit knowledge and influences that had formed the AT-ONE method, but which had not been articulated clearly before this time.

Upon reflection, it is the weakest paper of them all, in terms of academic writing. However, it was a good introduction to writing about my research, as a contrast to designing tools and facilitating workshops, which had been my focus until then. After re-reading the paper, I see that I could have written differently, but at the time, I think it fulfilled its function well. It was a good time to describe what Fallman (2008) describes as the area of design practice research (see earlier section on design research). At such an early stage of my research, I had identified the multiple areas that were being synthesised into a workshop-based solution; cross-functional teams, fuzzy front end, design thinking and service-specific characteristics. I had already run several workshops to receive some results for analysis and improvement, and could therefore give some initial comments regarding results. Finally, looking back on the paper, I can see that the brand megaphone concept was already identified at that time. Although not fully developed nor fully understood, it had a conceptual form.

## PAPER 2: BRIDGING THE GAP BETWEEN BRAND STRATEGY AND CUSTOMER EXPERIENCE IN SERVICES: THE TARGET EXPERIENCE TOOL

Presented at the *First Nordic Conference on Service Design* in 2009, this

paper aimed to present the target experience tool in a way that others could use, and at the same time to stimulate discussion. It described the theoretical background for the development of the target experience tool, and its relevance for services, but its main focus was to describe the tool itself to the conference participants. It therefore had a detailed appendix with a step by step description of the tool.

The work presented was work in progress, and was based upon the development of the tool and its use in the AT-ONE project. However, at this stage the paper did not reflect upon the wider implications of the tool, nor did it include evaluation data from project participants.

The paper can be seen as a second iteration of the brand megaphone that was described in Paper 1. It can be seen that the brand megaphone concept had developed to become more service and customer experience related, and is described as a process in detail. The paper also introduces the use of metaphor and analogy as part of the process, and the term Service Personality is introduced as part of the service branding process. This is the first development of a service-specific tool, in which the characteristics of services are focussed upon, particularly the aspect of behaviour and tone of voice. It signifies therefore a move from traditional branding thinking into new terrain.

### PAPER 3 : SERVICE INNOVATION THROUGH TOUCH-POINTS: THE AT-ONE TOUCH-POINT CARDS

This paper was presented at the *Second Nordic Service Design Conference* in Linköping in 2010. Its aim was to present the development of the touch-point cards and results from usage. This paper again had a focus upon sharing a tool in a way that others could use it. In addition, it aimed to start a research discourse around touch-points, one of the central aspects of Service Design.

The paper describes the evolution of the touch-point cards and how they could be used in different ways as part of service innovation projects. It presented some feedback from initial evaluations of their use and attempted to position touch-points within the field of service design. It described how the cards could stimulate innovation in teams, and the expected effects this could have upon team cohesiveness. The paper does not reflect over the theoretical

aspects of cards as boundary objects or upon the relations between physical movement, visual representation and cognition.

ARTICLE 1: SERVICE INNOVATION THROUGH TOUCH-POINTS: DEVELOPMENT OF AN INNOVATION TOOLKIT FOR THE FIRST STAGES OF NEW SERVICE DEVELOPMENT

This article was based upon Paper 2. It was fast tracked from the Service Design Conference in Linköping for a Special Issue of the *International Journal of Design*, with focus upon Service Design. It was published in August 2011.

For this article I chose to focus upon three aspects related to the touch-point cards. Firstly, to describe their development and use, such that the paper would allow readers to use the results themselves in a practical context. Secondly, I wanted to place touch-points as a key aspect of Service Design and to start a research discourse on touch-points. I had a larger empirical data set from interviews, observation and further evaluation of the cards than from the previous paper, and could therefore show the important role that the cards had in innovation and team function. Finally, I wanted to reflect upon the use of cards or other physical media in Service Design and the importance of physical media to support embodied cognition. This allowed me to highlight the existing literature from the related areas of co-design and participatory design and to build a bridge between the two areas.

However, as I wrote the article, I became aware of a new issue, which has been further developed in this document; the materials of Service Design and the essence of designing services. In the article I mention touch-points as a possible material of Service Design, but I only hint at the link to materials. This started a larger process of reflection, discussed in this final documentation. It also started the reflective process relating service personality to both materials of Service Design and boundary objects. I would not have made the association between service personality and boundary objects without having written article 1. I am therefore thankful for the opportunity to submit to the IJD and focus upon a journal article. It allowed a degree of reflection that I

would never have achieved in a conference paper.

## ARTICLE 2: BRIDGING THE GAP BETWEEN BRAND STRATEGY AND CUSTOMER EXPERIENCE

Article 2 was published in *Managing Service Quality* in March 2012. This article was based upon Paper 2, which was a work in progress conference paper. After having further developed the target experience tool to a second iteration and evaluated it with both interviews and observation, I felt that the findings were important enough to be published as a journal article. Further, I wanted to publish a design-based piece of work in a business journal. This is because I feel that the findings have relevance for the wider business community, and also because I feel that service design has a place in business and management research and education. I therefore chose a business journal which has published service research articles with a focus upon customer experience and branding. This article benefited from a greater degree of reflection upon service personality and the role that this has in the semantic transformation during service innovation.

## **Publications**

# Paper 1

INNOVATIONS IN SERVICE EXPERIENCES; THE AT-ONE METHOD

Presented at the Sixth Design and Emotion Conference in Hong Kong in 2008.

## Innovations in service experiences; the AT-ONE method

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### Summary

We live in a service economy and more than 70% of total value added in the OECD countries comes from services. In Norway, eight out of 10 new jobs are created within service industries and three out of four employees work in service provision. Services are not the same as products, yet we often find companies designing services using product-based methods with the result that the design of the user experience is not given the focus it deserves. This paper describes a method, AT-ONE, which is being developed to assist in the early stages of the service innovation process. Its focus is to design innovative and engaging service experiences, and at the same time, encourage design thinking in the organisation. The paper describes the background for the method, the method itself and first results from its use within several service providers.

### **Background**

#### Services play a key role in the economy

Industries that deliver help, utility, experience, information, or other intellectual content have expanded rapidly in recent decades and now account for more than 70% of total value added in the Organisation for Economic Cooperation and Development (OECD) countries. Market-based services (that is, excluding those typically provided by the public sector, such as education, health care, and government) account for 50% of the total and have become the main driver of productivity and economic growth in OECD countries, especially as use of IT services has grown.

#### Service Innovation is poorly researched

Considering its key role for value creation in today's economies, service innovation has been poorly researched. Whilst product innovation and innovation systems have been well researched, particularly during the past 10 years, service innovation has had little focus (Methlie and Pedersen 05). Research that has been carried out on services has focussed upon "Services in Innovation" rather than "Innovation in Services" (Methlie and Pedersen 05).

#### Service innovation differs from product innovation

The term New Service Development (NSD) has been coined as a mirror to the term new Product Development. Much of the research into service innovation has focussed upon the differences between products and services and how NSD should be treated as a separate branch of innovation, rather than the

process itself. The ACM recently called for the creation of a new discipline, that of Services Science, (ACM 06) claiming that:

“the opportunity to innovate in services, to realise business and societal value ... has never been greater. The challenges are both the multidisciplinary nature of service innovation...as well as the lack of formal representations of service systems”. Spohrer and Riecken (06)

Services are characterised as having distinct differences from products, each with consequences for innovation and development. Table 1 summarises these differences. At present innovation methods do not adequately take these differences into account.

Services are...	Characterised by	Consequences for innovation
Intangible	Services are experiential	Increased focus upon designing and managing expectations and user experiences
Time-based	A dialogue between service provider and customers	Importance of consistency based upon a brand ‘promise’
Delivered across multiple touch points	Multi-channel delivery	Importance of holistic approach to service design, often crossing organisational boundaries
Simultaneous	Produced and consumed at the same time	Ability to design tailored individual experiences

Table 1: Characteristics of services and their consequence for innovation

#### Innovation in services is becoming customer- and experience-centric

The increased focus upon service innovation has been paralleled by an increasing awareness of the importance of the customer dimension of service provision. Demos (a UK Government think-tank) show that the service sector has focussed its development upon commodotisation of services through chasing economies of scale, producing what they describe as “a fundamental disconnect between services and people” (Demos 06). They cite the need to rethink service innovation in a customer-centric way, and show how product differentiation is now based upon a clear focus upon luxury, differentiation and perceived uniqueness. They claim that services are lagging behind products in terms of radical innovations and show that “people have changed faster than service organisations” (Demos 06). Demos show that expanding choice and growing wealth have created needs that are not covered by todays services. They cite todays modern need for meaning and recognition, autonomy, control and participation as central aspects to todays consumer, with services lagging behind this change. This raises difficult issues for companies offering services who are “struggling to escape the historical legacy of mass provision”. These conclusions are supported by Cullum (06) who shows that:

- 81% of people had a bad experience purchasing services in the previous year, citing words such as distant, clinical and uncaring
- 70% of people consider companies are out of touch with their customers
- Consumer switching levels have increased by 52% in the past 5 years

Grönroos (2000) claims that a new paradigm of service provision has arrived, one based upon interactions between service providers and their customers. This paradigm is based upon customer experiences over the long term, and not just upon simple, singular exchanges of value.

Reibstein (04) highlights the benefits of providing good customer service experiences: highly satisfied Starbucks customers patronised the chain for more than eight years, made 86 visits per year and spent more than \$3,000 over that time. He calculated the difference between satisfaction and dissatisfaction to be \$2,800 per customer

#### Service-Design is becoming established as a new area of innovation

Service-design is emerging as a multi-disciplinary area for research and development

The term service-design is emerging as a response to industries' needs to improve service provision. It is a multi-disciplinary area that focuses upon innovation through the design of customer experiences, and is centred upon design-innovation using a services frame of mind rather than a product frame of mind.

Service design is defined as:

Design for intangible experiences that reach people through many different touch-points, and that happen over time. ([www.servicedesign.org](http://www.servicedesign.org))

As an area of R+D it has its roots in countries that are strong service economies, such as USA, UK, Italy and Germany. It has no specific discipline at its core, and can be described as the meeting point of:

Interaction design ( Saffer 06),

Experiential marketing (Schmitt (03), Smith and Wheeler,02),

Services marketing (Van Looy et al 03)

Innovation management (Smith and Reinertsen 95),

Customer-centred Innovation (von Hippel 05),

Branding (Wolff Olins 95 and Aaker 02)

Design management (Hollins, 94, Cooper 04)

Design leadership and Design thinking (Best 06)

#### The need for a method for service-design

The increasing focus upon innovation in services using a customer focusses approach requires a design process that highlights and bases itself upon designing user experiences and service encounters. At present, no coherent method exists for this, although in the product design area, value-based design methodology is beginning to influence product development methods (eg Lærdahl (01), Tollestrup (04). Common to many

“recent” methods, these approaches focus upon emotional, symbolic and idealistic values of products within a multi-disciplinary framework. They also focus upon vision driven development and the use of facilitated workshops to speed development and raise quality.

### **The AT-ONE method for service-design**

AT-ONE is a method to assist service-design at the early phases of the service innovation process. AT-ONE focuses upon the elements that are different between products and services, and has a clear user, and user experience focus.

Each of the letters of AT-ONE relate to a potential source of innovation in services:

- A - New combinations of ACTORS who together provide the service
- T - Coordination and development of TOUCH-POINTS between customer and service
- O - The design of what the service is actually OFFERING
- N - The NEEDs that the service satisfies
- E - The EXPERIENCE that the service gives the customer

AT-ONE integrates existing knowledge, but its combination of knowledge elements is new.

As a designer or researcher reading this, you will probably be familiar with many of the elements utilised in AT-ONE. It does not introduce radically new tools to the development process, rather it combines best practice from design and research. Its relevance and newness comes from the combination of elements and their introduction to the design process, not the elements in themselves.

AT-ONE is aimed at the service industry

AT-ONE has, as a goal, to produce a method that service providers will find easy to grasp and easy to implement. Its goal is to assist service providers that do not have a strong customer focus but wish to introduce one, or service providers with a customer focus wanting to improve the first stages of innovation. Our experience is that the service-industry still does not have a customer focus but is moving towards this, and that AT-ONE fulfills a need within the industry itself. AT-ONE is not specifically aimed at the research community.

At the fuzzy front end of the innovation process

The AT-ONE project focusses upon service innovation at the front end of the development process. This has often been termed the fuzzy front end (Smith & Reinertsen 98) and describes the phase at the start of the NSD (New Service Design) process often called preliminary planning or early concept development. This is the area within service innovation that is least researched and which has fewest support tools. Most service management texts assume a concept as a start point and many organisations have implemented very effective stage-gate processes for the latter phase of development, eg the Cooper stage-gate process (Cooper 86). The earliest phases offer the greatest opportunity for transformational innovation and 66% of life-cycle costs are decided here, whilst only about 5% of development costs are utilised (Berliner and

Brimson, 88). Innovation is particularly cost-effective at this stage, and it is often termed the bargain basement of life cycle development - improved focus here gives very high returns (Smith & Reinertsen 98). It is increasingly being focussed upon by designers, as they are given a more explorative and open brief (Sanders and Stappers 08)

#### Design thinking as a foundation for the method

The term 'design thinking' relates to the introduction of design methods and culture into fields beyond traditional design and links design and transformative innovation. Stanford's new Design School, the d.school, based on joint programmes between business and design, is one of the places where the notion of design thinking has emerged. One of the key aspects of design thinking is that of abductive thinking (Margolin, V. & Buchanan, R. (1995), Liedtka yy ), the designers focus upon a vision of possibility. It is this ability, together with the ability of design to synthesise disparate needs and rapidly produce tangible concepts that forms one of the core elements of the AT-ONE method. Within the AT-ONE process it is visible in that designers have responsibility to plan, facilitate and participate in innovation workshops with the role to encourage abductive thinking within the group and as a means of developing and documenting/visualising new service innovations.



Figure 1. Different roles for the designer through time. Design thinking relates to the role of design in company vision and strategy (based upon Valtonen 2007).

#### The 'service journey' as a customer-focussed timeline

AT-ONE uses the service journey (also called user journey) as a means of structuring customer points of experience over time. The service journey is a chronological mapping (from the customer point of view) of a service encounter. It divides the service encounter into separate stages and gives a customer view into the service delivery process. Several of the design agencies and consultancies that specialise in designing

customer experiences studied by Voss and Zomerdijk (2007) used the journey perspective to analyse current experiences and design new ones. Several firms had developed a technique for mapping customer journeys, among them “The Brand Touchpoint Wheel” (Dunn and Davis .

### Personas as core elements

The AT-ONE method utilises personas as a means of identifying and introducing a user focus to the innovation process, and personas are available for all development workshops. Personas are not the only form for user representation in the process. They are used in addition to other forms of user input, such as observation, interviews and co-design, which are integrated into the N (need) part of the method. The project bases itself primarily upon the persona lifecycle as described by Pruitt and Adlin (06).

### Evidencing as an output form

In the fields of industrial design and interaction design, prototyping and modeling are well defined processes that help the designer, client and potential user evaluate the concept at an early phase of development (eg. Capjon 04).

Jane Fulton Suri developed the idea of “Experience Prototyping” through practice in IDEO, a large design consultancy, and defined the term to describe the use of one interface, or “touch-point” (Suri 00). This idea of experience prototyping for services has been developed further by service-design consultancy LiveWork under the title ‘evidencing’, in which several media channels are prototyped, together with contextual-supportive content, storytelling and scenarios. Evidencing is an attempt to quickly prototype intangible service experiences. The goal of evidencing is not to specify design elements, but to conjure up user experiences of a new service, at a very early stage of the development process. To do this, design elements are shown in context, linking service journey elements to touch-points, content and experiences.

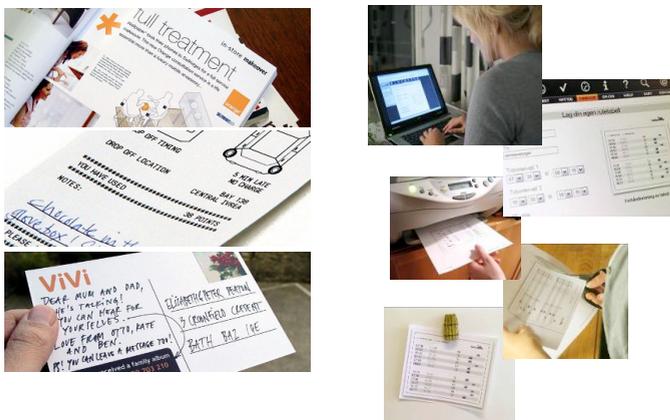


Figure 2: Evidencing is a means to conjure up experiences early in the process (photos: Livework/AHO)

### **AT-ONE is run as a series of workshops**

The AT-ONE process is run as a series of workshops, each with a focus upon the letters A,T,O,N,E, described below. The workshops can be run separately or can be combined, such that the method is scaleable. Initial evaluations have evaluated the method scaling from one day for all letters, to a half day per letter.

Each letter is planned individually and in relation to each other. The metaphor for the workshops is that each is a different ‘innovation lens’ used to view and develop the same project challenge. By using five different lenses, the goal is to stretch and explore the solution space as early in the design process as possible.

Each workshop has three phases, and is based upon commonly used creative processes (Isaksen et al 00):

- Startpoint:- establishing a common knowledge platform for participants (1/5th of workshop)
- Divergence:- exploring and generating ideas and solutions
- Convergence:- synthesis, ranking and decision-making



Figure 3: AT-ONE utilises a workshop approach

A key aspect to the workshops is the combination of participants representing stakeholders from the client organisation, domain-specific expertise and service designers.

### The Actor workshop

The basis of the Actors workshop is recent developments in the area of value networks as an alternative to the value chain. Value networks are more prevalent in services, and describe how actors together create value for the customer.

*Their key strategic task is the reconfiguration of roles and relationships among this constellation of actors in order to mobilize the creation of value in new forms and by new players. And their underlying strategic goal is to create an ever-improving fit between competencies and customers.*

(Normann and Ramirez 93)

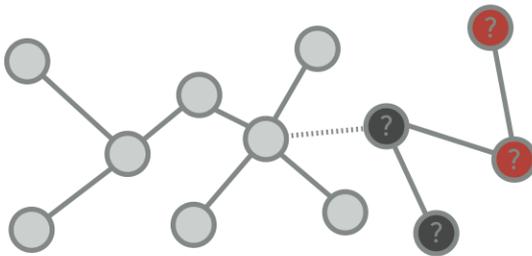


Figure 4: Actor networks create value with customers. Adding or removing actors can radically change a service offering and the service experience.

The Actors workshop investigates users as co-creators of value (von Hippel 05, Sanders and Stappers 08) and upon innovating value networks (Johanson et al 99). One key aspect here is to replace an organisations company-centred mapping of actors to one in which the customer is at the centre of the network and to consider new actors to the value network to give improve user value.

#### The Touch Point workshop

The touch point model is based upon the touch point brand model by Dunn and Davis (05). They describe how touchpoints can be segmented into three categories that generally represent the different dimension of a brand's relationship with a customer. In a service context they can be defined as: 1) Experience touchpoints when planning or preparing for a service transaction. 2) Service transaction touchpoints during the transaction and. 3) Post transaction touchpoints

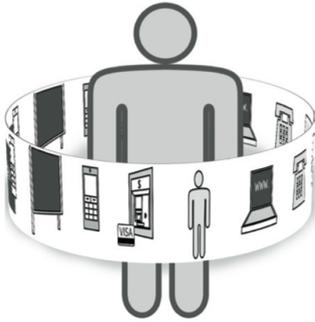


Figure 5: Touch-points connect users to the service during the service journey and are the tangible expression of a service offering.

The touch-point workshop maps out different touch-points during the service journey and compares and contrasts the use and quality of touch-point interactions. It looks for opportunities to introduce potentially new and more effective touch-points, remove weak touch-points and to coordinate the user-experience across touch-points in relation to brand message and user needs.

#### The Offering workshop

The approach taken on brand offering is based upon the model from Aaker (02), particularly brand personality. In a design perspective this has been adapted by Karjalainen (04)) and slightly adapted for the project. The offering workshop focusses upon the projected offering from the company, based upon the companies brand DNA. It also relates this to the cultural negotiation that takes place in the interface between projected offering and perceived offering. The brand megaphone model adapted from Ellwood (2000) is used as a model for the Offering workshop.

