

HOW CAN PRODUCTS ADAPT TO THE CHALLENGES
OF THE EXPERIENCE ECONOMY?

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of the Experience Economy?

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INTRODUCTION

HOW CAN PRODUCTS ADAPT TO THE CHALLENGES OF THE EXPERIENCE ECONOMY?

The basis of my research is an alternative approach to everyday-products design, which instead of catering for quick and clever functionality, comfort and aesthetics, seeks to deepen and augment users or audiences' experience, which is currently undermined by the temporary and commercial modern everyday-life.

The research focuses on delicate domestic rituals, such as spending time at the dinner table or in the living room, developing product-related ceremonies, sharing them with others and inscribing an emotional experience of all previous product-audience encounters and experiences. This emotional experience will then strive to differentiate these products from their commoditised rival substitutes. Written and designed exploration will suggest some products that could meet the challenges of the Experience Economy (Pine & Gilmore, 1999), while achieving experience differentiation and sustainability.



CONTEXT

Scholars suggest that as the world progresses towards sameness, as every commodity created will be copied by competitors, there is an urgent need to look beyond the traditional business model to provide a road map for what happens next: differentiation by experience. The new competitive landscape in the design arena has shifted from extracting commodities and producing goods, to delivering services and ultimately – staging experiences, in which the event is the offering. These, in return, create a transformation of the individual (Figure 1).

SETTING THE STAGE AND ENRICHING THE EXPERIENCE. (Commoditized & commercial experience)

Staging experience is not about entertaining customers or users, it's about engaging them. An experience may engage users on any number of dimensions and levels. Two of the most important are shown in Figure 2. The first dimension is the user participation. One end of the spectrum shows the passive participation where users are not affecting or influencing the

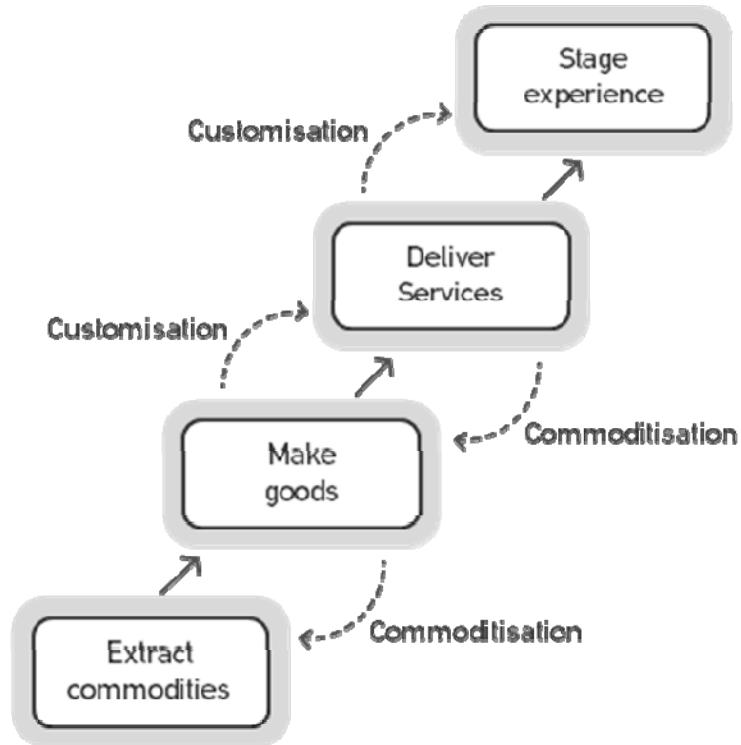


Figure 1: Economy Evolution Model

performance directly, rather, they are observing the occurrence and are not active. At the other end of the spectrum, we have the active participation – where users are personally influencing the performance and altering the event that culminate the experience.

The second dimension is the connection or environmental relationship. On one end of the spectrum lies absorption – occupying the users' attention by bringing the experience into mind. At the other end lies immersion – becoming physically or virtually part of the experience itself.

In other words, the more involved the user is the more immersed in the experience he is. Mixture of these dimensions creates the domains of an experience – entertainment, education, escape, and aestheticism.

EXPERIENCE DOMAINS:

The entertainment (sense) & educational (learn)

Entertainment experience is passively absorbed by the senses and, while the user in the education experience observes the events recounting in front of him.

Unlike entertainment, however, education encourages the active participation of the user. In order to augment the users' knowledge and/or skills, educational event must actively engage the mind (intellectual) or the body (physically).

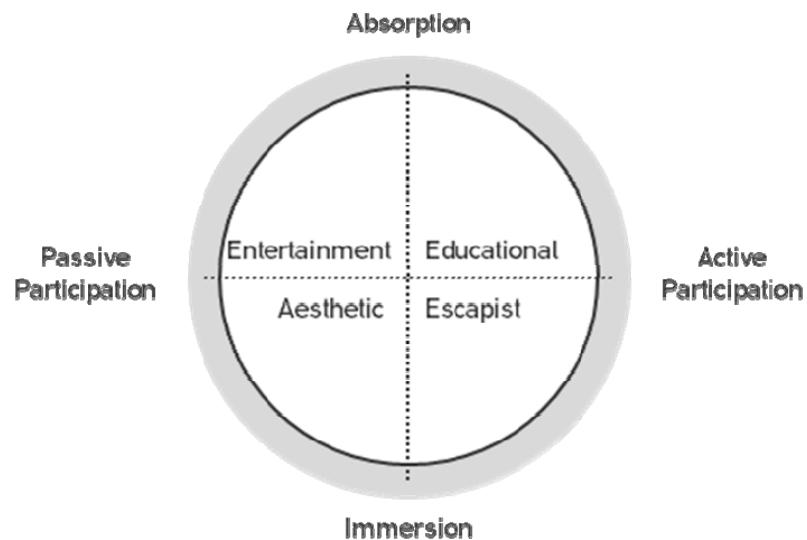


Figure 2: The Domains of Experience

THE ESCAPIST (do)

Escapist experience involves much greater immersion than entertaining or educational experiences. In fact, they are the polar opposite of pure entertainment experiences. A user in an escapist experience is completely immersed in it, being an active involved participant. The user becomes an actor, able to affect the actual performance. This type of experiences are not just about "embarking from" but voyaging to; it is about the journey, about events occurring over time.

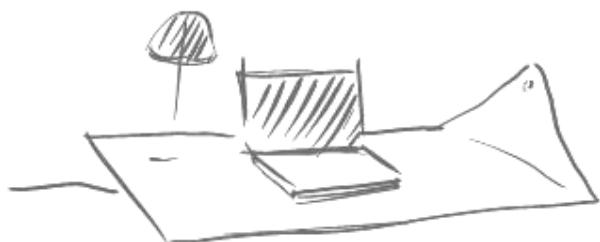
THE AESTHETIC (be)

Users who immerse themselves in an event or environment but remain passive; they have little or no effect on the environment which remains effectively intact. Aesthetic experience is about

"More and more we find ourselves designing complex and dynamic interactions with converging hardware and software, spaces and services"

"A new age of designing, focusing on the whole experience of user interaction, required more subtle calibration"

M. Buchenau and J. F. Suri, IDEO San Francisco



being there, the user observes the surroundings without changing them.

The richest experiences encompass all four domains. This centre point, where all the components and the dimension meet, represents a dynamic and full experience that can (potentially) reward and develop the whole person.

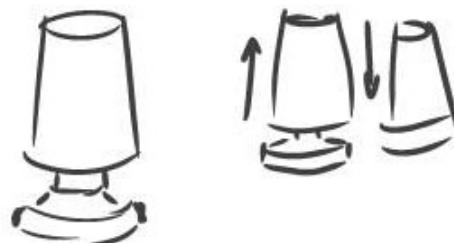
DESIGN

When designing rich, compelling and engaging experiences, we need to consider each, and alternate between the four domains. These domains can then be regarded as a set of "prompts" that help to creatively explore the aspects of each realm and that might enhance the particular experience we wish to stage.

Things to consider when designing an experience: **Aesthetics**: making the environment more inviting, intriguing and welcoming – where and how to be? **Escapism**: Drawing the user to immerse in activities that will contribute to the specific experience - What to do? **Educational**: What do we want them to learn? What sort of activities or information will help to engage the user in exploration of knowledge and skills? How to

do? **Entertainment:** A crucial component in evoking sensual attraction and maintaining focus and interest of the user. Being and doing.

The engaging point for any compelling experience is measured in the ability to incorporate entertainment, education, escapism and aesthetic elements in order to create memories. Distinct from the normally uneventful spaces of goods and services, the experience space is layered with facilities and props which correspond with how the space is used to achieve mnemonic qualities. The facilitation of distinct memory is crucial to achieve unique experience, in contrast to everyday-like memories and the experiences that beget them.



THE SURPRISE EFFECT

Allowing for users' individual needs and behaviour reduces the sacrifice caused by mass customisation. By instigating user surprise, more experiential interaction can be established. The 'surprise effect' is created when the user satisfaction and the user sacrifice are being contrasted. When staging users' surprise, the difference between what the users get to perceive and what the users expect to get are - being utilised (Figure 3).

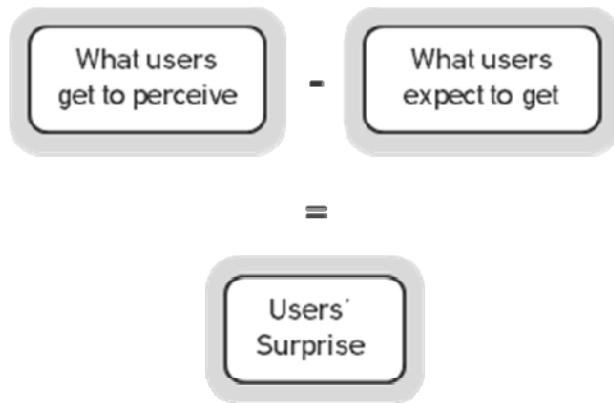


Figure 3: User's Surprise

Rather than merely meeting expectations (by providing satisfaction) or setting new ones (by reducing sacrifice), the users' surprise can be achieved by transcending expectations, when unexpected directions are being presented. It is not about exceeding expectations but about staging the unexpected.

Creating such an experience still requires a platform, which consists of satisfaction and sacrifice values. As indicated in the figure below, without efforts to drive up users' satisfaction and drive down users' sacrifice, there will be no foundation on which to instigate surprise for users (Figure 4).

When working with this surprise model in creating a new product it is important to go beyond "how we did" (designers) and even "what you want" (user) to "what you remember" (user). The most memorable experiences are those occurring outside of the "norm" – the realm of expectations and the boundaries of assumption.

To truly differentiate an experience, there is a need to increase users' satisfaction, eliminate users' sacrifice, and finally create meaningful surprise. But once the surprise factor is successfully established, it is still not enough. As users start anticipating being surprised, it is vital to heighten and sustain

their suspense. Built on the same surprise platform, a users' suspense reflects the gap between what they can recall from past experiences and what they do not yet know about forthcoming events (Figure 5).



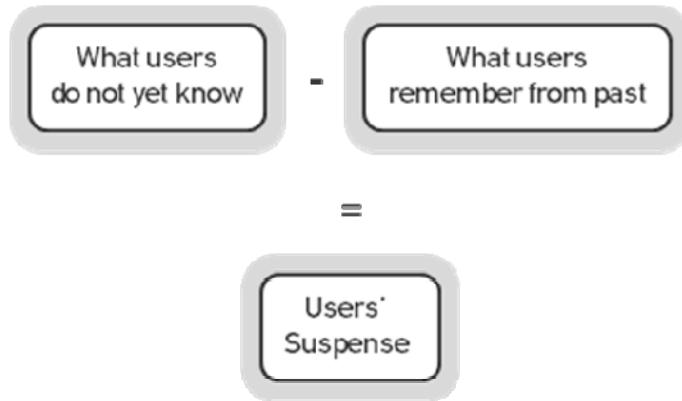
Figure 4: Surprise Effect Model

THEATRE AS A MODEL

In my project I have decided to use models of theatre to be a tool in designing more meaningful and more potent experience and to better engage the users in the creation of memorable experience.

The word drama derives from the Greek draq, meaning simply to do. With experience design, the more autonomy and encouragement the users' 'doing' has, the more control and influence on the experience they have, which will result in stronger memories, and thus – experiences.

Studies of theatre often talk about Aristotle's profound poetics. It is the foundation of our Western understanding of theatre, even with its emphasis on literary forms. Aristotle's notion of plot – what he called "the arrangement of the incidents" – forms the basis of any stages of experience and the sequencing of



cues required to create a desired impression. His components of plot which indicate a progressive revelation of knowledge, unity and balance of events, and the emotional effect of tragedy – give much explanation about what makes an experience memorable.

Aristotle also points out the importance of making good choices that will benefit the role played, define the players and the part they are taking in staging an experience. In defining theatre, Aristotle differentiated it from all other daily activities. The issue of choice in a theatrical act demands that boundaries are drawn. The actor must discern the significant from the insignificant elements in any play performed. Also, in order to stage a significant experience we need to address the issues of sequence, progression and duration of events. Where is the beginning of an experience; when does it reach its dramatic climax; and what defined its ending? Finally, we need to consider the rhythm and the tempo, as these define the relationships between the dramatic elements and control emerging of events over time.

Figure 5: User's Suspense

THEATRE AND PRODUCT EXPERIENCE

"We interact automatically with objects and spaces we encounter"

J. F. Suri, Thoughtless Acts?



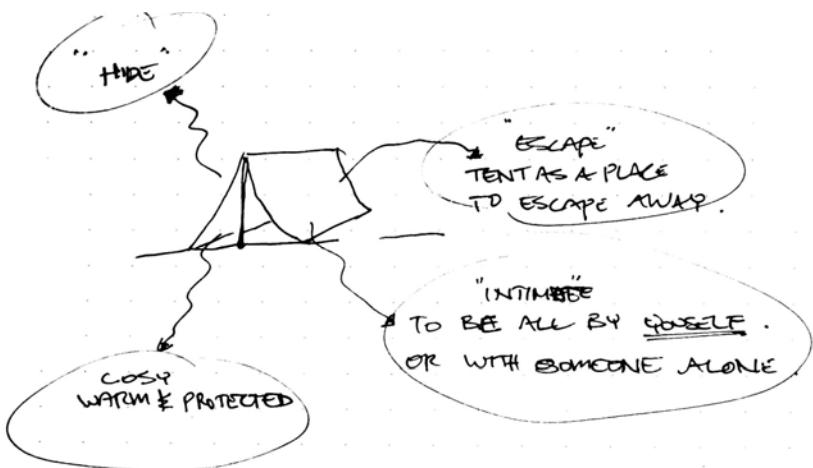
A detailed application of Aristotle's philosophy to computer-based design is provided by Brenda Laurel in her book Computers as Theatre (1993). Laurel, believing human-computer interaction should be a "designed experience," defines principles and techniques using computers as a medium rather than interface. Describing this technological approach she says, "Thinking about interfaces is thinking too small. Designing human-computer experience isn't about building a better desktop. It's about creating imaginary worlds that have a special relationship to reality – worlds in which we can extend, amplify, and enrich our own capabilities to think, feel, and act". Laurel (1993) conveys the notion that working with computers should be theatre. Using this theory while designing for a new product requires an engagement of the user with imaginary worlds, while providing him with the right tools to act within this new emerging relation to reality.

After discussing in detail the realm of the experience economy and the role of theatre models in forming practical manifestations of its constructs; I was striving to understand how these purposely translate to product design in order to

apply these concepts to my project. Thus, I began exploring experience design.

EXPERIENCE DESIGN

Shedroff (2001) explores the possibilities of designing the elements that contribute to superior experiences and their principles. As experience design has become newly recognised, Shedroff (2001) points out that its origins are in more traditional and established disciplines such as theatre, graphic design, storytelling, exhibit design, architecture and so forth. He also argues that experience design is not only a field for digital media as it was seen in the recent past. Shedroff (2001) aims to understand and explain what makes a 'good experience' and then translate these principles and possibilities into the different media, without the technology dictating the form of the experience.



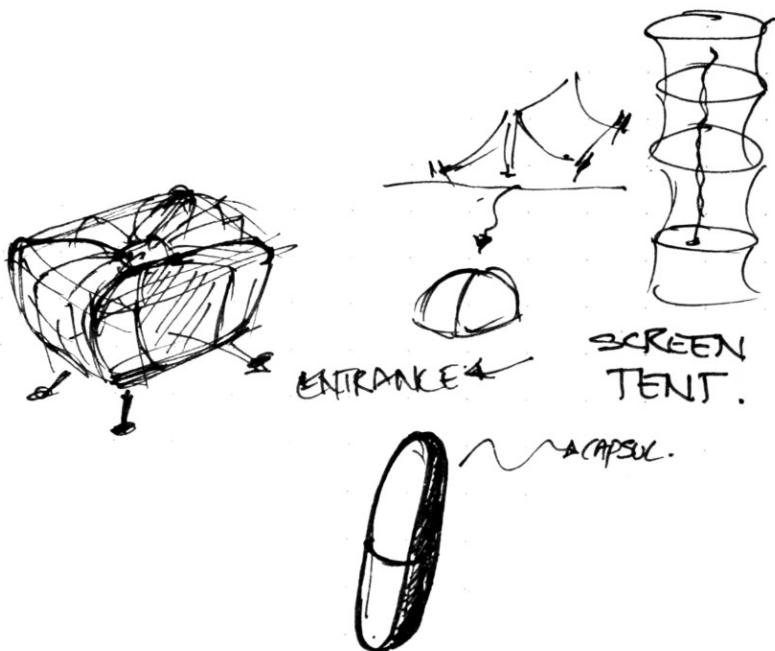
"Experiences are the foundation for all life events and form the core of what interactive media has to offer". Says Shedroff (2001), in order to define experience it is important to search its boundaries. Though many experiences are ongoing, sometimes even indefinitely, most have edges that define their start, middle

and end. These three components can be described as attraction, engagement, and conclusion.

The attraction is necessary to initiate the experience. It is a signal to any of our senses just like a theatrical cue, defining where and how to begin the experience. It is not necessarily an experience creator; rather, the attraction can be part of the experience itself or intentionally created, but has to exist.

The engagement is the experience itself. In order to hold the attention of the experience the engagement has to be sufficiently different than the surrounding environment. It also has to be cognitively important enough (the right context) in order to maintain experiencing.

The conclusion can appear in many ways. It must provide some sort of resolution, whether through meaning (story or context) or activity to conclude an enjoyable experience with satisfaction. Often, an experience that is engaging has no real end. This leads participants to feel dissatisfaction and even confused about the experience, the ideas, or the emotions they just felt. It is crucial, then, to dedicate attention to the conclusion component while designing an experience – whether through



inattention to details, boredom, or speed; otherwise, it is just a waste of the creator's efforts and the audience's time.

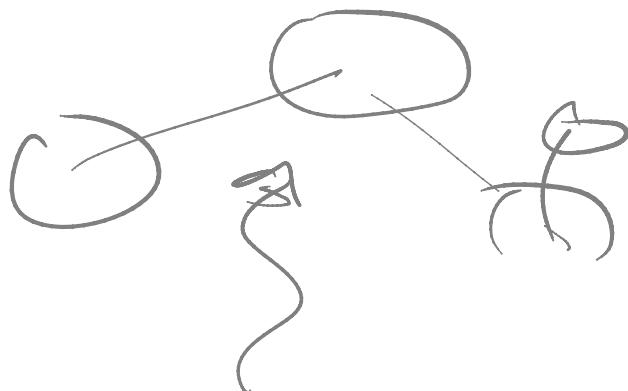
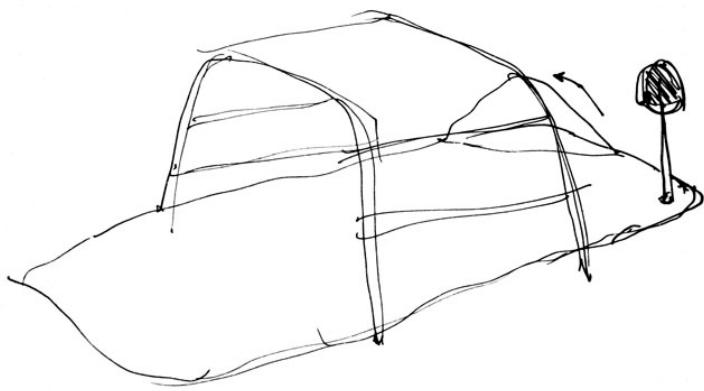
There is a possibility for an experience to have an extension, which can merely prolong the experience, revive it, or bridge to another experience. A satisfactory conclusion is still required for each experience on its own level, in order to justify more time for future experiences. It is more likely that the audiences will be disappointed, rather than expect the next experience, if they were left "hanging out to dry". It is essential that all experiences will reward attention at their end.

Finally Shedroff (2001) adds that it is essential to consider that "while all experiences are not created equal, all must compete for the attention of the audience and participants". Therefore, those domains of an experience do not just compete within themselves, but the competition of experiences occurs within the same domain. As people search for experiences, they will choose from various media to meet their needs, and so the focus shifts to the variation of experiences within a specific media. Unique experiences to their medium, that challenge and compete with traditional media in usefulness and satisfaction, will be successful.



