SUSTAINABLE MATERIALISM

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SUSTAINABLE MATERIALISM:
Exploratory research on designing for reflection on materialistic behaviours in the domain of Interaction Design

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Abstract

To have sustainable lifestyles, individuals need to have support from physical and social infrastructures, as well as institutions, however the major decisions about a sustainable lifestyle are being made at individual and social levels. This research is an exploration into understanding the social influences that drive an individual’s materialistic behaviour, and using that understanding to develop interaction design solutions that reflect on materialism and promote sustainable behaviour and lifestyles.

An extensive literature review is conducted on various aspects of materialism from the product design, interaction design - that have focused on the material and performative nature of artefacts - and social innovation perspectives. Here, existing work, such as simplicity movements, have promoted the idea that an individual’s life can be more fulfilling if they engage in activities that are purposive and materially light. However, since it has been difficult to convince large populations of the society about the benefits of sustainable living, sociology research provides a platform to understand how our perception of self and social surroundings impacts our lifestyles in materialistic ways. From this understanding, two stages of empirical studies were conducted for design material, firstly exploring the concept of materialism from a sharing and ownership perspective, and then, intervention based studies that gathered insight on the use of techniques that promote reflection on these behaviours. A set of rich insights were identified on methods for design that promote the reflection on materialistic behaviour; focusing predominantly on experiences and identity management. These insights are applied and presented in three service design concepts that were explored in a participatory workshop.
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Chapter I
UNDERSTANDING MATERIALISM
“You buy furniture. You tell yourself, this is the last sofa I will ever need in my life. Buy the sofa, then for a couple years you’re satisfied that no matter what goes wrong, at least you’ve got your sofa issue handled. Then the right set of dishes. Then the perfect bed. The drapes. The rug. Then you’re trapped in your lovely nest, and the things you used to own, now they own you.” ~ Chuck Palahniuk (American freelance Journalist, Satirist and Novelist. b.1961)

1.1 Background

Individuals are becoming more concerned with the increasing complexities associated to the planet’s climate change problem (Parry 2007). The industrial age created the machine that drives individuals today to undesirable amounts of consumption of products and services. This rate of consumption is climbing to concerning levels creating an enormous strain on our planet (Parry 2007). Therefore, we need to look at solutions that encourage the reduction of consumption and new ways of reducing CO2 emissions in environmental, social, and economical unsustainable ways of living. Current solutions in the technology and design perspective of sustainable living have focused on changing behaviour directly by promoting the benefits of living sustainable (e.g. reduction of waste, recycling, organic food intake, CO2 footprint calculations), or through social innovation towards lifestyle changes (e.g. building co-op communities, utility sharing - (www.sustainable-everyday.net), or focusing on the material use and process in manufacturing of products (www.storyofstuff.com). In Interaction Design, solutions in sustainability have focused primarily on the embedded material use of an object and understanding user attachment in building longevity, design-in-use, reducing ownership, or promoting cultural or societal value changes through the use of digital artefacts (Mankoff et. al. 2007, Wakkary & Tanenbaum 2009, Blevis 2007, Pierce 2009, Zimmerman 2009). It has been proven, however, that a major catalyst of consumption is related to our materialistic values and behaviour. On review of existing work in this area, there appears to be little done on designs for solutions that focus on materialism and its relation to consumption; particularly in the domain of Interaction Design. This research looks deeper into the sustainable issues of consumption by exploring further the social influences that drive the materialistic behaviours for developing Interaction Design solutions that promote sustainable behaviour and lifestyles.

1.1.1 Motivation

materialism: noun a tendency to consider material possessions and physical comfort as more important than spiritual values. (Definition Oxford Dictionary)

The position to approach this research topic was due to personal reasons. After moving from Australia, to Sweden, it was soon realised how materialistic
one can be and how the things you own, creates, and helps maintain your identities and belonging amongst peers. The fact I had moved from one country to another, restricted my ability to move most items. It forced me to detach from these items. At first, this was quite distressing, however overtime I soon came to realise how liberated I was to not be surrounded by them. It made me reflect on my materialism. It also became clear the importance of new surroundings, and experiences in helping shape this mindset. Therefore, this created motivation to explore the possibilities of achieving this form of behavioural reflection in the space of Interaction Design.

1.1.2 Materialism in Society

“So the task for sustainability - indeed, for any society - is to devise mechanisms that prevent this undermining of well-being and preserve the balance between present desires and future needs” ~(Gardner & Prugh 2008, pg. 56)

It is clear that our patterns of consumption need to change in order to live a more fulfilling life that is sustainable. However, to make such dramatic changes, physical infrastructures, institutions, and social structures play the most important role where all sections of society must take on the challenge. It has been argued that in providing a focus on social behaviour for sustainable lifestyles essentially two things are required: policies that support the infrastructure of sustainability, and establishing institutional frameworks that send consistent signals to businesses and consumers about sustainable consumption.

However, it has been noted that to be sustainable does not happen naturally for humans (Dawkins 2001). It has been advocated that to promote and maintain a sustainable society that, in the end, will consume less, we must look further into the balance between selfish and cooperative behaviours and their dependence on the society they occur in (Gardner & Prugh 2008). The extent of selfishness in people depends critically on their social conditions. Therefore, the major task for sustainability is about the choices being made at an individual and social levels, that balance both the present desires and future needs; reducing the outcomes of short-term gratification. It is essential that this change focus on commitment and social behaviour as opposed to self-interest, as individuals are too exposed to the social constructs; such as social signals and status.

Materialism is a concept that does not play an even grounding. Individuals are more or less materialistic based on numerous elements. Research goes beyond the immediate fact that humans consume not only to satisfy physical or physiological needs but to also create or maintain their sense of identity (Jenkins, 2004). In addition, material things are used to form alliances to social groups and to distinguish self from others. It is the power of material things that promote conversations about status, identity, social cohesion, and the pursuit of personal and cultural meaning (Dittmar 1992), the enhancement of
societal progress and lifestyle. It is therefore conceived that by consuming, or owning more things, will lead to greater happiness in life. In research areas such as consumer psychology, marketing, and motivation research have created knowledge in helping retailers, marketers, and advertising agencies sell more products that consumers will buy. However, it has been clearly demonstrated and researched that the more individuals consume, and the more attachment they place on things, the less likely they are to achieve their idealistic form of happiness (Christopher 2005, Sirgy 1998).