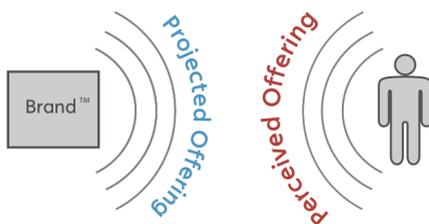


Figure 6: Offering looks at the negotiation that takes place between projected and perceived offering

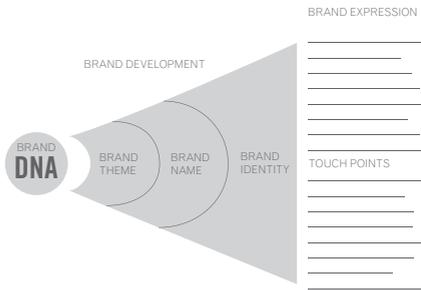


Figure 7: The brand megaphone shows the relation between company DNA and how this is experience through different touch-points (based upon Ellwood 00)

The goal of the Offering workshop is to evaluate the service offering in relation to the brand DNA and to identify any mismatch. Such mismatches can then be corrected through the alteration of the service offering, or through the development of new services. Several tools have been developed to assist this alignment process,

The Need workshop

The need workshop takes a user-centred design approach to explore user-needs. It uses personas as a vehicle for introducing a user perspective (Pruitt and Adlin 06) and adds user input from a wide selection of user-centred methods, such as interviews, observation, participatory design sessions as outlined on usability net ([www.usabilitynet.org/tools/methods](http://www.usabilitynet.org/tools/methods)). The need workshop has EN ISO 13407 Human-centred design processes for interactive systems, as its approach (ISO13407 99)



Figure 8: The needs workshop looks at both emotional and functional needs and attempts to uncover hidden needs

### The Experience workshop

The experience workshop builds upon the recent developments in the design of experiences. It combines approaches from consumer behaviour (Ratneshwar et al 00, Hansen and Christensen 07), the experience economy (Pine and Gilmore 98), Experiential Marketing (Schmitt 03) and Experiential Branding (Gad 01, Gobe 01).



Figure 9: The experience workshop attempts to define a desired experience and reverse engineer to service touch-points, offering and actors. We have found that a common vocabulary of experience words is needed.

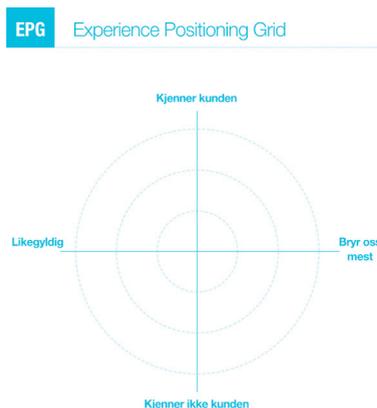


Figure 10: Example of a tool used in the experience workshop, the experience positioning grid is used to map customer experiences at each stage of the service journey

Several tools have been developed to assist in using experiences as a start-point for design. Ideally we aim to design service-experiences and reverse engineer the organisation and service to be able to reliably produce the desired experience. This can be termed an experience “pull” approach. In practice we have found this difficult due to the lack of suitable tools for adequately designing and describing a desired

experience. We hope to develop an experience “pull” method during the next few years, but until it is available, we are using a set of “push” tools that relates customer experiences to the service journey. One such tool is the Experience Position Grid (shown above). Another tool is the experience gap analysis, simply describing today's service experience with the desired experience.

### **Evaluation of the method**

The AT-ONE method is being developed and evaluated as part of an ongoing research project jointly funded by industry partners and the Norwegian Research Council (NFR). As part of this project, AT-ONE workshops will be run two times per year for each industrial partner. So far, two major iterations of the method have been carried out, one within a student course and one within a relevant industrial project.

The results are promising and the AT-ONE method scores highly when evaluated by participants from service providers. Detailed results were not available at the time of writing this article, but initial evaluations are positive. The method receives positive feedback in terms of typical innovation metrics :

- number and breadth of ideas generated
- relevance and quality of ideas
- relevance of themes covered and knowledge created
- a desire to use the method again for other service innovation processes
- a desire to implement the results

In terms of acceptance within the participating organisation for the AT-ONE method, the method and the results have been presented to the innovation boards within participating organisations and to top management. This indicates a desire to promote the method within the organisation. Further validation and evaluation work will be carried out as the project progresses.

Reflections upon the use of the method highlight several interesting aspects:

- designers have a central role in the workshops
- facilitation of workshops is a critical success factor
- the use of tangible aids during workshops aids the process and outcome
- the careful design of workshop elements (aids, forms, notes) is important
- the method is effective in terms of minimising client time in terms of results obtained, but requires a considerable amount of planning and follow-up
- involving client stakeholders with designers and experts in each discipline is a strong combination

### **Further development**

The method is being continually updated as part of a research project looking into service innovation ([www.service-innovation.org](http://www.service-innovation.org)) which continues until 2010. The method will be documented and will form the core of a service design initiative from the Norwegian Design Council. Further development will formalise the method, evaluate its scalability and develop a set of tools for each of the workshop letters.

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## Paper 2

BRIDGING THE GAP BETWEEN BRAND STRATEGY AND CUSTOMER EXPERIENCE IN SERVICES: THE TARGET EXPERIENCE TOOL.

Presented at the First Nordic Conference on Service Design and Service Innovation, Oslo 2009



### The research questions covered in this paper

This paper presents research that explores and attempts to answer the following two questions:

- » How can a cross-functional project team transform a companies brand strategy into relevant customer experiences for new services
- » How can a team describe a desired experience for a service at the early stages of new service development (NSD)

To answer these two questions, existing models for the process of converting brand strategy into customer experiences were examined, and an adapted model created that specifically applies to service development. Based upon this, several tools to assist the process have been developed. This paper describes the theoretical basis for the model, and one of the tools that resulted from it - the target experience tool.

### The context for this work

#### At the fuzzy front end of the innovation process

The work presented here focuses upon innovation at the early stages of the service development process. This has often been termed the *fuzzy front end* (Smith & Reinertsen, 1998) and describes the phase at the start of the NSD (New Service Development) process. The earliest phases of the development process offer the greatest opportunity for transformational innovation, and 66% of life-cycle costs are decided during this phase, whilst only about 5% of development costs are utilised (Berliner and Brimson, 1988). The fuzzy front end is increasingly being focussed upon by designers, as they are given a more explorative and open brief (Sanders and Stappers, 2008) and is seen as an opportunity to lift design up to a strategic and tactical level of an organisation.

#### Cross-functional development teams

Cross-functional development teams are now used in most development projects today. Such teams include relevant stakeholders, representing different functional areas within an organisation, and diverse disciplines. The process and tools described in this paper are aimed at assisting cross-functional development teams, where the team, together with designers, explore the brief and develop ideas together, through workshops. The cross-functional approach is described by Gladstein et al (1992) and Sethi et al (2001).

#### The AT-ONE project

This work is part of the AT-ONE research project. AT-ONE is developing process support for the NSD process, and tools that can be utilised in the workshops for each letter. This maps, ideates and conceptualises potential new services through workshops. This is called the AT-ONE method (Clatworthy, 2008).

Each of the letters of AT-ONE relate to a potential source of innovation in services, and the letters can be seen as a set of lenses through which a service can be viewed. The method therefore runs workshops with focus upon each of the following lenses:

A - New combinations of ACTORS who together provide the service

T - Coordination and development of TOUCH-POINTS

O - An understanding of what the service is actually OFFERING

N - The NEEDs that the service satisfies

E - The EXPERIENCE that the service gives the customer

### Designing for customer experiences

Since services are intangible, time-based, and simultaneously produced and consumed, they are strongly experiential in nature (Hollins and Hollins, 1991, Fitzsimmons (2006) Looy et al, 2003). The design of the customer experience is considered important to service success and is now incorporated in major service development approaches, for example Grönroos (2000).

Marketing has for many years focussed upon the Experience Economy (Pine and Gilmore, 1998) or Experiential Marketing (Schmitt, 2003), Emotional Branding (Gobe, 2001) and 4D branding (Gadd, 2001). Customer behaviour and emotional aspects of this has recently come into focus (Hansen and Christensen 2007, Ratneshwar and Mick 2005).

In Design, Interaction Design and HCI the area of user-experience design (referred to by some as UXD) has increasingly focussed upon the user-experience (Hassenzahl and Tractinsky (06), Desmet & Heckert (2007), Shedroff (1997)). Within this area, the major focus is upon understanding emotions and experience and measuring emotions or experiences.

There is little research related to how to design for emotions or experiences and a particular lack of research looking at the design of experiences for services. There is a clear need for more research that looks into the process by which design strategy is transformed into service experiences.

### Work in progress

This paper describes work in progress. The process has been developed over several years, whilst the tool described is still being developed. The process and tools developed in the project are used in realistic service design projects in two iterations per year.

## Semantic transformation through design

The transition from strategic brand identity to tangible objects is termed the semantic transformation (Karjalainen, 2004). Although an important part of the development process, this has received little research attention. Karjalainen is one of the first to research the transition process, and has contributed knowledge about the process, related to case studies in the product design domain. He has developed a model for how this process occurs in the design of products based upon case studies from Nokia and Volvo. He describes the result of a successful semantic transformation in this way: "In an ideal case, the process results in a solution that involves total congruence between strategic brand associations and physical product manifestations" (p207). This is visualised in figure 1.

Karjalainen describes how product manifestations from a company help convey brand associations, and describes a positive circle in which "Physical product manifestations and brand associations are fused in dynamic mutual interaction" (p207).

This occurs when the expression of brand identity, in the form of products (in Karjalainen's case) help cement the image and reputation of the organisation within customers and culture, which in turn help strengthen the internal identity of the organisation. This interaction, helps align the organisation to the brand, and therefore forms a strong start-point for new development processes. Karjalainen shows

how this occurs in the form given to Volvos new car series in the 'revolution' process, and through the design of Nokia handsets 'Definitely yours'.

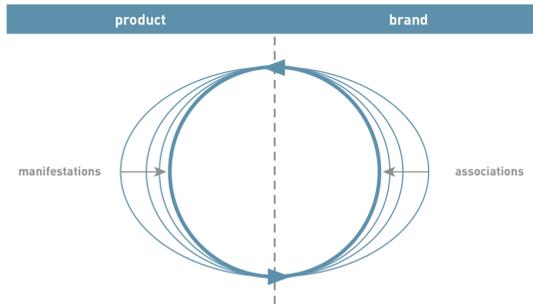


Figure 1: Karjalainen sees the result of a perfect semantic transformation as congruence between strategic brand associations and physical product manifestations. (From Karjalainen 2004 p207).

It is clear from his work that the tangible elements of a product should communicate the desired associations based upon the values and position of the company. Karjalainen's view is that the transformation of associations into product, strongly contribute to the image and reputation of the organisation.

#### Semantic transformation for services

Does Karjalainen's work also have relevance for services? As has already been mentioned, services exhibit some major differences from products, and therefore branding services is different to branding products. The specific aspects of services branding are described and discussed by De Chernatony (2003):

- » Employee behaviour is central to delivering the brand promise
- » The majority of service brands are monolithic
- » The delivery process is more important
- » Services have an increased number of contact points between customer and the brand making the service multi-tangible

The conclusion of De Chernatony's work is that there is a clear difference between services branding and product branding, and that this difference primarily relates to the form of service delivery. De Chernatony adds, that there is a lack of research regarding service branding and its implementation. However, his work highlights the importance of linking the companies focused position and values to a consistent brand promise delivered through behaviours, processes and contact points. De Chernatony points to the importance of organisational culture and staff behaviour for brand success, and states:

"Successful services brands thus evolve from a unique culture which is revealed both in the brand and in the attitude and behaviour of staff as they represent the brand to consumers" (p1107). Further, "successful services brands are characterised by organisations with core values which are deeply embedded" (p1110).

When comparing services brands as described by DeChernatony's research to Karjalainen's product brand research, there are clear similarities in the strategic brand approach. The main difference between services branding and product branding is the delivery. DeChernatony highlights organisational culture, staff behaviour and the multiple points of contact of a service, whilst Karjalainen focuses upon the product as main point of delivery. It is clear therefore that the semantic

transformation for services requires a transformation into multiple touch-point behaviours, which again are the platform for customer experiences. The question of how to do this is however not described within service branding research, and we have therefore chosen to adapt processes for service transformation from the product branding domain, as described by Karjalainen.

### The process of semantic transformation

We have chosen to base ourselves upon process descriptions that are primarily aimed at product-based branding and have chosen to merge two similar process approaches:

- » The process model described by Karjalainen (2004), which has a strong design basis
- » The process model described by Ellwood (2002) which is a more generic brand management process
- »

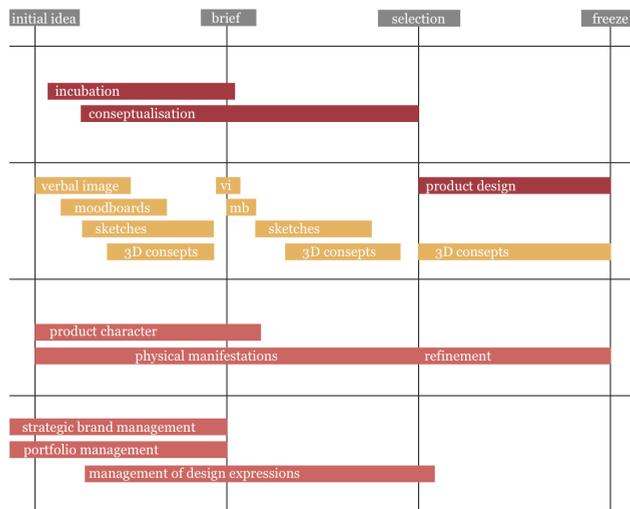


Figure 2: Karjalainen's visualisation of the semantic transformation process

Karjalainen (04) uses a transformation process model that is divided into three phases (see figure 2):

- » The strategic brand identity is communicated to the project team as desired strategic associations. In Karjalainen's cases, these are generally communicated in text form, but also are clearly ingrained within the organisational culture through the design heritage of the organisation.
- » The strategic associations are developed into product character through what he terms visual images (e.g. mood-boards).
- » The visual images are transformed into physical manifestations such as sketches and 3D concepts for new products.

During this process, a parallel strand of strategic brand management occurs, which has a role in managing design expressions. It is implied that this is a quality assurance process, although this is not explicitly explained.

Karjalainen does not go into detail regarding these phases in terms of a suggested process, nor does he suggest in what way the product character should be produced. According to Karjalainen, stages 2 and 3 are iterative and are cycled through several times before a range of concepts are suggested.

Ellwood (2002) uses a similar 3 stage process model that is more generic and does not specifically relate to design activities, or to a specific development process. He describes three stages, and uses slightly different terminology. His three stages are:

- » Description of brand DNA. His use of the term brand DNA can be described as very similar to Karjalainen's strategic brand identity (in fact Karjalainen uses the term DNA also).
- » Development of media neutral brand elements (brand theme, brand name, brand identity), also termed brand personality.
- » Development of media specific brand elements such as packaging, product, etc.

Common to both of these is the transformation from a core brand identity (mostly words, visual identity and culture) through the development of a project specific personality or character (visual representations), to sketches of how the final design might be.

For use in services, we have adopted much of the terminology used by Ellwood, and included elements from the process as described by Karjalainen. This, we feel, has given us a process that is relevant for service development, and cross-functional teams. We consider the term brand DNA as a good means of communicating the essence of a brand within a project team. We feel also that the term personality fits well with the application of brand to services, since personality and behaviour are closely linked. The use of the term brand personality, also communicates well within a service design project team, since it underscores the importance of behaviours in service provision.

### Brand personality

Brand personality is defined as "the set of human characteristics associated with a brand" Aaker (1997 p347). Brand personalities are often characterised using analogies to people, objects and services. By giving the brand DNA associations with tangible and experiential things, this helps understand the brand, communicate the brand internally and helps the designer when aligning the finished design to the Brand DNA. Aaker has developed a theoretical framework of the brand personality construct and has determined the number and nature of dimensions of brand personality. She found five dimensions (sincerity, excitement, competence, sophistication and ruggedness) and 42 traits, linked to these dimensions. We consider the combination of dimensions and traits are a good start when designing a service, since they assist linking the Brand DNA to tangible personalities, which can then be linked to objects and services. In a workshop setting, or in a project team, the brand personality is a very good means of forming a common understanding of the company brand in respect to a new service.

### The process model utilised in AT-ONE

In the AT-ONE project, we have developed a project specific model that combines process elements from Ellwood and design aspects from Karjalainen, to take account of service specific aspects, such as behaviour, as described by De Chernatony. We call this model, the brand megaphone.

The model (see figure 3) takes the brand DNA of the organisation, and uses this as a basis to describe the brand personality that is desired for the service being developed. Once this has been described, examples of behavioural touch-points are prototyped, based upon this personality. Examples of such touch-points are telephone conversations, point of sale assistance etc.

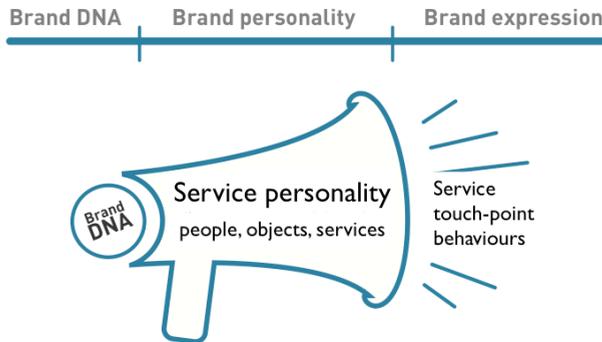


Figure 3: The brand megaphone model used in the AT-ONE project

This model forms the structure to assist the project team in the early stages of the NSD process. To assist with the process, several tools have been developed that cover different facets of service design, with focus upon the customer experience. Some of these are idea-generation tools, others help in the scoping and specification of a desired experience. The next section describes one of these, the target experience tool.

## Describing a target experience

During the design process, decisions are made that will have influence upon the customer experiences once the service is launched. The designer aims to design a holistic service with service elements that consistently give a pre-defined experience to customers. However, the customers meet a service once it goes live, and after considerable development time and money has been invested. It is therefore important in a project to be able to understand the customer experience as early in the design process as possible. Jane Fulton Suri from IDEO introduced the term experience prototyping to describe this: “Increasingly, as designers of interactive systems (spaces, processes and products for people), we find ourselves stretching the limits of prototyping tools to explore and communicate what it will be like to interact with the things we design.” Buchenau and Fulton Suri (2000, p424). Since then, this idea of experience prototyping has been developed further by service-designers in diverse forms.

### Introducing the customer experience at the start of the project

In the AT-ONE project, we are introducing the idea of starting a project by defining the desired experience that a company wishes to give its customers, and then working backwards to decide how such a service can be produced - what should the offering contain, which touch-points should be utilised and how should they be designed? This is a form for reverse engineering based upon the

experience. The problem that we are attempting to solve in the project is “how can service experiences be scoped during the early stages of the design process, before the service design is even chosen”. The tool presented here is one of the AT-ONE tools for doing this, and is based upon role-playing as a means of scoping a desired experience.

### Experience prototyping based upon role-playing a service

The goal of experience prototyping is to “allow designers, clients or users to ‘experience it themselves’ rather than witnessing a demonstration or someone else’s experience” (Buchenau and Fulton Suri 2000 p425). Suri describes methods as varied as probing, bodystorming and rapid prototyping. Since then, several methods for experience prototyping have been developed based upon acting out scenarios (Burns et al. 94, Buchenau and Fulton Suri 2000, Boess 2006, Boess et al 2007, Boess 2008).

In our case we are most interested in creating a common understanding within a project team regarding the relation between strategic brand and customer experience. Additionally we want to assist the team create a target experience, that can be documented. When initially using role-playing to assist this, we found that using project team participants to play the roles was interesting but did not give sufficiently detailed and nuanced experiences - we were basically not good enough at acting the nuances required for experience scoping. In addition, during the very early stages of development, many different service directions are still open. Solutions could be anything from self-service, virtual, mobile, fixed, bricks and mortar. Role-playing is often used to explore these alternatives and is effective in doing so. However, we wanted to find a way of describing and refining the kind of experience that was relevant to the brand, no matter what service direction was chosen later on in the process. We were not prototyping “the” experience, rather specifying a target experience. This is where our method diverges from traditional role-playing based experience prototyping. Traditional methods are aimed at exploring or evaluating an interaction or series of interactions for a specific service, rather than scoping a desired experience. We have therefore developed a tool that helps express brand strategy as target experience. To do this, we found that we needed to nuance experiences and required professional acting assistance.

Our usage aims specifically to help scope a target or ideal for how the brand strategy should be experienced, not to design the experience itself. Ideally, the results of our work would form part of a design brief that defines the desired experiential outcome, in terms of an experience target for the service, and presented as an experience (that can be experienced).

### The target experience tool

The tool is described in step-by-step detail in appendix 1. It has the following 3 steps, which relate to the semantic transformation model described earlier:

- » Transforming brand DNA into a project relevant brand personality
- » Transforming the brand personality into target experience words and emotional take-aways
- » Enacting situations based upon experience words to develop, refine and describe an experience target

At the project level, step one sometimes has been completed within the organisation prior to the project start. However, we have found this activity to be a good means of gaining a common understanding of the importance of the brand strategy for the project.