ELEMENTS OF EXPERIENCE DESIGN

In order to engage successfully in the design of an experience or designing for experience, it is essential that we comprehend, practice and observe the following eleven elements: cognitive models, metaphors, usability, meaning, user behaviour, awareness and adaptability, participants and participation, feedback and control, creativity, identity, storytelling and narrative structure, point of view.

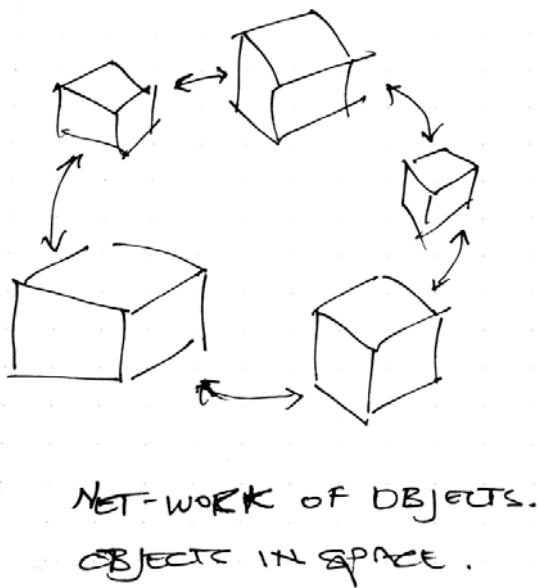


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1. Cognitive models

"The most important aspect of any design is how it is understood in the minds of the audience" (Shedroff, 2001).

The above quote, whether fully or partially formed, is a cognitive model. Everyone forms cognitive models for almost everything they encounter – particularly those things they interact with repeatedly, or those things that we focus on merely because they are important to us or are of interest for us. Adaptation of forming cognitive models varies between people, dependant on the different types of understanding, be it textually, visually, orally, geographically, etc.



The form of the experience is what gives it meaning, since this is what people experience directly. Nonetheless, the audience will bring their own understandings and feelings to the experience, so it is important while creating an experience to decide if they need to remember it for future reference and what would be the influence of these experience memories, on their perception of, and immersion in, the next experience they are to encounter. In creating meaningful cognitive models, it is important to consider the ways in which the audience found the meaning and form their memories. Also, in order to maintain

credibility and avoid cognitive dissonance, a valid relationship with the reality of an experience (metaphors), should be formed.

2. Metaphors

Metaphors can be a very powerful tool which orient people and helps them to understand an experience as well as build a cognitive model. If they are not properly applied, it can be very disastrous to the result of an experience. Metaphors use references to already existing experiences as clues to new ones, and if applied correctly they can illuminate the functions and interactions of an experience. When a metaphor imitates reality in a way that is too close to the theme, it actually limits the functions and creates confusion. Conversely, as pointed out by Laurel, it is worth nothing in the context of experience design that it is possible to design experiences that are true metaphors (1993). New devices and unique, playful theatre or product experiences, can actually redirect interaction with one object into the manipulation of another. Ultimately, it is the audience's imagination that can open them up to potential possibilities.



3. Usability

Usability applies to all experiences on some level. In order to assure effectiveness of experience usability, principals should always be verified with user testing. This should be conducted in a natural manner with users as close to the target market as possible, and that have not been exposed to the design process, solution and objectives. Usability consists of two basic elements: learnability – the ability to understand the experience via product interface or services; and functionality – how user-friendly the experience is, once it is learnt. Memorability is the key factor in the positive impact of functionality. Experiences that are memorable tend to be easier to repeat successfully, especially since people may want to repeat them more as a result. Memorability is directly affected by the cognitive model people build in their minds about the experience. It will be easy to remember a simpler and more natural cognitive model, and as a result, it will raise the user's confidence and satisfaction, which also leads to improved error recovery. Usability or "ease of use", as Shedroff describes this (2001), is often the starting point of innovative design. We can open up the possibilities to create more satisfying experiences while approaching a preconceived solution with 'fresh eyes'. Sometimes, the reason



for people to have unsuccessful experiences is not because they misunderstand them, but the fact that they do not know what to expect from them or why they might be beneficial to them, concerns that designers rarely consider since they cannot imagine their audience not realising what they are trying to achieve.



4. Meaning

In order to have experience with long lasting impact, it is important to design experiences so that the audiences or participants can find meaning in them by connection to their own lives and values. Meaning is often built by objects and experiences that allow us to grow or experience intense emotions. Artefacts (objects) from an experience that serves as a reminder of what was experienced become valuable as they help us to relive those personal experiences.

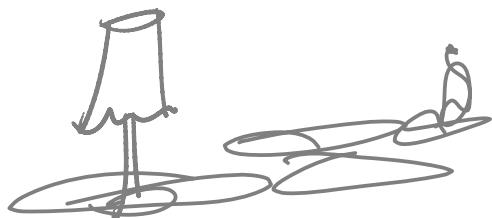
5. User Behaviour, Awareness and Adaptability

For experience to feel more interactive and 'live', it should ultimately modify and adjust itself to be more suitable for the

users' behaviour. Awareness to the changes of users' paths of behaviour can lead to a sophisticated and more personal experience. The more adapted the experience is to our interests and behaviours, the more sophisticated and personal they feel and the greater value they represent for the participants. One form of adaptability is customisation, which allows people to overtly choose options to tailor an experience to their needs and desires.

6. Participants and Participation

Participants have a great influence on experiences' successfulness. In order to design a successful experience the audience must be regarded as active participants and not passive viewers. Participation makes experience more meaningful because it taps into our desires to be creative and communicate. Without the involvement of their audiences, many experiences could not subsist.

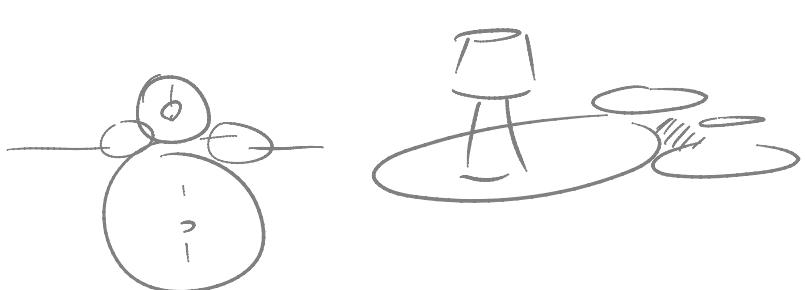


7. Feedback and Control

Most people expect experiences to acknowledge their actions in some way. The amount of feedback being given is important and can influence the experience's success. By and large, the same amount of feedback in real life is good measure for the amount of feedback required in any other experience. This measurement also applies to control; people expect to have some degree of control over their experiences and a real-world experience can provide a good idea of the required amount of control. This control usually makes the users feel more comfortable and respected. In order to know exactly how much control is needed, it is important to ask the users themselves about their needs and desires, and then test the experiences and see how successful they are.

8. Creativity

Experiences which allow us to be creative give us a feeling of satisfaction and accomplishment. As humans are inherently creative creatures, when we have a chance to be creative we feel more fulfilled and valuable. Co-creative (Don, 2007) technologies help and guide the user with the decision making



process in experiences. Tools such as recommendations, guidelines, advice and so forth, endeavour to minimise the anxiety effect users may experience when confronting with unfamiliar tools and technologies, and sometimes actually performing operations for the users.

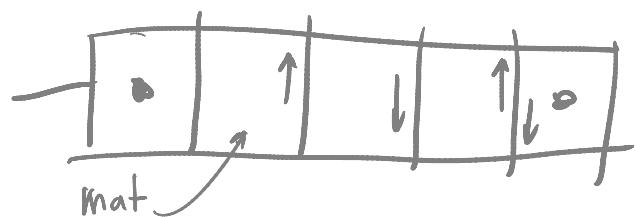
9. Identity

Experiences that allow us to contribute to the creation of identity are usually more memorable and meaningful, as creation of identity is one of the most important aspects of our life and a key part of our personality. One of the defining characteristics of an identity is authenticity, which allows us to evaluate how real or authentic we feel about an identity. The most valuable experiences are the ones that accommodate personal expression. It is very hard to predict what might be expressed, as the 'personal' component differs from user to user and is very unpredictable. When opportunities to observe and learn from self expression are being utilised, products benefit from more personal and meaningful qualities.



10. Storytelling and Narrative Structure

Stories can be used not just as entertainment but as a way to make experiences that entail difficult information or instructions - more accessible. Authentic and relevant (to the audience) are key story components to facilitate a successful experience as well as perspective, which allow the audience to orientate themselves and to find personal meaning. Beginning, middle and end are crucial component in building a comprehensive story structure. The way a structure of a story is being understood by the audience often affects its experience. Narrative structure is a tool that can be used in order to create tensions throughout the story duration that may lead to emotional, and or dramatic development. This tension can be achieved when the goals or objectives in the story are being switched or shifted from their original aspiration. Laurel notes that "in theatre, perception is more important than reality" (1993). In other words, whatever the structure changes, the narrative still needs to have a cognitive clarity that the audience can comprehend and follow. Laurel also points out that even when there are no characters all narratives require action (1993). Experiences that endeavour to engage, entertain, inform,



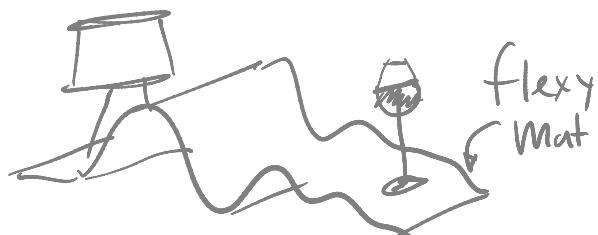
and be interesting - must be designed to act. Action is what holds our attention and creates meaning.

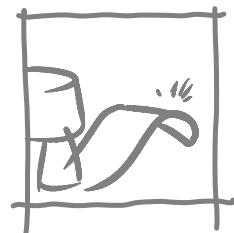
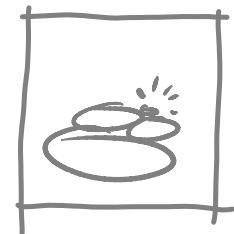
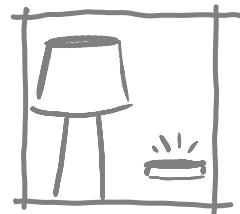
11. Point of View

The point of view of an experience itself can have an influence on how people interact and relate to it. Also the perspective of the activity or content in an experience can affect how it is understood.

"WE ARE ALL PLAYERS"

Having reviewed the elements of experience design we appreciate that in the modern everyday life with emerging economy such as the experience economy, we are required and expected to play and to take an active dramatic part in a staged act. As it is a common habit for us to play an active part in our professional lives at work - coming home should be no different. It is a different script with a new set of guidelines and re-defined boundaries, and some props to evoke a prolific and creative (on the user part) improvised play. While we portray a genuine role as characters that we choose to play, write and direct our own play in a much more relaxed and loose





environment, the outcome of such an event is an experience that is very personal and meaningful for us. Performing in such an environment, we are bound to de-act the job-related acting and gain some balance, which then revitalises some of our personality and identity values that result in increasing our quality of life.

In summary, experience-based design contains key attributes that are personal, memorable, often revealed over a duration, as it aims to provide a unique experience to the buyer – its audience, or guest on stage. Experience-based design can both evoke active participation of the guest, and provide educational value or escapism, or alternatively, it can involve passive participation of the guest, in which the design has an entertaining or aesthetic value only (Pine & Gilmore, 1999).

In an era where a shift towards performance-based, user-engaging design is evident, this project will focus on achieving an active participation of the user (Figure 6). In order to leave mental space for the user to actively participate in the experience, we, as designers, are encouraged to develop open designs, which allow for various behavioural and emotional responses to occur. And so, by de-centring products, designers shift their focus from the end-user (i.e. ergonomics) or the

traditional utilitarian product design (i.e. interface) – to the design of an experience by itself (Suri, 2004).

Given my experience as an exhibition designer, working within various inter-disciplinary levels, this project aims to explore experience-based product design, incorporating social, economic and technological factors (Cagan, 2002). This will then explore the ways in which the product design has faced the challenges of experience-based design, in creating a personal and memorable experience for the user.

Through this case study, utilising various methodological means, I will aim to identify key elements that differentiate and characterise this potentially augmented user experience. These gathered insights will then allow the development of a theoretical framework for future design practice. This project has the potential of providing practical implications that will add value to experience-based design, as it becomes increasingly dominant in the evolving experience economy.

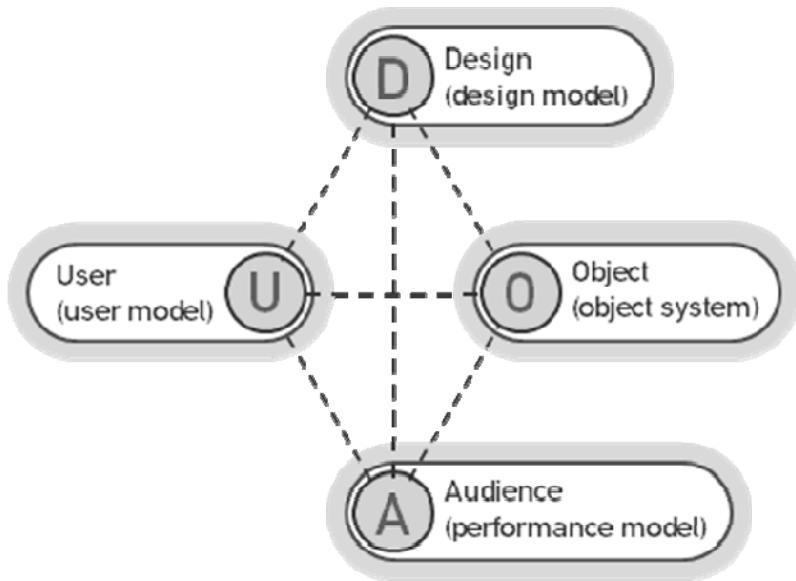


Figure 6: Experience / Performance-based Design Model

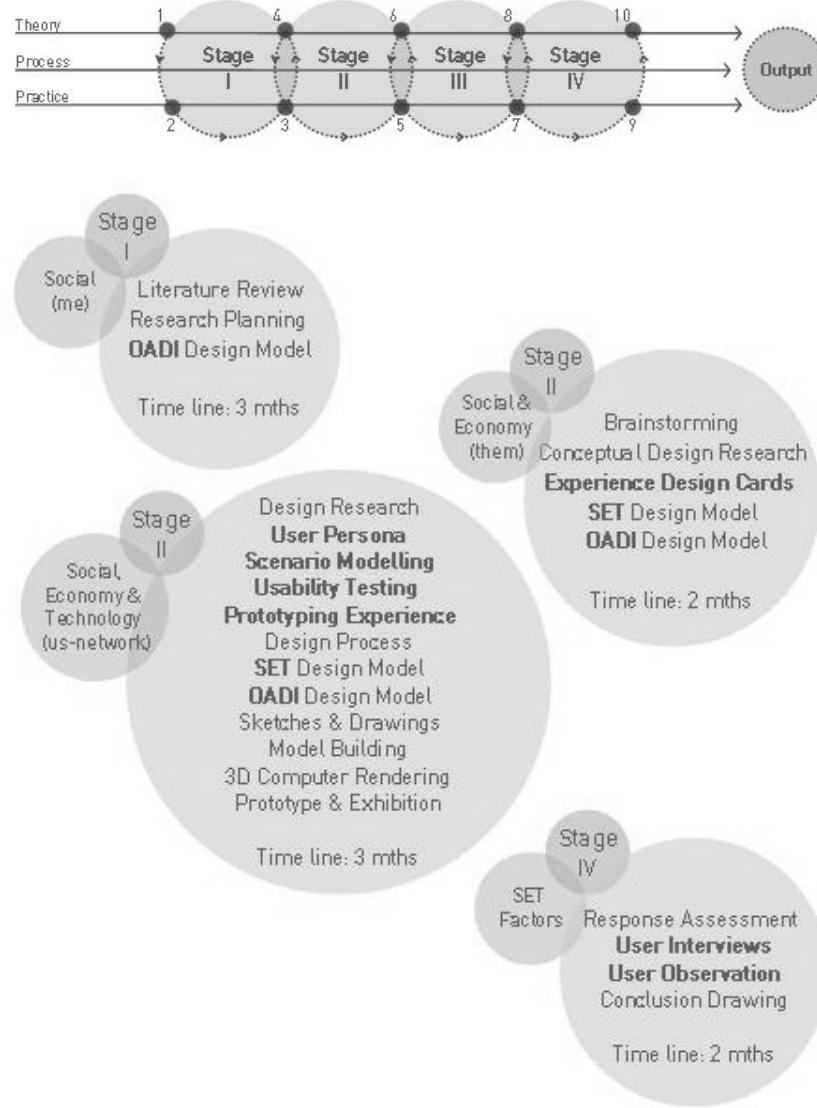


Figure 7: Process stages

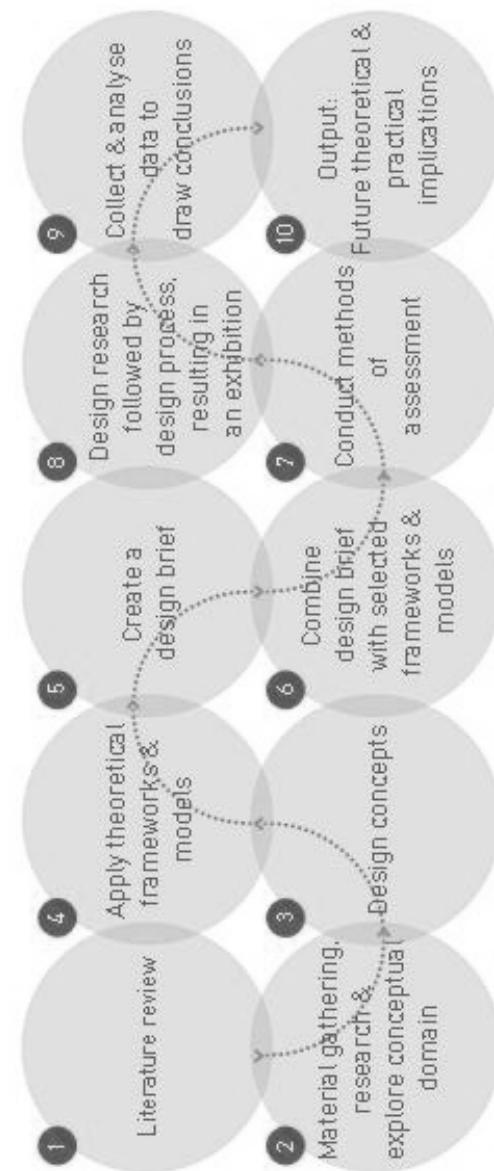
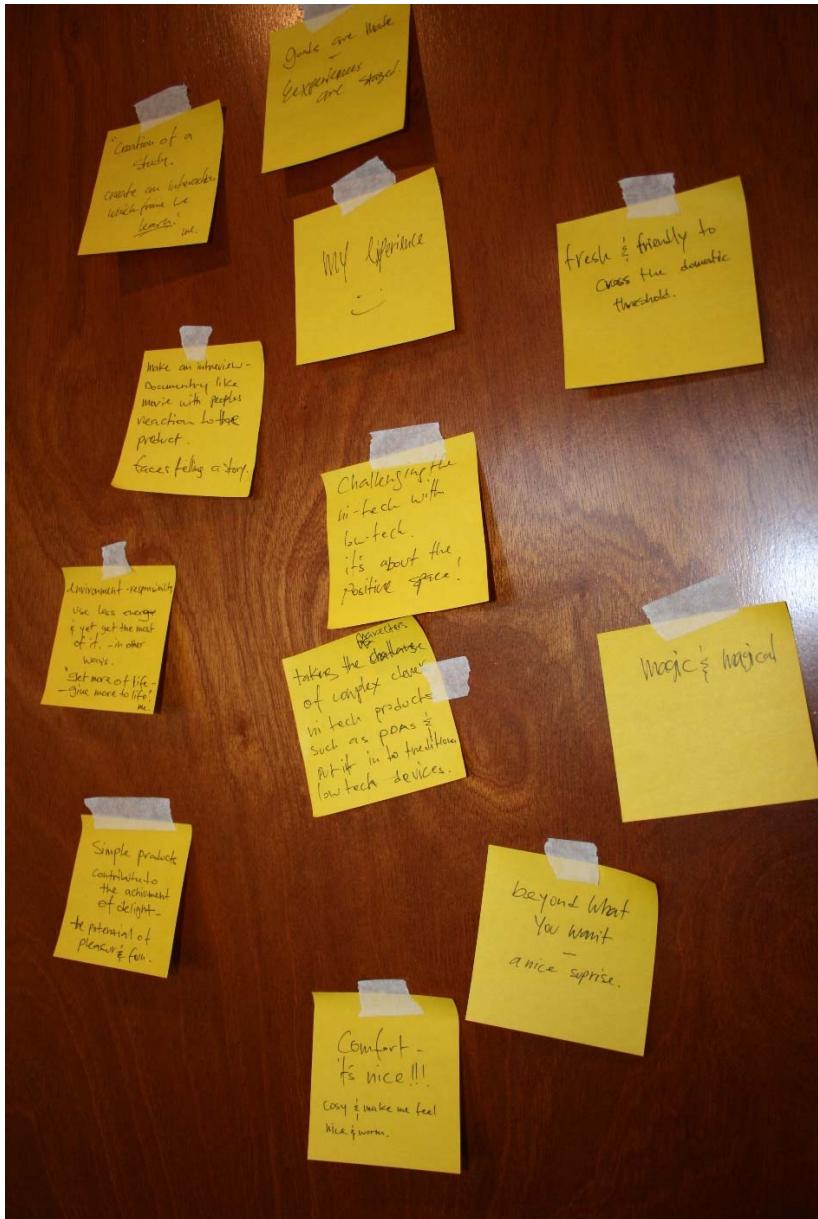