1.1.3 Consume less, right?

It has been proposed that to reduce our consuming nature individuals must live simpler lives, by engaging in activities that are purposive and materiality light (Gardner & Prugh 2008). The likes of Mahatma Gandhi, and psychologist Mihaly Csikszentmihaly suggest that an individuals life can be more fulfilling if they engage in activities that are purposive and materiality light. Kasser (2002, pg103-104) points out to that way to decrease materialistic ways is to “...Try to take these activities [materialistic] out of your life for a month and observe what happens...By engaging in new, intrinsically oriented behaviours, two important things are likely to happen. First, you will have more experiences that satisfy your needs. Thus your happiness and well-being should rise. Second, by having such experiences, you will probably see the value of intrinsic pursuits....importance of materialism should being to vane". However, it is clear that despite the best interests of the individuals creating and maintaining initiatives that promote these lifestyle changes, there are difficulties in convincing a larger portion of their value in society and benefits of sustainable living. Therefore, we need to understand the relationship between society and materialism and how we can design for these elements.

1.1.4 Self, Impressions, and Products

“Discovering identity through product consumption has been one of the major forces that has driven unsustainable behaviour in the Western world” (Wong, 2009).

If we turn to consumer research, the role of products in their position of possessing symbolic features, and the consumption of these products, depends more on the social meaning rather than functionality (Solomon 1983). Most of this research has been influenced from the argument that is employed in symbolic interactionism and social psychology, that consumers employ product symbolism to define social reality and to ensure that behaviours appropriate to that reality will ensue. Here product symbolism is absorbed by the social actor for the purpose of defining behaviour patterns associated to social roles. It is concluded in this knowledge of research, that the consumer often relies on social information embedded in products to shape self-image and to maximise the quality of role performance.
Erving Goffman’s (Goffman 1959) Impression Management theory is an ideal choice in understanding this relationship. It elicits insights into understanding materialism from a social viewpoint. It analyses various relations to how individuals role play in their various social contexts and situations. This theory is imperative in the understanding of how individuals enhance their social identities and status through assumptions, settings, props, and scripts in a play metaphor. It explains the motivation behind complex human interactions and performances and advocates that individuals use a goal-directed attempt to influence others’ perceptions about oneself regarding an object (or product) by providing self-assessed beneficial information in social interactions. This theory is therefore ideal in forming an understanding and eliciting the social drivers to materialism. Solomon (1983) points at that impression management theorems concentrate on the strategic goal of the objects purpose and their “communication to others in a posteriori sense”. Solomon (1983) looks deeper into products used as social stimuli that infers behaviour. Here is a diagram of the relationship between products and consumers as discussed by Solomon (1983).

![Diagram: Proposed Bi-Directional Relationship between Products and Consumers](image)

**FIGURE: Solomon 1983**

Solomon (1983) concludes the following when expressing the relationship of consumer products, people and social behaviour:

1. The symbolism embedded in many products is the primary reason for their purchase and use.

2. Individuals are evaluated and placed in a social nexus to a significant degree by the products which surround them.

3. The reflexive evaluation construct implies that the product symbolism which is instrumental in assigning meaning to others is also used by individuals to assign social identity to themselves.

4. The outcome of this self-definition process guides behaviour via the script that is evoked. This script is usually results in mindless behaviour defined by the social product and the role it conceives.

5. Symbolic consumption can exert an a priori effect on role definition and interaction, especially in situations where internalised behavioural responses are lacking.
1.1.5 Symbolism

“[a product] has meaning or sign-value: human-beings are drawn to particular product styles and not to others, and use a product to express the lifestyle to which they (want to) belong.” (Verbeek 2005, pg.204)

In addition, product attachment research and theories plays an important role in understanding how people relate to everyday products in their environments. This area has been a huge influence in industrial design in the design of enduring products. Odom et al. (2005) have completed recent research analysing existing theories in psychology and philosophy of technology focused on Interaction Design in an attempt to promote the design of more enduring products towards longevity. One of the more modern design thinkers in the domain of human and object relationships is Peter-Paul Verbeck. Odom et. al (2005) describes his work as modern and more design oriented approach using existing philosophical assumptions in understanding the relations between people and objects, and therefore appropriate in using as a overview for grounding in the understand and theorising of product attachment in this research.

In understanding object attachment further for this research and for reasoning in the empirical studies, Odom (2005) discusses Verbeek (2005) emphasises on material qualities over symbolism and function as explanation and prediction of durable relationships between people and things; its ability to direct attention towards the material object itself. Verbeek writes: “The bond that arises between people and products will have to concern the concrete object that is present in the here and now, and not only the meaning or symbols it carries or the functions it fulfills. If someone’s attachment to an object is only based on the way it expresses his or her lifestyle, then the object is vulnerable to being replaced by any other one with the same sign characteristics. The same holds true if the attraction is based only on the functionality of products... ” (Verbeeck 2005, pg. 225).

1.1.6 Sustainable Interaction Design

Interaction Design is at the forefront of social innovation that brings together technology and design for empowering sustainable lifestyles. It is therefore imperative that designing for sustainability is an important area of research in the field. Furthermore, designing for sustainability is only recent in the portfolio of Interaction Design research (Blevis 2007) and has large potential for further exploration and growth.

The focus currently in Interaction Design can be placed under two broad headings (Mankoff et. al. 2007):
material design of products should consider such things as energy usage, device re-use, enable sharing of devices or energy resources, and the reduction of waste. Longevity, in this case, is an important facet of creating sustainable designs where new methods should be focused on encouraging attachment to products in more alluring ways.

designing for sustainable lifestyles and decisions through influencing potential users, through technology, to focus more on sustainable. Focusing on developing design solutions that focus primarily on cultural change or enabling a social movement for sustainability to develop.

Furthermore, there appears to be a strong focus (Wakkary & Tanenbaum 2009) on advocating that a user can be an everyday designer and we must look at design-in-use which in turn links to the concept of designing for longevity; reducing consumption through attachment creation.

In addition, Sustainable Interaction Design method (Blevis 2007) primarily focuses on the material effects of design and considers “how the use of digital material actually prompts the use of physical ones and motivates behaviours that affect sustainability one way or another as part of the design process” (Blevis 2007). This method has touched lightly on designing to remove materialistic behaviour by focusing on the concept of de-coupling ownership and identity. However, it does not explore deeply the importance of social influences and perception of self in these areas.

1.1.7 Materialism and Interaction Design

Direct research on materialism and the role it plays in the consumption and use of everyday things in Interaction Design is very limited. (Pierce 2009) has researched aspects of designing for “material awareness”, which is “concerned with designing everyday useful products that occasionally present themselves to us in ways that encourage us to consider them more thoughtfully” (Pierce 2009). Further research has been done in product attachment theory and its relation to the user and the person they desire to be in product use (Zimmerman 2009). The research performed here focuses on role enhancement in identity, with no direct link to materialistic values and societal influences, focusing heavily on the physical form of the object. Therefore, this further reinforces the lack of research on materialism and the layers that exists between the product, individual and the societal influences that encourage it.
1.1.8 “Use, not own” Strategy

“Designers anticipate the use people will make of the product they are designing and, because of that, products contain implicit “manuals.” Things co-shape the use that is made of them: they define relations between people, and distribute responsibilities between people and things.”