The tool combines visual references in the transformation, but also behavioural or experiential references also. During step 1, mood boards are developed, together with other references that help develop a project specific brand personality. These references rely strongly upon use of analogy and

metaphor. In addition to this, the personality traits, as described by Aaker (1997) are used to choose words relevant to the organisation and project. Together these examples are used together to describe the personality that the service should have. The result of this activity is a shared understanding within the project team of the personality that the service should have.

Once this is complete, this personality description is used to choose key experience words. These words are based upon a set of words developed for desirability work at Microsoft (Benedek and Miner, 2002). Together with the key experience words, we note down the desired associations we would like the customer to receive, based upon the experience (see figure 4).

<b>Experience word:</b> Romantic	<b>Desired take-away:</b> Dreamy, excited, warm, (sentimental), special, chosen, moved.
-------------------------------------	--

Figure 4: The experience words are enhanced by noting the associations related to the word

This then forms the basis for working with a professional who can act out scenarios based upon these words. We have found that it is a good idea to choose a reasonably wide spread of words at first, and then through successive iterations, nuance these, based upon the experience that each gives when played out. The ability to rapidly iterate and adjust the experience words and subsequently played experience, allows for the development of increasingly nuanced expressions. The team can then choose the experience term or terms they consider is best suited for the project. A typical workshop session to achieve this takes about a half day, provided preparations are made. We film the iterations, and edit the chosen film section(s). The combination of the experience words, accompanying associations and film, supported by the brand personality deliverables together create a target for experience that can form a specification for a project at the early stages. This forms a target, or guiding light for all later development work.

## Discussion

So far, the process has been trialled using internal workshops and externally with one service provider. This section presents our experience with the model for the semantic transformation process and specifically the target experience tool. It discusses the tool in relation to other methods of enactment and suggests further areas for research and usage.

The research questions that we sought to answer through this work were:

- » How can a cross-functional project team transform a companies brand strategy into relevant customer experiences for new services
- » How can a team describe or scope a desired experience for a service at the early stages of new service development (NSD)

### Does it assist cross-functional design teams with the semantic transformation?

The early stages of a project are phases in which the project is scoping its direction. It has a strategic mandate and explores alternative ways in which this mandate can be realised. To be successful in its context, the process for semantic transformation for cross-functional groups has to fulfil the following criteria:

- » It should lead to a high degree of congruence between brand strategy and service experience

- » It should address service-specific aspects, such as multiple touch-points, behaviours and organisational development
- » It should lead to a shared understanding of process and result

Regarding the first question, we have not yet trialled the process in projects that have resulted in launched services. We have only partial data therefore to review this criterion. The process has been used several times as part of the research project together with external organisations. However, each organisation has utilised the process to develop concepts rather than to launch services. The feedback from workshop participants, received from discussions and questionnaires do, however, point to promising results. This also raises major methodological questions, which as yet remain unanswered. How is brand congruence measured, and who judges it? This question is not covered by Karjalainen, and in the case examples he uses, it is the designers and not the customers that are interviewed and who make the judgements. Without a brand congruence measurement tool it is difficult to assess the process we have developed.

In terms of the second question, there are strong indications that the process does provide an articulation of customer experiences that are specifically relevant to services. The process focuses upon behaviours and touch-points specifically as part of the procedural steps and results in examples of customer behaviours and their related experiences. In relation to organisational change, Karjalainen describes semantic transformation as a means of strengthening the brand and brand heritage within an organisation. In the AT-ONE project it is early days to say, since such changes take a long time. Organisational change is a slow process and difficult to measure. In addition, the organisations we are working with are large, and we interact only with a small subset. Indications are however positive, although indirect. Evaluation questionnaires completed after each workshop give positive feedback, and each organisation we have collaborated with, is now working on implementing AT-ONE as part of its development process. This indicates that the organisations involved see a positive reward from using this structured process and wish to implement it across the organisation. Should this happen, then the likely result would be a strengthening of brand and brand heritage within the organisation and improved congruence between service and brand.

#### Does the tool help scope a target experience for the service?

The tool aims to create a target for the customer experience, based upon the brand strategy of the service provider. This target can then be used to guide development later in the design process, independently of the final solution that is chosen. Does it do this?

To be able to evaluate this requires two criteria to be met:

- » That the tool manages to successfully transform brand strategy into relevant experiences
- » The tool manages to communicate the experience internally within the project team and externally, during the whole project process.

Our initial evaluations of the tool suggest that both criteria are met, but further work is required to understand this in more detail. Feedback from brand managers who have used the tool suggest that the tool assists in the transformation of brand strategy into a relevant target experience. Further, discussion within the project team regarding the nuances of experience, suggest that the tool does indeed scope experiences as a form for target. However, the tool has received limited evaluation and a long-term evaluation has not been possible due to the constraints of the project. We have been unable to follow a NSD process from start to conclusion using this process or tool, and cannot therefore conclude as to its value later in a development process.

So far, we have had best results from enacting telephone conversations or simple single touch-point interactions rather than whole processes. This is because it allows us to focus upon understanding nuances of experience without having to choose the specific direction that the service should take. In

the fuzzy front end, multiple directions are being explored, and it is not possible to explore both multiple directions and multiple experiences within the time frame of a workshop. When we have moved from conversations to behaviours involving touch-points, we find that the tool rapidly becomes traditional bodystorming, in which the focus is upon exploring alternative directions or solutions, rather than the experience itself. The tool therefore changes from being a scoping tool, to becoming an idea generation tool, thus fulfilling a different role.

#### Is it different to other existing methods?

We consider this approach to be different to existing experience prototyping methods, and complimentary to them. Informance/bodystorming/role-playing approaches explore different situations and are focused upon exploring alternative service solutions - what the service could offer and how it could be offered. This tool has a different focus, it looks at the transition from a strategic brand to service experience at a high level, and results in an experience ambition or target that is independent of the final chosen service design. It explores nuances of experience and fine-tunes this. It is this fine-tuning through iterative steps that we consider to be unique to this tool and complimentary to existing methods.

#### Broader applicability as part of a brand handbook

Although aimed at assisting projects with scoping and way finding at the fuzzy front end of projects, we see that the tool may have a broader applicability in terms of communicating brand strategy internally within an organisation. At present, brand identity is presented mostly visually in a handbook and through brand heritage and behaviours are often not communicated. We feel that this limitation has historical roots in product-based organisations and is that there is potential to use service experiences as part of brand handbooks for services. The tool offers an opportunity to explain and show how brand transforms through personality into experiences. We feel that the target experience tool could therefore be a supplement to a brand handbook in addition to a tool for a project team. This is a direction we would like to explore in the future.

#### Further work

The process and tool described in this paper are work in progress towards a holistic approach to service innovation at the fuzzy front end of new service development. The process itself is central to AT-ONE, whilst the tool is one of many tools being developed. Both the process and tool show promise, although several areas require further development and evaluation.

The process has been utilised in several projects and over several iterations as part of a research project. This has given valuable input to its development, but has prevented its use in fully realistic development projects. Long-term evaluation of the process as part of strategic development projects would be the real test of the process, and we hope that this will occur before the end of the project. Of particular interest is the evaluation of whether the process helps a project team towards achieving brand congruence. More specifically, we would like to achieve a greater understanding of how the process can assist a team:

- » Gain an increased understanding of how brand relates to service
- » Gain an understanding of the link between brand strategy and customer experience
- » Gain an understanding of the consequence the customer experience has upon service perception by customers
- » Understand nuances in customer experiences and the consequences of this

The tool itself needs to be trialled in more projects to gain a greater understanding of its strengths and limitations. It also needs to be trialled over a longer process, to understand its value further downstream in the development process. We would also like to explore the use of the tool as part of an expanded brand handbook for a service organisation. This offers an interesting further development, and we consider it might become complementary to a project-based version. We would also like to explore the boundaries of the tool and understand the situations in which it changes from being a scoping tool to becoming an idea generation tool. At present, this boundary is unclear.

## Conclusion

The transformation of brand strategy into service design is a phase that is not well documented or described in the research literature. The process and tool described here offer a structured process that helps a project achieve such a transformation during its early stages. Initial evaluations suggest that the tool assists with the semantic transformation from brand strategy to target experience, although further work is required to validate this. Additionally, the process seems to assist a project team create a common understanding of strategic branding, customer experience and to a certain extent design, early in a project. Further work is required to explore the use of the process and the tool, particularly over the long term.

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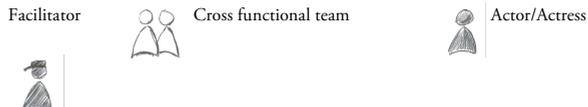
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## Appendix 1: Description of the target experience tool

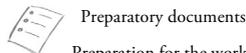
### Participants

The workshop participants are the project team and two (or more) designers. The team can be added to, if needed to ensure relevant stakeholders are represented. We recommend that the workshop is facilitated by a designer with good facilitation skills. Alternatively, an experienced facilitator can be used, but they have to have an understanding for design thinking and design



We have used an actress who is trained in improvisational theatre, but are unsure how important this is.

### Planning the workshop



Preparation for the workshop entails collecting as much Brand DNA information as possible. General strategy, vision and mission documents will have been used during the earlier workshops and will be reasonably well known by this point. The goal here is to focus upon the brand and its transition to experience.

The outputs from the Offering workshop should be built upon, particularly any mapping or defining results.



The only requirement is a room large enough for workshops with adequate space for acting out scenarios. This method does not require specific props to create realism. It is important to have a printer available very close to the workshop room, since multiple scripts will be produced and edited. We have used video as a recording technique, and recommend using a directional microphone to record the actor's voice.



The facilitator introduces the company brand personality through descriptions and visual examples.

The examples should show personality through the following means:

- » examples of successful touch-points from the company that represent the personality
- » examples of products, people, images or services that represent the personality
- » the personality described in words, using the dimensions of brand personality (Aaker 97)
- » If these examples are not available, then the group should produce them together in the workshop.



A written and visual summary of brand personality that can be used later in the design process.



### Stage two - From brand personality to experience words

Based upon the brand personality from stage one, the group chooses experience words that they feel represent the brand as it should be experienced by customers. The group should be encouraged to take a broad approach at first and choose 5-6 different experience words that stretch the brand, yet are still faithful to the personality and DNA of the company.

We have based our experience words upon a list initially created by Microsoft for their desirability toolbox (Benedek and Miner 2002). They list 118 words and we have supplemented these and translated into Norwegian. Examples of our experience words and the full set of Microsoft words are presented in Appendix 1.

Many of the words do not describe experiences in themselves, so we have started to describe the desired experience we want the customer to 'take away' from the service encounter. This is done by simply creating a table (see example below):

Experience word: Romantic	Desired take-away: Dreamy, excited, warm, (sentimental), special, chosen, moved.
------------------------------	---

Figure x: Example of experience word and desired 'take away' from a project with the Norwegian Lottery.



### Output

A set of experience words together with desired experience/emotional take-away, presented in table form.



### Stage three: Role-playing and scripting (iterative)

This is an iterative stage, in which role-playing and scripting are cycled through. We find it worth jumping straight into role-playing to get a feel for some of the words and how they work. This results very quickly in the need for a script and sometimes some primitive props.

The scripts need to be carefully worded to be precise enough to express the chosen words and take-aways.

This stage cycles through several phases as a spiral of playing then adapting the script. We find that once the experience words have been played or attempted, that they become nuanced a level. Some become merged, some removed as being irrelevant, and some become more precise. During this stage, we use the printer continuously, printing out new updated scripts, playing the script and adapting.

Below are example scripts simulating a telephone call informing of a medium sized lottery win. The experience word is shown in bold, and the script that is related to it below. Note, these are translations from the original in Norwegian, and some of the meaning has been “lost in translation”:

#### Pragmatic

*Hello, I'm calling from the Norwegian Lottery to inform you that you have won 100 000 kroner in this weeks lottery draw. The money will be transferred to your bank account within two to three days.*

#### Personal

*Hi John, this is Anne calling from the Norwegian Lottery, and I have some great news to share with you. You have just won one hundred thousand kroner on your lottery ticket and we congratulate you warmly.  
John, I will transfer the money to your account and it will be with you within a couple of days. Enjoy your evening.*

#### Enthusiastic

*Hi, is that John?  
I have fantastic news for you. You're this week's winner of one hundred thousand kroner in the lottery. Isn't that amazing? There are so many things you can do with that money - imagine the possibilities. John, the money will be right with you and you will be able to blow it in a couple of day's -Congratulations!*

We film this stage, and an edited video forms part of the final deliverable.

The group uses the iterations as a means to collaboratively focus and end up with one “target” word or word set.



Output

This stage outputs video footage of the role-playing, together with numerous sets of scripts, with final chosen experience words and scripts.



Stage 4: Final deliverable

This phase is tailored to the project but generally consists of putting together the brand personality result, together with the experience words and an edited video. Our experience is that a video showing the final chosen expression plus some of the ‘near misses’ works best to express the ideal experience and how this is different from other similar situations.



Output

The final deliverables from this part of the workshop are:

- » documentation of the brand personality, desired experience and experience take-aways
- » edited video
- » scripts supporting edited video
- »

## Appendix 2: Dimensions of Brand personality

The five main dimensions:

- Sincerity (down-to-earth, honest, wholesome, cheerful)
- Excitement (daring, spirited, imaginative, up-to-date)
- Competence (reliable, intelligent, successful)
- Sophistication (upper class, charming)
- Ruggedness (outdoorsy, tough)

More detailed descriptions of each traits characteristics:

- Down-to-earth = down-to-earth, family-oriented, small-town
- Honest = honest, sincere, real
- Wholesome = wholesome, original
- Cheerful = cheerful, sentimental, friendly
- Daring = daring, trendy, exciting
- Spirited = spirited, cool, young
- Imaginative = imaginative, unique
- Up to date = up to date, independent, contemporary
- Reliable = reliable, hard working, secure
- Intelligent = intelligent, technical, corporate
- Successful = successful, leader, confident
- Upper class = upper class, glamorous, good looking
- Charming = charming, feminine, smooth
- Outdoorsy = outdoorsy, masculine, Western
- Tough = tough, rugged

From: Aaker 97: Dimensions of Brand Personality. Journal of Marketing Research. Vol 34 pp. 347-356

### Appendix 3: The Microsoft Experience words (originally used for product reaction cards).

The complete set of 118 Product Reaction Cards				
Accessible	Creative	Fast	Meaningful	Slow
Advanced	Customizable	Flexible	Motivating	Sophisticated
Annoying	Cutting edge	Fragile	Not Secure	Stable
Appealing	Dated	Fresh	Not Valuable	Sterile
Approachable	Desirable	Friendly	Novel	Stimulating
Attractive	Difficult	Frustrating	Old	Straight Forward
Boring	Disconnected	Fun	Optimistic	Stressful
Business-like	Disruptive	Gets in the way	Ordinary	Time-consuming
Busy	Distracting	Hard to Use	Organized	Time-Saving
Calm	Dull	Helpful	Overbearing	Too Technical
Clean	Easy to use	High quality	Overwhelming	Trustworthy
Clear	Effective	Impersonal	Patronizing	Unapproachable
Collaborative	Efficient	Impressive	Personal	Unattractive
Comfortable	Effortless	Incomprehensible	Poor quality	Uncontrollable
Compatible	Empowering	Inconsistent	Powerful	Unconventional
Compelling	Energetic	Ineffective	Predictable	Understandable
Complex	Engaging	Innovative	Professional	Undesirable
Comprehensive	Entertaining	Inspiring	Relevant	Unpredictable
Confident	Enthusiastic	Integrated	Reliable	Unrefined
Confusing	Essential	Intimidating	Responsive	Usable
Connected	Exceptional	Intuitive	Rigid	Useful
Consistent	Exciting	Inviting	Satisfying	Valuable
Controllable	Expected	Irrelevant	Secure	
Convenient	Familiar	Low Maintenance	Simple	

From: Benedek and Miner (2002). Measuring Desirability: New methods for measuring desirability in the usability lab setting. Proceedings of the Usability Professionals' Conference, 2002.

### Appendix 3: Examples of experience words, as used by AT-ONE

<i>Effektiv</i>	Stolt	Fornøyd	Fredelig
Nedlatende	Empatisk	SENTIMENTAL	Ulykkelig
Vennlig	Kjærlig	Pragmatisk	Deprimert
<b>Stressende</b>	<b>Autoritær</b>	<i>Romantisk</i>	Rolig
Sosial	Beskjeden	Sjalu	<b>Anspent</b>
Tiltalende	<b>IVRIG</b>	<i>Alene</i>	Bekymret
<b>Fjern</b>	Respekterende	<b>Sexy</b>	Aristokratisk
Brukervennlig	STOLT	<b>Misunnelse</b>	<b>Nervøs</b>
<i>Komplisert</i>	Pålitelig	<i>Hjemkjær</i>	Ikke Fornøyd
<i>Personlig</i>	<b>SKYLDIG</b>	Ydmyket	UPFULSTENDIG
Tids-oppslukende	Entusiastisk	SKAMFULL	<b>IRRITERT</b>
Attraktiv	<i>Glede seg</i>	Flau	Frustrert
Forutsigbar	LYKKELIG	<b>DANISK</b>	<i>Verdifull</i>
	<b>MUNTER</b>	<b>REDD</b>	Rett fram
	<b>Glad</b>	<b>SKREMT</b>	<b>OVERVELDENDE</b>

## Paper 3

SERVICE INNOVATION THROUGH TOUCH-POINTS:  
THE AT-ONE TOUCH-POINT CARDS

Presented at ServDes. 2010, the Second Nordic Conference on  
Service Design and Service Innovation, Linköping 2010

# Service innovation through touch-points: the AT-ONE touch-point cards

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## Abstract

In this paper we review the area of touch-point innovation in services and specifically describe the development and use of a card-based toolkit developed in the AT-ONE project - the AT-ONE touch-point cards. These cards have been developed to assist cross functional teams during the first phases of the new service development (NSD) process. This paper describes the development of the tools, their intended use and their evaluation. The results show that the toolkit assists the innovation process and helps develop team cohesiveness. The card-based approach offers a tangibility that teams find useful, and that offers multiple usage alternatives. Discussion and suggestions for further work are included.

KEYWORDS: Touch-points, cross-functional teams, service design, innovation

## Introduction

Touch-points are the points of contact between a service provider and customers. Each time a person relates to, or interacts with, a touch-point, they have a service-encounter. This gives an experience and adds something to the person's relationship with the service and the service provider. The sum of all experiences from touch-point interactions colours their opinion of the service (and the service provider).

Touch-points are one of the central aspects of service design. They describe one of the major differences between products and services, and are the link between the service provider and the customer. In this way, touch-points are central to the customer experience. It is not surprising then, that touch points are mentioned as one of the three pillars of service design (Koivisto 2009 p .142)

Due to the importance of touch-points as part of service design, there is a lot of interest regarding how a project team can innovate within the area. This paper considers existing touch-point research and describes the development and use of a card-based toolkit used to help project teams develop innovative new services.

## Research into Touch-points

Despite being a major part of service design, there is little, or no, documented research within the area (Howard 2009). We have to move to other disciplines to find research into touch-points, yet this research has a different focus and approach. Existing knowledge comes mainly from practice-based consultancy within service design, and can be traced back to literature from marketing and CRM (customer relationship marketing). This literature generally focusses upon the need for strategies for the integration of multiple channels, often with focus upon integration into a CRM system. In marketing and CRM, the term multi-channel delivery is often used instead of touch-points, and the focus has been mostly upon CRM systems themselves, rather than customer experiences or touch-point interactions. Design of individual touch-points is not covered, nor is innovation through touch-points considered, other than at a cursory level.

However, the concept of designing points of contact between the service provider and the customer is not new. Shostack (1984) introduced thinking around touch-points as part of services, using the term tangible evidence as part of what she termed 'service blueprinting'. She describes touch-points as follows:

*... everything the consumer uses to verify their service's effectiveness. The setting, including colour schemes, advertising, printed or graphic materials and stationary, all proclaim a service's style. The design should not be carelessly delegated to outsiders or left to chance*  
Shostack 1984 p137

Shostack also used the term "orchestration" to describe how these points of contact should be designed.

In the medical domain, the term emotional touchpoints has started to appear in the research literature (eg. Dewar, et al 2009). The use of the touchpoint term here is more in alignment with usage in service design, in relation to the customer experience. However, the term is specifically applied in their article as an interview tool for eliciting critical incidents during a service journey - ie. as an evaluative tool for completed services, rather than as an innovation tool during the early stages of the design process.