Figure 8: Process Development

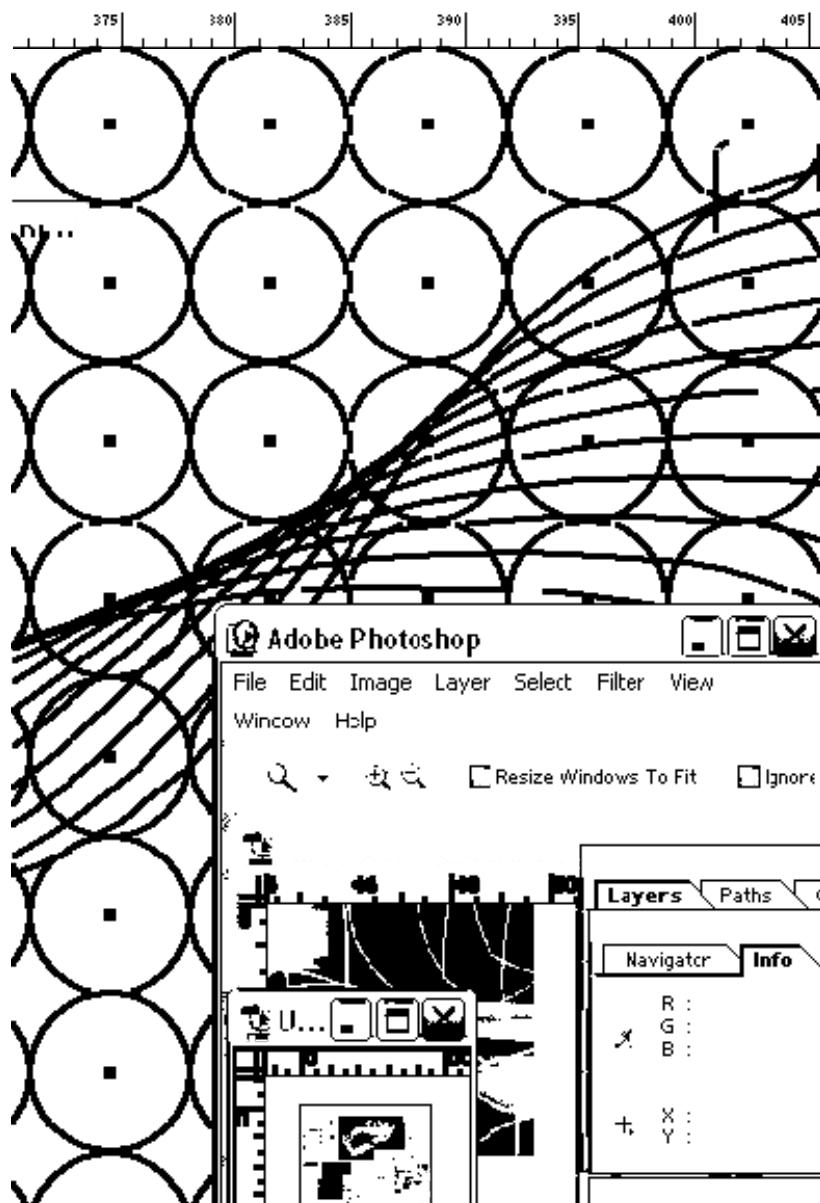


PRACTICE

WHERE FROM AND WHY? My personal and professional background.

As an exhibition designer, I create displays and stands that have immediate cut-through in a commercial environment. The exhibition medium is about creating 'eye-catching' visual effects and structural objects that foster rich visual and informative experiences to attract the audiences' attention. It is also important, in order to maintain the products' credibility, to encompass various values of the stand visitors experience, such as; reliability, authenticity, advancement and advantage. As the attention allocation of the audience is quite short, it is crucial to make the maximum impact in the least amount of time and to feed as much information as possible, by presenting the latter in an approachable and engaging way.

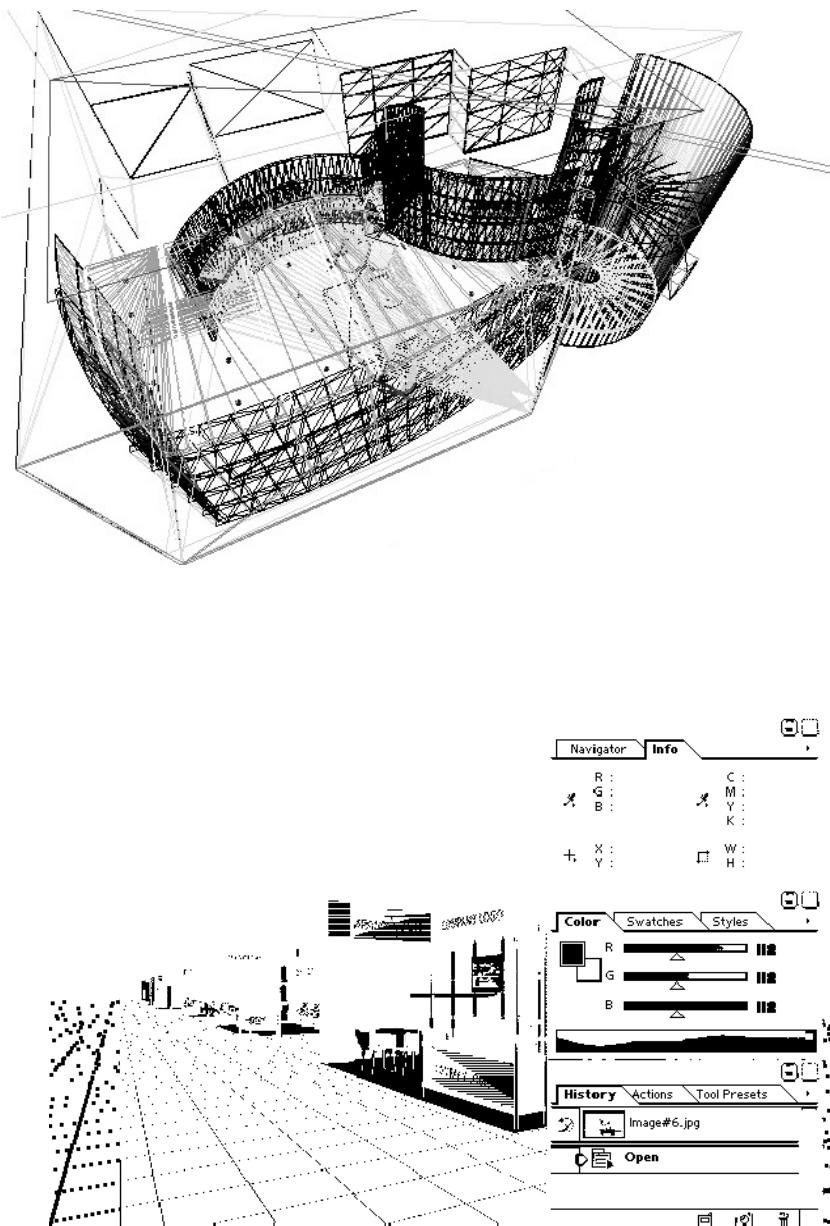
I was looking to broaden my professional design practice, and so I decided to pursue other dimension of designing for experience, while sharpening my skills and updating my knowledge of current design theories and research techniques. Therefore, it was important to me to pursue a project that



reflected my field, but at the same time, would also allow me to explore new theoretical frameworks and push the boundaries of my discipline. As the exhibition industry focuses on experiences derived from commercial and corporate factors, I was intrigued to explore the other end of the spectrum, where terms such as intimacy, individuality, personality and domesticity lie.

I have also decided to take the opportunity to “stretch other design muscles” that do not get used very often in my day-to-day practice – I was keen to engage with product and industrial design. My work is about designing for a swift and momentary experiences at a tradeshow or ‘Expo’ environment; therefore, I was intrigued by the possibility to explore and achieve the same design depths across a lengthier encounter with an audience – the other ‘end’ of an experience. I wished also to work with a different target environment, to contrast the exhibition industry medium by working with the domestic domain – in order to contribute to a bigger agenda of designing for habitable surroundings. As a consequence ‘quality of life’ became a key term.

As presented in the Context section I am starting this design research with the suggestion that design is increasingly driven



by the Experience Economy paradigm. Designing an unusual users' experience that occurs while interacting with the product will differentiate it from competing products on the market.

The idea is to allow for the creation of an experience, beyond product's functionality or style, that eventually will result in broadening users' experiences and creation of personal meaning and memories. If these experiences can transform or change people behavior paths and the way they think about ordinary, everyday-like rituals, while endorsing their quality of life values, it will then result in contributing and sustaining social values. These values are the foundation of the creation of an inhabitable world, which is the ultimate outcome.

HOW? Design process and research – methodology and practice.

Based on the theoretical background I have presented at the Context section and looking at several existing examples of products that embody tactics of design for experience, I have embarked on this project. Keen to broaden my knowledge of research-by-Design strategies, and techniques of designing for experience, I have decided to start with following methods, and

*"Considered as an operator acting in relation to the daily environment, the designer's ultimate responsibility can only be to contribute to the production of a **habitable world** in which human beings not merely survive but also express and expand their cultural and spiritual possibilities.*

The term habitable, referring to the environment, indicates a complex existential condition that cannot be reduced to its functional component. It is a condition arising from the intersection of a multiplicity of questions rooted in the anthropological and social nature of the human race. "

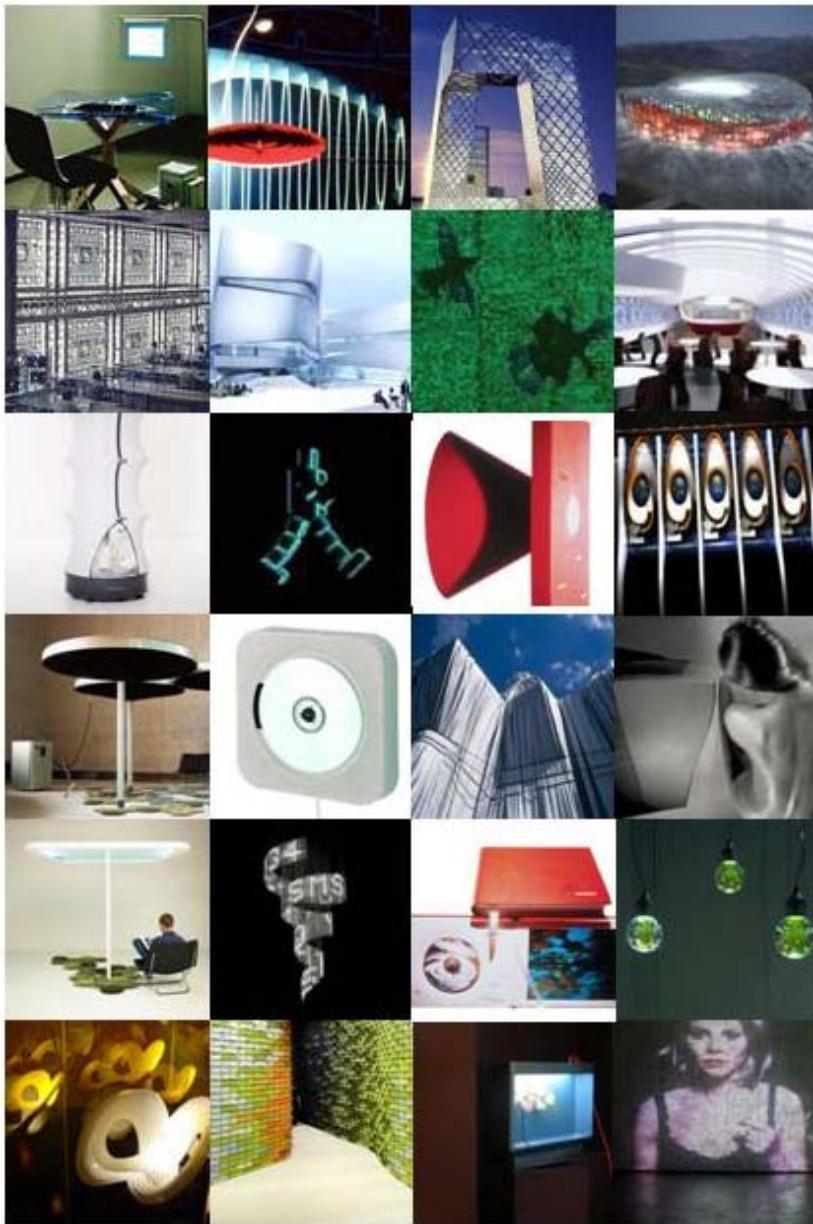
E. Manzini, Design Issues

existing inspirational products that articulated them in a design based manner (Figures 7-8, see pages 25- 26).

INSPIRATION

Seeking answers to "how to define design for experience?" - and what it should encompass, while considering my personal passion for technologies and electronics - I began looking at some of Anthony Dunne's work. Dunne explores the aesthetic role of electronic products in everyday life. He asserts that industrial design has the potential to enrich our daily lives - to improve the quality of our relationship to the artificial environment of technology, and argues that it can be subverted for socially beneficial ends. Dunne identifies that our everyday social and cultural experiences are increasingly determined and influenced by electronic products, and so it is the design of these products that shapes our experience of the "electrosphere" in which we live in (Dunne, 1999).

With this concept in mind, I was inspired to further explore the direction of social and cultural experiences and how they are influenced by electronic objects. I found some of Dunne's theories put into practice in his book *Design Noir*, where he



presents conceptual designs and ideas that deal with the psychological dimensions of the connection between humans and electronics (Dunne and Raby, 2001).

He also investigates the 'real' physical and cultural effects of the digital domain, demonstrating electronic objects that profoundly influence people's experience of their environment. Dunne and Raby (2001) present experiments that involve placing objects in novel contexts (such as electromagnetic field and augmented electronic environments) and examine how humans interact with them and with the ideas they represent. This is where I have begun to regard 'domestic environment' as my domain and to consider interaction between people and electronics as my main point of reference in generating ideas and concepts. Product such as the 'Truth Phone' by the Counter Spy Shop (Figure 9), is a good example of how users become protagonists and the designer becomes a co-author of an experience that refers, (in a wider context of use) to the possibilities of the illicit and the unexpected, instead of standard behavioural models (Dunne, 1999).

Another unusual human-technology interaction example can be seen in the Marble Answering Machine by Durrell Bishop (Figure 10). Proposed in 1992, the MAM is one of the first



Figure 9: 'Truth Phone' by the Counter Spy Shop

examples of interfaces that interlink the physical and digital worlds. It consists of an answering machine where marbles represent incoming messages. To listen to a message, the user picks up a marble and adds it to a designated play indentation on the machine. To call back the person who left the message, the user picks up the marble and adds it to a call back indentation. The user can also choose to store messages, outside of the machine. These conceptual products, which entail narrative and playful interaction contributed to my understanding of new potential design trends.

In order to gain rigorous understanding of traditional theory of domestic objects, I was also interested in conventional product design theories such as cognitive-ergonomic critical approaches to everyday household products, and how the "good design" of everyday things can be achieved by exploitation of natural interactions between controls and functions, while providing visible feedback (Norman, 1998). Further research of interactive design and its components revealed a common-sense approach to observing how humans interact with products. This approach offers subtle, yet critical review of the ways in which people behave in a world not always perfectly tailored to their needs. People's everyday behaviour is an

unconscious result of their interaction with their surroundings. This observation leads to creation of human-centred, friendly products (Suri, 2005).

An example of such product is the Parasol Lumineux lamp by the Bouroullec brothers (Figure 11). It evokes the feeling of finding yourself under a roof and brings people together through a greater feeling of intimacy. The space is created by an immaterial context, connected with that sense of 'being sheltered', which automatically refers to habitable feeling and values of a 'home'. The immaterial context is the main component of the experience and is accompanied by the user's connotation and associations. Supporting this experience and the concepts it cultivates, are additional inter-connected objects other than the lamp, such as a modular rug and a chair. Placing these objects together is arguably like setting a theatrical scene. This 'staged scene' facilitates the prospect of an effective sustained experience.

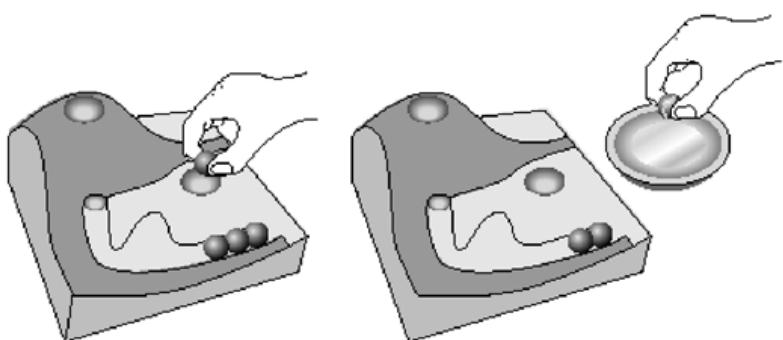


Figure 10: Marble Answering Machine by Durrell Bishop



Figure 11: Parasol Lumineux lamp by the Bouroullec brothers

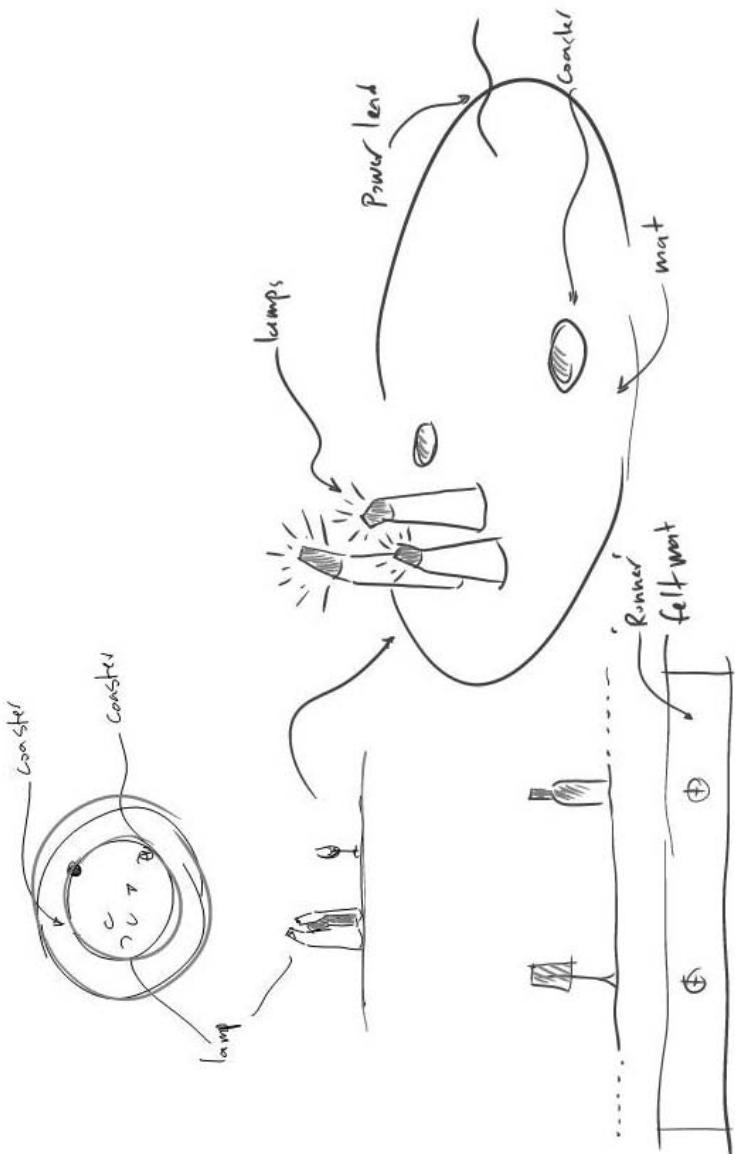
INITIAL PROJECT CONCEPT

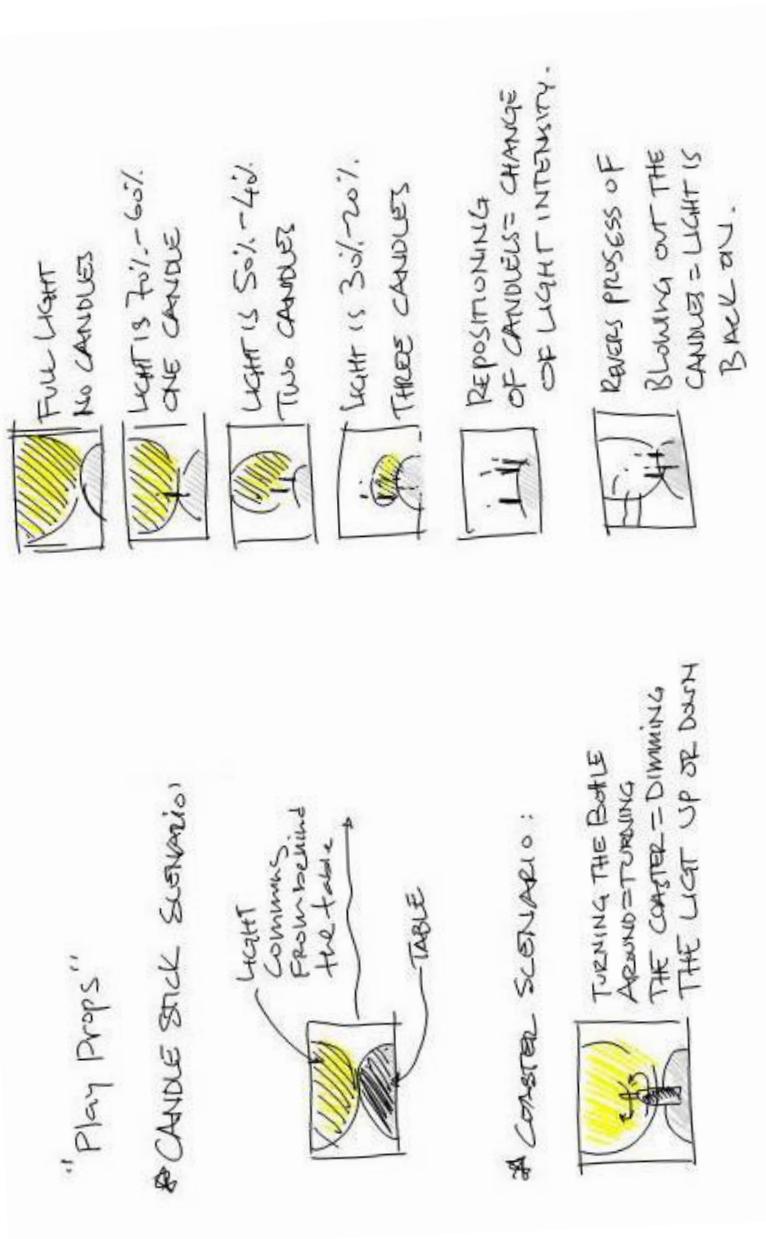
Influenced by the examples and trends shown above I have proposed my first project concept. The idea was to deal with everyday rituals in a domestic environment and to see how technology-based products can contribute and augment the users' experience. Therefore, in order to follow a linear and constructive design process, I have turned to various methodologies. These techniques also helped me to deepen my project scope, from functionality, technology and aesthetically driven products and objects - to the possibilities of contributing and sustaining personal and social cultural dynamics, which will augment not just the experience of relationships between people and technology but, more than that, the experiences between people themselves. Ultimately, I agree with the perception that human-centred product and experience design approach will create a stronger emotional connection with the user (Suri, 2004), and believe that it will contribute to a successful adaptation of product to the challenges of the experience economy.