(Verbeek 1998, pg. 34)

Designers themselves are to blame for the influx of superficial products that are designed to enhance the senses in ways that promote materialism and have short lifespans. As pointed out earlier, to become more sustainable we must firstly extend the lifespan of products (section 1.1.6). In addition, moving from a product to service economy, concentrating on my eco-designs, and recycling parts in the creation of a product (Verbeck 1998).

“Use, not own” strategy, or sharing, has emerged in recent years as a proponent of the service oriented paradigm shift in design, where more and more examples of this approach to design are becoming more visible and integrated into our lifestyles.

Social sharing is a major behavioural shift, the most important so far of the 21st century. And the information we choose to share with friends, co-workers and even strangers, is re-defining the idea of what's private and public before our very eyes.

Examples of sharing are discussed further in the related work (section 1.3.1).
1.2 Problem Framing

1.2.1 Hypothesis

In our materialistic world we are encouraged to consume more and more, while at the same time discouraged to act in sustainable ways. This discouragement can be linked to societal influences; the fight to be socially accepted through the impressions we wish to portray in a way that best fits, what we believe, our perception of self. Therefore, designers need to think beyond the basic fundamentals of manufacturing processes, infrastructure, system and policy changes to influence behaviour change. It is proposed that we need to approach designing for sustainability in ways that influence people’s behaviour through understanding more the societal influences and perception of self, and how this promotes the act of materialism in order to design for reflection towards sustainable behaviour. Thus, moving away from designs focused on the material performance of objects and their influence on object attachment.

1.2.2 Research Questions

These research questions have been formulated to encourage exploratory research on the topic of materialism in the domain of Interaction Design:

1. How can we design for reflection on our materialistic values and behaviours that are embedded in the things that we own?

2. How can we embed these understandings in Interaction Design based solutions, that influence and promote sustainable materialism?
1.3 Related Work

This section presents related work that has been achieved. Most examples in the field of Interaction Design are related primarily towards focusing on the object’s performative properties. They do not take into consideration specifics about the object’s social context and meaning that help enhance the attachment and create materialistic behaviours in individuals and possible implementation of reflective properties on these values. In addition, a selection of work that extend into the realms of social innovation and collaborative services are presented that touch on “use, not own”, as opposed to ownership.

In addition to this section, related work are presented in the concept generation chapter; specific to each concept.

1.3.1 The rise of sharing services

Sharing, “use, not own” examples are popping up everywhere. It appears to be one of the most promising, or clearest, approaches when dealing with sustainability issues. The more we share, the less likely we will over-consume on unnecessary items that may be used for limited times of their lifespan. Therefore, the sharing approach can be seen as a potential direction when it comes to tackling materialism. However, as we will discover in the studies chapter, this direction requires more insight from an Interaction Design perspective on how to detach individuals from the materialistic ownership driven ways.

An overview of sharing has focused on various community based initiatives: clothing swaps, car-sharing (www.zipcar.com, www.streetcar.co.uk), community gardening, co-housing (Meroni 2007), giving things away (www.freecycle.com), and loaning systems for 3rd world countries (www.kiva.com). Sharing is also prominent in the media world: creative commons, open source software, and wikipedia are key examples here.

One author (McDermott 2009) points out the gap in existing sharing solutions “Making it more difficult is that some of the things that are really useful only get used every so often... You can now easily rent cars by the hour, and more cities are establishing bike share programs, but programs to rent smaller items aren’t as prominent, nor as convenient.”

Furthermore, it has been argued that Generation Y (1982-1995) is more likely to make a shareable world come to fruition. They grew up on the internet and therefore more likely to bring its values and practices into the real world. In some cases they have been labelled Generation G (for generous) (Gorenflo 2010), and are creating a cultural shift where sharing is the new giving. This is a positive shift for influencing future generations.
If we look at sharing objects in particular, two promising services have been
developed quite recently. These services can be seen as an ideal approach to
enable individuals to share more, and therefore detach themselves from the
objects they own. Both these services are existing examples of how the internet
can help facilitate social sharing using a local location based community. They
also form a basis for further exploration in this area from the perspective of
materialistic behaviour reflection.

**FIGURE: Sharing services online**

1.3.1.1 ShareSomeSugar.com

Very simple and elegantly designed interface that has two primary functions
to share or borrow stuff. It is location and request based. It allows individuals
to send requests on items they wish to borrow. It provides simple information
regarding the object and allows the borrower to provide payment for their
sharing.

1.3.1.2 Neighborgoods.com

Another neighbourhood based sharing services. You can make friends with
individuals in the network and enable them to borrow your things from a
simple request. Very limited in feedback information.

1.3.2 Critical design perspective

From a critical design perspective these two examples provide insight into
what has been done and pave way as potential inspiration for this research.
They both have properties of “use, not own”, however informed using critical
expression. The 2nd example, rent luxury, is not intended to be critical, how-
ever, by nature, it displays a high critical position on the individuals that buy
luxury items and the purpose of use.

1.3.2.1 Exchange machine
From a critical design angle, the exchange machine (Lindström 2005) explores how we can use exchange as an anonymous but intimate form of interaction between strangers in public or semipublic spaces. “It is up to the participant to decide what they want to exchange with what. This openness allows the participants to play with the system and others who participate. Some have used the platform to get things they need, some to express themselves, some to get rid of things and some to create new games within the system.”

This example provides insight into the possibilities of exchange and the link to sharing objects between strangers and their willingness to detach themselves from their items.

![FIGURE: Exchange machine](image)

**1.3.2.2 Rent luxury**

Bag-borrow-or-steal ([www.bagborroworsteal.com](http://www.bagborroworsteal.com)) is a high-end “luxury” accessory item borrowing service. It enables members of the service to “rent” designer items such as handbags, watches, and clothes. This is a unique service that turns the table on ownership from a very clear materialistic perspective - luxury items are definitely a high status driven item. It still enables individuals to “show off” or be “impressionable”, however it focuses on techniques of “use, not own” to keep these values in a sustainable approach; reducing consumption.
1.3.3 Reflective design perspective

These examples focus heavily on reflective properties that can be examined from a material artefact perspective. They use reflective mechanisms that make the individual reflect on the object itself and its performative nature; thus potentially increasing longevity of use.