Within marketing, integrated marketing (Iacobucci and Calder 2003) places most importance upon touch-points. Integrated marketing combines three elements that are closely related to service design; an understanding of consumer behaviour, focus upon brand and the link to customer experience. Integrated marketing takes a holistic view of services, in which coordination of touch-points is one major part of linking what is termed contact experiences to the brand:

*in a more complex consumer experience ... there may be literally hundreds of small elements of experience the consumer notices.*(Fortini-Cambell 2003 p63)

In CRM, the focus is upon using technology to organise and automate relationships with customers and prospective customers. It is often centred upon automating and integrating interactions, often with a focus upon efficiency rather than upon the customer experience:

*CRM is a management approach that seeks to create, develop, and enhance relationships with carefully targeted customers to maximise customer value, corporate profitability, and thus, shareholder value* (Payne and Frow 2004 p527)

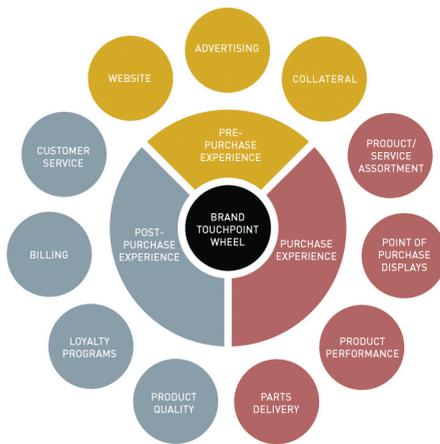


Figure 1: The traditional view of touch-points is based upon controlling communication across different channels as shown above. Recent developments are moving this to include indirect touch-points such as word of mouth and social media.

Source: Redrawn from Voss & Zomerdijk 2007

Within CRM research the term touch-points has been used within a context of maximising profitability and shareholder value. Technology is used to organize, automate, and synchronize business processes—principally sales activities (Payne and Frow 2004, Hogan, et. al. 2005). Recent developments in CRM practice show a new attention towards touch-points as part of the customer experience (Choy 2008),

Unfortunately, there is a lack of literature that provides methods, approaches or case studies describing *how* a project team can work to achieve the goals described in the literature. Much literature covers the importance of touch-point orchestration (Payne and Frow 2004, Holmid 2008, etc). However, there is little literature available regarding how this is done, how this could be done or how this should be done. The work described here, describes therefore a methodology to assist cross-functional teams when working with touch-points.

Holmlid (2008) states that *'For design management the challenge becomes one of both coordinating multiple service channels, and the coordination between service channels'* (p7). There is therefore a clear need for assistance that helps project teams achieve these two goals, yet little or no research to help project teams with the 'what' and 'how' of touch-point orchestration and innovation exists.

## Research questions

The research presented here contributes to the limited discourse around touch-points by identifying categories of touch-point innovation and by proposing an approach to innovation suitable for cross-functional project teams. Further, a toolkit and its evaluation is described.

The research questions explored in this paper are:

1. How could cross-functional teams innovate service touch-points during the early stages of a project?
2. In what way can design-based tools assist team integration at the first stages of a project?

## Context

### At the fuzzy front end of the innovation process

The fuzzy front end (Smith & Reinertsen, 1998) describes the phase at the start of the NSD (New Service Development) process and has come into focus during the past years. This phase is described as the most important part of service innovation by innovation managers (Allam and Perry 2002, Allam 2006). This is because the earliest phases of the development process offer the greatest opportunity for transformational innovation. Approximately 66% of life-cycle costs are decided during this phase, whilst only about 5% of development costs are utilised (Berliner and Brimson, 1988). Kelley and Storey (2000) summarise its importance in this way:

*While previous management disciplines have rationalised and routinised the back end of the new service development (NSD) process, the front-end of the process remains a knowledge-intensive black art that appears, from all industry studies available, to be consuming an increasingly large portion of the total concept to cash-flow cycle time. (Kelley and Storey 2000 p.45)*

The fuzzy front end is increasingly being focussed upon by designers, as they are given a more explorative and open brief (Sanders and Stappers, 2008). This phase is also seen as an opportunity to lift design up to a strategic and tactical level of an organisation.

### Cross-functional development teams

Cross-functional development teams are now used in most development projects. Such teams include relevant stakeholders, representing different functional areas within (and from outside) an organisation, and diverse disciplines (de Jong and Vermeulen, 2003, Gladstein et al 1992, Sethi et al 2001). The process and tools described in this paper are aimed at assisting cross-functional development teams, where the team, together with designers, explore the project mandate and develop ideas together, through workshops. This, amongst other things, aims to aid the development of team collaboration and communication (Sarin and O'Connor 2009), and helps maintain a common understanding and a shared vision of the object of development (Molin-Juustila 2006).

### The AT-ONE project

This work is part of the AT-ONE research project. AT-ONE is developing process support, and tools, for cross functional teams during the first stages of the NSD process. The AT-ONE method helps teams map, ideate and conceptualise potential new services through a structured series of workshops (Clatworthy, 2008).

Each of the letters of AT-ONE relate to a potential source of innovation in services, and the letters can be seen as a set of lenses through which a service can be viewed. The method therefore runs workshops with focus upon each of the following lenses:

A - New combinations of ACTORS who together can provide improved services

T - Orchestration and development of TOUCH-POINTS to provide innovative services

O - Developing new OFFERINGS that are aligned to brand strategy

N - Understanding customer NEEDS and how new services can satisfy them

E - Designing customer EXPERIENCES that wow the customer

The work described here relates to the development of the method for innovation in touch-points, the letter T in AT-ONE. The context for this work is therefore upon innovations based exclusively upon focussed workshops on touch-points in which cross-functional teams work together.

## Method

The research approach taken was one of participatory action research (O'Brien 2001) in which the author was involved in planning, developing and evaluating the support tool through several iterations.

### Use context/requirements specification

The idea for developing a tangible tool emerged when we started running workshops in the AT-ONE project three years ago. As part of the Touch-Point workshops, we found ourselves using touch-point examples to help with both mapping and analysis (before a workshop) and for idea generation during the workshops themselves. In addition, we identified a need for activities that help build project team cohesiveness, common understanding and common goals.

This need is supported by research into design and collaborative teams (Molin-Juustila 2006), and from literature in which showed cards or games as an innovation support tool (Brandt 2008, Brandt and Messeter 2004, Halskov and Dalsgård 2006).

Based upon existing research into touch-points, cross-functional teams and card-based tools, the project therefore developed a card-based tool with the following seven functions:

#### A. Team building for cross functional teams

1. To build a common understanding of touch-points and their role as part of a holistic service design
2. To assist with team cohesiveness and mutual respect within the team for different disciplines and views

#### B. Analysis and mapping:

1. To gain an overview of the multiple touch-points used during the customer journey

2. To identify critical touch-points during the customer journey
3. To understand the limitations and possibilities of each touch-point that the company utilised
4. To identify who is responsible for design, development and maintenance of each touch-point

#### C. Idea generation

1. To generate ideas regarding how to innovate through changes in touch-point usage, design or implementation.

#### The development process for the cards

The development process has been iterative and evolutionary during the past three years. Several touch-point workshops have been held with cross-functional teams from industrial clients and in addition, student projects, working with industrial clients have also utilised the cards as part of the workshop process. The cards were initially developed to enrich existing innovation workshops based upon the touch-point analysis and mapping. A need was quickly identified during these workshops to have a checklist of possible touch-points, to save time and to reuse knowledge. We found however, that developing the cards helped further develop the tools, so the tools and cards developed together. The tools and the cards have been prototyped several times and improved each time, most recently during workshops during the Autumn of 2010.



Figure 2: The first cards were images of individual touch-points and fairly large. Their tangibility was good, but they were too large when mapping complex service systems involving many touch-points.

The first cards were images denoting different touch-points. They were larger (ca. 15x15cm) and placed on foam-board. This made them tangible elements that were easy to handle and share and a strong improvement on post-it notes. However we found two problems with them. Firstly, they were too large and unwieldy when many touch-points were being grouped - they simply took up too much space on a table. Secondly, it was unclear from some of the images, which touch point they represented - the images were ambiguous.

The second cards were made as an innovation game for one of the industrial partners in the project. The intention here was to identify touch-points specifically for lottery and betting contexts. This time the cards were of normal playing card size. We found that the size worked well for the game context, and was a size that worked both on tables and on walls, when used for group work. In the images, we attempted to show both the touch-point and the use context. This caused two types of confusion. Firstly, ambiguity of some images, caused confusion, similar to the first series. Secondly, the association to context made it difficult to distinguish between the object in the images as a touch-point (for example a glass) or the context being a touch-point (a bar). This confusion raised questions within the group during group processes and transferred focus from the innovation process to discussion of card meaning. Although not a significant problem, it interrupted the flow of conversation.



Figure 3: The second series of cards were playing card size and incorporated into a game. They incorporated more contextual information about the cards by often including contextual information in the images.

During development of the third, and present set of cards, the project leader and designers discussed the issue of confusion and multiple interpretations. This led to two decisions. Firstly, that we would put the name of the touch-point on the card. This enabled a quick recognition of the touch-point, and together with the image, presented an unambiguous representation. This led to a discussion regarding the choice of images for the cards, and the

usage of the cards themselves. Were they to be abstracted and inspirational for idea generation in themselves, or should they be concrete representations of the touch-points? We chose to make them as clearly descriptive and concrete as possible based upon the confusions earlier reported. This eliminated the problems mentioned earlier, and smoothed out group processes, allowing the group to focus upon the innovation process rather than negotiation of meaning.



Figure 4: The final cards added a text label to the image, and contextual information was reduced. This was found to improve group processes. (photo: Nina Lysbakken)

#### Innovation tools developed using the cards

The cards can be used in different ways, depending on the requirements of the project. In this way, they assist the divergent phase of the front end of innovation.

##### *Use context 1: Mapping an existing situation.*

The cards help map out an existing situation. For example, the team can go through each stage of a service (or customer) journey and pick out the touch-points that are relevant at each stage. From this, many aspects can be discussed, such as which touch-point is most important to the customer, which are used in sequence, which are most frequently used etc. This helps get the discussion moving around how customers view the service through touch-points, and how they often jump between them.

##### *Use context 2: Identifying so called 'pain points'*

Once the service journey has been mapped out, then there are many options open to a project team, depending upon level of ambition. One of the things we find useful is to identify the touch points along the service journey that don't perform particularly well from a customer point of view, and why. This can be a useful means for improving consistency of experience along the service journey.

##### *Use context 3: Whose touch-point is it anyway*

In large organisations, different departments can be responsible for the design and content available through different touch-points. This often comes as a shock to an organisation, but is something that is usually noticeable from the customer perspective. There can be different tones of voice, interaction styles, use of images, typography and especially different terminology. Identifying who is responsible for each touch-point and finding ways of coordinating between them can be very useful. This assists an organisations co-ordination activities around the customer experience.

*Use context 4: Touch-point migration*

An organisation might get lazy, or might just not have routines in place for updating their touch-points. Over time, a touch-point might become out of date or there could be a better touch-point alternative that can be used as a replacement or addition. This is particularly relevant when it comes to use of technology and discussions regarding self service. Going through the touch-point cards can give ideas for new touchpoints and can help map out a migration strategy from one touch-point to another.

*Use context 5: Touch-point addition or subtraction*

This challenges today's situation by removing important touch-points. Based upon the touch-point mapping, the main touch point at each stage of the service journey is removed, and idea generation used to find a better replacement. If it cannot be replaced, then the team has gained a deeper understanding of the touch-points importance and role. An alternative to this is to pick a random card at each step of the service-journey and discuss how it could be used to improve the service. We have added some specific touch-points for this, such as "service integrated into a product" or "smart phone". This can be a useful task in many ways, particularly to help challenge today's situation, which might have deep historical roots and need updating.

*Use context 6: Forced association to create new services*

In this task participants are forced to create a service based upon random cards: they pick two (or more) random cards from the pack and design a service based only upon these cards. Forced association is an idea generation technique to force you away from logical thinking, and doing this with the touch-point cards forces the team to break with pre-conceived understanding. It's a fun and challenging way to look at touch-points, and often unearths useful reflections regarding a service.

## Evaluation

The project has carried out two AT-ONE workshop series per year, for each commercial partner in the project, and have therefore evaluated over 10 iterations of the touch-point toolkit. This means that the cards have been used together with a broad set of service providers and, additionally in several student projects.

The evaluation of the cards has combined several methods: observation, group discussions, questionnaires, and semi-structured interviews with workshop participants.

### A. Team building for cross functional teams

Mulin-Juustila (2006) discusses the five critical elements that together create team cohesiveness during the fuzzy front end: personality barriers, different cultural thought

worlds, language barriers, organisational responsibilities and physical barriers. Similar elements are identified by Persson (2005) and Pei (2009). Of these, the cards, used as part of collaborative workshops, have shown positive effects upon all. However, it is difficult to distinguish between the role of the cards and the role of the workshop process in these positive team building results. Comments from participants support their use in team building; *'very useful as a common point of reference'*, and that *'the use of visual tools simplified the process and created a common understanding in the group'*.

### B. Analysis and mapping

The cards received positive reactions when it comes to their ability to assist the analysis and mapping of existing situations. They were seen to assist both holistic understanding, by allowing a visual overview of all touch-points, and the ability to focus upon individual touch-points. This seems to be aided by the combination of clear images and texts, which allows them to be viewed individually, but also in combination. This ability was also useful when identifying critical touch-points or possibilities or limitations of individual touch-points. The same can also be said when it comes to identifying who is responsible for each touch-point. Some workshop participants compared the content of the cards to a checklist, others said that *'the process is built up like Lego blocks, meaning that you can unfold ideas on a large scale'*.

### C. Idea generation

The cards were given positive evaluations in terms of their potential for generating new ideas. Firstly, the cards encouraged both systemic innovation (changing the whole service system) and innovation in individual touch-points. For individual touch-points, innovation related to both removal (or addition) of touch-points, but also upon changes to the interaction design of an individual touch-point. Further, the cards aided alignment of touch-points to brand strategy. Workshop participants commented upon the cards ability to *'make you both concrete and experimental at the same time'* and their ability to *'open up the process'*.

One issue was that the cards might inhibit radical thinking in which invention of new touch-points could arise. Similarly, it was commented that a missing touch-point could potentially have consequences, since using the cards constrained thinking within the alternatives given. This is something we have considered, but have not experienced when running workshops. The cards deliberately suggest a very broad range of touch-points, many of which are outside the scope of traditional touch-point thinking. Indeed a common comment is that participants initially considered many touchpoint cards unnecessary or irrelevant. Once used, this changes to an expression of how useful the broad approach turned out to be. However, it is difficult to know if a potential solution is inhibited, without using controlled testing procedures, which have many practical disadvantages in the project context. We have met the thought that the cards can constrain idea generation, but in reality have not been able to identify situations in which this occurs.

Over time, we have identified a need to continually update the touch-points, such that they remain up to date. As an example of this, we have had to add a new category of touch-point - the iPad/tablet, since this was launched during the first 6 months after the last set of touchpoints was produced. We see that the touch-point cards need continual updates to remain contemporary.

#### D. Needs elicitation

Recent developments in the AT-ONE project have included the cards during the customer insight phase of a project. The cards have been used as an aid for needs elicitation when interviewing potential users of a service. For example, we have recently used them to elicit preferences regarding touchpoints when contacting customer service in a telecommunications company. They were found to be useful and allowed potential customers to compare different touchpoints, prioritise touchpoints and think aloud about touchpoint preferences. This is a new and promising area of use for the cards, and one which we will be exploring in more detail in the future.

#### Discussion

The touch-point cards and related tools fulfilled the requirements identified from both research and practice. They had a positive effect upon team collaboration, assisted with analysis and mapping processes and aided idea generation. In addition, they showed similar benefits to results found in other domains, regarding the use of cards as part of a collaborative process.

One clear issue regarding the cards is the danger that they can in some way constrain thinking within the contents shown. Experience from using the cards in workshops and the evaluations did not raise this as an issue, although it is clearly a factor to consider in future evaluations.

A second issue is whether the tool directs innovation towards incremental innovation rather than encouraging transformational innovation. Again, experience shows that this is unlikely, although it is dependent upon how the cards are used. A focus upon analysis and mapping of an existing system can constrain thinking towards incremental changes. However, the cards have been used for innovation without an analysis of an existing solution, and this constraint was not visible. We did notice, however, that design students particularly enjoyed using methods such as 'forced association' or 'can I use it here'. The open nature of this for of use was considered exciting and liberating, even though many ideas generated were not usable in a commercial context. The same did not seem to be true of participants with business or marketing backgrounds. They disliked the open approaches offered by these techniques, and considered them inefficient (large number of irrelevant ideas in relation to relevant) and preferred to use mapping and analysis based approaches. This finding supports the difference between design thinking and business thinking and highlights designs abductive approach, as described by Margolin and Buchannan 1995.

Finally, the recent use of the cards as support for user-interviews offers a new area of use. Initial trials of the cards as part of customer insight work shows that the tangibility of the cards assists semi-structured interviews.

#### Further work

Since this is one of the first pieces of research discussing the 'how' of touch-point innovation in project teams, further work is needed to verify the findings presented here. We would like to see additional work related to the tasks and activities that a project team need to do to innovate through touch-points. Secondly, we would like to explore alternative representations of the touch-points, using more abstract representations or using richer representations. This would allow us to identify if there is a relationship between representation and innovation

outcome. Finally, we would like to develop a team game, based around the touch-point cards to see if this adds to the innovation potential.

## Conclusion

This research has identified seven aspects of touch-point innovation of relevance to cross-functional teams. Two of these aspects relate to team building through the use of cards and workshops. Four relate to analysis and mapping of touch-points, which assist touch-point orchestration. Finally, one aspect relates to idea generation based upon changes in touch-point usage.

Evaluation of the card-based toolkit shows that the toolkit has a positive impact upon all seven of these. Firstly, the results show that a card-based approach to innovation in teams can successfully be transferred from product innovation to service innovation. This is perhaps not surprising, but is a valuable affirmation of design-based tools in service innovation. Secondly, that the toolkit assists touch-point orchestration by assisting with analysis and mapping of touch-points in a group context. Finally, the toolkit assists with idea generation. It aids new ways of orchestrating touch-point combinations, and with the identification of new touch-points.

Further work is needed to discuss and further develop the seven aspects of touch-point innovation described in this paper. We would also like to see exploration of alternative and richer touch-point representations to explore the effect of representation upon innovation. We would like to see the development of one or more design games to support the tools presented here. Finally, we would like to further explore the potential that the cards have for eliciting user insights.

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## **Article 1**

**SERVICE INNOVATION THROUGH TOUCH-POINTS: DEVELOPMENT  
OF AN INNOVATION TOOLKIT FOR THE FIRST STAGES OF NEW  
SERVICE DEVELOPMENT**

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# Service Innovation Through Touch-points: Development of an Innovation Toolkit for the First Stages of New Service Development

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This paper reviews one of the central areas of service design, the area of touch-point innovation. Specifically, it describes the development and use of a card-based toolkit developed in the AT-ONE project - the AT-ONE touch-point cards. These cards have been developed to assist cross-functional teams during the first phases of the New Service Development (NSD) process. This paper describes and analyses the development of the tools, their intended use and their evaluation following actual uptake by several commercial service providers. The results show that the toolkit assists the innovation process during the first phases of the new service development process and helps develop team cohesiveness. The card-based approach offers a tangibility that teams find useful, and that offers multiple usage alternatives. In addition, the paper describes the multiple functions that tools used in service innovation need to accommodate, and how design makes an important contribution to this. The work also reflects upon the materials of service design and suggests that touch-points are one of the materials used by designers to understand, explore and develop innovative service solutions. Suggestions for further work are included that include aspects of toolkit tangibility, usage areas and touch-point innovation.

**Keywords** – Touch-points, Methods for Service Innovation, Touch-point Cards, Toolkit, Cross-functional Teams, Service Design, Innovation.

**Relevance to Design Practice** – Describes how innovation in new service development processes can be achieved through focusing on touch-points, and describes a toolkit approach to foster this in service organisations. The toolkit, and its uses, offer service designers, service organizations, project teams and researchers a valuable resource for innovating services. This gives insights into the materials of service design and the nature of service design itself.

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## Introduction

The field of service design is expanding rapidly in practice, and a body of formal research is beginning to appear to which the present article makes an important contribution. As innovations in services develop, there is an increasing need not only for research into emerging practices and developments but also into the methods that enable, support and promote such unfolding changes. This article tackles this need directly by referring to a large design research project, and performing a related practice-based inquiry into the co-design and development of methods for fostering service design in organizations wishing to improve their service offerings to customers. In particular, with reference to a funded four-year research project, one aspect is elaborated on that uses cards as a method to focus on the importance and potential of touch-points in service innovation. Touch-points are one of five aspects in the project that comprise a wider, integrated model and means for implementing innovations in service design.

Touch-points are the points of contact between a service provider and customers. A customer might utilise many different touch-points as part of a use scenario (often called a customer journey). For example, a bank's touch points include its physical buildings, web-site, physical print-outs, self-service machines,

bank-cards, customer assistants, call-centres, telephone assistance etc. Each time a person relates to, or interacts with, a touch-point, they have a service-encounter. This gives an experience and adds something to the person's relationship with the service and the service provider. The sum of all experiences from touch-point interactions colours their opinion of the service (and the service provider).