SCENARIO MODELING

At the onset of my design process, I needed to orientate my project as well as define its objectives. Scenario modeling and narratives of domestic rituals were the starting point. I have decided to utilise Henze and Kahmann's method of the use of scripts; a detailed description of scenes, to assist the design research and allow the product creators to account for experience in the early stages of the design process in order to design products with a rich experiential attributes (Henze and Kahmann, 2004).

With the intention of identifying potential authentic rituals from which to drawn narrative and scenarios, I chose to observe some of my close friends' everyday domestic activities. Realisation of some potential products' experience development opportunities based on these observation, led me to come up with a few prospective concepts for such products. Also using OADI guided me through the design process and supported my learning progression while helping me to isolate critical components of unfulfilled concepts. This perpetual process of organise, assess, design and implement are cyclical key stages of design process, that are used repeatedly to ensure a rigorous process (Kim, 1995) Social, economic and technological (SET)





aspects which were targeted during the design research (Cagan & Vogel, 2002), helped me to consider and evaluate concepts from these different perspectives in order to validate the project's relevancy.

AMBIENT INTELLIGENCE

Further research into the experience design realm drew me into Ambient Intelligence. I was particularly taken by the various experiments, product developments and concept designs conducted in this field by the Philips and Sony Design Labs.

Based on the Ambient Intelligence model by Philips Design Labs (Figure 12), I suggested my first project. The model describes the relationship between four different factors of Ambient Intelligence and how they influence the experiences derived from events occurring over time:

People: Contribute to the nature of the relationship of people to space and technology. As people differ in the way they interpret experiences we should aim to develop an 'experience landscape' which stimulates and enables people to create or augment their own experience.

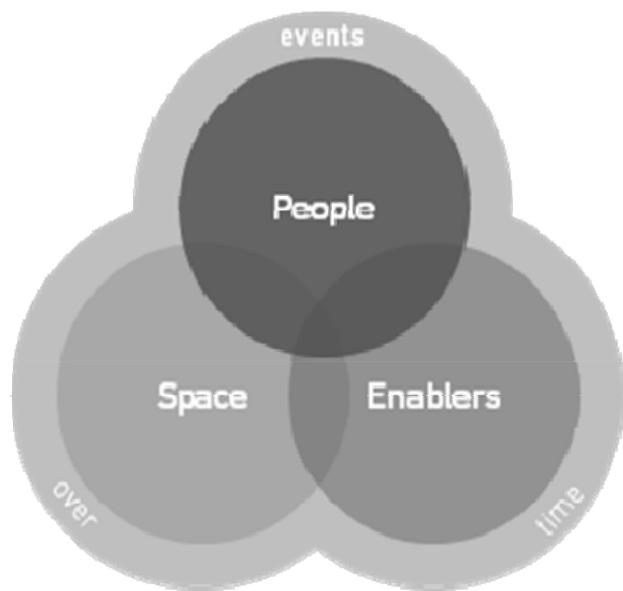


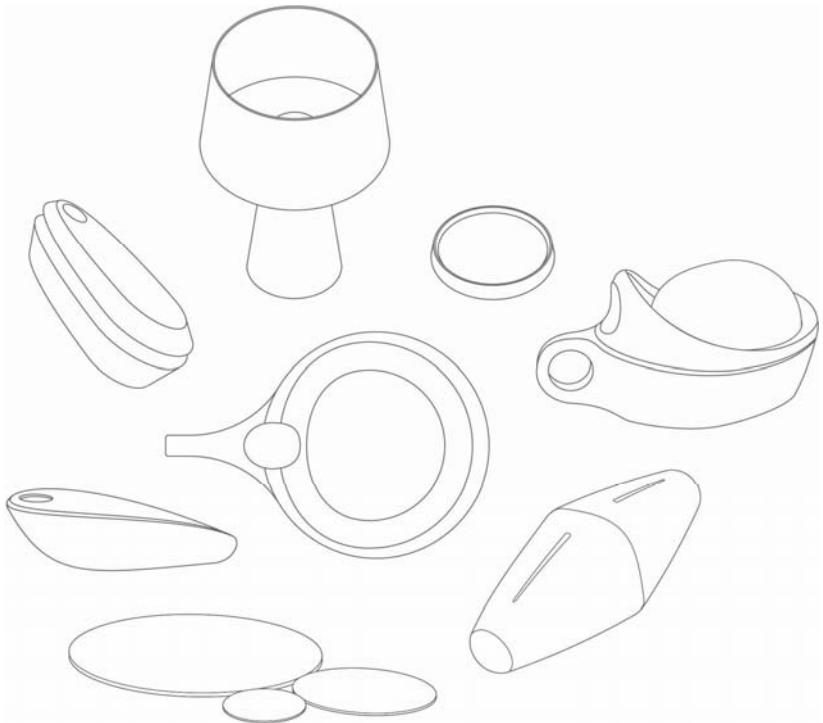
Figure 12: Ambient Intelligence model by Philips Design Labs

Space: The dynamics and boundaries of an environment are key elements that determine experience. Other than the traditional sensory elements that affect our psychological perception of space, ambient intelligence can introduce immersion, transition, virtuality and ubiquity.

Time: The perception of time is key to the design of an experience. It is vital that the approach and application of time goes beyond the particular instant of an experience. Duration of interaction, together with cumulative experience, play an important role in how Ambient Intelligence will be accepted.

Enablers: As technology is no longer perceived as a limiting factor, it will enable to convey sensory expression in 'smart materials'. These materials will possess the ability to respond to sensory stimuli and to adapt to changes in their environment. With the appropriate use of technology (software and hardware) and materials lies the success of Ambient Intelligence and its experience. These enablers must relate to people in a relevant and meaningful way within their own timeframe and culture (Goulden & McGroarty, 2005).

As a result of the design research described above my approach to design shifted. I was now not just interested in the



relationships between people and objects but also in the relationships between objects themselves. I have realized the importance and the benefits of exploring these relationships and how they facilitate augmented reality. This augmented reality is about new possibilities and about an invitation to things to happen outside the normal function-based user-object interaction. Leaving an open end for the user to fill, it is asking the designer to lose control of what might be the effect of using his object. Therefore, I had to start thinking in terms of designing for a range of experiences and outcomes that may happen - asking myself 'what would happen if'. (Laurel, 1989)

NEW CONCEPTS

Lamp Some. (The Product's name is driven from the expression 'Lump Sum' and referring to a group of interlinked objects) my first ambient intelligent design, is a remote controlled device that controls and operates the ambient and focussed lighting devices in a specific environment. The form and shape of the objects will determine the way in which it will be activate, for example: **Genie** - rubbing to activate, **Lumier** - push finger to activate and **Flamboyant** - shake to activate



Figure 13: Genie, Lumier and Flamboyant

(Figure 13). The remote control will record motion and will register its positioning in a certain environment which will result in activating different light sources to allow for a specific ambient atmosphere that will support a specific experience. I felt this project offered good ambient qualities and functionalities along with values of identity and characterised objects which will support an augmented experience, but limit the users' participation and the potential of an meaningful experience to occur. By being personal and "one men operation" it lacked social interaction, which was one of my objectives.

My second design, **Table of Content**, a dinner table that interacts and responds to the activities surrounding it, using technology enablers such as: electronic sensors, software, light and visual projection. This project aims to enrich the experience of 'sitting around the dining table'. Different activities from eating to playing where accounted for. As the dinner table, in some cultures, is the 'centre of the house', my intentions were to explore the ways in which I can equip the users and invite them to take an active part in the design of their dinner table experience.



Although, contrasting the **Lamp Some** design, by fostering of social interaction and promoting user participation, this concept was too broad. It needed a focused narrative and a specific set of scenarios to relate to.

SCENARIO DRIVEN CONCEPTS

At this point I have realised the need to refer to a specific scenario in order to design products that generate meaningful experiences. Hence, I looked at a domestic ritual such as drinking coffee and having a conversation, reading a book, watching TV and so forth. That acknowledgment resulted in proposing three new products that would explore the possibilities of contributing to the experiences of the everyday rituals mentioned above and the prospects of creating new relationships between domestic object and people, as a result.

The first product is a remote control pillow (Figure 14) that has a motion-sensitive sensor that controls the TV output. Specific pillow movements will be programmed to activate specific TV functions. The second product consists of a remote control bookmark and reading lamp (Figure15). Embedded in the bookmark is a light sensitive sensor that controls the lamp. As



Figure 14: Remote Control Pillow

soon as the book is opened, the light is switched on. An additional function in the shape of a dimmer slider switch is recessed into the bookmark front panel and allows further light output adjustments. The third product is a remote control coaster (Figure 16) that operates a movement and pressure-sensitive sensor that controls an ambient light. By turning a glass or a cup placed on this coaster the movement is registered and translated as a signal that controls the ambient light source output. These products and relationships have the potential to be further developed and extended to other objects in domestic environments. By using a computer aided system, consisted of transmitting sensors and receivers - the possibilities are endless (Figure 17, see page 43). Just like a DIY "domestic objects network" system that can lead to tailored and personalised experiences. The user can choose the object he wants to link and to design the way in which they are communicate with each other.

MEANINGFUL EXPERIENCE

The risk that lies in such system is that instead of reaching a meaningful experience with a result that will lead to a positive



Figure 15: Remote Control Bookmark
and Reading Lamp

change in the user behaviour, the product will be compromised to be a comfortable and easy solution, aiding the users to perform domestic activities and rituals in a traditional way that does not transform the way they behave. Instead of enriching and inspiring experience this would result in an experience that promotes numbness. Therefore, it is essential for a meaningful experience to occur, that the product clearly refers to a specific scenario and that it promotes and communicates unambiguous user behaviour. It should encourage user participation but within boundaries and behavioural conventions related to the ritual in focus.

Once I realised and established the factors described above, I re-evaluated and revised my **Lamp Some** design scope. I was convinced that remote control artefacts that control and operate a lighting device in domestic environments can be redesigned to engage users in a new way that will extend the experience of using domestic objects, by positioning them as props that evoke a discussion and encourage users to interact. At that point I aspired to design a product that will have defined identity, but will accommodate diverse scenarios and locations in a domestic environment.



Figure 16: Remote Control Coaster

EXPERIENCE THE EXPERIENCE

Without knowing what this product should look like or how it will operate I have turned to the desired outcome – the users' experience. I was trying too hard for too long to design a product – an object that will evoke an experience, without knowing what that meaningful sought-after experience might be or what its potential behavioural characteristics are.

In order to focus on the user experience concept through creating tangible expressions of ideas, I have decided to conduct experience prototyping. However, as experience is an abstract concept, Suri insists on thrilling the experience to guarantee a result: "The only way to experience an experience is to experience it" (p.15). Such thinking has led Buchenau and Suri (2000) to promote the use of Prototyping Methods to allow designers, users and clients to experience things for themselves rather than rely on contextual observation, demonstration and user interviews.

RITUAL-BASED CONCEPTS

Therefore, I have conducted two parallel experiments, acting out scene of everyday-like scenarios. One, having a conversation around the dinner table while drinking a glass of wine (Figure 18), and the other, was the same without the wine but with candlesticks (Figure 19). Both the bottle of wine and the candle sticks were placed on the dining table and regarded as functional objects that control the ambient light of the dining room while representing the actual experience props of the following two products; first, the **remote control coaster**. By placing an object on the coaster lighting device is activated, and then can be controlled. Turning the object (bottle, glass or tea pot) will dim the light and set it to the desire output. The second product was **remote control candlestick**. The candlestick device is activated by lighting the candle. Then it will communicate with and control the lighting device. The specific position of the candlestick on the table will consequently dim the light and set it to the desire output depending of where it is located - the closer the candlestick is positioned to the lighting device the less light is produced.

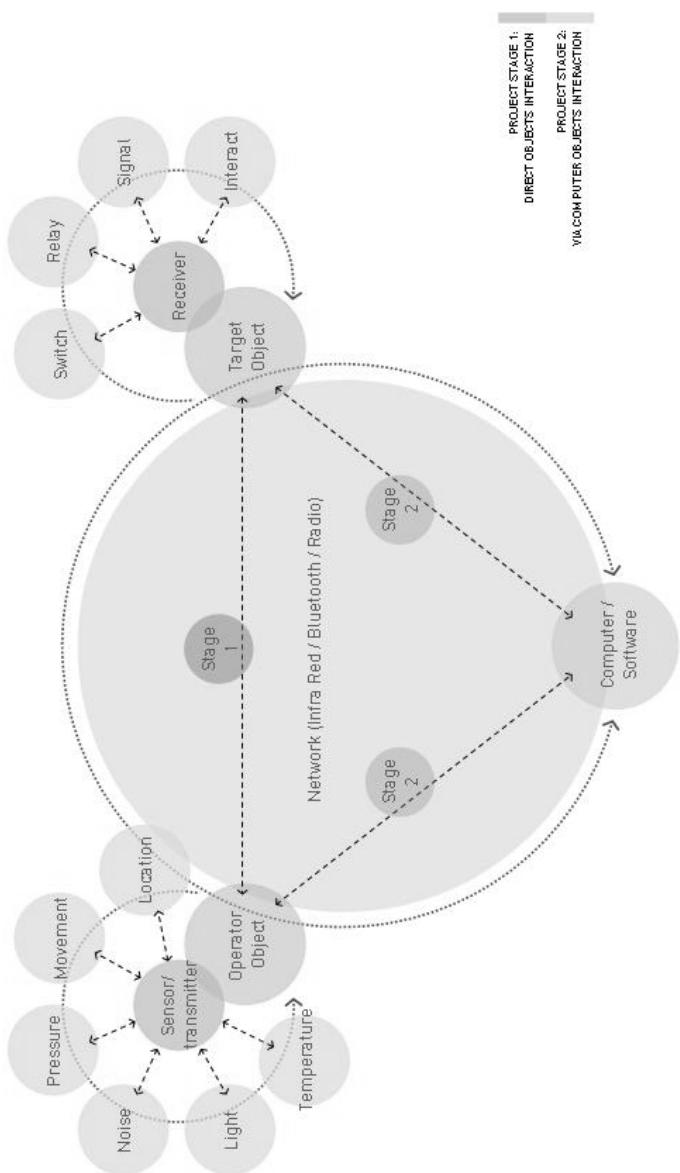


Figure 17: Domestic Objects Network



Figure 18: Scenario One:
Drinking Wine

ENVIRONMENTAL-BASED CONCEPTS

While working on these two projects I also explored a different direction of design for experience. Stimulated by domestic scenarios, I was keen to look at other experiences that may occur and noted them at an early brainstorming stage - using Experience Design Cards (IDEO), so I could revisit them at a later stage. The cards represented topics that include design issues to create various kinds of experiences. Each card addressed a topic in the form of a question posed directly to the designer, to create an opportunity to remember to address more issues than may be in the initial project brief. This can also be used to aid in brainstorming sessions (Shedroff, 2001).

From these cards I selected two ideas that were targeted to deal with completely different experience than the remote control projects I was exploring at the time. Rather than dealing with experiences of relationships and dynamics between people, these two concepts referred to the relationship between people and the environment (in the sense of energy saving and pollution) in domestic scenarios.

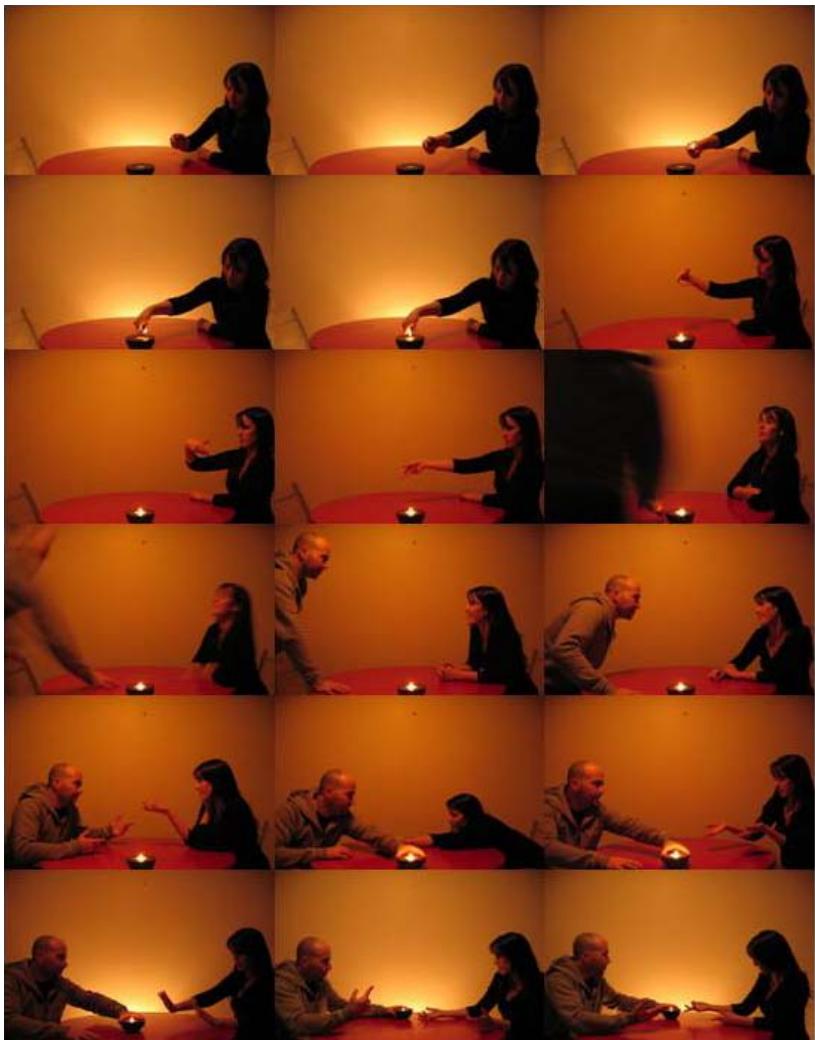


Figure 19: Scenario Two:
Candlesticks

The first concept called the **Magic Rug** dealt with de-centering design, when the product's purpose is shifting from its identity with regards to the functions it fulfils or to the way they are being executed. In this case, it is a "fluffy" rug designed to heat up once the user places a cast steel iron on a designated hot spot. Using the metaphor of cast steel iron to heat up a rug enhancing the users experience and shifts it from the traditional switch while adding a visual reference and connotation. Also allocating an electric blanket technology to a rug offers new uses and potential experience to the users (Figure 20).