1.3.3.1 Personal inventories and longevity

Existing Interaction Design research (Odom 2009) in material awareness of objects has identified various reasons as to why some artefacts endure and attain sustainable longevity of use, while others are discarded without thought. This study focuses directly on the various relationship aspects of domestic objects and strictly on what values can be used to design for longevity; not from a reflective viewpoint on ownership and materialism. However, the study elicits compelling insights into these relationships and touches on the importance of history, augmenting value, engagement, and perceived durability as key to longevity, and the potential of these elements from a reflective standpoint.
Pierce (2009) has researched how to design for material awareness from an Interaction Design perspective. This research is focused on designing for everyday products that occasionally present themselves to us in ways that encourage us to consider them more thoughtfully. It looks at how we can design to promote reflection on, and attachment to, everyday things. Here the researcher discusses examples of amplifying the history of use by placing counters on objects (right), and animating objects to (mis)use their functionality, to focus on their needs and desires. The arguments presented in this research are towards the material aspects, or performative nature of objects, as opposed to the social influences outlined in the background literature from a materialistic perspective (section 1.1). However, these findings are a base for influencing potential concepts later on in this research.
Chapter II
APPROACH
2.1 DESIGN APPROACH

Designing in the sustainability and materialism domain requires an approach that is both empirical and theoretical. The theoretical component has been explored in the background literature (section 1.1) and related work (section 1.3). The remaining approach involved various empirical studies to understand the problem space, with ethnographical studies (interviews, shadowing, observations), and experimental interventions. These studies helped form a base for understanding materialistic behaviours, from a interaction designer perspective, to elicit the social drivers and other associated elements as design material for concept generation.

This section explains the theories, methods, and processes used in the design approach within this research.
2.2 DESIGN THEORIES

The following design theories were influential during particular stages of the design process. They also formed a grounding for understanding elements required to design the studies and elicit findings for the concept generation stage.

Each theory is outlined and discussed with regards to its use and influence in the design process.

2.2.1 Participatory Design

Participatory Design (PD) is an approach that includes the users of the design within the design process. Here, the user is directly involved in the development of the design and provides inputs throughout the process. It is essentially used for designs that require strong focus on user needs, and is especially appropriate for environmental considerations and context based problems (Schuler & Namioka 2003).

In this research it was appropriate to use this approach throughout the entire design process to elicit participant elements; particularly eliciting the deep insights into materialism. This research involved heavily the use of participants to fully explore the problem space, and therefore the PD approach was used considerably. The PD approach included user involvement in the studies, idea generation, and in concept refinement stages.

2.2.2 Reflective Design

Reflective Design essentially looks towards exposing unconscious assumption we may make as designers regarding our designs. It is grounded from critical theory; which states that reasoning about the world should be developed through an individual viewpoint rather than an external body (Sengers et al. 2005). In definition, reflective design is “exposing unconscious aspects of experience to conscious awareness, thereby making them available for conscious choice.” (Sengers et al. 2005). In essence, it helps experience the world in a fundamentally different way. It helps break down the barriers of prior assumptions of being and doing in the world.

People adapt to the opportunities and constraints that we design into our products and therefore this influences everyday practices, feelings, identity and sense of self; in unanticipated ways. Therefore, influence from existing methods of reflective design were used in ways to elicit the fundamentally held values and behaviours of individuals which is embedded deeply in materialism. Several existing methods in the reflective design set were explored abstractly, or “played” with, during the concept generation stage: value-
sensitive design (Friedman. et. al. 2006), and ludic design (Gaver. et. al. 2004). Furthermore, reflection is key in this research and has been actively used in the formulation of the empirical study designs, as discussed in stage 1 studies (section 3.1).

2.2.3 Critical Design

In the realm of reflective design, critical design focuses on critical theory as the approach to design. It was coined by Anthony Dunne and Fiona Raby (Dunne & Raby 2001), and traditionally embodies critique on consumer culture. The artefact itself and the process of designing the artefact is used to cause reflection on existing values, mores, and practices in a culture. Here, it challenges the user, or audiences, preconceptions, and provokes new ways of thinking about the object, its use, and the surrounding environment. In other reflective design approaches, the design is intended to be used to enforce values and behavioural reflection that will hopefully be maintained in the long run. Critical design tends to stem more from an artistic standpoint.

In this research, critical design has been explored as an alternative for concept generation. Due to the nature of materialism and the research itself, deep value and behavioural elements are intertwined in social constructs and environments. It is for this reason that critical design was considered an option in eliciting those held values and behaviours regarding materialism, and therefore bringing them to the forefront for reflection. However, even though the process and concepts themselves are not critical in nature, critical design was considered in the concept generation stage during provocation methods. It was not used as a primary method, or focus, in the studies, due to the provoking, and somewhat artistic nature a design of such would elicit.

2.2.4 Service Design

In this research, a position was taken from the start to focus the concept generation on services as opposed to an artefact design. This decision was due to two reasons:

- Very nature of materialism is positioned within object belonging and attachment. To create an artefact that enables individuals to reflect on these behaviours is contradicting, in part, to the very essence that this research is attempting to achieve towards reflection on artefact ownership.

- Services now represent between sixty and seventy percent of the gross domestic product of developed nations. It is due to the pressure from a rapidly changing market, social innovation and current focus towards predominantly service-based economies, product-service systems, and design teaching. It has been argued that there is a shift towards a service and flow economy (Boulanger 2008 & Thackara 2005). Here we are changing the relation-
ship between producer and the consumer and shifting from the economy of goods and services to services and flows.

Service design defined as (Erlhoff & Marshall 2008):

“Service design addresses the functionality and form of services from the perspective of clients [users]. Service designers visualize, formulate, and choreograph solutions to problems that do not necessarily exist today; they observe and interpret requirements and behavioural patterns and transform them into possible future services. This process applies explorative, generative, and evaluative design approaches, and the restructuring of existing services is as much a challenge in service design as the development of innovative new services.”

Therefore, the approach to designing for services is ideal for the design of possible future services in the space of reflection on materialism. Service design can help in understanding these elements, and the possibilities in envisioning new influential designs that incorporate existing, while at the same time encouraging new, behaviours through new experiences the user is actively involved in.

Various solutions were used as inspiration in the service design domain; particularly focusing on the pursuit to influence people into more sustainable lifestyles, discussed in the related work (section 1.3).
2.3 DESIGN PROCESS

Above is a diagram of the overall design process; the various components and their relationship. The process itself was, of course, not linear as displayed. However, the overall feel and major stepping stones formulate a process of this structure. The methods/tools used in the process are discussed briefly throughout this section.

2.3.1 Ethnography

It is imperative that to understand specific settings and activities that exist in the real world the designer must engage in it from a firsthand perspective. Ethnography methods enable the designer to do just that. It focuses on experiencing the world from natural settings; as generally people have limited ability to describe what they do and how they do it without access to these settings and, in some cases, can only be experienced through observation. Furthermore, it is holistic in its approach, allowing the designer to understand activities within the space they are performed and not disconnected from various other influences within that context. Overall, it is descriptive in nature and provides contextual and cultural insight into the researched specimen. (Blomberg et. al 2002).
It is an essential method to understand the inner workings of materialistic held behaviours in this research. This is discussed further in the studies chapter (section 3.1).