Touch-points are one of the central aspects of service design. A commonly used definition of service design is "Design for experiences that happen over time and across different touch-points" (ServiceDesign.org). As this definition shows, touch-points are often cited as one of the major elements of service

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## Service Innovation Through Touch-points

design, and the term is often used when describing the differences between products and services. They form the link between the service provider and the customer, and in this way, touch-points are central to the customer experience. It is not surprising then, that touch points are mentioned as one of the three pillars of service design (Koivisto, 2009, p.142)

Due to the importance of touch-points as part of service design, there is considerable interest regarding how a project team can innovate within the area. This article considers existing touch-point research and describes the development and use of a card-based toolkit used to help project teams develop innovative new services. It focuses on how project teams can innovate services through the use of touch-points and contributes new knowledge to the field of service innovation.

## Research Questions & Outline of Article

The research presented here contributes to the limited discourse around touch-points by identifying categories of touch-point innovation. It proposes a methodological approach to innovation suitable for cross-functional project teams. Further, a toolkit is described, along with its implementation and evaluation.

Two related layers of research questions are also addressed. First, at a broad, contextual level it is asked: 1) What role might the notion of touch-points play in further conceptualising the design of innovative services methodologically? 2) How may card based methods oriented to touch-points be incorporated in a workshop based approach for fostering service innovation? Second, at a more operational level, two additional questions are asked: 3) How may cross-functional teams innovate service touch-points during the early stages of a project? 4) In what ways can design-based tools assist team integration at the first stages of a service innovation project?

In answering these questions, the article takes the following form. The next section surveys existing research into touch-points. This is followed by a section relating touch-points to the innovation context within which methods in service design function. The paper then moves on to present the design and implementation of the designed methods to a specific case. Further, a section on evaluation describes the results obtained from multiple iterations of the cards when used in business innovation contexts. Finally, the concluding section discusses the implications of the use of card-based methods in service design and the broader issue of the materials of service design. Overall, the article argues that touch-points are a valuable innovation area for service design, and that a card-based approach fits the service innovation context very

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well. It also suggests that there is a similarity between the broader methodological approaches used for product design/interaction design and service design, but that the materials and application of methods are different.

## Research into Touch-points

Despite touch-points being a major part of service design, there is little, or no, documented research within the area (Howard, 2009). In order to find research into touch-points, one has to move to other disciplines, yet this research uses a different terminology and has a different focus and approach. Within service design, existing knowledge comes mainly from practice-based consultancy and can be traced back to literature from marketing and CRM (customer relationship marketing). This literature generally focuses on the need for strategies for the integration of multiple channels, often with focus upon integration into a CRM system. In marketing and CRM, the term multi-channel delivery is often used instead of touch-points, and the focus has been mostly on CRM systems themselves, rather than customer experiences or touch-point interactions. Design of individual touch-points is not covered, and neither is innovation through touch-points other than at a cursory level.

The concept, however, of designing points of contact between the service provider and the customer is not new. Shostack (1984) introduced thinking around touch-points as part of services, using the term tangible evidence as part of what she termed "service blueprinting". Shostack describes touch-points as, "Everything the consumer uses to verify their service's effectiveness. The setting, including colour schemes, advertising, printed or graphic materials and stationary, all proclaim a service's style. The design should not be carelessly delegated to outsiders or left to chance" (p. 137). She also used the term "orchestration" to describe how these points of contact should be designed.

In the medical domain, the term emotional touch-points has started to appear in the research literature (Dewar, Mackay, Smith, Pullin, & Tocher, 2009). The use of the touch-point term here is more in alignment with usage in service design, since it relates directly to the customer experience along the customers service journey. However, the term is specifically applied in their article as an interview tool for eliciting critical incidents during a service journey, i.e., as an evaluative tool for completed services, rather than as an innovation tool during the early stages of the design process. This application of touch-point thinking to user-insight work is interesting and can be incorporated into service design approaches.

Within marketing, integrated marketing (Iacobucci & Calder, 2003) is the area that places most importance upon touch-points. Integrated marketing combines three elements that are closely related to service design; an understanding of consumer behaviour, focus upon brand and the link to customer experience. Integrated marketing takes a holistic view of services in which the coordination of touch-points is one major part of linking what is termed contact experiences to the brand. Fortini-Cambell (2003) describes touch-points as being: "in a more complex consumer experience ... there may be literally hundreds of small elements

of experience the consumer notices" (Fortini-Cambell, 2003, p. 63). However, here there is only the recognition of the importance of touch-point co-ordination within integrated marketing with no guidance as to how innovation processes can achieve such goals.

In CRM, the focus is on using technology to organise and automate relationships with customers and prospective customers. It is typically centered upon automating and integrating interactions, often with a focus upon efficiency rather than upon the customer experience. Payne and Frow (2004) describe CRM as "a management approach that seeks to create, develop, and enhance relationships with carefully targeted customers to maximise customer value, corporate profitability, and thus, shareholder value" (Payne & Frow, 2004, p. 527).

Within CRM research the term touch-points has been used within a context of maximising profitability and shareholder value. Technology is used to organize, automate, and synchronize business processes, principally sales activities (Payne & Frow, 2004, Hogan, Almquist, Glynn, 2005). Recent developments in CRM practice show a new attention being paid towards touch-points as part of the customer experience (Choy, 2008). Again, the importance of coordinating (or even orchestrating) touch-points is mentioned in CRM, but there is little or no guidance as to how this can be achieved.

There is a clear lack of literature to provide methods, approaches or case studies describing how a project team can work to achieve the goals described in the literature. Much literature covers the importance of touch-point orchestration (Payne & Frow, 2004, Holmlid, 2008, etc), however, there is little literature available regarding how this is done, how this could be done or how this should be done. Holmlid (2008) states: "For design management the challenge becomes one of both coordinating multiple service channels, and the coordination between service channels" (Holmlid, 2008, p. 7). There is therefore a clear need for assistance that helps project teams achieve these two goals. However little or no research exists to help project teams with the *what* and *how* of touch-point orchestration and innovation. The work presented here, therefore, describes a methodology to assist cross-functional teams when working with touch-points. Further, through analysing the methodology in contexts of use in professional innovation projects and via evaluations of its value in use, this research goes some way in answering the questions previously raised.

## Context of This Work

### At the Fuzzy Front End of the Service Development Process

The fuzzy front end (Smith & Reinertsen, 1998) describes the phase at the start of the NSD (New Service Development) process. The NSD process is related to the New Product Development process (NPD), and refers to the specific differences encountered when innovating in services rather than products. NSD literature is limited in quantity and quality in relation to the well researched NPD process. Service Design, as part of NSD is barely mentioned, in contrast to the increasingly rich documentation regarding the role of product design in the NPD process.

The fuzzy front end phase of projects has come into focus during recent years, being described as the most important part of service innovation by innovation managers (Allam & Perry, 2002; Allam, 2006). This is because the earliest phases of the development process offer the greatest opportunity for transformational innovation. Approximately 66% of life-cycle costs are decided during this phase, whilst only about 5% of development costs are utilised (Berliner & Brimson, 1988). Kelley and Storey (2000) summarise its importance in this way:

While previous management disciplines have rationalised and routinised the back end of the new service development (NSD) process, the front-end of the process remains a knowledge-intensive black art that appears, from all industry studies available, to be consuming an increasingly large portion of the total concept to cash-flow cycle time. (p. 45)

The fuzzy front end is increasingly being focused upon by designers as they are given a more explorative and open brief (Sanders & Stappers, 2008). This phase is also seen as an opportunity to lift design up to a strategic and tactical level of an organisation. Clearly, in terms of methods, there is a critical need to develop means to achieve this. Such methods are also important when it comes to building links and supporting innovation in the cross-functional teams that are now used in most development projects during new service development.

### Cross-functional Development Teams

The process and tools described in this paper are aimed at assisting cross-functional development teams, where the teams, together with designers, explore the project mandate and develop ideas through workshops. Cross-functional development teams are now used in most development projects. Such teams include relevant stakeholders representing different functional areas within (and from outside) an organisation, across diverse disciplines. This article does not question the relevance of cross-functional teams in an innovation perspective while recognising that opinions are divided regarding their effectiveness in innovation processes (de Jong & Vermeulen, 2003; Ancona & Caldwell, 1992; Sethi, Smith, & Park, 2001). However, since the majority of commercial innovation projects utilise cross-functional teams, this project has chosen to develop tools to support such teams as part of the new service development process.

Challenges facing cross-functional teams include the development of team collaboration, internal culture and team communication (Shikhar1 & Colarelli, 2009), as well as the achievement of a common understanding and shared vision of the object of development (Molin-Juustila, 2006). Cross development teams therefore provide rich nests of knowledge and situated experience; however, without clearer methods for getting at this knowledge during the initial work at the fuzzy front end of innovation processes, service design practices and research will be restricted. To meet these challenges, a large research and development project called AT-ONE has been developed. This project is one of very few that addresses support for cross-functional teams at the fuzzy front end of services. It is, however,

important to emphasize that the design, processes and insights it offers are very early and are offered as part of the emerging inquiry into methods and their uptake in service design. The sections that follow therefore need to be read as an exploratory, case related inquiry that seeks less to be declarative and solution-centred but, in keeping with the tenor of design itself, aims to also find issues, better identify them and communicate them.

### The AT-ONE Project

This work is part of the AT-ONE research project. AT-ONE is developing process support, and tools, for cross functional teams during the first stages of the NSD process. The AT-ONE method helps teams map, ideate and conceptualise potential new services through a structured series of workshops (Clatworthy, 2008).

Each of the letters of AT-ONE relates to a potential source of innovation in services, and the letters can be seen as a set of lenses through which a service can be viewed. The method therefore runs workshops with focus on each of the following lenses:

- A–New combinations of ACTORS who together can provide improved services
- T–Orchestration and development of TOUCH-POINTS to provide innovative services
- O–Developing new OFFERINGS that are aligned to brand strategy
- N–Understanding customer NEEDS and how new services can satisfy them
- E–Designing customer EXPERIENCES that impress the customer

The work described here relates to the development of the method for innovation in touch-points, the letter T in AT-ONE. This work can be utilized for innovations based exclusively upon focused workshops on touch-points in which cross-functional teams work together.

## Design and Implementation

The research approach taken was one of participatory action research (O'Brien, 2001) in which the author was involved in planning, developing and evaluating the support tool through several iterations together with commercial service providers using innovation briefs of commercial relevance.

### The Choice of Cards as an Innovation Tool

The idea for developing a tangible tool emerged when we started running workshops in the AT-ONE project three years ago. As part of the Touch-Point workshops, we found ourselves using touch-point examples to help with both mapping and analysis (before a workshop) and for idea generation during the workshops themselves. In addition, we identified a need for activities that help build project team cohesiveness, common understanding and common goals.

Within service design, one of the early successful large-scale initiatives was the RED programme, coordinated by the

Design Council in the UK. One of the projects within RED was the Diabetes Agenda (RED, n.d.) in which patients were given agenda cards as a preparation for a health consultation. The cards were considered a great success by the stakeholders, and this, together with the need for examples in workshops, inspired us to look into cards for the AT-ONE project. When we looked more deeply into research on design for collaborative teams (Molin-Juustila, 2006), and cards or games as an innovation support tool (Brandt, 2006; Brandt & Messeter, 2004; Halskov & Dalsgård, 2006) we found considerable support for the development of a tangible tool. One of the motivations for using cards was the important role that they can play for forging team collaboration towards a common goal. Brandt (2004) describes this as follows:

... movements within a community of practice has both open periods in which creativity and discussions have room to unfold and more narrow periods characterised by consensus and/or decision-making, including the location of these in physical artefacts. (p. 128)

Brandt refers to the participatory design tradition in design, in which physical manifestations are a central part of the process, something she describes as reification, which is "the process whereby people within a community of practice create physical artefacts on the basis of a common understanding of the practice" (Brandt, 2004, p. 128). We were interested in developing a tool that could support group processes through reification for a service. We saw this as both a challenge and opportunity, since services are often described as immaterial and experiential rather than tangible. The idea of developing a tangible tool to assist with the development of an intangible service was particularly appealing.

### Use Context/Requirements Specification

Based upon existing research into touch-points, the needs of cross-functional teams and card-based tools, the project therefore developed a card-based tool to assist with the following seven goals:

#### Team building for cross functional teams:

1. To build a common understanding of touch-points and their role as part of a holistic service design.
2. To assist with team cohesiveness, team culture and mutual respect within the team for different disciplines and views.

#### Analysis and mapping:

3. To gain an overview of the multiple touch-points used during the customer journey.
4. To identify critical touch-points during the customer journey.
5. To understand the limitations and possibilities of each touch-point that the company utilised.
6. To identify who is responsible for design, development and maintenance of each touch-point.

#### Idea generation:

7. To generate ideas regarding how to innovate through changes in touch-point usage, design or implementation.

### The Development Process for the Cards

The development process has been iterative and evolved over the past three years. Several touch-point workshops have been held with cross-functional teams from industrial clients. In addition, student projects working with industrial clients have also utilised the cards as part of the workshop process.

The cards were initially developed to enrich existing innovation workshops based upon the touch-point analysis and mapping. A need was quickly identified during these workshops to have a checklist or resource bank of possible touch-points to save time and to reuse knowledge. We found however, that developing the cards helped further develop the tools, so the tools and cards developed together. The tools and the cards have been prototyped several times and improved each time, most recently during workshops during the Autumn of 2010.



**Figure 1.** The first cards were images of individual touch-points and fairly large. Their tangibility was good, but they were too large when mapping complex service systems involving many touch-points. They were also difficult to hold, group and manipulate by hand.

The first cards were images denoting different touch-points. They were larger (ca. 15x15cm) and placed on foam-board. This made them tangible elements that were easy to handle and share; they were a strong improvement on post-it notes. However we found two problems with them. Firstly, they were too large and unwieldy when many touch-points were being grouped, simply taking up too much space on a table or a wall. Secondly, it was unclear from some of the images which touch point they represented - the images were ambiguous.

The second cards were made as an innovation game for one of the industrial partners in the project. The intention was to identify touch-points specifically for lottery and betting contexts. This time the cards were of normal playing card size. We found

that the size worked well for the game context, and was a size that worked both on tables and on walls when used for group work. In the images, we attempted to show both the touch-point and the use context. This caused two types of confusion. Firstly, ambiguity of some images caused confusion, similar to the first series. Secondly, the association to context made it difficult to distinguish between the object in the images as a touch-point (for example a glass) or the context being a touch-point (a bar). This confusion raised questions within the group during group processes and transferred focus from the innovation process to discussion of card meaning. Although not a significant problem, it interrupted the flow of conversation.

During development of the third and present set of cards, the project leader and designers discussed the issue of confusion and multiple interpretations. This led to two decisions, the first being that we would put the name of the touch-point on the card. This enabled a quick recognition of the touch-point, and together with the image, presented an unambiguous representation. This led to a discussion regarding the choice of images for the cards and the usage of the cards themselves. Were they to be abstracted and inspirational for idea generation in themselves, or should they be concrete representations of the touch-points? Our second decision was to make them as clearly descriptive and concrete as possible based upon the confusion earlier reported. This eliminated the



**Figure 2.** The second series of cards were playing card size and incorporated into a game. They included more contextual information about the cards by showing the touch-point in its natural place of use.

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Figure 3. The final cards added a text label to the image, and contextual information was reduced. This was found to improve group processes. (photo: Nina Lysbakken)

problems mentioned earlier and smoothed out group processes allowing the group to focus on the innovation process rather than negotiation of individual card meaning.

### Innovation Tools Developed Using the Cards

The project explored different approaches to innovation through touch-points using experimentation over a period of three years, comprising 32 workshops together with commercial service providers. A clear pattern of innovation types developed during this process, and from these, the project identified six different use contexts. Each of these contexts enables a different aspect of service innovation and utilises different creative techniques. The use contexts for the cards presented below were chosen to maximise the divergent nature that characterises the front end of innovation. They assist teams working within innovation projects with a wide variety of innovation goals. These range from benchmarking an existing service, through incremental improvements to an existing service, and transformational innovation and the development of a totally new service.

#### Use Context 1: Mapping an Existing Situation

The cards help map out an existing situation; for example, a team can go through each stage of a service (or customer) journey and pick out the touch-points that are relevant at each stage. From this, many aspects can be discussed, such as which touch-point is most important to the customer, which are used in a sequence, which are most frequently used, etc. This helps get the discussion moving around how customers view the service through touch-points and how they often jump between them.

#### Use Context 2: Identifying So Called "Pain Points"

Once the service journey has been mapped out, there are many options open to a project team. One of the things we find useful is to identify the touch points along the service journey that don't perform particularly well from a customer point of view. This can be a useful means for improving consistency of experience along the service journey.

#### Use Context 3: Whose Touch-point is it Anyway?

In large organisations, different departments can be responsible for the design and content available through different touch-points. This often comes as a shock to an organisation, but is something that is usually noticeable from the customer perspective. There can be different tones of voice, interaction styles, use of images, typography and especially different terminology. Identifying who is responsible for each touch-point and finding ways of coordinating between them can be very useful. This assists an organisation's coordination activities around the customer experience.

#### Use Context 4: Touch-point Migration

An organisation might get lazy, or might just not have routines in place for updating their touch-points. Over time, a touch-point might become out of date or there could be a better touch-point alternative that can be used as a replacement or addition. This is particularly relevant when it comes to use of technology and discussions regarding self service. Going through the touch-point cards can give ideas for new touch-points and can help map out a migration strategy from one touch-point to another.

### *Use Context 5: Touch-point Addition or Removal*

This challenges today's situation by removing important touch-points. Based upon the touch-point mapping, the main touch-point at each stage of the service journey is removed, and idea generation is used to find a better replacement. If it cannot be replaced, then the team has gained a deeper understanding of the touch-point's importance and role. An alternative to this is to pick a random card at each step of the service-journey and discuss how it could be used to improve the service. We have added some specific touch-points for this, such as "service integrated into a product" or "smart phone". This can be a useful task in many ways, particularly to help challenge today's situation, which might have deep historical roots and need updating.

### *Use Context 6: Forced Association to Create New Services*

In this task, participants are asked to select random cards (two or more) picked from the pack and then to use them to design a service based only on the cards. Forced association is an idea generation technique to force you away from logical thinking. Doing this with the touch-point cards forces the team to break with pre-conceived understanding. It's a fun and challenging way to look at touch-points and often unearths useful reflections regarding a service.

## **Evaluation of the Touch-point Cards**

The evaluation of the touch-point cards employed multiple methods. This included semi-structured interviews with selected workshop participants, discussion sessions with workshop participations, a questionnaire developed for workshop participants, and participative and non participative observation. The questionnaires were filled out by workshop participants at the conclusion of touch-point workshops in which the cards were used.

Evaluation of the toolkit took place during 2010, the final year of the project. The toolkit has been utilised during five workshops, each of a minimum three-hour duration. Participant numbers in the workshops have varied from six people to 24 people. The evaluation data all relates to the final version of the touch-point cards.

The interview guide was informed by observation of several workshops combined with the insights gained from the literature review of touch-points in service innovation. The questionnaire was a standard questionnaire developed for the evaluation of the AT-ONE workshops by the project team. It consisted of open questions requesting information about positive and negative aspects of the workshop itself, and multiple choice questions related to the innovation potential of the workshop at a project level. These questions were developed from literature regarding innovation metrics in companies (Perrin, 2002; Brusoni, Prencipe, & Salter, 1998; Andrew, Haanaes, Michael, Sirkin, Taylor, 2008). Furthermore, the questionnaire and interview guide drew on discussions within the projects cross-disciplinary validation team.

Participants at the workshops were primarily project participants in commercial service innovation projects at the fuzzy front end of a project in the telecom field or within public health services. Since these workshops have been at the fuzzy front end of large innovation projects, the evaluation process has not been able to follow the ideas and concepts from the workshops through to market. However, a separate validation activity has evaluated the effect that the AT-ONE workshops have had upon participating organisations. This work is close to completion and will be described in future articles.

The following section describes the evaluation of the cards in relation to their intended function. Additionally, a finding is described that relates to their tangibility and how the cards afford cognitive and social support through cognitive-gestural movement.

### **Assistance with Team Building in Cross Functional Teams**

Molin-Juustila (2006) discusses the five critical elements that together create team cohesiveness during the fuzzy front end: personality barriers, different cultural thought worlds, language barriers, organisational responsibilities and physical barriers. Similar elements are identified by Persson (2005) and Pei (2009). Of these, the cards (used as part of collaborative workshops) have had positive effects on four of these five elements. The fifth, physical barriers due to geographical location, is not addressed by co-located workshops.