This project aims to extend the experience result from using a rug, to intensify the warmth and cosiness metaphoric values of the product and to utilise energy better. This product is relevant to a various groups of potential users and scenarios, ranging from students who save costs of heating and need a source of warmth while studying, to young lovers that want to lie in front of the "fire place" but cannot afford one, or a young father that needs to attend to his newborn in the middle of a cold night, or an elderly who seats on his TV-chair and needs to keep warm. This project refers to energy sustainability, while offering a new playground for domestic activities in the winter time.

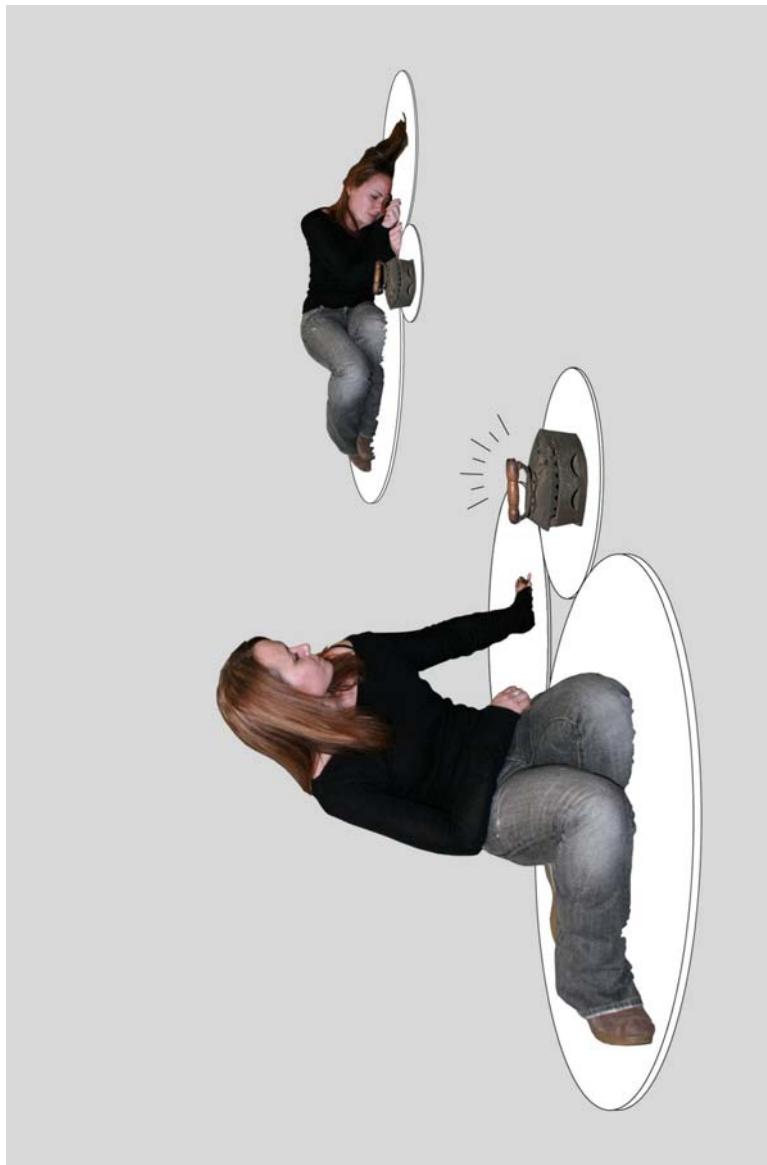


Figure 20: Magic Rug

The second concept is an augmented reality product called **P-Low**. It is a self moulding pillow, designed to act as a noise reduction device, using technology enablers such as electronic sensors and sound systems, this project aims to enrich the experience of “cuddling with a pillow” by lowering the noise pollution such as urban traffic, and offering a relaxed alternative sounds, such as birds singing or other sounds that will bring pleasant memories to the users’ attention to replace it (a recorded voice of their loved-ones or an ambient sound from their last vacation). This product promotes the experience of a shelter and calmness, and aims to sustain, endorse and support a mental equilibrium (Figure 21).

The exploration of these concepts, though different to the other remote control projects, validated the components which I needed to include in my design of a product that will evoke and allow for a rich and meaningful experience to occur. Not just a product that will support the experience, but one that will provide a substantial context to draw a personal experience from. Hence, an open design that would sustain the users’ individuality, accommodate their circumstances and sometimes, their unexpected and improvised performances.

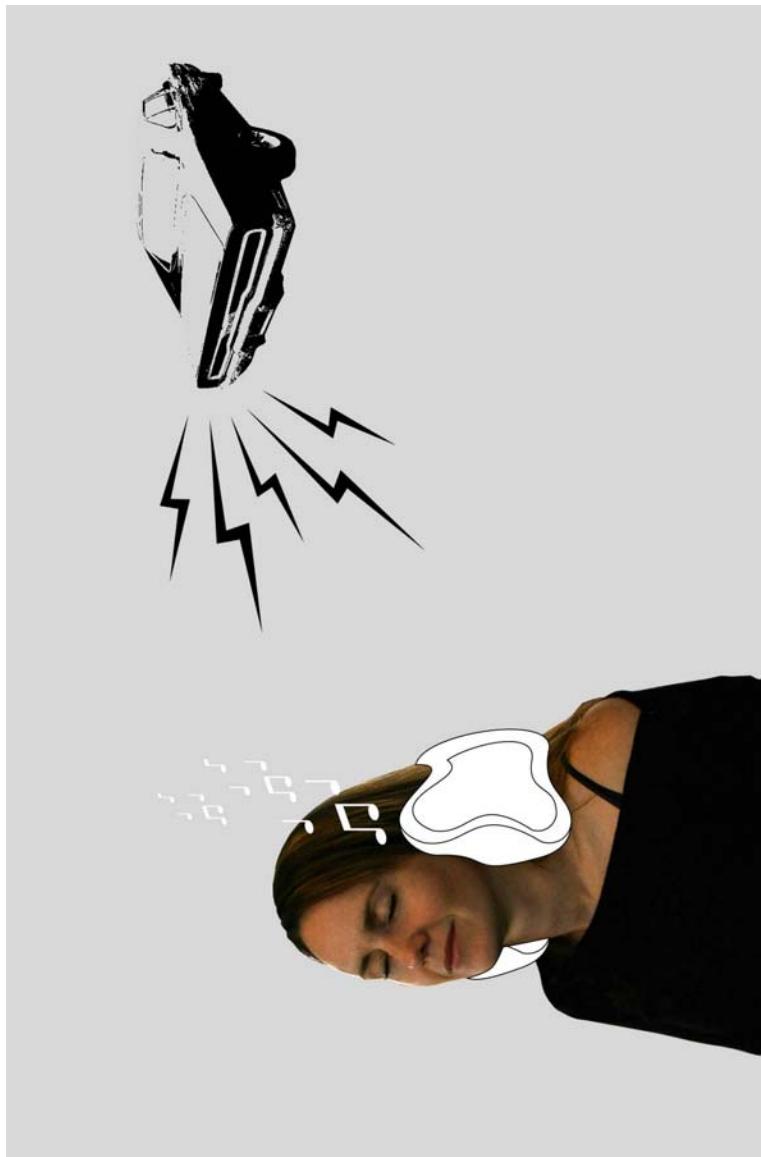
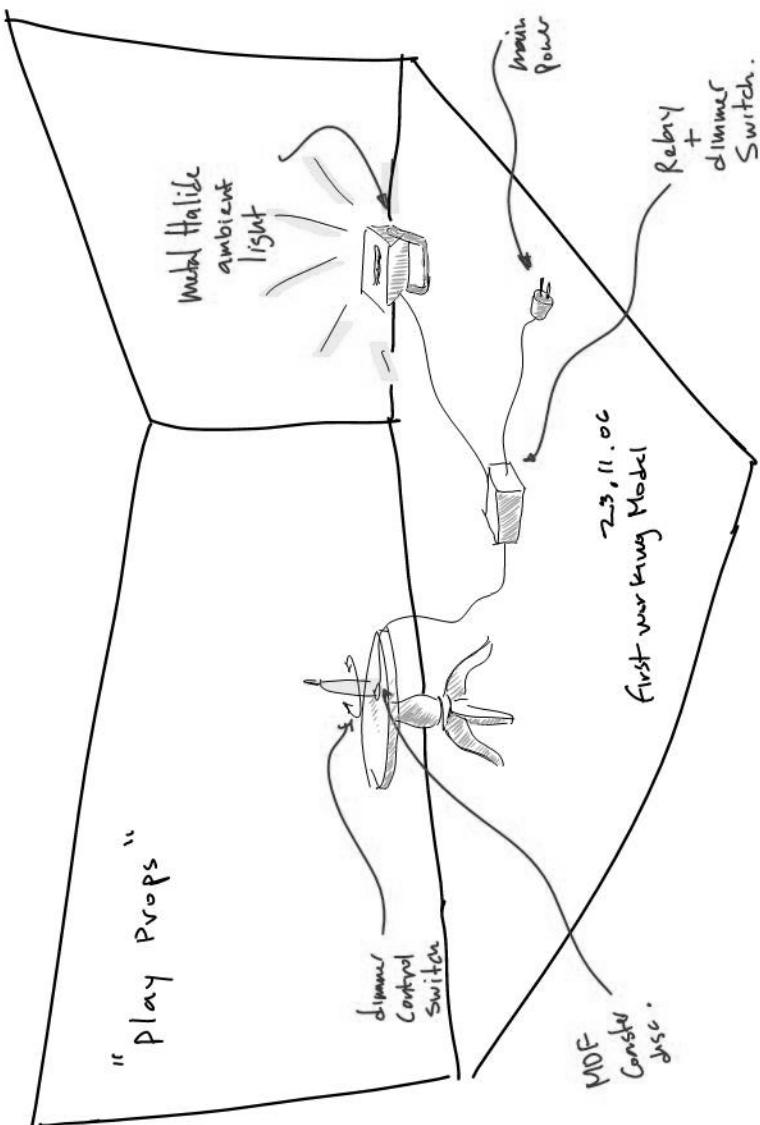


Figure 21: P-Low

This design research process as described above helped me to better define my project concepts and form my final product. I have returned to the remote control project and reevaluated the outcomes of the 'prototyping experience' experiments I have conducted. After processing the benefits of this experience and noticing the potential development of new experiences, I was enthused to further develop this product.

THE FINAL PRODUCT

Lamp Some was developed to its final shape and consisted of coaster-dimmer control, a lamp and a table-mat. The lamp is positioned on the dining table to create an intimate atmosphere (e.g. romantic set-up). Operating the light output is done by turning an object placed on the coaster (i.e. wine bottle, tea pot, wine glass), de-centres the traditional activation of a lamp by using a domestic object to activate the light. The short distance between the table lamp and the coaster helps the user to observe the simultaneous cause-and-effect relationship between manipulating the coaster-dimmer and the changing light (Figure 22).



Placing the lamp on the table in its current setting, would generate an enchanting experience (bottle that operates a lamp). Yet, this experience is believable and credible. Having a stronger "wow" factor may subtract from the experience by distracting the users. I feel that the small wonder or surprise (rather than magic) of turning the bottle to control the light is sufficient to encourage a playful engagement with conversation at the dinner table. Allowing the users to retreat to an alternative and unconventional means of communication (i.e. manipulate the light) broadens and contributes to the dinner experience. This sustains the development of new scenarios and experiences as the language changes, and may lead to new paths of behaviour and emotional projection.

This product aims to cultivate and enrich the communication experience around the dinner table. As such, it acts as a proactive agent (instrument) rather than passive one (entertainer), therefore, there is no need to neither amaze nor entertain. It is critical that the product is authentic and lucid. Same as language, in order to produce a meaningful experience, it should serve and sustain communication at the first place in order to help the users to express themselves (and

then maybe to amuse / entertain). This expression should be unambiguous and well oriented; otherwise it loses its meaning.

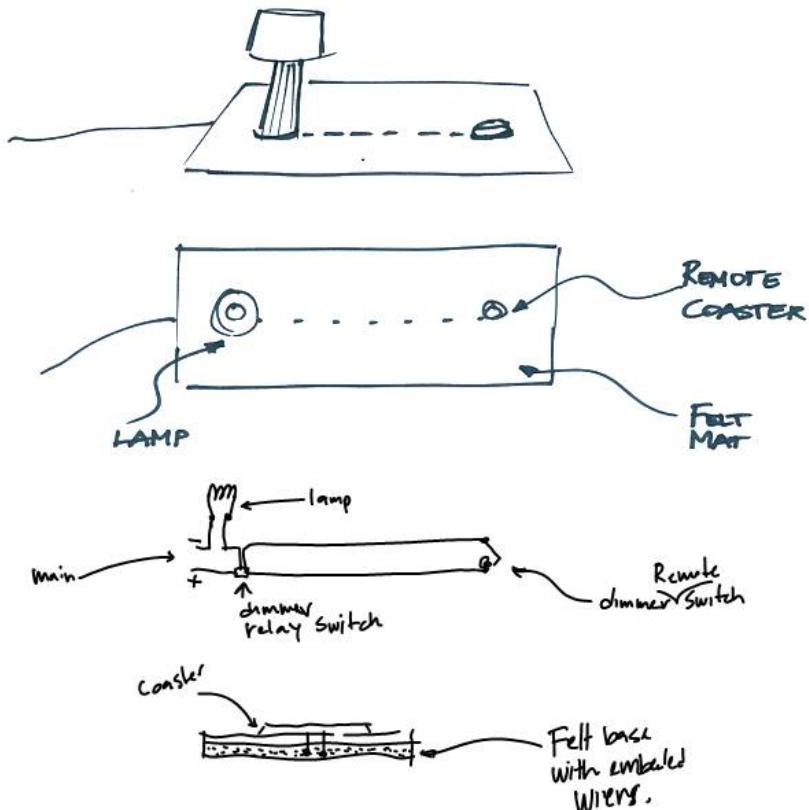


Figure 22: Lamp Some

OTHER METHODOLOGIES

The project evolution from the concept stage to the product development stage was supported by other methods and techniques that enriched and influenced its final shape. This process involved potential users and required interaction with other people which eventually provided me with a very valuable external feedback.

Usability Testing, one-on-one targeted testing that asked targeted users to perform specific, primary tasks and using a "talk aloud" protocol, which enabled me to see whether the user's cognitive model matches the model of the product. The test can minimise methodological biases, often associated with conducting research (Laurel, 2003).

I also aimed to define a User Persona for this project; Personas are archetypal users with specific goals and needs based on a real market and design research. They may include: demographic characterisation, technographic and behavioural



characteristics, barriers and/or challenges and specific goals and needs (Laurel, 2003).

User Interviews provided directional design input. I did not try to get the user to tell me what and how to design; but rather, I tried to elicit the users' goals and needs by focusing on how they perform their on focus tasks independent of the specific product being developed (Laurel, 2003).

WORKING MODEL

With the aim of trialing the product and to record the users' experiences I had to produce a working model. Similar to Dunne's approach (2001) in his 'Placebo project' I chose to make one, using a very simple materials, shapes and textures. To get the users to focus on the act and the experience itself, I had to design this product's visual appearance to look plain and unsophisticated. It was essential to maintain some basic aesthetic values in order to blend the object in the user adoptees' domestic environment. However, I have stripped it down from most visual connotations and symbolical icons to maintain neutrality as much as possible (Figure 23).



Figure 23: Lamp Some
Working Model

I started collecting feedback from users who trialed the product. Users' response was quite fascinating, as they reported multi-faceted experiences while interacting with the product. Thus, comments ranged from experiential-related views to product and function-related feedback. This point was a crossroad. I began to follow the path of designing a commercial product, utilising the users' comments regarding the product's aesthetics, functional factors and future products concepts (see Figure 24, pages 52-53). However, I decided to go back and further explore the experience related issues and findings noted by the users. Choosing the latter, I saw more value in exploring the design factors that comprise an experience and characterise them in order to capture what defines "design for an experience" in practice.

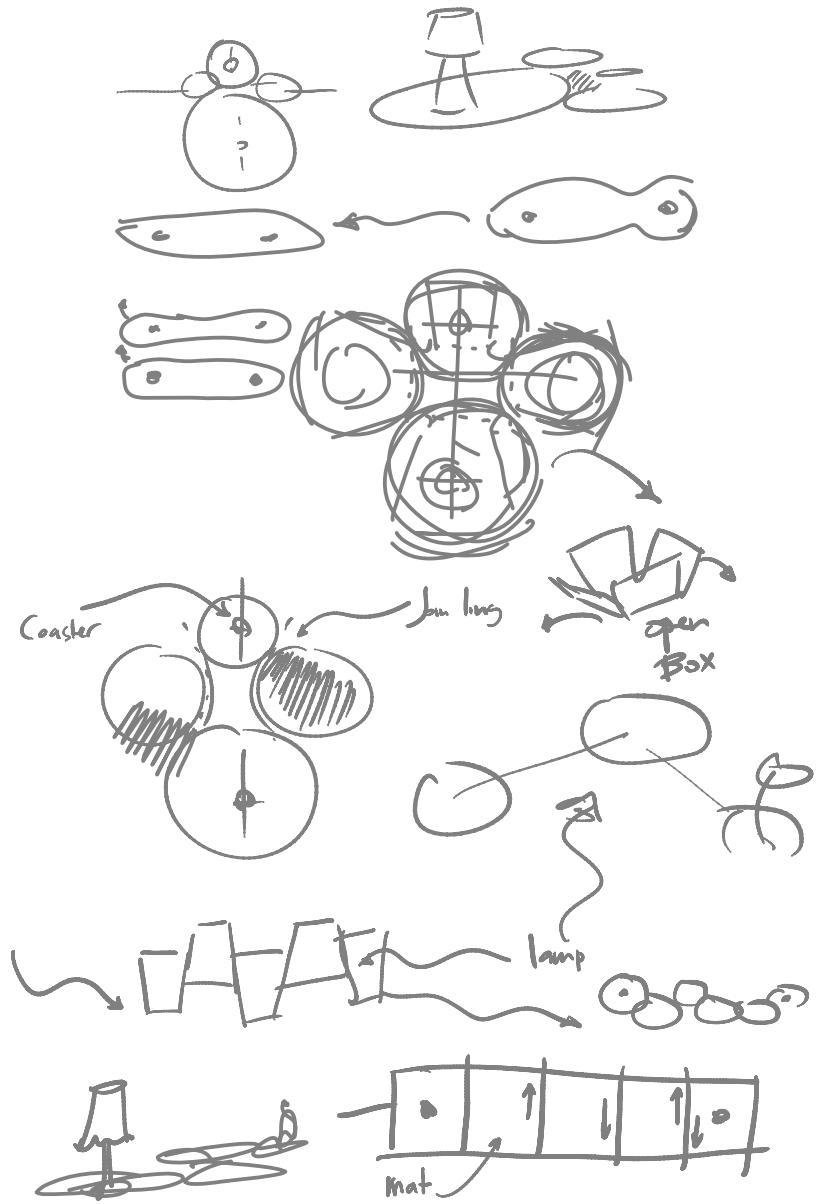
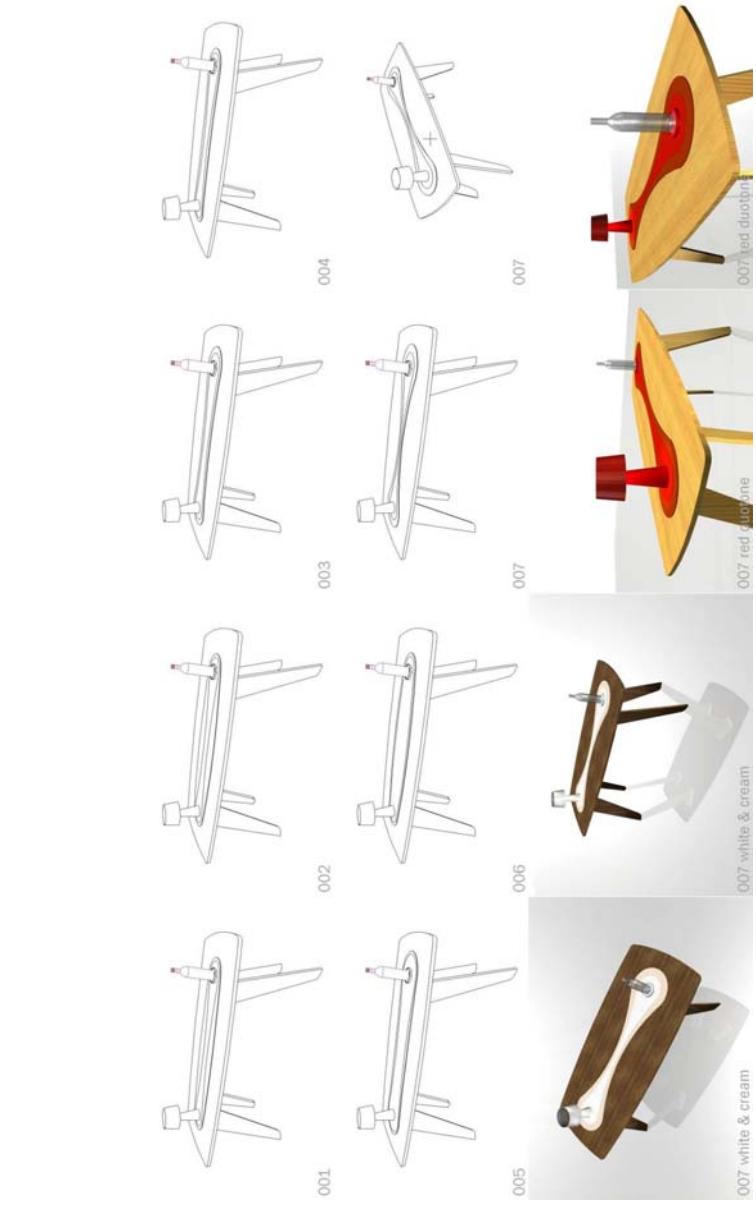
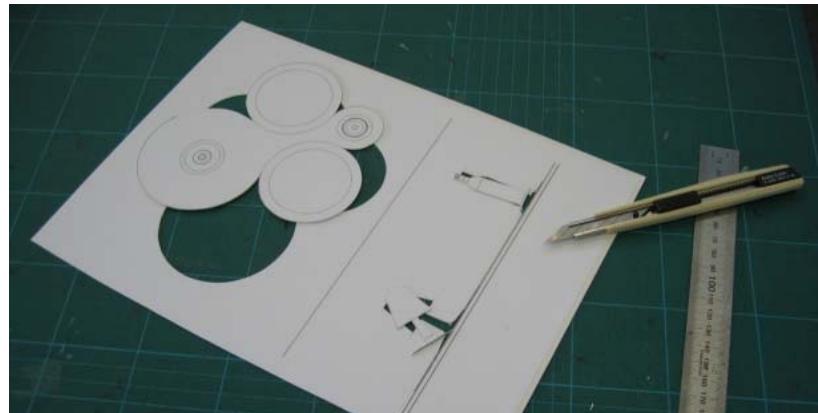
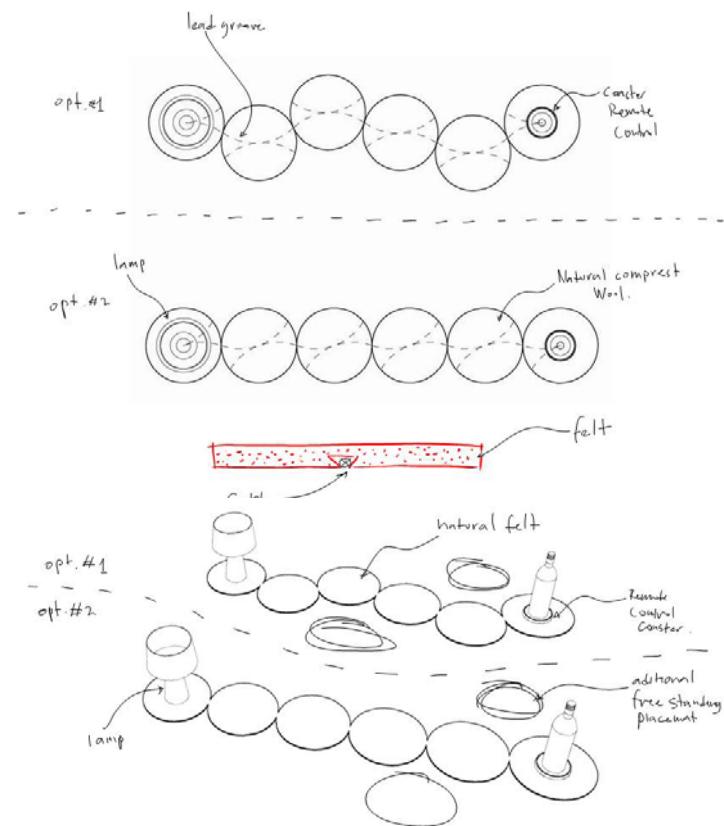