2.3.2 Brainstorming

Brainstorming is important in generating new ideas and directions in the creative process. The method was used throughout the research from initial literature review, empirical study conduction, result analyses, concept generation, and various other points. Various types of brainstorming (provocations, word relationships, theme based) were conducted with different materials (post-its, paper, whiteboard, book).

FIGURE: Brainstorming examples from the research

2.3.3 Workshop

As part of the participatory design approach a workshop is one in which designers and participants (users) work together to design or provide feedback on possible solutions. It gives participants a voice in the design process, which in turn, increases the probability of a usable concept that fits with the user’s needs.

The workshop was used in this study as a discussion platform for concept feedback and generation. This is discussed further in the concept generation chapter (section 4.1.1).
2.3.4 Cultural Probes

Cultural probing is a design-led method for understanding users that stresses empathy and engagement. Probes are collections of tasks meant to elicit inspirational responses from people. Its intentions are not to gather comprehensive data about individuals, but “fragmentary clues” about their lives and thoughts. The design method is used in inspiring design ideas for technologies that could enrich people’s lives in new and pleasurable ways (Gaver et al. 2004).

Probing has advantages for several reasons: they use capturing artefacts (i.e. camera) to provide insight into participants lives, create biographical accounts, make the invisible visible, participants becomes the expert, and provides dialogue and conversation (Graham et. al 2007). Therefore, due to these elements, the method was perfect in capturing an understanding of materialism from the participants’ perspective as resource for design. Probes generate intensely personal and sympathetic accounts of a participant’s lives. The fragments of information captured are generally specific and personal, which acts as good starting points for discussion in interviews. In addition, they naturally enforce reflexivity - which is important for the reflective focus of this research - while provoking new perspectives on everyday life.
2.3.5 Use scenarios

Scenarios or story-boards were important in exploring the concepts developed throughout the research. A scenario is a story of a participant using a concept and its relative activities. It demonstrates a journey of use. The construction of scenarios is important in evoking reflection on the design. It embodies a partial view of the design, and therefore helps identify potential flaws for critique. It can be viewed that the scenario provides a mechanism for “soft” prototyping.

Scenarios are presented for each concept in the concept generation chapter.
2.3.6 Interviews

Blomberg et al (2002) states that interviews can be classified into three groupings: unstructured, semistructured and structured. In this research, an unstructured interview was used to semistructured interviewing techniques were used. A structured interview is restrictive in the variety of responses and topics explored. It increases the chances of missing critical pieces of information (Blomberg et. al 2002), and may bias the interview into pushing opinions and thoughts onto the interviewee. Therefore, the unstructured approach was important in forming an understanding of what questions were useful and the approach taken in eliciting the various elements associated to the domain of research.

2.3.7 Interventions

Design interventions help provoke new perspectives and insights into everyday activities. They are very useful in exploring an area in new light, by disrupting the design space in new ways. This method can result in inspirational design material and form a test bed in the “wild”. Interventions are designed to encourage people to think critically about how they interplay with the environment and the people around them.

They were used extensively in stage II studies (section 3.3).

2.3.8 Blogging

Throughout the research a blog was used to record happenings and to start potential discussions on findings and directions. It was a way of jotting down thoughts regarding the research and provided classmates insights into the research. The blog can be viewed at www.aaronmullane.com/masters_blog

FIGURE: Screenshot of thesis blog
Chapter III
STUDIES
3.1 STAGE I: EXPLORING MATERIALISM

The first stage of the empirical studies concentrated on understanding the aspects of materialism as the designer. It was important to get a first-hand understanding of the elements embedded in the values and behaviours of individuals, and how this intersects with current lifestyles. The findings of this study informed stage II empirical studies and design material, they were important in the development of the themes from stage I + II findings (section 3.4).

3.1.1 Why attempt to understand materialism in context?

To design for reflection on materialism, it is necessary to understand it from a contextual perspective, the fundamental values, and behaviours that individuals possess. The reasoning behind materialistic ways of doing and being, the drivers, types of materialistic objects, and the context in which materialism plays. It was important to explore this domain, to form a designer understanding and perspective. The findings provided inspiration and helped in the ideation stage.

The purpose of the initial study was to evaluate materialistic nature of individuals. This includes the connection they have with general items (objects, people, clothing, food, accessories etc...). It explored and observed the items that individuals possess, the importance, value, and for what reasons these items have entered their lives. The study focus is to expose elements of materialism, within the ownership of these objects, and the connection to various other driving forces of their acquisition, such as: identity, social status, quality of life, perception of self; elements discussed in the background literature (section 1.1.4). In addition, it observed qualities associated to owning an object, as opposed to sharing; attempting to elicit elements that are associated to objects that are shared.

3.1.2 Study Design

This stage of empirical studies was designed in three parts with a strong ethnography approach (section 2.3.1): probing, semi-structured interviews, and post-reflection interviews. It was important to have a strong focus on reflection throughout this stage, due to the embedded nature of values and behaviours. Each study is discussed in detail in the following sections.
3.1.3 Participants

It was decided that to understand materialism the studies required individuals that covered the spectrum of low to high materialistic values, low to high salary, and belong in different social groups - due to the social influences that exist; as discussed in the background literature (section 1.1). Therefore, participants were selected around these differences. It was partially biased, however availability of individuals and time constraint were an influence.

Participants were a mix of both male and female, mid to late 20s, 30s and were in the student, academic, and professional categories. All participants were used throughout the empirical studies in this research. It was important to use the same participants due to their background knowledge of the study and their influence in various stages.

Five (5) of the participants were involved in the first stage of studies.

An overview of participants’ occupation, interests, and favourite items are presented on the next page.
3.1.4 Design of “Things” Probes

Probes were given to participants to help elicit materialistic values and behaviours. The subject area of materialism is quite sensitive and complex from the various layers that form its existence. Therefore, the probe was designed to enable individuals to reflect on the things they owned and used in their lives - from daily, monthly to yearly basis. It was designed to create reflection on things without specifically addressing the concept of materialism. It was imperative that participants were not aware of the study purpose - as it may have biased the probe results from the pure fact that this particular topic area is foreseen, generally, in a negative light. It was also hoped that this approach would pave way for natural reflection and create new formed perspectives; making the invisible visible (discussed in section 2.3.4).