It is difficult to distinguish between the role of the cards themselves and the role of collaborative workshops in these positive team building results. The cards assist with the reduction of cultural thought worlds by giving a common context for collaboration within a customer-centric service innovation framework provided by the AT-ONE process. In terms of language barriers, the toolkit establishes common terminology through clearly defined tasks. Additionally, the use of images on the cards, together with clear texts makes understanding of card content unambiguous. Organisational responsibilities are a specific focus for one of the tools, such that organisational roles for touch-point development are specifically identified.

Comments from participants support the relevance of the cards for team building. They were reported to be "very useful as a common point of reference" and that the participants "quickly developed a common understanding" and that "the use of visual tools simplified the process and created a common understanding in the group."

### **Analysis and Mapping**

The cards were found to be effective when it comes to their ability to assist the analysis and mapping of existing situations. They were seen to assist the holistic understanding of a service by allowing a visual overview of all touch-points along the whole customer journey. They also allow the team to focus upon individual touch-points. This seems to be aided by the combination of clear images and texts which allows them to be

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viewed individually and also in combination. This ability was also useful when identifying critical touch-points or possibilities or limitations of individual touch-points. The same can also be said when it comes to identifying who is responsible for each touch-point. Some workshop participants compared the content of the cards to a checklist, others commented on the cards modular ability, saying “the cards’ physical form and visual presentation make it easier to scale the process,” and that “the process is built up like Lego blocks, meaning that you can unfold ideas on a large scale.” Further, they reported that it was “easy to see touch-points in relation to each other and spot overlaps or things missing.”

### Idea Generation

The cards were given positive evaluations in terms of their potential for generating new ideas. Firstly, the cards encouraged both systemic innovation (changing the whole service system) and innovation in individual touch-points. For individual touch-points, innovation related to removal (or addition) of touch-points, and also to changes to the interaction design of an individual touch-point. Further, the cards aided alignment of touch-points to brand strategy. Workshop participants commented upon the cards ability to “make you both concrete and experimental at the same time” and their ability to “open up the process.” In addition, several participants commented that the cards opened up a breadth of ideas. One workshop participant commented: “When I first looked at the cards, I thought the majority were not relevant for our project. However, when we started using them, I realised that this was not true, and seemingly irrelevant cards suddenly contributed to the improvement of the service (workshop participant, October 2010).

We asked participants in the workshops to evaluate the use of the toolkit to evaluate the ideas that were generated in terms of their contribution to new ways of thinking, the number of ideas generated during the time available, the relevance of the ideas for their project, and the perceived uniqueness of the ideas. These can be considered pointers to innovation potential. The results were consistently positive, scoring high ratings on all dimensions. Considering that the participants in the workshops were from innovation projects – many with innovation leadership roles – this shows that the cards fulfilled their function in terms of generating novel yet relevant ideas.

One issue commented on by a few participants was that the cards might inhibit the radical thinking in which invention of new touch-points could arise. Similarly, it was commented that a missing touch-point could potentially have negative consequences, since using the cards constrained thinking within the alternatives given. This is something we have considered, but have not experienced when running workshops. The cards deliberately suggest a very broad range of touch-points, many of which are outside the scope of traditional touch-point thinking. Indeed a common comment is that participants initially considered many touch-point cards unnecessary or irrelevant. Once used, this changes to an expression of how useful the broad approach turned out to be. However, it is difficult to know if a potential solution is inhibited without using controlled testing procedures, which have

many practical disadvantages in the project context. In practice, we have not been able to observe situations in which the cards have constrained idea generation.

Over time, we have identified a need to continually update the touch-points. As an example of this, we have had to add a new category of touch-point - the iPad/tablet, since this new touch-point was launched during the first 6 months after the touch-point cards were produced. We see that the touch-point cards need continual updates to remain contemporary and relevant.

### Needs Elicitation

Recent developments in the AT-ONE project have included using the cards during the customer insight phase of a project. The cards have been used as an aid for needs elicitation when interviewing potential users of a service. For example, we have recently used them to elicit preferences regarding touch-points when contacting customer service in a telecommunications company. They were found to be useful and allowed potential customers to compare different touch-points, prioritise touch-points and think aloud about touch-point preferences. It was clear that the tangible form of the cards assisted the cognitive process when users were answering questions, grouping together, or prioritizing. The use of the cards for needs elicitation is a new and promising area of use for the cards, and one which we will be exploring in more detail in the future.



Figure 4. The way that people held the cards and moved the cards assisted cognitive and social processes through movement and placement.

## Assisting Embodied Communication and Cognition

One of the findings from observing card-use in teams is that the cards afford embodied interactions at the individual and group level and thus support the cognitive and social processes involved when carrying out tasks within teams. This was an unexpected result, since the cards were developed primarily as a visual checklist of touch-point examples. It became very clear that the way the participants used the cards showed a clear interaction between mind and body. The following modes of use clearly demonstrate how the physical form of the cards, together with physical position and movement, assist the workshop process.

### *Chunking - Grouping Cards Together to Save Short Term Memory*

This is perhaps an expected pattern of use - participants in the workshops grouped the cards in their hands as a type of short-term memory storage while they focused on other cards. There was a continual negotiation between potential new cards and the group in hand that occurred physically. The participants would pick up a card and hold it up to the group in hand to question its relevance to the group. This seems to use a combination of visual cues, position cues and movement cues to identify relevance. It became obvious that the action of moving the new card toward the group assisted the cognitive process of grouping.

### *Negotiating Alone / Evaluating Through Position or Movement*

Participants would hold a card (or sometimes more than one) and, whilst still holding it, move it physically around the table to see if it fit with other cards. This is a form of negotiation through physical movement and position in which the physical movement becomes a strong support for cognitive processes.

### *Negotiating or Explaining Within A Team Through Movement or Position*

This is a behaviour in which a card (or sometimes cards) are held in the hand and moved to assist a verbal argument or explanation within a team. This mode of use is similar in both cases, although the former is a form of questioning within a team ("what if this was the main touch-point at this stage") while the latter is used as explanation ("you can see that this touch-point doesn't fit here"). The physical movement seems to be slightly different between the two. One being a physical expression of questioning by the way the card is moved and the timing of the movement expressing uncertainty. This can be compared to more definite movement and different timing that gesturally expresses fact.

These modes of use of the cards suggest that the cards themselves, together with their content actively assist the processes of mapping, grouping and social negotiation through their form and use. This assistance is not afforded by lists or through a digital sorting mechanism.

## Discussion

The work presented here is one of the few research investigations covering touch-points and service design. Although its focus is upon a toolkit for innovation through touch-points, it also is one of the few documented studies of service design at the fuzzy front end of service innovation. As such, it offers insights and raises points for discussion at multiple levels. These range from discussion of the touch-point cards themselves, methods in service design, and reflections upon the nature of service design itself. This section therefore discusses both the specific and the general, and is divided into sections of broadening relevance, starting with the cards themselves.

### The Card-based Tools

The touch-point cards and related tools were shown to have a positive effect upon the three main requirements that the project had identified from both research and practice - cross-functional team building, analysis and mapping, and idea generation.

One issue raised by workshop participants is the danger that they can in some way constrain thinking within the content shown on them. Does the tool direct innovation towards incremental innovation rather than encouraging transformational innovation? A set of cards showing existing touch-points might be considered to encourage an inductive approach to innovation, and therefore a focus upon *what is*. However, our findings show that this is not the case. At the early stages of a project, the goal is divergence, i.e. to generate a large number of ideas covering a broad area. We found that the cards encourage an abductive approach where the goal is to consider *what can be*, rather than just what is (Margolin & Buchanan, 1995). Evaluation of the cards by participants shows a high score for number of ideas, idea relevance and idea novelty. We conclude, therefore, that transformational innovation using touch-points does not mean the invention of a touch-point. Transformational innovations can as much be the removal of an existing touch-point, the reordering of touch-points within a customer journey, or the addition of a new (to the service) touch-point. Internet trading of stocks and shares is an example of this, in which an existing touch-point has been utilised in a new context, rather than the invention of a new touch-point. This conclusion has implications for service innovation with touch-points, since the goal is not necessarily to invent touch-points, rather to introduce new (to the service) touch-points, a reordering of touch-points or harmonisation of touch-points. As such, the findings here support the term "orchestration" used by Shostack (1984).

Additionally, we noticed that design students particularly enjoyed framing non-analytical use of the cards, such as "forced association" or "can I use it here" in which random combinations of cards are used to generate ideas. The open nature of this form of use was considered fun, exciting and liberating, even though many of the ideas generated were not usable in a commercial context. This enthusiasm was not shared by participants with business or marketing backgrounds. They found the open approaches offered by these to be too open, and considered them inefficient since they produced a relatively large number

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of irrelevant ideas. This is an interesting observation and can have multiple explanations, for example that business has an expectation of efficiency and performance throughout the design process, including idea generation. It perhaps also highlights the difference between “design thinking” and “business thinking”. This difference is repeatedly mentioned in the design thinking literature (eg. Lockwood, 2010). In Lockwood’s anthology, this is frequently mentioned, for example the need to “look beyond what is, to what could be” (Fraser, 2010, p. 39) or to “let go of reality - to be expansive and inspirational” (Jones & Samaliois, 2010, p. 187). These are therefore common themes in the intersection of business and design. They do, however, have a consequence for cross-functional processes where designers and business disciplines meet, such that workshops need to strike a careful balance between exploratory and analytical approaches.

A second issue regarding the touch-point cards themselves is that of forms of representation. The cards were developed iteratively and ended up as representations of the touch-points combining text and image. This raises a question of what the images on the cards represent in use. Experience from their use showed that the cards had to have an immediate identifier, so that a welcome package card, for example, is immediately identified as a welcome package by the workshop participant. We found early on in the project that ambiguity here disrupts the flow of a workshop significantly.

Another issue to note is that the cards have to assist the participants with an understanding of how that touch-point can function in the project context. Since one of the key aspects of services that the AT-ONE project is focusing on is the customer experience, the cards had to assist the workshop participants’ understanding of the functional and experiential qualities of the touch-point in its use context. We considered several representational forms, from neutral to highly symbolic, with varying degrees of context included. During different evaluations of the cards, we found that their context of use varied greatly. A betting context, insurance context, and educational context are very different in terms of touch-point representation. This suggests that the cards should be depictive rather than connotative. The balance that we chose (depictive with some use-context) was developed over several iterations and functioned well. However, a great many alternative visual representations could have been chosen or explored, from hand-drawn sketches to abstracted icons. These were not explored as part of this work, and it would be interesting to explore the relationship between touch-point representation and innovation outcome. Such a study would necessarily have to explore the core meaning of each touch-point, and would most likely unearth some fundamental understandings of touch-point qualities in the process. This could further our understanding of how touch-points help deliver experiences.

### Card Based Tools in Service Design

An interesting finding, and one that was noticeable through observation of the AT-ONE workshops, is that the cards afford embodied communication and embodied cognitive processes. It became clear that holding, moving and grouping the cards all

supported the cognitive processes involved in the task. The task of touch-point innovation became simpler and more involved because of this embodiment. This is an important finding when considering the design of group tools, and one that only became apparent through observation of their use. Our initial focus in the project was upon developing a visual checklist; it was only by chance that we discovered the affordance that the cards offered for embodied communication and cognition. From observation, this affordance is provided not only by the size and form of the cards but also their combination with the visual nature of the content. This finding is supported by Sirigu and Duhamel (2001), Wachsmuth, Lenzen and Knoblich (2008) and Tversky (2005), who have identified the clear link between cognition and motor and visual imagery. For development of new workshop tools, it is clear that the size, image and mode of use should be given greater attention to afford the cognitive and social processes that they aim to assist. This also suggests that digital versions of the cards will not function as well as the card-based ones.

Finally, the recent use of the cards as a task-aid to support user interviews offers a new area of application for the cards. When given cards to sort, discuss and prioritise as part of user insight interviews, we found that users consider the cards very helpful. They work as memory aids and shared objects that aid discussion around specific themes. They help the users reflect and express aspects related to their experiences of services in use and assist in the formation of a dialogue around existing solutions and potential improvements. This is partly explained by the affordances explained in the previous paragraph, and supports the further use of tangible tools when interviewing or gaining user-insights. The use of cards as part of participatory design is not new, and Brandt (2006) describes cards and games in detail. However, we found that cards improved interview responses, and added a participatory design dimension to the interviews. This encouraged interwoven discussions of what is and also what could be.

Together, these two findings support the further development of the card-based techniques that are popular in service design. They suggest that service design should increasingly make tangible tools to support the development of intangible services, and that cards particularly offer support to this. The designers’ card sets can be simply produced, and service designers should therefore develop and use cards more often. Service design, as it develops further, should explore and build upon the rich vein of knowledge already developed within the participatory design field and adapt this to the service innovation field.

### Touch-point Innovation at the Fuzzy Front End

This study has presented insights into touch-point innovation and its nature. Several issues arise from this, most notably the need to understand individual touch-points and at the same time combine them to produce a holistic result. In service design, the focus is “about how an experience would flow across channels ...” (Løvlie, Downs, Reason, 2010, p. 174). This adds a requirement for extra levels of understanding from the designer. Not only do they have to understand qualities of touch-points at an individual level, they have to understand how they combine to create a holistic service,

in relation to a desired brand image. This is particularly relevant at the fuzzy front end of innovation, since this phase defines the whole service – both its offering and means of delivery. At present, we have a poor understanding of exactly how this occurs when it comes to services. To shed light on this, further work to explore how designers work with touch-points as well as an exploration of the customer experience is needed.

A second aspect related to the fuzzy front end that this study raises is the relationship between the designed solution and its delivery. Service value is often described through its 'value in use' (Vargo & Lusch, 2008) and as such, there is a need to study downstream effects of touch-point decisions on the final customer experience. There is a lack of research linking design decisions during the fuzzy front end to the final delivered customer experience. This would be a very useful research area to explore, and could help further validate the value of this toolkit, and other service design approaches.

### The Materials of Service Design

At a more general level, this research inquiry explored the area of tangible tools for intangible services. This raises the question of the materials used to form solutions in service design. In product design, the use of physical prototypes and modeling as a form for reification are well researched (Brandt, 2004). The materials of product design are numerous, and materials such as foam, cardboard and clay are commonly used in the early stages to both explore a problem and attempt to solve it through explorative modeling. In service design, it is difficult to physically model a service in the same way. Foam, wood and clay are difficult to use, since a physical representation of a single artefact does not capture the holistic nature of services. The materials of service design are therefore different. However, modeling is possible, and in service design, the object to be modeled is the whole system and its individual parts. Modeling touch-points over time is an example of this, in which the aim is to understand the customer experience as an outcome. This work suggests that touch-points are one of the central materials of service design, together with cross-functional workshops, card-based tools, visualisations, post-it notes and timelines. This is complemented by role-playing and rapid prototyping. Although not specifically identified in existing research, this is supported by descriptions of the service design process by Jones and Samaliois (2010) and the tools of service design, as described by Saco and Goncalves (2010). Further work to understand and explore the materials of service-design would be useful, since it will assist in the development of new tools, new processes and an understanding of service design itself. Discussion about the material of service design, introduces therefore a discussion about the nature and characteristics of service design.

### The Nature of Service Design

These findings also reinforce the role of touch-points as one of the central means of providing the immaterial experiences that are services. The cards were used in several commercial service innovation projects, and gave a valuable insight into the nature of

service design itself. The work here supports the simple definition of service design that is commonly used, that of designing for experiences that occur over time and across touch-points.

Two aspects became very clear from this study. The first is that service designers focus upon the orchestration of a service in which the choice of individual touch-points and their relation to other touch-points is important. This requires an understanding not only of individual touch-point qualities, but also of their potentials when combined in particular ways. The second relates to the orchestration of touch-points over time. Common to both of these is an understanding of the parts and the whole and the innumerable alternatives that this affords in relation to how a customer might experience the service. Both of these findings support existing research into the need for touch-point orchestration (Shostack, 1984; Payne & Frow, 2004; Holmlid, 2008). However, this orchestration occurs today through use of tacit knowledge using heuristics that are practice-based. There is a great need for research that examines the heuristics of touch-point orchestration, both during the design process and at points of service delivery. Over the long term, research that identifies and presents such heuristics would be beneficial. Such heuristics could further be developed towards a pattern language for touch-point orchestration in services. In interaction design, patterns are becoming a common means of documenting proven solutions to recurring design problems (Borchers, 2000). It would be very useful if the same could be explored in service design, when it comes to touch-point interactions and orchestration.

### Conclusion

Although regularly discussed and described in practice-based consultancy, there is little or no research into the nature of touch-point innovation or how one coordinates multiple touch-points. There is therefore a need to support touch-point innovation as part of the new service development process, particularly in terms of how cross-functional teams can innovate using touch-points. This need is particularly evident during the first stages of innovation, the fuzzy front end, in which major decisions are made regarding service functionality and structure.

This research takes the first steps towards establishing a body of knowledge on touch-points in service design. It does this by pulling together research on touch-points from integrated marketing, CRM and co-design, together with research into cross-functional teams in innovation processes. It then describes how this was used as a basis for the development of an innovation toolkit which was developed through, and evaluated over, several workshops together with service designers and service providers.

One of the findings of this work is that touch-point orchestration is often mentioned as central to service success. However, orchestration as a term is not defined, nor are methods described that can be used to achieve such orchestration. This work unpacks the term orchestration and identifies seven aspects of touch-point innovation relevant to the performance of cross-functional teams at the early stages of the new service development process. Two of these aspects relate to team building through the use of cards and workshops. Four relate to analysis and mapping

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of touch-points, which assist touch-point orchestration. Finally, one aspect relates to idea generation based upon changes in touch-point usage. From this, the project has developed a card-based toolkit consisting of six tools that enable and encourage these seven aspects. Development occurred in several iterations together with participating companies.

Evaluation of the card-based toolkit shows that it has a positive impact upon all seven identified aspects. The results show that a card-based approach assists and encourages the development of team collaboration, communication, the achievement of a common understanding, and shared vision of the object of development. This supports findings from the use of cards, toolkits and games when used in product and interaction design. In addition, the toolkit assists touch-point orchestration by assisting with analysis and mapping of touch-points in a group context. Finally, the toolkit assists with idea generation. It aids new ways of orchestrating touch-point combinations, and the identification of new touch-points for a particular context.

We discovered that the design of the cards affords embodied thought and interaction, and usage modes are described for this affordance. This finding helps explain why card-based tools are popular in service design, and has consequences for the future design of card-based tools. Finally, it was discovered that the cards can be used in other contexts, particularly as a support tool for user-interviews. We encourage, therefore, the development of card-based tools specifically aimed at supporting customer insight work based upon these findings.

This work also contributes to the discourse on touch-points and service design at a broader level. It discusses the question of materials used in the development of services, and the nature of service design itself. In product design, modeling materials such as clay and wood are used to explore and solve problems in an iterative process of understanding, exploration and solution. In service design, we believe that the same effect can be achieved through modeling touch-points over time. This points to the fact that touch-points are one of the main materials of service design. This needs corroboration, but has consequences for the development of service design research, teaching and practice.

Although raising many questions, the work presented here has limitations. Firstly, the development of the cards did not base itself upon long-term studies of touch-point innovation in service design. Instead, it used knowledge from practice, together with published work from other fields to identify issues of importance in touch-point innovation. Further work, such as case studies, is needed to give a richer understanding of how touch-point innovations occur. Secondly, we chose to develop the cards through practice as part of touch-point innovation workshops which, although giving many benefits, also had limitations. For example, comparisons of alternatives and in-depth analysis of design decisions were not possible. In particular, an in-depth study of touch-point representations was not possible, and we hope to see exploration of this area. This would give a better understanding of the core meaning of individual touch-points and how such touch-points deliver specific customer experiences. Such work could move towards the development of patterns for touch-point use in service design.

Further work is needed at each of the multiple layers discussed in this article, from development of the cards themselves, to broader issues regarding the characteristics of service design. There is a need to discuss and elaborate the seven aspects of touch-point innovation identified in this article. We would also like to see studies that show how touch-point decisions made at the early stages of a project impact the final customer experience when developed and finally delivered. Further work to explore alternative and richer touch-point representations is needed to gain a deeper understanding of the nature of touch-points, their individual characteristics and how they contribute to an orchestrated solution. We would hope that this work also initiates discussion around the materials used to explore and develop service designs. This will contribute to a greater understanding of the similarities and differences between service design and other design disciplines. As service design develops, this understanding will be increasingly important.

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## Article 2

BRIDGING THE GAP BETWEEN BRAND STRATEGY AND CUSTOMER EXPERIENCE.

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# Bridging the gap between brand strategy and customer experience

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## Summary

**Purpose** - This paper describes the development and evaluation of a process model to transform brand strategy into service experiences during the front end of New Service Development (NSD). This is an important yet poorly understood transformation that occurs early in service development projects. The paper describes the theoretical basis for this transformation, and introduces a process model that has been developed to understand and assist with this. Further, it describes early evaluation results and reflections upon its use.

**Design/methodology/approach** - A research through design approach using participatory co-design led to the development of the new process. The development was iterative, together with service providers. The process model was evaluated using a combination of qualitative methods, including interviews, observation and participatory observation.