Figure 24: Future Products Concepts





INSIGHTS

RESULTS

In order to explore the product and the users' experience I have held several user interviews in their own domestic environments. I have asked people to adopt the product and use it for a week; and write a journal, describing their experiences and feelings. After having the product for a week, we discussed their experience and the thoughts they had about it. We also had a gathering of all the focus groups together aiming to further discuss this project's effects and implications on their habitual rituals.

The results were fascinating. The users assimilated the product into their lives, in such a way that it was hard for them to return it or pass it on to the next pair of adoptee. The users changed the way they behave around dinner time (and in several other occasions) because of the product and the experiences it had evoked. The following quotes describe these experience characteristics, as extracted from the focus groups reactions.



ANALYSIS

Some of the experiences reported by the focus groups can be analysed and grouped into two main categories; mental/emotional experience, and physical/technical experience.

MENTAL/EMOTIONAL EXPERIENCES:

- *"Get dressed for dinner"*
- *"Another way to communicate"*
- *"The only meal you have **together** with your partner during the day – then it's worthwhile to make the effort to make it **nicer**"*
- *"Stage your dinner"*
- *"Having the option to **play** and control it. Play at your dinner – not just eat"*
- *"Very **romantic** feeling"*



- *"Definitely giving extra, different experience, intimate and cosy when the only source of light is this device"*
- *"Conversation maker"*
- *"The shift of focus from your partner or the food to the light will have a different effect on the experience of having dinner together"*

Upon analysing the subject-statements above, it appears that most of the users began to treat dinner as an event while using the **Lamp Some**. Instead of 'grabbing a quick bite' or a take-out dinner, they had spent time cooking together and preparing themselves for the event by dressing up for the occasion and setting-up the table. They noted it made them aware of how many dinners they were spending while watching television, without engaging in conversation with each other. They also mentioned the 'romantic', intimate and cozy effect of using this device and the atmosphere it has created. While each pair of subjects noted different benefits, they unanimously agreed that the **Lamp Some** had cultivated and promoted their communication and encouraged them to have conversations. It is difficult to unfold the effects further at this stage since the move towards having conversations' itself is possibly derived

from more than one stimulus. Perhaps it is because they were away from the TV and had the chance to talk or because they related to the product's attributes and functions while eating – which provokes a discussion.

The above results are illustrated in the elements diagram in relation to the experience design components model discussed in the Practice chapter (Figure 25).

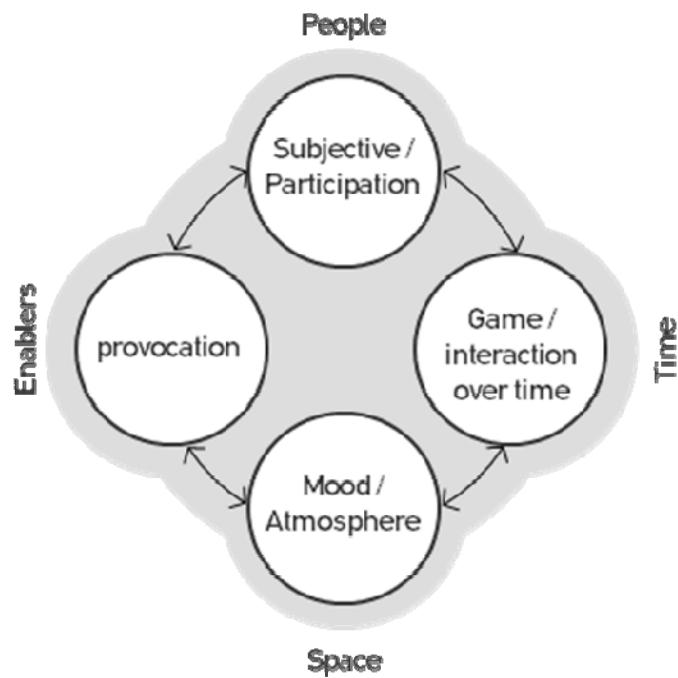


Figure 25: Mental / Emotional Experience Elements

PHYSICAL/TECHNICAL EXPERIENCE:

- *"Not another switch on a wall"*
- *"The fluid movement (rather than on/off) doesn't make noise, is more natural and organic"*
- *"Bottle (object) control - not just a conventional button"*
- *"Quite enchanting: you move the bottle here... and the light changes over there! ...I like it!"*
- *"Source of light is not from a conventional direction – not a 'cold' power saving bulbs mounted on the ceiling"*



- *"Always set up on the dinner table as a permanent display – integrated with other domestic objects"*
- *"Saves you the trouble of standing up to change the light while having dinner – keeps the focus on the experience"*

With regard to the physical and technical experiences resulting from using the **Lamp Some**, most of the users' comments revolved around the novelty of the products' interface and the fact that its utilities are different. There is nothing new about a lamp on a table, a felt mat or a coaster. But a coaster that operates a table lamp, and the fact that they are all interlinked and respond to each other via a table-mat, while taking part in a greater product - is unique. This uniqueness reinforces the product's innovativeness, which then, encourages the user to think and behave in new ways. It liberates the user of previous conventions and promotes the facilitation of a new behavioural path. The control over the lamp's output, the unconventional switch and the object that operates it (bottle, vase, wine glass and so forth) and the 'powered' felt mat, are all triggers purposely designed to evoke different experiences and to allow the user to elicit something new and fresh.



The above results are illustrated in the elements diagram in relation to the experience design components model discussed in the Practice chapter (Figure 26).

DISCUSSION

In this project, I set out to examine how products can adapt to the challenges of the Experience Economy. I have reviewed literature of experience economy and experience-based design and concentrated on the characteristics that can potentially differentiate utilitarian products from “experiential” ones. I have then designed a product which was reviewed by several user adoptees. This experiment resulted in interesting findings that led to the conclusion that we can indeed include specific features and components in the design process of products that could successfully compete in the Experience Economy terrain.

My proposition is to design products that foster and promote personal experiences with significant immersion and meaning that eventually will generate memories and contribute to a richer experience. As such, it will eventually lead to that sought-after differentiation from products’ commoditised rivals. It is very common nowadays that design of new products will

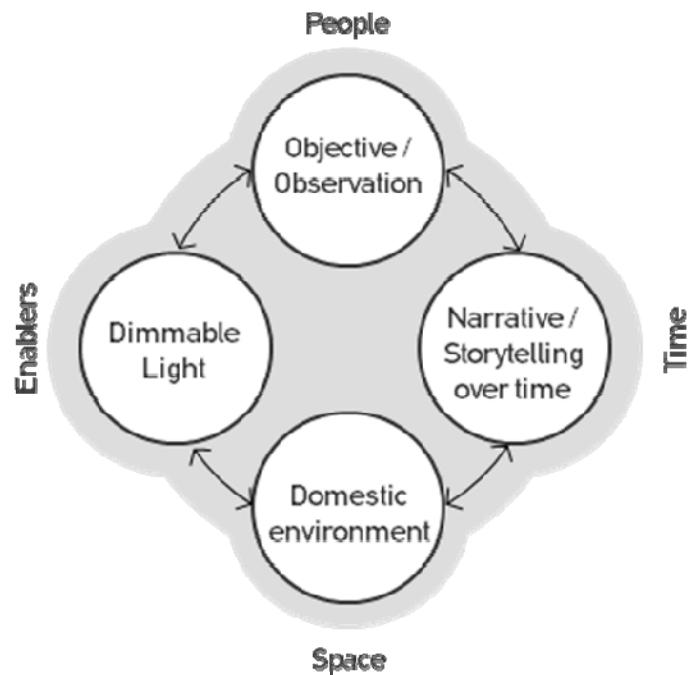


Figure 26: Physical / Technical Experience Elements

include some degree of experiential factors. Nonetheless, I believe that in order to shift from function-based experiences, that relate usually to comfort and entertainment (i.e. remote control, personalised interface, and so forth), it is vital that the product will comprise of **open-end** design characteristics and invite the users to take an active part and participate in the creation of the experience. I have found that **augmented reality** – contextual clusters of objects that relate to each other can reinforce a specific scenario and animate the narrative's surrounding, which then can help the users to create an authentic identity and take a relevant part in the creation of the experience.

Acting like a prop on a stage, the product is **de-centred**. Its purpose is shifting from its identity with regards to the functions it fulfils or to the way they are being used in relation to the context of the act itself and its environment (in this case - scenario of domestic ritual). One of the defining characteristics of an identity is **authenticity**, which allows us to evaluate how real or authentic we feel about an **identity**. The most valuable experiences are the ones that accommodate **personal expression**. It is very hard to predict what might be expressed, as the 'personal' component differs from user to user and is



very unpredictable (Shadroff, 2001). Nevertheless, experiences that allow the user to express and to contribute to the creation of identity are usually more memorable and meaningful, as creation of identity is one of the most important aspects of our lives and a key part of our personality.

Other than authenticity, in order for such experience to become meaningful and valid, the users need to engage with social and environmental context. This social interaction and the relational aspects generate interpersonal feedbacks, which then influence the way users build their cognitive models in relation to that experience. When this **learning process** occurs, the experience can generate substantial meaning that will possibly lead to a new experience (i.e. you sit down for dinner and while your expectations were only to eat, have a quick talk and go to watch TV, you find yourself playing and having fun with someone else). That '**meta experience**', that can lead to other surprising random experiences is, in my opinion, the real differentiator.

As discussed in the 'Context' chapter, by instigating user surprise, more experiential interaction can be established and ultimately can differentiate that experience from its rivals. It is important to remember that it is not about exceeding



expectations, but about staging the unexpected (Pine and Gilmore, 1999).

Referring back to the Experience Design model I have presented in the 'Context' chapter – we can see how the model's components and the user adoptees findings can support the hypothesis that products can indeed adapt to the challenges of the experience economy by designing for a transcending experience. These challenges are about the ability of a product to generate rich experiences from which to inscribe an **emotional memory** that can then be shared with others.

As shown in Figure 27 this experiential process can be captured in six stages.

Stage 1. This stage originates from the user based-design model which describes the relationship between the Design the Object and its User as identified at the time of purchase.

Stage 2. The author of intention. This stage begins as the user is **introduced** to the object and becomes its audience.

Stage 3. The **initiation** of the experience. This stage is comprised of two sub-stages. The first part begins as the event commences and expectations are established. The second

phase is defined when the user transforms and becomes an active participant. Now, as the participant takes the lead of the experience, the Design element becomes secondary and 'loses' its place in the relationship, leaving the participant and the audience with values of identity and authenticity.

Stage 4. The **immersion**, places an emphasis on the relationship between the participant and the audience through the use of the object. At this stage, the participant and the audience are shaping experience's boundaries and setting the rules of engagement.

Stage 5. The **conclusion**, marks the holistic reciprocal relationship between the participant, the object and the audience which affect the communication between the two.

Products that can successfully provoke and invite users' active **participation** in authoring and shaping an experience, that will contribute and augment their habitual rituals in a new and **exciting manner**, will succeed in adapting to the challenges of the experience economy.

Allowing the users to retreat to an alternative and unconventional means of **communication** (i.e. manipulate the light) broadens and contributes to their experience. This

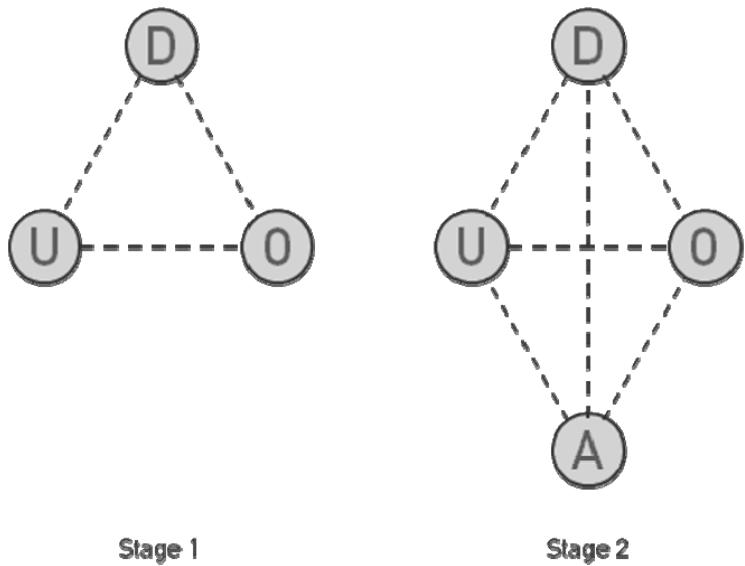


Figure 27: Experiential Process Stages

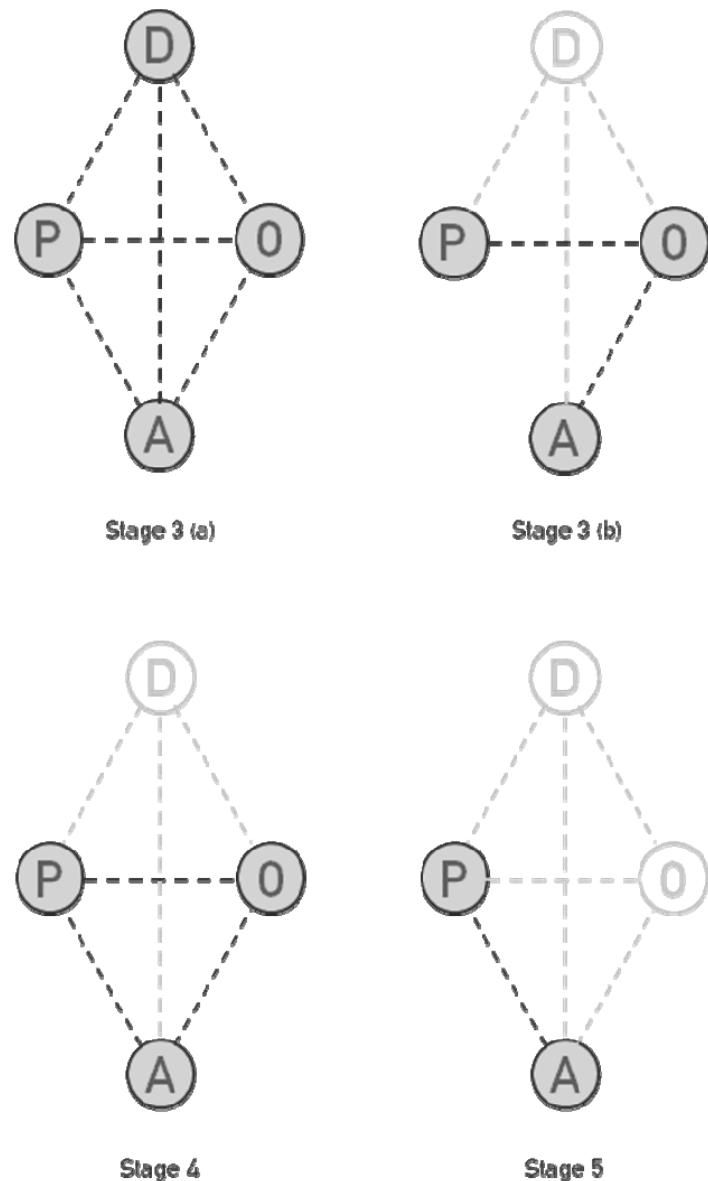


Figure 27: Experiential Process Stages (continued)

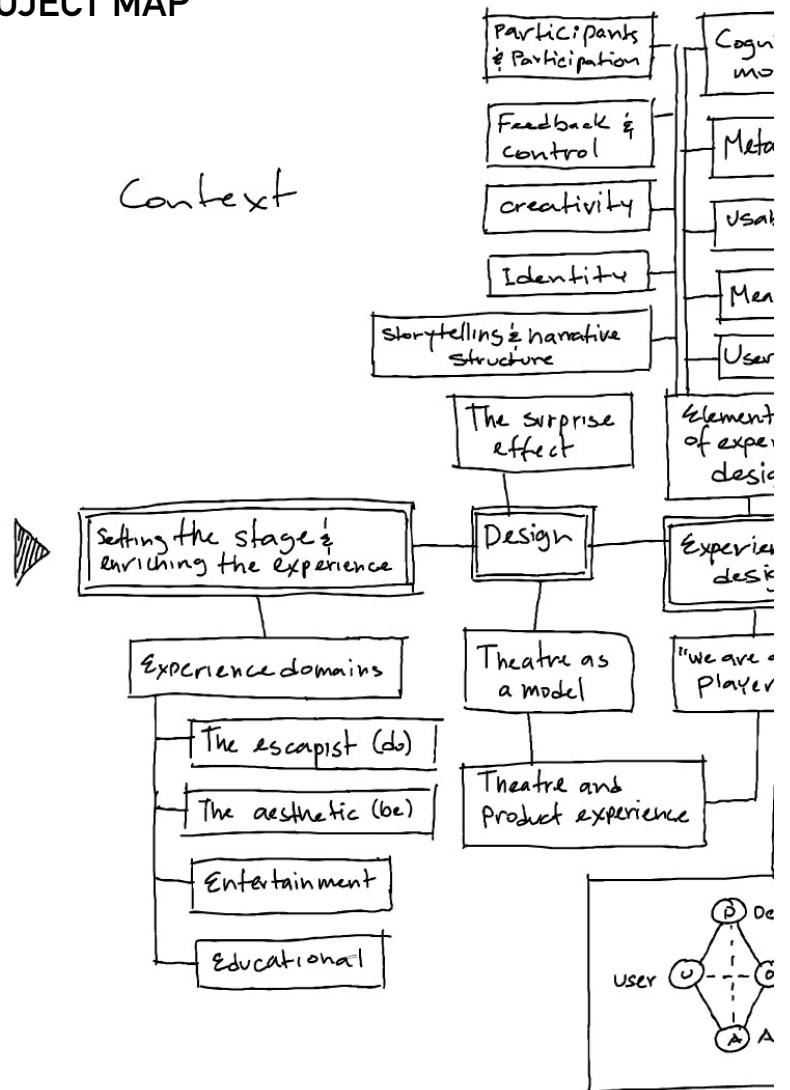
sustains the development of new scenarios and experiences as the language changes, and may lead to **new paths** of behaviour and emotional projection.