“Things”. It was apparent that in designing the probe the use of the word “object” created a strong traditional industrial design form association, and discounted items that may be used for identity and social purposes; particularly fashion. In addition, the test probe provided insight into the title “Why do you own that thing?”. The first participant indicated that the use of the word “own” and “why” restricted the study and provoked the participant to think about the use of the thing. Therefore, it was clear that more open words were to be considered in the design of the probe. “Things” was used in describing the study, probe design, and the semi-structured interviews. “Things” was also important in questions concerning sharing.

The inspiration of the probe design came from numerous literature on materialism and object usage. It was important to draw attention to things of use or ownership, elicit their usage, and also make the individual think about its meaning and association to them in light of any social aspects. It was important that participants took photos of the things they wished to record on the probe. This provided more visual insight and was used as a discussion item in the semi-structured interviews.

The probe came in the form of a landscape booklet; perfect to be placed in your pocket for usage in all given social situations. The participants were asked to have the booklet on them at all times and prompted them to take photos of things that they wish to record based on their perceived usage (both owned or shared with others). Various questions were asked on each probe page that helped the participant think about their reasoning for choosing the object; these questions were formulated from the literature review on materialism and the association to social influences. In addition, it was felt that by providing a option that stated “wished you owned” provokes thoughts on why they wished to own a particular thing; eliciting the urge of possible associations to social visibility and identity classification within their social context(s).
Most participants held the booklet for at least 7 days. This provided enough time for them to experience several social situations and contexts. It also enabled them to reflect on things around them and their choice for selection in the study.

### 3.1.5 Design of semi-structured interviews

In addition to the probes, it was important to use interviewing as the method in eliciting the meaning associated to the probes usage and completion. Interviews are essential in understanding a participant’s perspective (discussed in section 2.3.6). The protocol of interview was quite loose, and the probes feed into the types of questions that were important to ask.

The types of questions asked, before the concept of materialism was discussed or encountered, ranged from the importance of the object (thing), why do they own/use it, how did they come about owning it, the decision to purchase it (if purchased), social visibility importance, and if the thing had been shared with someone.

The unstructured interviewing technique provided the ability to move the interview to a particular topic of interest, materialism, which then enabled probing deeper into the underlying thoughts from the participant’s perspective. The interview questions were designed to sway the interview in the direction towards eliciting the reasons why an individual was more inept to a particular thing; that may have association of status or identity traits. After several attempts at probing deep into the results of the probe, the discussion for all participants broke out into a negative tone regarding materialism. Generally the questions that elicited this type of behaviour focused on the social influences to their likes or dislikes for particular things, “I am not materialistic” one participant declared, without even a single mention of the word, or any relation to the word itself. As (Blomberg, 2003) points out, interviewing is an art, and prior knowledge in the skill and theory based understanding of the domain proved valuable in performing in a way that elicited data that was important for this study.
3.1.6 Design of reflection interview on “Things”

After the initial probing and semi-structured interview, the participants were approached again to gather more insight into the reflection process they may have undertaken since the last meeting. It was decided not to tell the participants upon completion of the first interview that they would be asked for further feedback regarding their reflection. Each participant was given a few days to a week before the next meeting was scheduled. This gave enough time for participants to gather their thoughts on any insights into what was discussed in the previous interview and further insights into their own materialistic values and behaviours.

This was a simple short unstructured interview to elicit any further reflection and insights.
3.2 STAGE I: FINDINGS

This section details the findings from the first stage of the empirical studies. Due to the structure of the first stage, the findings have been discussed into two (2) sections: probing and semi-structured interview evaluation, and post-reflection interview findings. The findings have been further refined under appropriate sub-headings for key points and summarisation purposes.

3.2.1 Probing and semi-structured interview findings

The following findings have been grouped into associate headings for commonality analysis and readability reasons.

3.2.1.1 Deep memories create association

Most items elicited in the study were of meaningful value with a strong focus on socially visible things that were more an indication of memory as opposed to any social elements of choice.

A participant selected items mainly of strong meaningful value; where here meaning represented a strong correlation to a loved one or memory. For another participant brands of things were important, especially ones that exceeded quality and had memory association.

Several participants questioned why they still had particular objects. Most of the objects questioned were of some meaning (i.e. memories to grandparent), and in reflection, had no reason to be still visible in their home. These objects, however, were gifts given by others and were not related to their own purchasing patterns.
These items were discounted as creating any form of materialism in this study.

3.2.1.2 Things used to achieve

There appeared to be an interesting mix of things that help some participants (i) gain a thing for a particular desire and to (ii) maintain who they really want to be.

One participant chose a castle (or mansion) as the thing the participant wished they owned. Reasoning was aligned to the fact that it was the finest one could achieve and would make them feel that they had reached a particular level of status in their life. When asked about status, it was noted that you will always climb for the highest and you will most likely never stop. The participant became aware of the desire for things for status, highlighting that the car is used purely for the fact of showing off - even though the bus is adequate to get to and from work.

For another, achievement desire was related to the job, where the Netbook was used as the item of choice. It was hoped that this thing would help secure the participants position in the job market when seen at various networking events, or even at an interview.

One participant had various items that were clearly visible in the home as a means of social gratification. “it is all about achievement”...“it is showing off!”. It was evident that achievement was associated to “showing off” or maintaining a particular status. The participant was clear in the choice of words used to describe this by such phrases as “climbing humanity”. It has been preprogrammed in society that particular things need to be achieved that essentially highlight success.

3.2.1.3 Physical pleasure over digital

In some cases, items that were also available in digital form were required in physical for physical pleasure. For example, for one participant the purpose of obtaining a physical CD was for the feel and relation to the object purchasing that is not achievable through digital content.

3.2.1.4 Finding who they really are

A participant mentioned that some objects were used to remind them who they really were, as opposed to fighting, it appeared, an internal battle with who they should be. A lava lamp was used in this example to distinguish the individuals “geekiness” from the majority of objects visible in the apartment.

Another participant confirmed that uniqueness was key in purchasing items that had no direct meaning. It was used to break away from the “norm”, and to be part of a group that did not particular find the way of “other” individuals idealistic. “Rarity is related to quality”
Two participants were aware of the material world we live in and the effects this has on our social belonging and status. However, they had comfort in the fact that their social group was accepting and was not focused on the items that an individual owned. There is no desire to fit into anything which strives for material possession as a basis for belonging. “I have found a social group that accepts me”.

3.2.1.5 Mystery creates urge for object

The mystery of the thing attracted a participant, giving examples of buying second hand clothes. It provided comfort in the thought that the object had a story to tell and that it had meaning beyond the factory floor. This was evident from the choice of objects in the study for this participant. Most of the items had strong meaning in terms of things that were made by the participant or had some memory attachment. “Imagine if you could tap into an object memory, you would do it!? You would really do it...”