**Findings** - This work underlines the importance of aligning the customer experience to the company brand and suggests how this can be achieved. A key element in this is the development of a service personality and consideration of service touch-point behaviours through a combination of analytical work and experience prototyping. The suggested process model has received positive evaluation when used in commercial projects, in terms of brand congruence, project team cohesiveness and experiential result. The work advocates tighter integration between brand management and NSD, and has identified multiple issues regarding the content of a service brand strategy. These include the ways in which a brand department should communicate its brand strategy, and how it should be involved in NSD projects to ensure brand alignment.

**Research limitations/implications** - The evaluation of the model has limitations, both in terms of number of cases and downstream/long term effects. This should therefore be considered an initial evaluation of the model, requiring further verification.

**Practical implications** - The paper describes a three stage experience-centric process that improves brand alignment in projects. Further, the work shows that brand specifications for services should increasingly focus upon desired customer experiences, service touch-points and touch-point behaviours rather than the current focus upon visual identity.

**Originality/value** - This is the first paper to suggest a process that transforms a brand strategy into customer experiences during NSD. It also adds original insights into the transition from brand to concept, bridging branding, service design and NSD.

**Keywords** Design, Brand, Customer experience, New Service Development

**Paper type:** Research paper

## Introduction

The area of customer experiences as an emerging area of competitive advantage is now clearly documented (Johnston and Kong, 2011, Pine and Gilmore, 1998, Prahalad and Ramaswamy, 2004). Research is now beginning to explore the relationship between customer experience and Service Dominant Logic (Sandström, Edvardsson, et al., 2008) and between customer experience and the NSD (New Service Development) process (Johnston and Kong, 2011). However, there is little guidance in practical terms regarding how to design for experiences. Although the link between brand and experience has been shown to be important there is a strong need to focus upon the ways in which this can be achieved.

To achieve alignment between brand strategy and the final customer experience, a project team has to channel and transform brand strategy into a service solution that will consistently give brand-relevant experiences to customers. This transition is described in design as a semantic transformation (Karjalainen, 2004), a transformation in which a project brief is transformed into a “tangible” concept, such that it can be experienced and evaluated by a project team. It occurs during the early stages of the NSD process, the ‘fuzzy-front-end’, and makes this early stage critical to defining the customer experience in NSD. If this transformation is not carefully managed, there is a danger of a gap between the associations that should embody the brand and how a customer actually experiences a service. Now that the customer experience is increasingly seen as a core part of business success, companies cannot risk the dangers of unaligned services.

This paper describes a process to align service experiences and brand strategy during the front end of new service development.

## Research questions

The research presented here explores and attempts to answer the following question: how can a cross-functional project team transform a company’s brand strategy into relevant customer experiences during the early stages of new service development (NSD)?

This question has been broken down into three further questions:

1. What is the relationship between brand strategy and customer experience?
2. How could brand strategy be transformed into relevant customer experiences for new services?
3. How can a cross-functional team describe or scope a desired experience for a service at the early stages of new service development?

## Article structure

The article has the following structure. Firstly a summary of existing knowledge in services branding, customer experience and their relation to NSD is given. This is followed by a section regarding the semantic transformation process in product design and how this can be transformed to be relevant for services. Based upon this, a model for semantic transformation in services is presented. Results from using the model in case projects is reported. This is then discussed in the light of the conceptual framework, with a discussion of the consequences this work should have for service organisations that desire strong experience-based brands.

### Conceptual framework of this research

This research is at the intersection of three research areas. Firstly, it is positioned within services branding. Secondly, its area of application is that of New Service Development in terms of how an organisation can apply knowledge of services branding to the innovation process, particularly the front end of innovation. Finally, it is grounded in design research as the means by which innovation occurs, i.e. through *designing*.

### Research method

The research was conducted using the participatory design approach (Schuler and Namioka, 1993), a practice-led, design-based variant of participatory action research (Kendon, Pain, et al., 2007). This is a qualitative approach in which designers develop solutions together with relevant stakeholders through a cycle of theory, practical design and reflection. This is similar to the systematic combining approach described for business case studies by Dubois and Gadde (2002), in which an abductive approach (Peirce 1955) is utilised to “generate new concepts and development of theoretical models, rather than confirmation of existing theory” (Dubois and Gadde 2002, p559).

At first, an exploratory approach was taken. This combined findings from literature and practice together to develop a broad range of tools aimed at assisting innovations in brand-based customer experience. These were evaluated through workshops with service providers. From these workshops, the model emerged and was then refined through several iterations of development together with relevant stakeholders in commercial project contexts.

A mix of evaluation methods and tools were used, such as observation (participatory and non-participatory), questionnaires and semi-structured interviews.

## Services branding and the customer experience

Strong brands play a special role in services since they enable customers to better understand the intangible nature of services and help reduce customer perceived risk in consuming services which are difficult to evaluate prior to consumption (Berry 2000). For Berry, the brand is the company, and the two are inseparable.

There is an increasing focus upon service brands as being closely related to the customer experience (Bitner, 1992, Berry, 2000, Prahalad and Ramaswamy, 2004, Sandström et al. 2008, de Chernatony, 2006). This is highlighted by de Chernatony (2006) who has an experiential description of a service brand: “A brand can be regarded as a cluster of functional and emotional values, which promise a unique and welcome experience”. In Vargo and Lusch’s description of service dominant logic (Vargo and Lusch, 2004), value is something that is perceived and evaluated at the time of consumption, so called value in use. Sandström et al. (2008) link this to the customer experience in the following way: “Value in use is the evaluation of the service experience, i.e. the individual judgement of the sum total of all the functional and emotional experience outcomes” (p 120). Further: “To fully leverage experience as part of a value proposition, organizations must manage the emotional dimension of experiences with the same rigor they bring to the management of service functionality” (p 119). It is therefore important that service brands ensure that the customer experience consistently delivers upon the brand promise. However, the link between customer

experience, the brand and the design process is missing when it comes to tools, methods and processes. Johnston and Kong (2011) review models for how to design for customer experiences, and propose a ten stage model for the design process. In this model, the service brand is not mentioned, nor is brand congruence. There is therefore a danger that organisations with an experience focus will develop experiential solutions that dilute the brand. To avoid this, the link between brand and experience needs to be clearly articulated and incorporated into the design process.

### The importance of touch points and behaviours in services

De Chernatony (2003) highlights the importance of a consistent brand promise delivered through behaviours, processes and contact points. Further, the importance of organisational culture and staff behaviour for services branding are stressed: *“Successful services brands thus evolve from a unique culture which is revealed both in the brand and in the attitude and behaviour of staff as they represent the brand to consumers”* (p 1107). Berry (2000) echoes this, claiming: *“with their on-the-job performances, service providers turn a marketer-articulated brand into a customer-experienced brand”* (p135). Sandström et al (2008) update this view adding a technology dimension, through for example self-service solutions, in which *“the physical access device and the technical infrastructure are in a kind of symbiosis, both dependent upon on each others existence”* (p 115). Clatworthy (2011) directly relates behaviours to touch-points, independent of their means of provision, adding that the sum of experiences from all touch-point interactions form the customer perception of value in use. Fortini-Cambell (2003) describes such multiple touch-points in this way *“in a more complex consumer experience ... there may be literally hundreds of small elements of experience the consumer notices”*(p 63). Since services often include people in their provision, aspects such as behaviour and tone of voice become important. The same is true of digital interactions - the behaviour of the digital solution - its user friendliness, pleasurability, utility and usability -all describe behaviours that need to be aligned with the brand. This shows that the choice and design of touch-points, particularly touch-point behaviours are central to delivering the customer experience.

There is therefore a strong need to align all service touch-points, and particularly touch-point behaviours to the brand. This raises the question about how a company does this, and unfortunately, research has little support to give at this stage, other than to describe mapping and blueprinting activities. There are a clear lack of models, methods and tools to link touch-point behaviours to the brand during NSD. Companies wishing to improve the alignment of the customer experience and brand lack the support they need when doing so. At present, there is a gap in terms of both research knowledge and NSD practice - the gap between brand strategy and customer experience.

## Semantic transformation through design

A service innovation project transforms brand identity into a service concept which is later developed, launched and experienced by customers “in-use”. This process is termed a semantic transformation (Karjalainen, 2004). It can be defined as the process through which predetermined brand associations are communicated through service manifestations. This is visualised in figure 1.

The link between brand and experience is considered important in NSD, yet the semantic transformation has received little research attention. Studies within NSD regarding this specific development phase could not be found, even though it happens in each and every NSD project. The way in which it happens, or should happen, is not evident from the research literature.

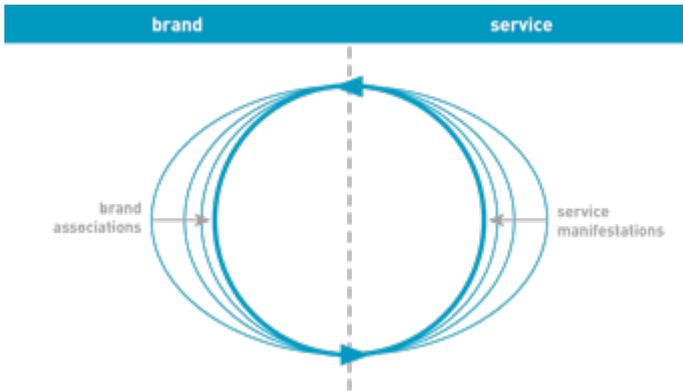


Figure 1: The result of a perfect semantic transformation is total congruence between strategic brand associations and service manifestations. (Adapted to services from Kajalainen, 2004, p 207).

In the product development domain, the semantic transformation has received a little more attention, although it is still poorly researched as a process. Karjalainen (2004) is one of the first to research the transformation process. He shows how this occurs in the form given to Volvo's new car series during the 'revolution' process, and through the design of Nokia handsets 'definitely yours'. His work is product specific, such that the manifestations he describe relate to product design features and communication through physical form, as can be seen in figure 2.

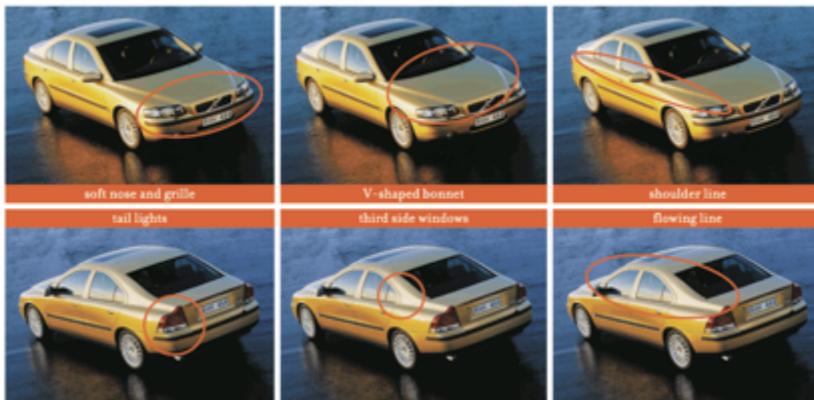


Figure 2: Many elements make a Volvo uniquely a Volvo. For the S60, the semantic transformation transformed brand strategy into product form elements with desirable symbolic associations. This example shows Volvo form elements as implemented in the Volvo S60 and used throughout the Volvo product range. Services cannot communicate brand strategy through form in the same way, and need to use other means to convey symbolic associations. (Image from Karjalainen, T. M. (2007), used with permission).

## Towards a model for semantic transformation for services

In product development, the focus is upon product form as the main manifestations of the brand. In services, other aspects influence the customer experience. Touch-points, organisational culture and staff behaviour have all been highlighted as key to brand identity for a service. This section details a model developed specifically for services.

The semantic transformation for services can be described as a design transformation. In this design transformation, desired brand associations are incorporated into a service concept, such that manifestations of the service, when delivered, give relevant customer experiences. This article takes the position that experiences cannot be designed, rather that they can only be *designed for*. Vargo and Lusch's (2004) term 'value in use' supports this view and implies that experiences can only be subjectively evaluated once delivered. It can be argued that in services, the semantic transformation occurs 'in use', during service delivery. This is where designed enablers meet situational context and variability. However, given the view that the design of the service concept defines much of the service, then it is evident that an important semantic transformation occurs during the front end of concept development. Sandström et al. (2008) go into more detail about this development, describing enablers that can be designed, and situations that can only be designed for. This is due to individual and situational filters that are necessarily part of the co-creation of value. Pine and Gilmore describe this as staging services (Pine and Gilmore, 1998), and although they frame this in a hedonic context, the term 'staging' is valid when designing for all service experiences, since it allows for the individual and situational factors mentioned by Sandström and colleagues. A model that supports semantic transformation must therefore support the design of enablers and the staging of services. It was mentioned earlier that the front end of NSD is the phase of the design process in which such enablers and staging are defined.

Karjalainen's study of the fuzzy front end and semantic transformation for products is detailed and well documented. Karjalainen identifies three clear phases of transformation: identification of desired strategic associations, transformation into visual associations and transformation into physical form. His work has focussed purely upon product form, however, it is considered that the stages of the process are relevant for services, even though the enablers are different. In the following table, Karjalainen's 3 stages are presented, together with comparable steps for services. The contents of each step are based upon literature regarding service branding and upon several iterations during the models development.

Design phase	For products (Karjalainen 2004)	Suggested comparable steps for services
1. Strategic brand identity input - Summarising Brand DNA	The strategic brand identity is communicated to the project team as desired strategic associations: a) in text and image b) through the organisational culture c) through design heritage.	The strategic brand identity is communicated as desired strategic associations through: a) text, image, touch-points, behaviours and interactions b) organisational culture c) experience heritage
2. Transformational exploration through associations	The strategic associations are developed into product character through iterations of verbal images, moodboards and sketches.	The strategic associations are developed into service personality, and desired touch-point behaviours, using text, images and analogies.

Design phase	For products (Karjalainen 2004)	Suggested comparable steps for services
3. Design concept	The visual images are transformed into physical manifestations such as sketches and 3D concepts for new products.	Personality and touch-point behaviours are transformed into experiential manifestations and service concepts through experience prototyping

Table 1: The semantic transformation for products as described by Karjalainen (first and second columns) were the start point for suggesting steps for services and for developing this model. This is shown in column 3, using similar terminology to Karjalainen. Note that steps 2 and 3 are iterative as exploration and conceptualisation are inseparable.

This three stage process has been simplified into a model that can be used in NSD projects. The terms have been shortened and the model has been given a form and title that aids its communication; “the brand megaphone”. The metaphor of the megaphone is used to highlight the necessary alignment between touch-point behaviours and strategic brand identity (here called Brand DNA). It implies that weaknesses in the semantic transformation will be amplified across touch-points.

The model (figure 3) functions both as a conceptualisation of the relation between strategic brand identity and customer experience, and as a description of the three stage process needed to make the transformation. This three stage process is described in more detail below and is designed to complement existing NSD process models, rather than replace them. A detailed description of the tool used in projects can be found in Author (2009).

### Stage 1: Summarise Brand DNA

There is a broad similarity between the strategic brand identity input identified by Karjalainen and the one suggested for services. There are however some significant differences. The product model is strongly based upon visual form, materials and visual associations. As mentioned earlier, services are experiential, delivered over multiple touch-points and dependent upon behaviours and interactions. A corresponding version for services should therefore add communication of desired behaviours and interactions for the typical touch-points of services. As can be seen later, this is not a common component of service brand specifications inside organisations.

The term Brand DNA (Karjalainen 2007, Ellwood 2002) describes the essence of the brand. Ellwood (2002) describes it as “a single source of reference for all branding and marketing activities, both internal and external” (p.125). It is used in this model since it is a simple term to communicate and grasp for participants in a project team. Secondly, it fits with the anthropomorphic analogy (DNA, personality, behaviour) which is used for the whole model.

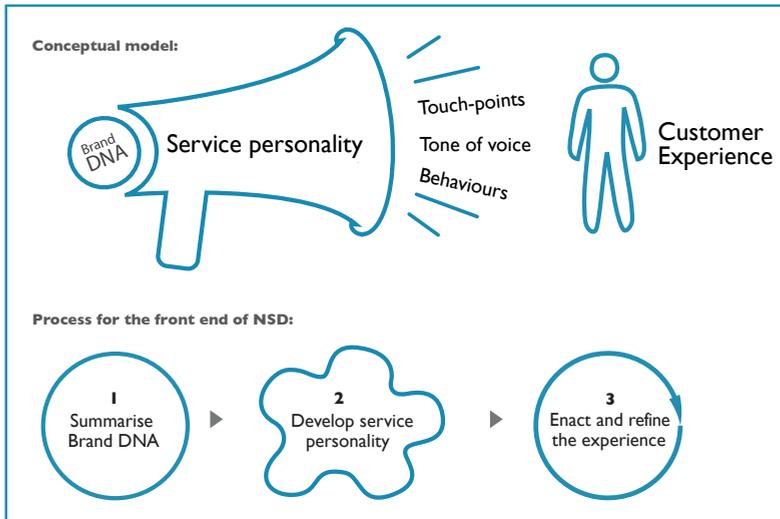


Figure 3: The brand megaphone' semantic transformation model simplifies the terms from the above table. The top part of figure describes the conceptual link between the elements and suggests how brand DNA is amplified and manifested through touch-points, tone of voice and behaviours. The bottom part of the figure functions as a process description, showing the three steps that can be used to develop a brand-aligned customer experience.

## Stage 2: Develop Service Personality and Touch-point behaviours

This phase of the design process explores alternative means of achieving the goals identified in Stage 1 in terms of a new service. In product design this occurs through the exploration of visual analogies. Designers work on how brand strategy can be transformed into a form expression that gives relevant brand connotations. Typical at this stage is the use of inspirational visual analogies and exploration of what the specification may mean in terms of a transformation into physical form.

Since services are based upon behaviours and interactions, and are delivered across multiple touch-points, the model has explored behavioural analogies as an addition to visual analogies. After evaluating different approaches over several years, the project chose to use brand personality exploration as a suitable means of transforming and exploring brand strategy into service associations. The term personality fits well with service characteristics, and gives relevant associations to behaviour and experiences. It is also a term that team members with diverse backgrounds can readily understand.

Brand personality is defined as “the set of human characteristics associated with a brand” Aaker (1997 p347). Aaker has developed a theoretical framework of the brand personality construct and has determined the number and nature of dimensions of brand personality. She found five dimensions (sincerity, excitement, competence, sophistication and ruggedness) and 42 traits, linked to these dimensions. The project found that the combination of dimensions and traits are a good start when designing a service, since

they assist linking the brand to personalities, which can then be linked to objects, interactions, behaviours and experiences. Brand personalities are often characterised using analogies to people, objects and services. By associating the brand with tangible and experiential examples, an understanding of the brand and how it can be manifested in a new service is developed and communicated within the team. This has an internal value, and also helps designers and developers later in the process when aligning the detailed design to the brand. In a workshop setting, and in a project team, the term personality provides a very good means of forming and enabling a common understanding of the company brand in respect to a new service. This is particularly effective when combined with analogies and metaphors since it gives close associations to behaviours and expected experiences.

The use of analogies during this stage is grounded in both design research, branding research and practice. Their importance as part of the design process was originally identified by Dumas (1994) and described as totems. Analogies and metaphors are commonly used in design as a means of conceptualising a potential direction. Dumas shows examples of analogies and metaphors used in design, mentioning the example of the Honda Accord, developed in the early 1990's, in which the whole project team became aligned around the metaphor 'Rugby Player in a Dinner Suit'. Dahl and Moreau (2002) describe the importance of analogous thinking during the fuzzy front end of product development, and Supphellen (2000) suggests using analogies as a means of eliciting brand associations from customers. Much of this work utilises our innate and strong analogous and metaphorical communication skills (Lackoff and Johnson, 1994).

In this service specific model, the rich body of knowledge from product design and marketing is used to explore potential service personalities using analogies and metaphors such as:

- » Examples of touch-points from other services that successfully convey brand DNA
- » Analogies between the service to be designed and existing services, products, people or images. Here, strong use of analogy is used, e.g. "if this service was a supermarket/person/car/clothes brand, what would that be"
- » Analogies from situations that give similar emotional experiences, eg. the smell of cut grass on a summer day
- » The personality described in words, using the dimensions of brand personality identified by Aaker (Aaker, 1997).

Note that some of the analogies and metaphors used are not purely service related. Some product analogies are used since they often have clear manifestations as customer experience, brand expression or personality. Results have shown that including such analogies work well, since the key element at this stage is to focus upon analogies that have an experiential character and can be shared and discussed within a team.

The output from Stage Two is a description of the desired personality for the new service, represented through words, images and analogies. The difference between Karjalainens product based result (visual) and the service based result, is that the service descriptions describe personality, touch-points, behaviours and experiences, rather than visual form. In this way, brand DNA is transformed into service-focused elements.