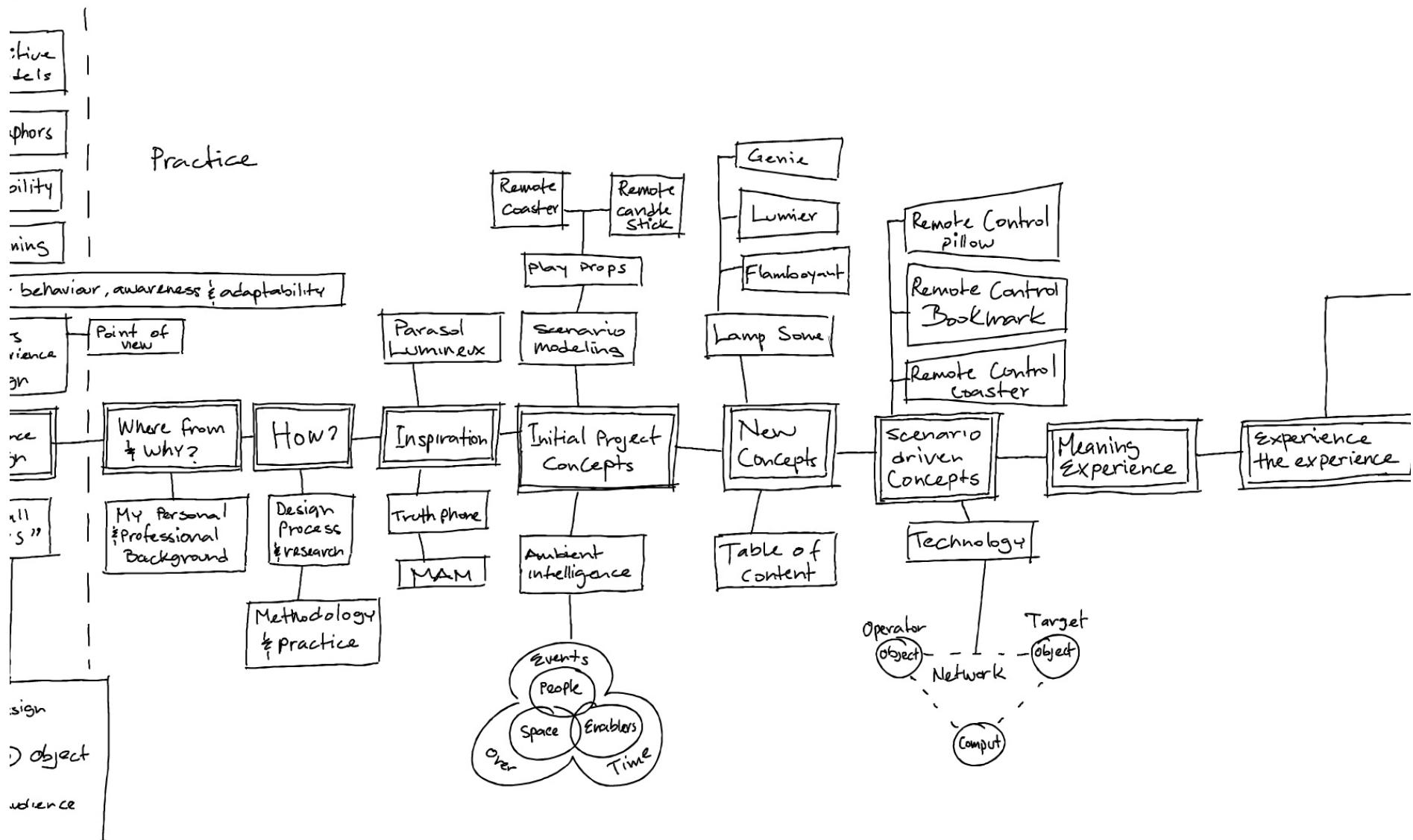
I believe that a design for a rich experience should also contribute to a **habitable** world. By sustaining social engagement with other people in the creation of new identities and experiences it should aim for this rich experience to result in contribution to the user's **quality of life**. This experiment showcased how product/experience design allows users to create together (with others - audience, users and partners) their own habitable environment through communication - an exciting novel environment to look forward to.

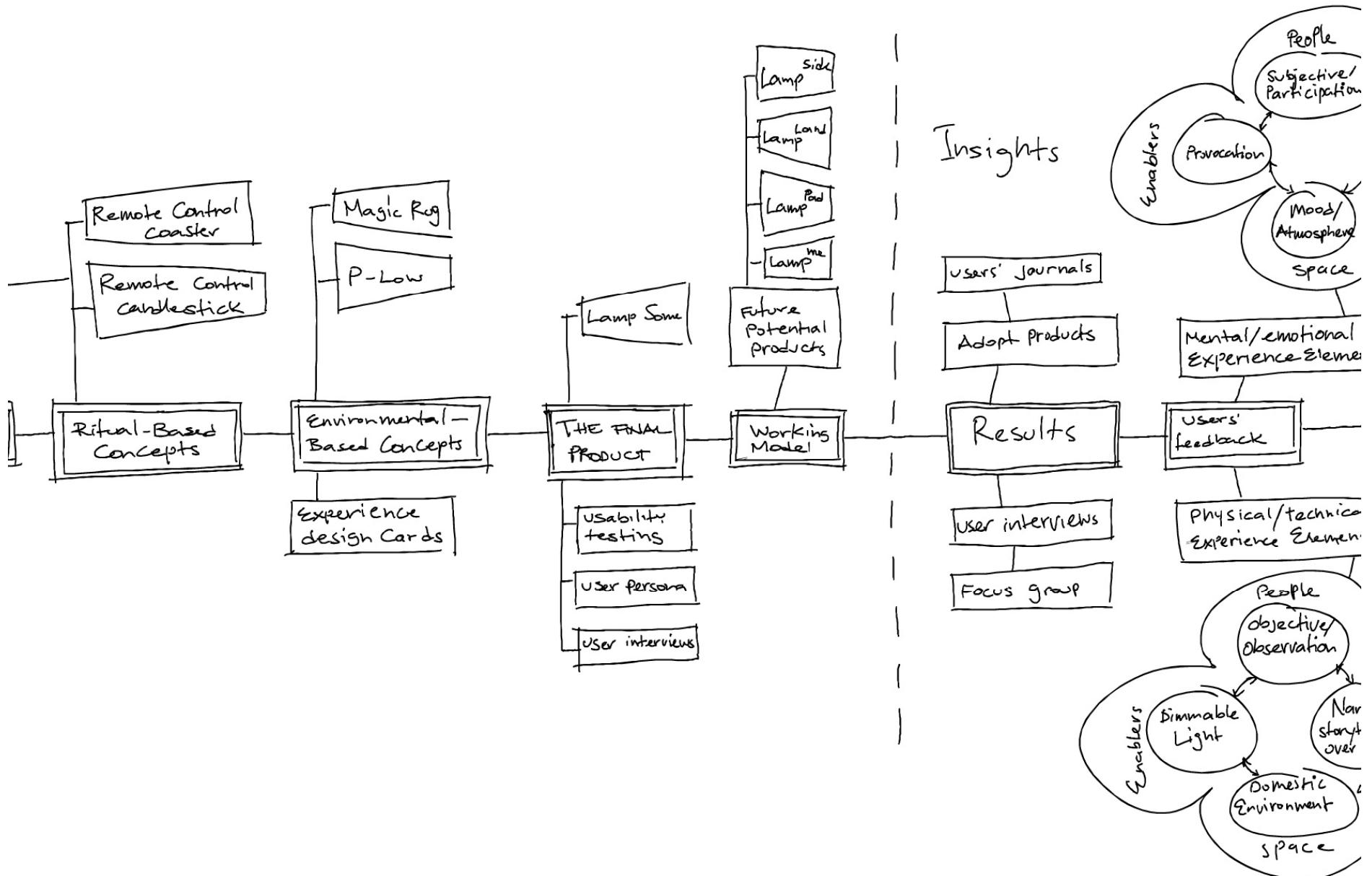


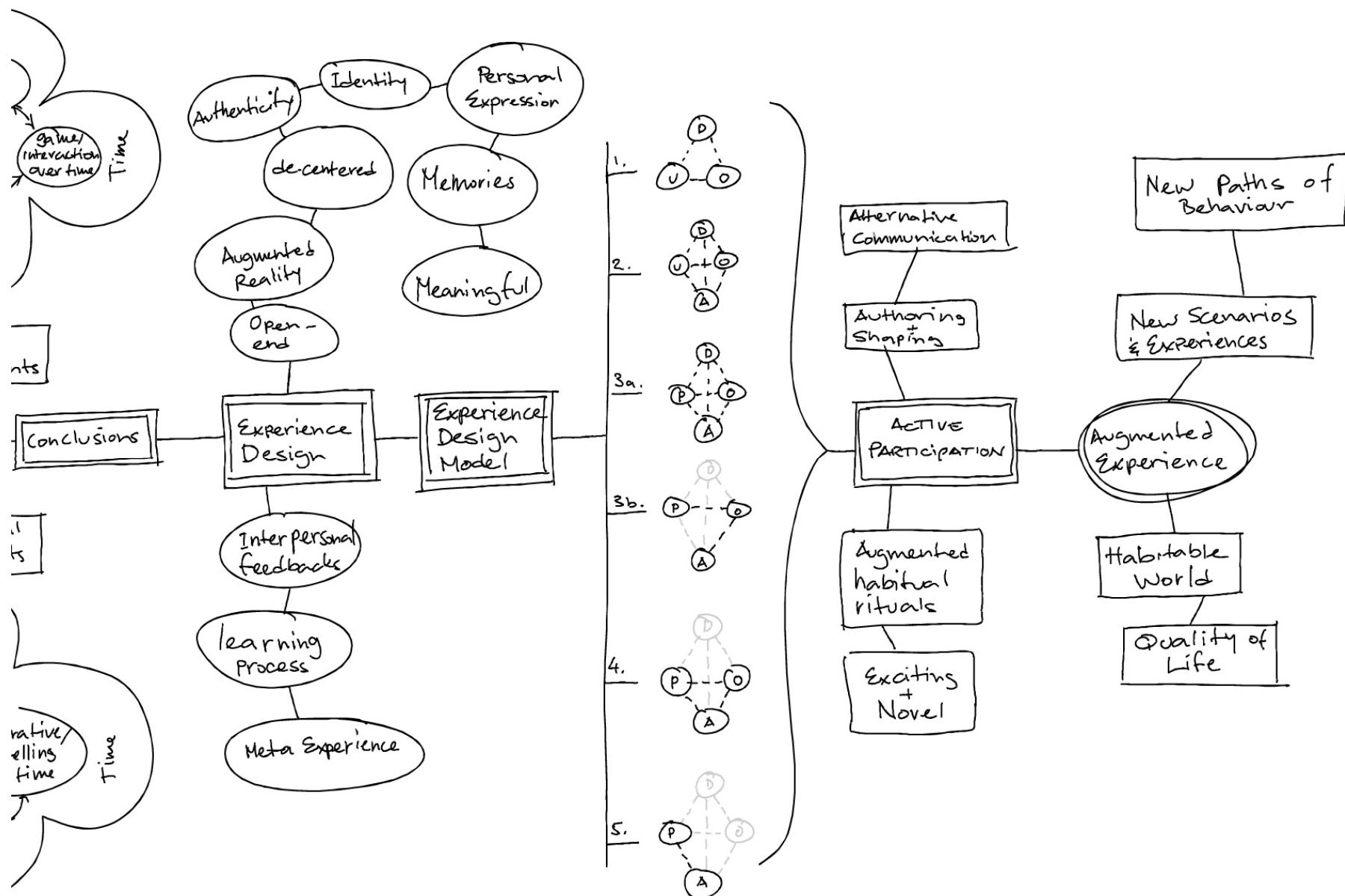
PROJECT MAP

Context











Date Received by the Division of Postgraduate Studies: _____

GENERAL INFORMATION

Note that Sections A1-A7 duplicate the information required in the corresponding Ethics Application form.

LEVEL 9 RESEARCH TITLE:	
De-centring the designed product.	
Conducted at:	UNITEC Institute of Technology
Degree:	Master of Design

Course Credit Value:	240
Course number and name:	

POSTGRADUATE STUDENT

Name:	Amitai Halfon
Address:	3/59 Grange Rd., Mt. Eden, Auckland
School:	Design
Phone No.	09 638 5651 0210 447 656

Student ID No.	1272923
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level 9 research – Specific Information for a UNITEC degree To be completed in conjunction with Supervisor and Head of School.

Initial year of enrolment: Full-time

Research Objective:

This project aims to explore how the role of designed products can adapt to the challenges of the Experience Economy (Pine & Gilmore, 1999). In contrast to the traditional or prevalent view of design as both 'user-focused' and centred around 'utilitarian' or 'functional' design principles, this project aims to research and develop creative strategies and analytical tools that focus on the role of products that support inter-personal and performative scenarios. This approach is one in which

objects are viewed as post-optimal (Dunne & Raby, 2001), where function entails narrative, experience and theatre, alongside the more familiar notions of efficiency and effectiveness.

The outcome of this project will contribute to the profession's understanding of the potential role of product design in the experience-based economy, via exemplar objects and a process-oriented theoretical framework.

Have you given a seminar of your research proposal? Yes

If yes, what was the date? 30-03-2006

Have you completed an ethics checklist? No

Is ethics approval required? No

Principal/Associate Supervisors: (Attach C.V. if not on register)

Principal Supervisor

Name:	Dr Cristian deGroot
School:	Design
Qualifications:	PhD
Role in project:	Principle supervisor, Content advisor

Associate Supervisor

Name:	Roger Bateman
School:	Design
Qualifications:	MA

Role in project:	Associate supervisor, Research advisor
------------------	--

Associate Supervisor

Name:	
School:	
Qualifications:	
Role in project:	

Comments of Supervisor(s):

Comments of Supervisor(s):

Other Groups or Outside Institutions Involved:
Comments of the Head of School:
Signature of Applicant: _____**Date:** _____**Print Full Name:**

Signature of Programme Director:

Date: _____
Print Full Name:

Signature of Head of School: _____**Date:** _____**Print Full Name:**

Programme Director (to forward to BPGS)**Research Supervision Contract****Student name:**

ID Number: _____

Principal Supervisor:

I agree to act as the Principal Supervisor for the above student for his/her research. I agree to abide by the responsibilities contained in the Code for Supervision of Postgraduate Students Undertaking Research, the Policy on Publications, the Policy on Proofreading and Editing, and the Policy on Intellectual Property.

The broad area of study is:

The provisional submission date is:

Signed: _____ Date: _____
Name: _____

Associate Supervisor (s)

I agree to act as the Associate Supervisor for the above student for his/her research. I agree to abide by the responsibilities contained in the Code for Supervision of

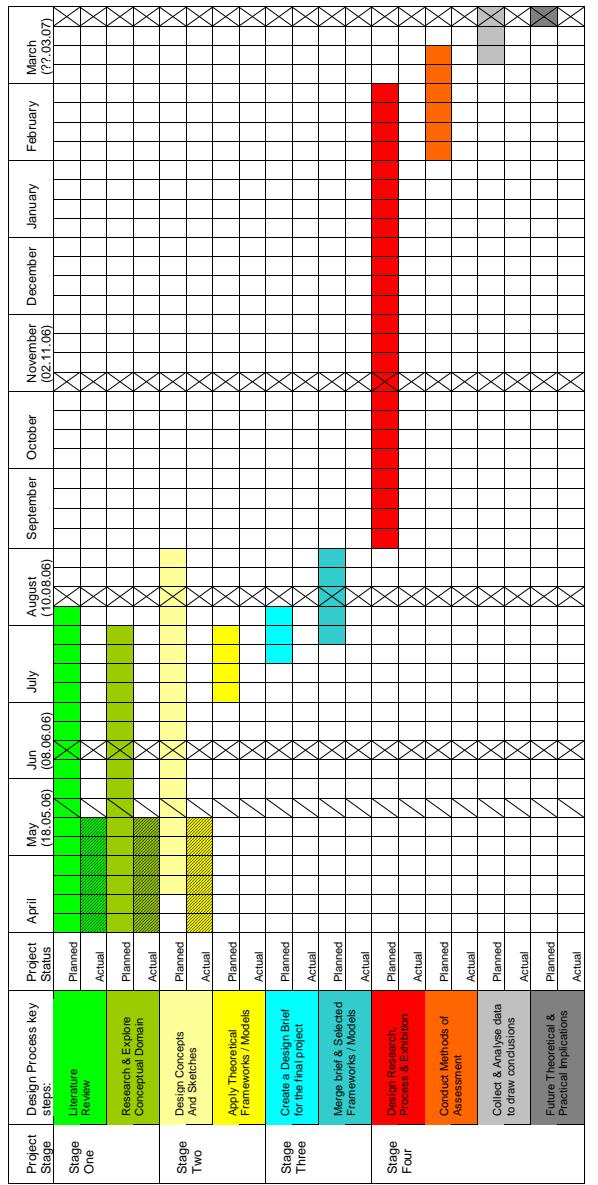
Postgraduate Students Undertaking Research, the Policy on Publications, the Policy on Proofreading and Editing, and the Policy on Intellectual Property.

Signed: _____ Date: _____
Name: _____

Student

I accept the above as the Principal and Associate Supervisor/s for my research. I agree to abide by the responsibilities contained in the Code for Supervision of Postgraduate Students Undertaking Research, the Policy on Publications, the Policy on Proofreading and Editing, and the Policy on Intellectual Property.

Signed: _____ Date: _____
Name: _____

Timeline:**Aim of Research Proposal:**

1. To develop strategies and analytical tools to support the effective engagement of product design with the challenges of the experience economy.
2. To identify characteristics of effective experience-based products.
3. To exhibit a prototype experience-product for user-evaluation.
4. To analyse and interpret results, in order to draw conclusion for future design practice and theory

Outcomes:**Tangible Outcomes**

1. A comprehensive master's Thesis, supported by thorough theoretical research and product development and design.
2. A product designed while aiming to target key characteristics of the experience economy.
3. An exhibition of the above product.

Theoretical Implications

1. Exploration and identification of the key challenges posed by the experience economy, based on concepts and a product developed throughout this project.
2. A theoretical framework addressing potential design strategies to meet the challenges of the experience economy.

Literature review:

The following key texts represent the logical-theoretical path that will be pursued in the literature review of my research project. Initially, I will explore the macro-level premises of the experience economy and experience design, while aiming to identify key elements and trends. Then, I will conduct a more granular exploration of meso-level design research, as well as primary concepts of special interest, such as the design of everyday things and ergonomics. Finally, I will explore at a micro-level, looking at specific products or companies that exemplify and promote experience design.

Key Texts:

Pine, J. & Gilmore, J. (1999). *The Experience Economy*. Boston: Harvard Business School Press.

A new economic era, in which every business is a stage and companies must design memorable events for which they charge admission, is presented by Pine & Gilmore in their book: *The experience Economy*. As the world progresses towards sameness, as every commodity created will be copied by competitors, there is an urgent need to look beyond the traditional business model to provide a road map for what happens next: differentiation by experience. This book explores how successful companies - using goods as props and services as the stage, create experiences that engage customers in an inherently personal way.

Fiell, C. & P. (2001). *Designing for the 21st Century*. Koln: Taschen.

This book discusses the issues of design for the future and explores where we are headed and what it will look

like when we will get there. Throughout the discussion of how contemporary designers define the form, function and aesthetic role of future products at the turn of a new millennium and by trying to answer the above questions, this book manages to outline the perceptions and highlight a different approach to product design and the role of products in the future. Its motivation, to engage designers in a dialogue on their visions of the future of design, results in a diversity of responses from different designers from various parts of the world, and can be read as a guidebook to what our world will look like in the 21st Century and how design position it self as a key component in that picture.

Shedroff, N. (2001). *Experience Design*. Indianapolis: New Riders.

In his book, Shedroff explores the possibilities of designing the elements that contribute to superior experiences and their principles. As experience design has become newly recognised, this book points out its importance and origins in more traditional and established disciplines such as theatre, graphic design,

storytelling, exhibit design, architecture and so forth. The book also argues that experience design is not only a field for digital media as it used to be seen in the past. Shedroff aims to understand and explain what makes a 'good experience' and then translates these principles and possibilities into the different media, without the technology dictating the form of the experience.

Suri, J. F. (2005). *Thoughtless Acts?: Observations on Intuitive Design*. San Francisco: Chronicle Books.

This book offers a common-sensed approach to observing how humans interact with products, and offers subtle but critical review of the ways in which people behave in a world not always perfectly tailored to their needs. People's everyday behaviour is an unconscious result of their interaction with their surroundings. "We interact automatically with objects and spaces that we encounter" (p.7). This observation results in outlined methods and ways of how IDEO creates human-centered, friendly products, services and spaces.