3.2.1.6 Internal identity fight

Belonging to social groups were important, “you are always a type” concluded a participant. This participant realised that they have an internal fight with where they “fit” within society. They indicated that they even purchase products that counteract their perceived fit. For example, an old coffee table was purchased that had a rustic feeling to it and quite obvious that it was second hand just to show, and remind, that this is not ideally the type of object they would usually purchase or use. In this case it was purposely going against their ideal purchase and sense of self. It was rebellious to oneself.

During the probing, the option of selecting “socially visible” as a category, made one participant very mindful on the reasoning as to why they parade particular things and this fight with identities.

Another participant was aware of the importance of not being considered judgmental or snoobish. He was aware of the perception of oneself on others. “…even though i might stress like someone that is ignorant, it is important that i am not -judgemental or snobbish”. There appeared to be an internal battle from an identity perspective when the participant highlighted that some objects that are perceived differently in various social contexts and this became unnerving. It seemed to be more unnerving if the object in question was carried by many individuals, “…at a network meeting, it was at the point of getting sick [iphone]. i was like hello, does anyone here like not have an iphone!”
3.2.1.7 Judging others through objects

This participant admitted to strongly judging individuals based on their possessions and in some cases made a visual of what someone would be like by viewing the things that they own through the windows of their home.

Furthermore, this participant wished they owned a pair of speakers that were being used by their colleague at work for their mac. It was then concluded that they did not want to become a “mac freak”. Here it was obvious that the perception of oneself was important in the realisation that by purchasing such an item would instantly place an attachment of such stigma. The participant concluded with “OMG I can’t live in a home that is an IKEA home, cause everyone else does that!”

3.2.1.8 Multiple group association = survival

Several participants expressed that they were fighting with their identities and the social fit, “...being part of more than one social group helps for survival”. The purchase of particular objects were highlighted clearly to this. These objects were used socially to show off some form of perception of oneself, and also used to remind the participant of their place and their clash of identities. For one participant, Manga collection of comic books were used for social fit reasons and were never used personally. There is a strong perception of each group an individual belongs to and how much association one wishes to make with that particular group: geek, professional, student, sustainable. Even evidence of awareness for group exclusion from potential actions were kept in mind during purchasing, “…My group, I would get rediced if I don’t buy ego milk”.

3.2.1.9 Sustainable identity is showing off and expensive!

Several participants concluded that sustainability activities in some cases had negative undertones. It appeared that the strive to be sustainable in their groups of belonging were a little pretentious in nature, or perceived to be expensive, and highlight unreasonable “showing off”, “ecological [sustainable] stuff is expensive and I don’t want to be part of that group [eco friendly geeky people]”. “...a friend that does the environment thing a lot but is a pretentious prick. The amount of recycling you do in a lifetime can be done in a factory in a day”

It was clear that these particular participants were comparing sustainability actions on an individual scale. They did not understand the hidden value of a collective contribution when it came to sustainability.

3.2.1.10 Thoughts on sharing and sustainability

There were a mix of results regarding discussions on sharing and sustainability. Several participants did state that sharing an object of meaning would lose its meaning after it was shared too many times. And that a majority of the sus-
tainability actions taken were not related to materiality as such (i.e. recycling etc.).

Some participants eluded at the fact that their lack of actions towards sustain-
ability is associated to visibility as a status enhancer. “I would be more sustain-
able if my actions were more visible” (section 1.1.4).

3.2.1.11 Thoughts on Materialism

When participants were asked about materialism in general similar comments
were made: that they were mindful of purchasing things, and that materialism
was connected to aspects of over-consumption, loving an object more than
people or feelings, and identity and social belonging. “Decadence and over-
consumption. ... having material things and loving them more, than people or feel-
ings.... that the material world comes first”, commented a participant.

3.2.2 Reflection interview findings

After several days, to a week, the participants were visited once again to ob-
tain insights into possible reflections on the initial stage of the study. These
insights were important to understand to what degree the study had made
individuals reflect more, or what elements were required, to keep such reflect-
on on an individual’s materialistic ways of being. The interview was very
open and discussion based. The findings are now presented in the following
section.

3.2.2.1 Awareness

One participant acknowledged that they usually think about materialism in
some form during purchases and believed they were already at a point that
the study intended on achieving.

Two participants indicated that the initial probing and interview made them
reflect greatly on materialism. They actually wanted to remove stuff from their
home. “never been asked why i own these things! you just accept it, you don’t ques-
tion it....” commented one of them. On face value one participant did indicate
that the study did provide some insight into his own materialism and the val-
ues that are held strongly for reasons towards purchasing items that may seem
to appear as materialistic and not out of needs.

Another participant became more aware of the common patterns in item selec-
tion. For example, then realised that when buying things that have been used,
it was nice to be part of the history of the item. It is the thought of being part
of the bigger picture in contributing to the item’s history.

The least materialistic out of the participants stated that it made her re-
evaluate why they owned particular objects and wanted to do some sort of
“spring clean” on items that they perceived to have no use anymore.
A Facebook message was even received from one participant that thanked myself for the studies ability to make the participant reflect on their materialistic habits!

3.2.2.2 Questioning belonging

One participant indicated they questioned their reasons for belonging to a group and why they owned particular items. It was pointed out that it is hard to change your ways after establishing yourself in a system that conditions your values and behaviours according to purchasing items, and the relation it may have to your social counterparts. “it would be nice to have something that reminded me of why do i need this...”

3.2.2.3 Human side to reflection

Several participants noted that any concept that touches on materialism needs to have a human-to-human interaction at some point to work if reflection is key. “Interacting with an object that causes reflection on materialism is quite difficult”, stated a participant.

3.2.2.4 Sharing as an experience

One participant indicated that he actually shares things as a recommendation - video games - this sharing is playing the game itself with the other person (an experience). Experience sharing was seen as the ideal. It made sharing more “real” and more satisfying.

Other participants indicated that they are willing to share items, however, it must be “realistic”. The situation, person you are sharing with, the type of object, logistics, and your attachment to the object play a major role in the sharing process.

3.2.3 Reflection on Stage I

The things individuals reflected on during the probing did point to more meaningful items. It was quite hard to make individuals reflect on things that they may have not liked, or were not considered as meaningful. Meaningful as a term is loosely defined and did create some issues during the probing exercise. Some participants found the questions that pointed specifically at “meaningful” quite unclear, due to definition. However, it was designed to be loosely defined in some regards to elicit various aspects of what “meaningful” may mean and the relationship it may have with materialism for this study. This was still quite difficult to analyse.

Items probed ranged from cars, to grandmother clocks, to a picture of a mansion. The images below give an indication of the types of items collected by
each participant. There were no distinct patterns formed from the items chosen.