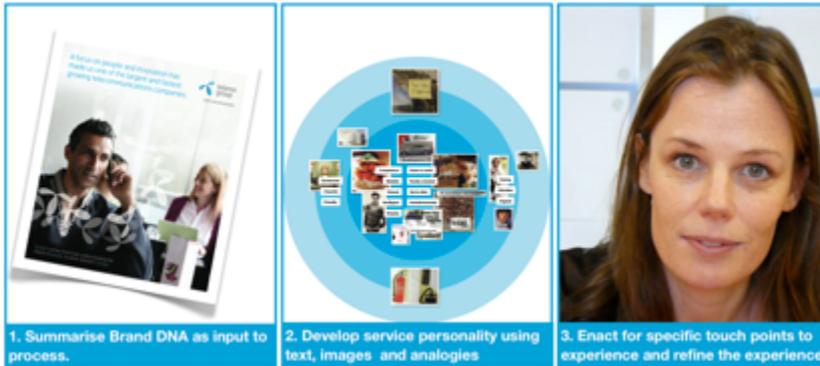


Figure 4: Examples of the three stages (simplified), taken from a customer service project in a telecommunications company.

### Stage 3: Enact and Refine the Experience

In product development, this phase takes the form explorations and develops them into a form language that embodies the brand, through multiple stages of modelling, using clay, wood or 3D printing. Of particular interest is the development of unique form platforms, or house language, that help define through form and materials, a unique (in his case) Nokia or Volvo form. It is during this stage that the form platform elements shown in figure 2 are developed individually and combined into a holistic concept.

What then is the corresponding stage for services? The service concept, is an understanding of individual parts, and the whole, and integrates multiple elements. As Goldstein et al. (2002) describe it, it is the *what* and the *how* of the service, encompassing: operations, customer experience, service outcome and benefits. The corresponding phase is the service concept and of particular interest, the customer experience. However, instead of exploring a physical prototype as used for products, in services, there is a need to explore experience prototypes.

Jane Fulton Suri from IDEO introduced the term experience prototyping to describe this need: “Increasingly, ... we find ourselves stretching the limits of prototyping tools to explore and communicate what it will be like to interact with the things we design.” Buchenau and Fulton Suri (2000, p424). The goal of experience prototyping is to “allow designers, clients or users to ‘experience it themselves’ rather than witnessing a demonstration or someone else’s experience” (Buchenau and Fulton Suri, 2000 p425). Suri describes methods as varied as probing, bodystorming and rapid prototyping. Since then, several methods for experience prototyping have been developed, based upon acting out scenarios. Burns et al. (1994), describe bodystorming as a means of using role-playing to innovate solutions. Diaz et al. 2009 describe role playing as a means of enacting collaborative scenarios to better understand the service encounter, while Boess (2006, 2008 and Boess et al. 2007), describe four rationales for the use of role-playing: to aid communication within design processes, to understand new technologies, to develop customer empathy and to support social change. The model presented in this paper makes use of role-playing primarily to aid communication and to develop customer empathy.

The third stage of the semantic transformation for services is therefore a series of experience prototyping sessions, in which enactment of alternative services or service touch-points help give the experience of the experience that might be delivered. The use of professional actors to assist with this phase has been found to be useful, although experience prototyping can be carried out internally within a project team. Experience shows that professional actors can help fine-tune and nuance a desired experience in a better way than project team members. In addition, a video of a professional actor enacting a service encounter is a valuable output that can be used downstream in development. This enactment allows the project team to experience the experience at an early stage of the project, enabling decisions regarding future development directions.

The phase is documented in text, image and video. Together with the documentation from the earlier phases, this forms a high level customer experience specification that can be used in the project in multiple ways (eg. as a target/totem for later stages of a project, for customer evaluation, stage-gate documentation etc).

## Evaluation of the models 'value in use'

The model was developed through iterative stages over a three year period together with a broad range of service providers in Norway. This evaluation is of the final iteration, which has been evaluated in a total of 6 workshops during late 2010 and early 2011. The model was evaluated through its use in 3 commercially relevant projects (Insurance, National Lottery and Telecom), employing cross-functional teams during the first stages of projects. Each workshop had a 4-6 hour duration. Participant numbers in the workshops have varied from 5 to 8 people, each with different organisational roles and backgrounds. The evaluation methods have combined semi-structured interviews, discussion sessions, a questionnaire, and participative and non participative observation.

The questionnaires were filled out by workshop participants at the conclusion of each innovation workshop. The questionnaire was a standard questionnaire developed for the evaluation of innovation workshops. It consisted of open questions requesting information about positive and negative aspects of the workshop itself, and multiple choice questions related to the innovation potential of the workshop at a project level. These questions were developed from literature regarding innovation metrics in companies (Perrin 2002, Brusoni 1998, Andrew et al. 2008).

A total of 7 semi-structured interviews were carried out with workshop participants. The interviewees were chosen to represent a broad range of disciplines and responsibilities across different organisations. Each interview lasted approximately two hours. The interviewees had the following profiles:

1. Brand manager for large Nordic insurance company
2. Marketing manager leading division of large Nordic insurance company
3. Senior service designer in service design consultancy
4. Telecom engineer in Norwegian operations of large international telecom operator
5. Project director, brand experience, in large international telecom operator
6. Strategic brand advisor in large international telecom operator
7. Senior advisor, strategic planning, in Norwegian operations of large international telecom operator

The interview guide was informed by observation of several workshops combined with the insights gained from the literature review of branding in services, service design and service innovation.

The research questions from the start of the project were re-formulated into four success criteria for the model, in terms of its ability to support the NSD process:

1. It should lead to a high degree of congruence between brand strategy and service experience, as perceived by the project team and stakeholders (and ultimately customers)
2. It should be relevant to services and address aspects such as multiple touch-points, behaviours and organisational development
3. It should support team cohesiveness and the innovation culture of a team
4. It should help develop service concepts at the front end of the innovation process

### Brand-Experience congruence

This evaluates congruence between strategic brand associations and service manifestations. Brand congruence is ultimately judged by customers once a service is launched, but the goal here is to introduce the model as part of the semantic transformation during the fuzzy front end of projects. In such a context, it is congruence as perceived by the project team that was evaluated.

The evaluation shows that the approach contributes to brand-experience congruence in several ways. Firstly it focussed the team upon the importance of designing brand-relevant experiences, thus influencing the project approach and decision-making at an early project stage. Interviewee 1 stated *“The films are great illustrations of the huge potential you have to influence the experience. You can’t experience it (the brand) when it is described in a dead word document or a powerpoint, you can only experience it when you see a person talking, using tone of voice etc”*. Interviewee 4 commented, *“We have used brand values in projects before. This however, gave us a window into how it would be when operationalised”*. Secondly it developed an experience target that could be used later in the project as a reference. Interviewee 5 stated *“I was impressed how small changes gave different experiences. I think this can be used to set a standard (for experience) in a project. We can view a video and say, yes, that is us”*. Thirdly, it assisted with the development of the desired experience for the projects in question. Interviewee 3 claimed *“One has the opportunity to work systematically with the things that are difficult to describe precisely with words, but which strongly influence the experience. When it is enacted, everyone can agree upon what the experience was.”* Finally, it transformed the brand specification into an experience that could be evaluated, adjusted and re-evaluated. Interviewee 1 mentioned *“This has been an awakening for me ... there is often a long way from word to deed, and this model builds a bridge between them”*. Further, *“It shows the brand as it meets the customer, the point within the service where we deliver the brand. I think the model is well suited to do that”*.

However, for one member of a project team it was considered a radical approach that took a considerable amount of time to understand. Interviewee 7 mentioned *“I needed a period to get to grips with what the model does and didn’t see its value at first”*. Further, *“It has value, but requires a lot of explanation to people outside the project team. We have been a little restrictive in terms of who we show (the video) to”*. This shows

that the introduction of discussing experiences and developing experience prototyping to technically-oriented groups at such an early stage of a project might be considered unusual, and require some preparation. However, all participants saw the value of the process and wished to use it again.

One interviewee (6), asked if this was the right use of resources, when there were other pressing brand issues to deal with within the organisation, *“the problems we have at the moment are a level above this. It might be overkill for each project to work with this at the present time”*. This comment is considered as much a comment on the perceived weakness of the brand in question (in an experience perspective) rather than the proposed model itself. However, it raises the role of the process model in a non brand-aware organisation. The process model has a strong effect in focusing a project team towards brand, and the model could therefore be considered a tool to support change management, as much as a design-tool for NSD. Further anecdotal results support this, since the process has started a change project within the organisations involved to add brand experience to their existing stage-gate process (Cooper 2000).

### Service relevance

It has been shown earlier that customer experiences and brands relate to value in use and encompass such things as behaviours, touch-point interactions and organisational culture. Findings show that the model highlights such service-specific aspects, and that it does this in a way that project teams understand. Interviewee 7 mentioned *“We have no descriptions of how our brand translates into different touch-points. Nothing. We have descriptions of our differentiators and the basic customer-needs we need to satisfy, but we lack the link from theory to practice. This is a very useful approach to address that”*. Project team participants commented that it gave them a new understanding of service issues and that the model formed a common understanding within the project team regarding the importance of these issues. Interviewee 6 mentioned that *“It had great value to show where we were, and where we wanted to be”*. Interviewee 3 observed *“I noticed that the model had a transformative effect ... the project team suddenly had a new way to see and understand things”* ... Interviewee 2 commented that *“It made us aware of how you say things, how you treat customers, how you behave, and in our situation, where we have a multi channel strategy, it made me aware of how we do things on the internet, which is an important channel for us, how we do thing over the telephone, how we do things when you come into our shops, how we do things when we are out at a customers, at an exhibition ...”*

The model can be time consuming if all touch-point behaviours are explored and enacted. This led to us to focus upon fine-tuning one generic touch-point and using this as a target from which other touch-points could later be designed. Interviewee 3, summed this up in the following way *“I think the model works best where there is a high degree of personal interaction in the service. Its might be a little too time consuming to use it on purely digital services, for example.”* Interviewee 2 felt that the approach demanded a lot from the team stating *“Its a very good approach, but a demanding one”*. These comments could relate to two aspects; scope of use and/or cost/benefit.

In terms of scope of use, findings show that project participants found it easiest to use the process model to enact interactions that entail human behaviour and tone of voice aspects. However, they found that these enactments developed an important understanding and formed a valuable target that could be used for the design of other touchpoints (e.g. digital touchpoints). The effect of focussing the team upon the experience therefore makes the model valuable, even in service solutions with a limited number of touch-points. However, for small projects with only digital touch-points, the model may have limited applicability.

When it comes to cost/benefit it is difficult to give precise guidance without further experience from using the model. The front end of projects has been shown to be an inexpensive phase of a project (Berliner and Brimson 1988), such that in a total project cost, use of the model can be considered inexpensive. The benefits can be shown to be team coherence, brand focus and the development of a target experience, and as such can be considered low-cost for medium and large development projects. For organisations that wish to focus upon improving the customer experience and the brand-experience relationship this should be considered worth using in medium and large projects.

### Contribution to team coherence and innovation culture

One of the challenges facing cross-functional teams at the start of a project is the development of team collaboration, internal culture, team communication (Sarin and O'Connor 2009), the achievement of a common understanding and development of a shared vision of the object of development (Molin-Juustila 2006). The results of the evaluation show that the model contributes to team coherence and innovation culture by forming a common cultural thought world within the project. Part of this is due to the ability to experience the experience as a customer would. Interviewee 3 commented that *"It allows everyone in the project team to see things through the customer's eyes"*.

The model developed a common language within a team and reduced personality barriers. Interviewee 4 summarised it in this way *"It has a clear value. It develops a collective mindset for the team - how to translate word into deed"*. Interviewee 2 mentioned that *"it created a shared awareness"* something that interviewee 3 embroidered upon stating *"It gave the team a way to identify with the experience of the service... all could see what the experience was"*. Interviewee 6 focussed upon the experience of the experience claiming *"I had read the experience economy book, but through this process, all the elements fell into place. It opened my eyes to a lot of new things."*

### Development of service concepts

Goldstein et. al (2002) describe the service concept as the *what* and the *how* of the service, encompassing operations, customer experience, service outcome and benefits. To assist with the development of service concepts, the model should support an understanding of the what and how of a potential service. Evaluations show that the model strongly supports the what of a service, in terms of its focus upon a target customer experience that fits with the brand strategy of the company. The model does not directly answer the how of services, although this is implied through the enactment and descriptions that are within the model. The model presents a high level target for a service experience, which allows the project team to explore alternative means to achieve the experience. This can be termed an 'experience pull' approach, rather than an 'operations push' approach, in that the experience is described before, or in parallel to the design of the service delivery mechanism. Several of the interviewees mentioned the model's ability to direct a project towards an experiential outcome from an early stage. Interviewee 4 felt *"This gave us a head start. It focussed the design from the start and gave us a different kind of foundation for the project"*. Interviewee 6 supported this view, stating *"Something changed during the process. We have been customer-focussed for a long time, but experience-focussed means more than just understanding the customer. You have to understand the customer, but do something more and change things so that it delivers a good experience"*. This experiential focus was echoed by interviewee 3 who considered experience prototyping as important, stating *"You can explore many different aspects related to the customer experience before you invest heavily, allowing you to test the experience well, at an early stage."*

## Relevance for front end of innovation

The front end of innovation develops the foundations upon which the service is developed and launched. As such it develops concepts that describe and specify the whole service, and allows a decision point before expensive development takes place. The interviewees commented upon its relevance as part of future development processes.

There were divided opinions regarding its integration into the design process in the future. Interviewee 1 was positive, claiming *“This is something that fits into stage 2 of our process. It should be a required stage for projects of a particular size or character.”*. However interviewee 5 disagreed, claiming that the process could be run once and used as an internal “gold standard” within the company claiming *“in the form it is now, it identifies the right experience for the customer journey. You cannot do this in each and every project. Guidance has to come from above, and in the project work only with its implementation.”* Interviewee 1 saw the value in developing a target experience early on in the project, stating *“You need to have a target first, like a lighthouse that leads the way”*. This was supported by interviewee 3, who stated *“I think the model can be used throughout the process. I think it is something that people will remember, some books to hang things on and go back to. I think it is well suited to that. It’s like sketching. You can have early sketches, and detailed design sketches. It’s the same here ... just with people’s interactions with the service included”*.

## Discussion and further work

The work presented here raises multiple issues for discussion within the field of branding and customer experience as part of service innovation. This section discusses the implications that the model might have upon service organisations, and suggests further work.

### During NSD, experience prototyping will become more central.

The importance of prototyping service experiences within a team was shown to build a bridge between brand and customer experience at the early stages of a project. This article has scratched the surface of experience prototyping for services, and there is a great need to explore the method further, particularly when it comes to prototyping experiences across multiple touchpoints. So far, we have not involved end users in the experience prototyping phase, and this is something we would like to explore in the future.

### Service brands need to be described and specified experientially

During the project it became clear that the existing body of knowledge regarding how service brands are described and specified (Aaker 2002, Kapferer 1997, Olins 1995, Wheeler 2006) have a visual-identity focus rather than an experiential focus. Behaviours and interactions are briefly mentioned as part of brand literature, but examples invariably focus upon visual identity and form. Each of the companies involved in this work had developed detailed visual guidelines as part of their brand specifications. Some used video to explain the importance of the brand, but none used video to describe the desired customer experience nor presented the customer experience in any structured way. It is surprising to find that services still have not embraced behaviours, interactions and experiences as central parts of their brand handbooks. There is therefore great potential to improve brand specifications, through an increased focus upon the customer experience. This model could therefore be a supplement to a brand handbook in addition to a tool for a project team. This is something that will be explored in the future.

This model introduces a mindset that may have a positive effect upon brand heritage and culture.

Karjalainen (2004) shows that focus upon the semantic transformation strengthens the brand and develops brand heritage within an organisation. The work described here gave project participants a new view of the NSD process, and one that they often termed a new mindset. This mindset can be described as an experience-centric mindset. This mindset can be a strong contributor to a brand and experience-focus throughout an organisation if incorporated into the NSD process.

The traditional role of the brand management group is challenged by this work.

This research highlights the close link between the company, the brand and the customer experience. It therefore challenges the traditional distance that the brand management department has from individual development projects. It suggests that services branding within an organisation should move from a prescriptive approach to a participatory approach - an approach in which brand personnel are directly represented in NSD projects.

#### Using a target experience as a totem and specification

The enactment of a concept offers potential as a target experience that can align a project team at an early stage and during subsequent development. The filmed enactment can therefore operate as a 'totem' (Dumas 1994), or target, and assist with an experiential alignment in NSD. This should be explored more, particularly downstream effects during the NSD process of such totems from the fuzzy front end.

#### Who should judge brand congruence?

This work raises the question of who can and should judge brand congruence at the early stages of a project. Customers were not involved during the development of the model since its focus was upon enabling a project team. In the evaluation of the model, none of the interviewees questioned the use of the model as a team-internal process, and the question of customer participation within the model was not raised. However the model can easily include customer participation or co-creation and further exploration of this should be explored. It might be most cost-effective to user-test the concept outcomes rather than involve customers in the process itself since project teams took some time to understand the model and its relevance. Such a learning curve is part of the development of a common understanding within a team, and therefore can be considered a good investment. It is questionable if this is such a good investment with customers who will have no further role within a project, once the process is complete.

## Conclusion

This paper has responded to the need within organisations to align customer experience and brand. It describes a three stage model that supports cross-functional project teams when transforming brand strategy into customer experiences, and describes how this can be achieved during the early stages of the design process.

The article contributes to the literature in several ways. Firstly it identifies the need for alignment between the company, the brand and the customer experience. Secondly, it identifies the concept phase of a project as the important phase during which brand strategy is transformed into a service concept. It is during this

transformation that the important elements of customer experience are formed. Thirdly, it presents a three stage conceptual model that identifies service specific elements needed to make this transformation successful. Fourth, it shows that the customer experience is strongly grounded in service personality and the behaviours of service touch-points, be they people or technology. Fifth, it introduces experience prototyping as means of prototyping service experiences and aligning them to the brand. Finally it shows how focussing the early stages of a project upon the customer experience creates team coherence and fosters an experience centric innovation culture.

The main contribution for practitioners is the description of a process-support model that enables a project team to align the customer experience to brand strategy in a structured way. It does this by linking brand strategy, brand personality, service touch-points and customer experiences together in an explorative process, ending with experience prototypes. These can then be fine tuned and used as an experience target or 'totem' during the remaining design process, to assist downstream alignment. In addition to this, the paper questions the traditional role of the brand department in service innovation. It suggests that brand strategy needs to become less visual and more experiential and suggests how brand specifications can be improved by focusing upon brand personality, touch-point behaviours and desired customer experiences.

This is the first process model for semantic transformation in services, and its evaluation shows it supports brand-experience congruence, team coherence, innovation culture and the development of service concepts. This fills a gap in existing knowledge and practice and is a valuable contribution to the how of NSD, in particular how marketing and design together can develop brand-relevant customer experiences.

The work described here has several limitations. Firstly, although developed using multiple case projects over several years, it has only been evaluated in three projects. In addition, it has only been evaluated in regard to its effect at the front end of innovation projects. It therefore lacks evaluation over whole NSD cycles.

Interesting questions for further research are described. Firstly, an important question has arisen regarding the role of customers in the development or evaluation of experience prototypes. Secondly, the form and content of a brand specification for services needs to be explored, and examples of experience-centric brand documentation developed. Thirdly, the downstream effects of an early focus upon the semantic transformation need to be identified, such that a better understanding of an experience-centric design process can be developed. Finally, the wider effects that the process has upon a service provider's innovation culture should be identified. Initial evidence shows that focusing upon the customer experience (and its alignment to brand), early on in a project has a positive effect within the organisation when it comes to customer focus, experiential outcome and brand understanding. However, the dimensions of this need to be identified and verified.

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## Design support at the front end of the New Service Development (NSD) process

Major decisions are made during the first stages of New Service Development (NSD), and these can have a great impact upon the project, the company and the customer. If you look more closely, you will find that a team, consisting of people from different departments, are usually brought together and given the mandate to make these decisions. The team needs to get to know each other, understand the problem area and choose a solution, all within a short time scale. There is a competitive pressure to streamline these first stages, whilst at the same time, making sure that the right decisions are made.

This thesis explores the first stages of New Service Development, and focuses upon the role that design can play to improve the innovation performance of a development team. The work took a "research by design" approach, that resulted in the design and evaluation of tools and process support, for two specific areas of service innovation. Firstly, how working with the touch-points of a service can improve innovation performance, and secondly the importance of aligning the customer experience with the brand strategy of the organisation. The tools that were developed to assist with both of these areas are shown to improve both group performance and innovation outcomes. Further, they are shown to give a service orientation to the projects.

The results of this research are further discussed and reflected upon to present insights into the nature of service design itself. These discuss the materials of service design, and the importance of service personality when designing services.

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