Suri, J. F. (2004). Design expression and human experience: evolving design practice. In McDonagh, D. (Ed.), *Design and Emotion: The Experience of Everyday Things.* (pp.13-17). London: Taylor & Francis.

As products have become more similar in technology, functionality and quality, companies have turned to design to differentiate their products through human-centred innovation and to create stronger emotional connection with their customers. More companies recognise design as a strategic function in their business. Thus, ultimately, designers focus on the user experience concept through creating tangible expressions of ideas. However, as experience is an abstract concept, Suri insists on thrilling the experience to guaranty a result: "The only way to experience an experience is to experience it" (p.15). Such thinking has led Buchenau and Suri (2000) to promote the use of Prototyping Methods to allow designers, users and clients to experience things for themselves rather than rely on contextual observation, demonstration and user interviews.

Henze, L. & Kahmann, R. (2004). Communicating product experience. In McDonagh, D. (Ed.), *Design and Emotion: The Experience of Everyday Things.* (pp.13-17). London: Taylor & Francis.

In this paper, Henze and Kahmann identify the growing need for product developers to have focus on emotional aspects through the creation of context for experiences. Henze and Kahmann reflect on The Experience Economy (Pine & Gilmore, 1999) and the need for manufacturers to experientialise their products. In order to design products with a rich experiential attributes, Henze and Kahmann suggest the use of scripts, a detailed description of scenes, to assist the design research and allow the product creators to account for experience in the early stages of the design process.

Laurel, B. (2003). *Design Research: Methods and Perspectives.* Cambridge, Massachusetts, London: The MIT Press.

This book presents a variety of research tools that can be used to inform design research and provides some ideas

and timelines of how and when to use them successfully. Design research contributes to the shift of the design process away from the object and towards the integrated system. Designers often complain they are perceived as stylists; by moving away from styling the product itself and into designing a system that helps to support and define products, designers can rightfully claim their share and contribution to the success of the product. This book examines how design research, its methodologies and perspectives can help to achieve that positive result.

Norman, D. (1988). *The Design of everyday things*. New York: Basic Books.

In his book, Norman explores the psychology of everyday things and the psychology of how people interact with them. Through cognitive-ergonomic critical approach to everyday household products, Norman deals and highlights a variety of problems from ambiguous and hidden controls to vague relationships between controls and functions. This exploration shows how good design of everyday things can be achieved by exploitation of natural

interactions between controls and functions, while providing visible feedback.

McCullough, M. (1996) *Abstracting Craft: The Practiced Digital Hand*. Cambridge, Massachusetts, London: The MIT Press.

McCullough's *Abstracting Craft* explores and defines the possibility of craft in the digital realm. This book presents an observation on computers and software and their emergence as a medium by itself, rather than just a set of tools. It also suggests a growing connection between traditional craft and digital works.

Dunne, A. (1999). *Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design*. London: RCA CRD Research

This book explores the aesthetic role of electronic products in everyday life. As Dunne asserts that Industrial design has the potential to enrich our daily lives - to improve the quality of our relationship to the artificial environment of technology, and argues that it can be

subverted for socially beneficial ends. Dunne identifies that our everyday social and cultural experiences are increasingly determined and influenced by electronic products, and so it is the design of these products that shapes our experience of the "electrosphere" in which we live.

Dunne, A. & Raby, F. (2001). *Design Noir: The Secret Life of Electronic Objects*. Basel: Birkhäuser

This book presents conceptual designs and ideas that deal with the psychological terms of the connection between humans and electronics. Dunne and Raby investigate the real physical and cultural effects of the digital domain, demonstrating electronic objects that profoundly influence people's experience of their environment. They present experiments that involve placing object in context and domain such as electromagnetic field and augmented electronic environment and examine how humans interact with them and with the ideas they represent.

Kelley, T. & Littman, J. (2005). *The Ten Faces of Innovation: IDEO's Strategies for Defeating the Devil's*

Advocate and Driving Creativity Throughout Your Organisation. New York: Currency/Doubleday.

This book explores strategies within a major design firm and how they are used to foster innovative thinking that will lead to innovative products, throughout the organisation and overcome the suppression of creativity within the corporate environment. Kelley identifies in his book ten personas that can play a role in an organisation to foster innovation and new ideas while offering an effective counteraction to 'big corporation syndromes'.

As was shown above, this research project will comprise an exploration of experience design, originating from multi-angular points-of-reference, in order to achieve a holistic appreciation of the concept. This will encompass a multi-level exploration of social, economic and technological aspects, which will allow me to manifest its importance in future environments. I hope to achieve these goals in order to coalesce experience design principles to reach a significant outcome.

Current readings / Future references:

Aarts, E. & Marzano, S. (2003). *The New Everyday: Views on Ambient Intelligence*. Rotterdam: 010 Publishers.

Bürdek, B. E. (2005). *Design : History, Theory, and Practice of Product Design*. Boston: Birkhauser-Publishers for Architecture.

Byars, M. (2001). *On/Off: New Electronic Products*. New York: Universe Publishing.

Cagan, J. (2002). *Creating Breakthrough Products: Innovation from Product Planning to Program Approval*. New Jersey: Prentice Hall PTR.

Couldry, N. & McCarthy, A. (2004). *MediaSpace : Place, Scale and Culture in a Media Age*. New York: Routledge.

Fiell, C. & P. (2003). *Design for the 21st Century*. Koln: Taschen.

Hartley, J. (2005). *Creative Industries*. Malden: Blackwell Publishing.

Kim, D. (1995). Managerial practice fields: Infrastructures of a learning organisation. In *Learning Organisations: Developing Cultures for Tomorrow's Workplace*. NY: Productivity Press.

Kuniavsky, M. (2003). *Observing the User Experience: A Practitioner's Guide to User Research*. San Francisco: Morgan Kaufmann Publishers.

Lacucci, G., Kuuti, K. & Ranta, M. (2000). On the Move with Magic Things: Role Playing in Concept Design of Mobile Services and Devices. Presented in DIS: Symposium on Designing Interactive Systems. New York: ACM.

Malnar, J. M. & Vodvarka F. (2004). *Sensory Design*. Minneapolis: University of Minnesota Press.

McDonagh, D. (2004). *Design and Emotion: The Experience of Everyday Things*. London: Taylor & Francis.

Meadows, M. S. (2003). *Pause & Effect: The Art of Interactive Narrative*. Indianapolis: New Riders.

Mosco, V. (2004). *The Digital Sublime: Myth, Power and Cyberspace*. Cambridge: MIT Press.

Reinhard, E. (1998). *Nomadic Architecture: Human Practicality Serves Human Emotion*. Baden: Lars Muller.

Rawat, T.J. (2004). *Wonder Objects: Magic and Interactive Storytelling*. In MA Interaction Design. Ivrea: Interaction Design Institute Ivrea.

Tognazzini, B. (1993) Principles, Techniques, and Ethics of Stage Magic and Their Application to Human Interface Design. In Interchi '93 - Conference on Human Factors in Computing Systems. (pp.355-362). Retrieved from: ACM Press, on 14.3.2006.

Weinstock, M. (2005). *Terrain Vague: Interactive Space and the Housescape*. *Architectural Design*, 75(1), 46-50.

Budget:

Project to be entirely self-funded

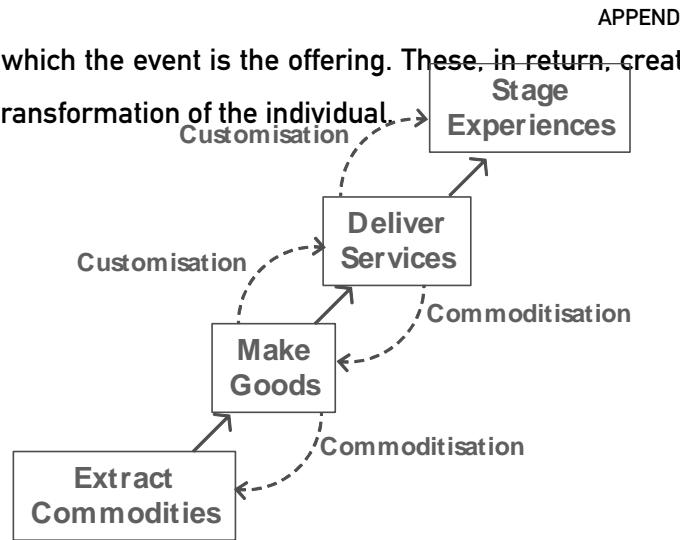
Project Requirements:

Access to facilities at Unitec; workshops, computer labs, and a secure studio space for model making and development of project.

Research Rationale & Purpose:

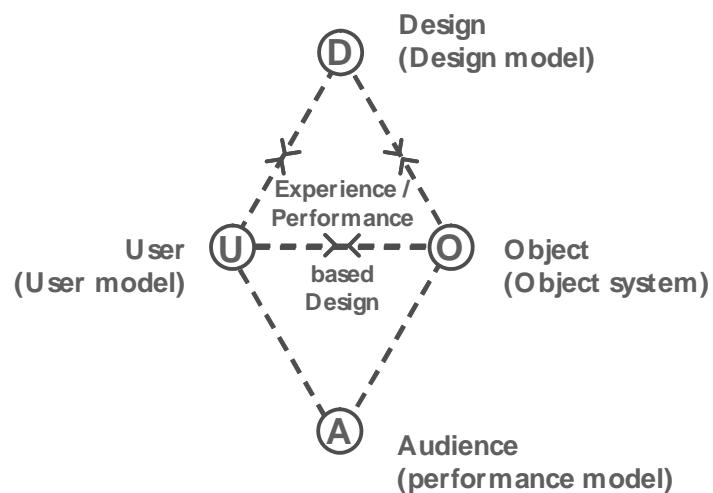
Scholars suggest that as the world progresses towards sameness, as every commodity created will be copied by competitors, there is an urgent need to look beyond the traditional business model to provide a road map for what happens next: differentiation by experience. The new competitive landscape in the design arena has shifted from extracting commodities and producing goods, to delivering services and ultimately – staging experiences.

in which the event is the offering. These, in return, create a transformation of the individual.



(Source: Pine & Gilmore, 1999)

By and large, experience-based design contains key attributes that are personal, memorable, often revealed over duration, as it aims to provide a unique experience to the buyer – its audience, or guest on stage. Experience-based design can either, evoke active participation of the guest and provide educational value or escapism, or alternatively, it can involve passive participation of the guest, in which the design has an entertaining or aesthetic value only (Pine & Gilmore, 1999).



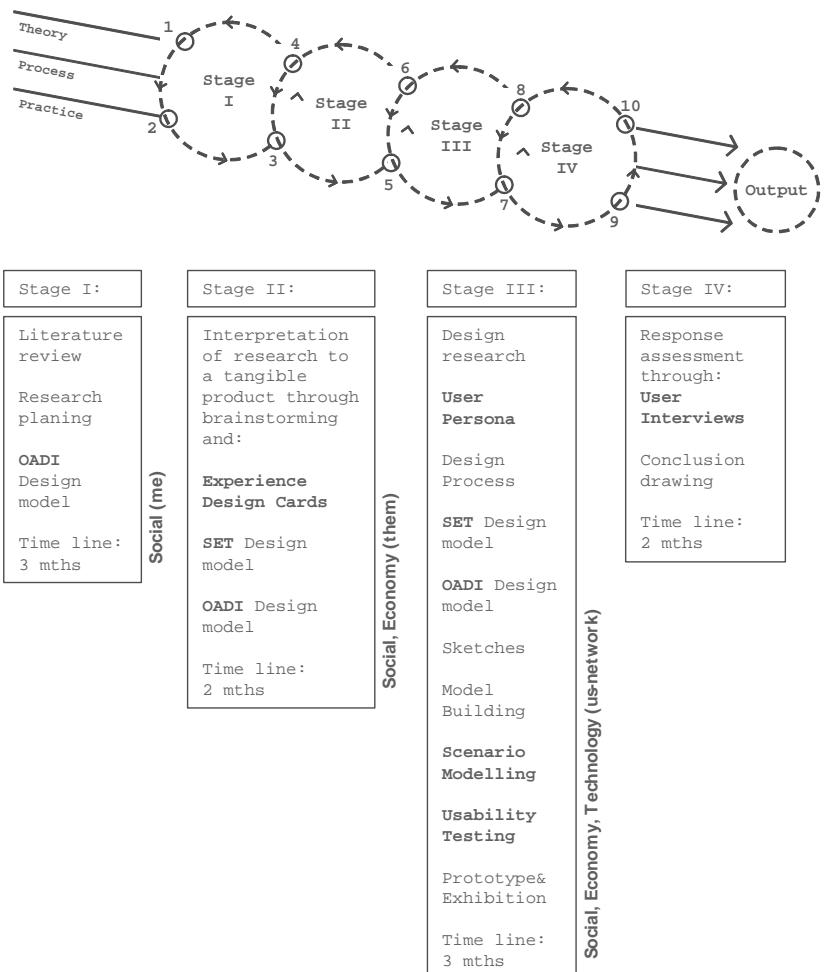
In an era where a shift towards performance-based, user-engaging design is evident, this project will focus on achieving an active participation of the user. In order to leave mental space for the user to actively participate in the experience, we, as designers, are encouraged to develop open designs, which allow for various behavioural and emotional responses to occur. And so, by de-centring products, designers shift their focus from the end-user (i.e. ergonomics) or the traditional utilitarian

product design (i.e. interface) – to the design of an experience by itself (Suri, 2004).

Given my experience as an exhibition designer, working within various inter-disciplinary levels, this project aims to explore experience-based product design, incorporating social, economic and technological factors (SET). This will then explore the ways in which the product design has faced the challenges of experience-based design, in creating a personal and memorable experience for the user (Cagan, 2002).

Through this case study, utilising various methodological means, I will aim to identify key elements that differentiate and characterise this potentially augmented user experience. These gathered insights will then allow the development of a theoretical framework for future design practice. This project has the potential of providing practical implications that will add value to experience-based design, as it becomes increasingly dominant in the evolving experience economy.

Methodology:



Process Sub-stages:

1. Literature review

(See Appendix for elaborated description on design research methods)

2. Research & explore conceptual domain

Data Collection:

3. Design concepts and sketching

Secondary Research: Literature Review

4. Apply theoretical framework and models

The first stage of the data collection will be dominated by secondary research sources, to inform a comprehensive literature review and familiarise the researcher with the conceptual domain at hand. These will typically include journals, books, magazines, Internet websites and databases.

5. Create a design brief

6. Combine design brief with selected frameworks and model

7. Design research followed by design process, resulting in an exhibition

Primary Research: Product Examination

8. Conduct methods of assessment

The second stage of the data collection will be practice-based and will be guided by a multi-angular personal exploration of key experiential products, which will be selected using a defined set of criteria.

9. Collect & analyse data to draw conclusions

10. Output: Future theoretical & practical implications

Primary Research: Experiment Process

An additional form of primary data collection will be Experience Prototyping through allowing user groups to experience the product.

APPENDIX:

Definitions:

Experience design cards:

The cards represent topics that include design issues to create various kinds of experiences. Each card addresses a topic in the form of a question posed directly to the designer, to create an opportunity to remember to address more issues than might be in the initial project brief. This can also be used as aid in brainstorming sessions (Created by Nathan Shedroff).

OADI:

Organise, assess, design and implement are cyclical key stages of the design process, that are used repeatedly to ensure a rigorous process (Kim, 1995)

Usability Testing:

One-on-one targeted testing that asks targeted users to perform specific, primary tasks and using a “talk aloud” protocol, which will enable the designer to see whether the user’s cognitive model matches the model of the product. The test can minimise methodological biases, often associated with conducting research.

User Interviews:

These provide directional design input. The designer does not try to get the user to tell him what and how to design; but rather, he tries to elicit the users’ goals and needs by focusing on how they perform their current tasks independent of the specific product being developed.

User Persona:

Personas are archetypal users with specific goals and needs based on a real market and design research. They may include: demographic characterisation, technographic and behavioural characteristics, barriers and/or challenges and specific goals and needs.

Scenario Modelling:

Scenarios describe users' situations and experiences, and enable usability evaluation in design.

SET:

Social, economic and technological aspects which are targeted during the design process (Cagan & Vogel, 2002).



BIBLIOGRAPHY

- Aarts, E. & Marzano, S. (2003). *The New Everyday: Views on Ambient Intelligence*. Rotterdam: 010 Publishers.
- Bürdek, B. E. (2005). *Design : History, Theory, and Practice of Product Design*. Boston: Birkhauser-Publishers for Architecture.
- Bouroullec, R. & E. (2003). *Ronan and Erwan Bouroullec*. Phaidon Press
- Byars, M. (2001). *On/Off: New Electronic Products*. New York: Universe Publishing.
- Cagan, J. & Vogel M. C. (2002). *Creating Breakthrough Products: Innovation from Product Planning to Program Approval*. New Jersey: Prentice Hall PTR.
- Couldry, N. & McCarthy, A. (2004). *MediaSpace : Place, Scale and Culture in a Media Age*. New York: Routledge.
- Dewey, J. (1937/1997). *Experience and Education*. Macmillan.



- Dunne, A. (1999). *Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design*. London: RCA CRD Research.
- Dunne, A. & Raby, F. (2001). *Design Noir: The Secret Life of Electronic Objects*. Basel: Birkhäuser .
- Fiell, C. & P. (2003). *Design for the 21st Century*. Koln: Taschen.
- Hartley, J. (2005). *Creative Industries*. Malden: Blackwell Publishing.
- Henze, L. & Kahmann, R. (2004). Communicating product experience. In McDonagh, D. (Ed.), *Design and Emotion: The Experience of Everyday Things*. (pp.13-17). London: Taylor & Francis.
- Kelley, T. (2001). *The art of Innovation*. New York: Currency/Doubleday.
- Kelley, T. & Littman, J. (2005). *The Ten Faces of Innovation: IDEO's Strategies for Defeating the Devil's Advocate and Driving Creativity Throughout Your Organisation*. New York: Currency/Doubleday.

- Kim, D. (1995). Managerial practice fields: Infrastructures of a learning organisation. In *Learning Organisations: Developing Cultures for Tomorrow's Workplace*. NY: Productivity Press.
- Kuniavsky, M. (2003). *Observing the User Experience: A Practitioner's Guide to User Research*. San Francisco: Morgan Kaufmann Publishers.
- Lacucci, G., Kuuti, K. & Ranta, M. (2000). On the Move with Magic Things: Role Playing in Concept Design of Mobile Services and Devices. Presented in *DIS: Symposium on Designing Interactive Systems*. New York: ACM.
- Laurel, B. (1989). On Dramatic Interaction. *Verbum, Journal of Personal Computer Aesthetics*. San Francisco: ACE. AT.
- Laurel, B. (1993). *Computers as Theatre*. Boston, Massachusetts: Addison-Wesley Longman Publishing Co., Inc.
- Laurel, B. (2003). *Design Research: Methods and Perspectives*. Cambridge, Massachusetts: The MIT Press.
- Malnar, J. M. & Vodvarka F. (2004). *Sensory Design*. Minneapolis: University of Minnesota Press.
- McCullough, M. (1996). *Abstracting Craft: The Practiced Digital Hand*. Cambridge, Massachusetts: The MIT Press.
- McDonagh, D. (2004). *Design and Emotion: The Experience of Everyday Things*. London: Taylor & Francis.
- Meadows, M. S. (2003). *Pause & Effect: The Art of Interactive Narrative*. Indianapolis: New Riders.
- Mosco, V. (2004). *The Digital Sublime: Myth, Power and Cyberspace*. Cambridge, Massachusetts: The MIT Press.
- Myerson, J. (2001). *IDEO: Masters of Innovation*. London: Laurence King.
- Norman, D. (1988). *The Design of everyday things*. New York: Basic Books.
- Reinhard, E. (1998). Nomadic Architecture: Human Practicality Serves Human Emotion. Baden: Lars Muller.
- Pine, J. & Gilmore, J. (1999). *The Experience Economy*. Boston: Harvard Business School Press.

Rawat, T.J. (2004). Wonder Objects: Magic and Interactive Storytelling. In *MA Interaction Design*. Ivrea: Interaction Design Institute Ivrea.

Shedroff, N. (2001). *Experience Design*. Indianapolis: New Riders.

Suri, J. F. (2004). Design expression and human experience: evolving design practice. In McDonagh, D. (Ed.), *Design and Emotion: The Experience of Everyday Things*. (pp.13-17). London: Taylor & Francis.

Suri, J. F. (2005). *Thoughtless Acts?: Observations on Intuitive Design*. San Francisco: Chronicle Books.

Sterling, B. (2005). *Shaping Things*. Cambridge, Massachusetts: The MIT Press.

Thackara, J. (2005). *In the Bubble: Designing in a complex world*. Cambridge, Massachusetts: The MIT Press.

Tognazzini, B. (1993) Principles, Techniques, and Ethics of Stage Magic and Their Application to Human Interface Design. In *Interchi '93 - Conference on Human Factors in Computing Systems*. (pp.355-362). Retrieved from: ACM Press, on 14.3.2006.

Weinstock, M. (2005). Terrain Vague: Interactive Space and the Housescape. *Architectural Design*, 75(1), 46-50.