![Selection of items participants photographed for the probes](image)

**FIGURE: Selection of items participants photographed for the probes**

3.2.3.1 The study design

The probes were extremely useful in the collection of things, their association and representation to the participant. It also clearly created the ability to open a participant’s perspective on their things and was a good tool for discussion creation.

The specific questions asked in each probe set was in some cases unclear when it came to questions regarding “meaning”. However, most participants used the questions as a form of reflection and prompting to think outside their traditional view of things. It created some form of open interpretation that, in the end, was appropriate for the deepness of understanding materialism, and the intended findings.

The semi-structured interview and reflection stages were excellent in eliciting elements that were embedded in the probe findings. It helped form connections and explore aspects that were not possible through probes (i.e. status association, identity and the general thoughts on materialism). It was also ideal in attaining direct answers to questions regarding sharing, ownership, and sustainability.

The location of the interviews was important in gathering context regarding the things in question. It was hard to get access to individuals homes or offices, where most things were identified in the probes, and therefore in some
cases was difficult to elicit exactly how the setting of their space influenced the potential selection of purchasing things. It was also important to be in context due to asking direct questions on things that were not listed in the probe results; such as if they would share a particular item.

3.2.3.2 The participants

Participants were excellent throughout the study. Some had greater perspective and reflection capabilities for this study, however this is an element that is extremely hard to judge and control.

One participant was extremely non-materialistic: “I don’t think I have ever created the need for upgrading myself”, was in reply to a question regarding why they did not feel the need to purchase things that were not of any meaningful or social use. The other participants were quite materialistic, which is quite subjective to analyse, and commented on their “materialistic ways”.

It would of been ideal to have participants from a broader background, lifestyle, social grouping, occupation and family structure. However, the study was restricted to the availability of these individuals.

3.2.3.3 To share, or not to share?

Sharing was seen in a positive light, however the objects that individuals are willing to share were scarce. Most participants listed items that were non-meaningful, used on an occasional basis, or fitted the “typical” shareable categories. In attempt to get participants to open up on sharing, they were prompted to reflect on various items within their location and the possibilities of sharing them. In surprise, items that were originally considered not shareable were in fact only classed that, besides strong meaning association, due to the lack of functionality (“it just sits there, why would someone want it?”), logistic reasons, and the thought of others potentially destroying their item.

3.2.3.4 “Oh, I am not materialistic!”

Participants were not aware of the purpose of the study, therefore as stated in the design of the study, the use of words such as Materialism were not a focus during the probing. This was to reduce any biased towards the things selected for discussion and to help form an understanding of the process of reflection - used for concept generation - onto the participant during and post the study.

However, it became apparent at some point in the interview that the objective of the study is to examine the participant’s materialistic values and behaviours. It was here that the interview entered a stage of deep discussion around the concept of materialism, social status, fit, and perception one has of themselves in the social world they belong.
The interview achieved this point due to various questions that were asked in association to the social visibility of particular objects and any insights that were displayed that linked desire over needs. Once this strong connection was established with the thing and its purpose, the participant then proceeded to pronounce their non-materialism. It must be noted that every participant announced that they were not materialistic. The concept of materialism is seen to be quite negative. All participants associated the term to a trait that extends to excess consumerism beyond needs. However, it was clear that this concept is not always in the conscious of all the participants and is something that requires a lot of effort to change perspectives on.

3.2.3.5 What inspired stage II?

The findings have indicated several interesting insights into each participant’s individual experiences and perception of materialism, and embedded values and behaviours. In summary the following appeared to be of great importance for this research and inspired, in part, the development of stage II interventions:

- sharing can be achieved if seen from a different angle. Add something to a shared item (i.e. an experience)?;

- fight between multiple identities is obvious and part of an individuals strive to be accepted;

- survival is helped by what we own;

- mystery of an object is alluring if it helps with identity.
3.3 STAGE II: INTERVENTIONS

After conducting the first stage of empirical studies, it was clear that interventions (discussed in 2.3.6) were required to gather insight into the potential of specific design directions and elements that were identified from the stage I findings. Participants had to be pushed outside their comfort zones, so to speak, and experience the more unconscious aspects of stage I in new ways. In doing this, the participant would become more aware of specific elements associated to the intervention, and therefore provide design material and inspiration for concept generation.

The findings of stage I indicated three distinct areas, and therefore intervention groups, for further empirical work:

**Share**: Elicit various elements regarding “sharing”. The intervention looks at the various types of sharing possible at a personal and group level by focusing on sharing things that are common to uncommon, personal, and experience based (discussed in 3.2.2.4, 3.2.1.10).

**Impressions**: Exploring the action of “showing off”. Interventions that push the boundaries, being provocative, to enable the participants to reflect and generate potential ideas from the act of “showing off” by removing or altering elements of their self-presentation/impression management of self and identities (discussed in 3.2.1.6, 3.2.1.7, & 3.2.1.9).

**Audit**: Provoke reflection on materialism from a “doing” perspective, as opposed to an observing/analytical, by hiding items of choice. This provides further insights into potential pure methods for reflecting on materialism (discussed in 3.2.2.1).

The design of each intervention set was considered based on the findings from stage I and the various learnings from literature background and examples. In addition, some options within each intervention group were created to provoke possible alternatives to feed the concept generation stage.

3.3.1 Participants

All interventions were completed by the participant over the course of a week. The participants were a mix of individuals from stage I and some others listed in the stage 1 participants overview (section 3.1.3). The selection of participants in this study were not as important; as the interventions were designed to be of greater help as design material to provoke possible concept directions.

A total of five (5) participant participated in this study.

3.3.2 Sharing
This intervention was designed to prompt participants to think outside their normal sharing habits. It asked them to think of new ways of sharing objects that were never thought of before, or experiences that they may have never shared.

The purpose of the intervention was to create awareness of the ability to share more and to experience more. It was also designed to enable participants to reflect on the reasons why they felt that particular objects did not have sharing properties.

It explored their perception of sharing and how this could be extended to incorporate the action of sharing more often, the types of objects that could be shared, and any other underlying elements that could be enhanced in the activity of sharing.

The participants were asked to do the following and always prompted to think “outside the box”:

**Select 1-3 things that they were willing to share with another individual or group of individuals.**

These things needed to fall under the categories of: *meaningful/personal thing, uncommon or common* in respect to objects of sharing qualities. The definition of an object with “sharing qualities” was left open and up to the participant to form.

Sharing of an experience that had never been shared before. It was also expressed to think of interesting scenarios of experience sharing.

It was made clear to the participants that the sharing did not necessarily require exchange on part of the individuals(s) they were sharing the thing or experience with. This was necessary to mention as the aspect of finding things to exchange in sharing was not the focus of this intervention. It was to capture the thoughts on sharing and to provoke new sharing experiences.

### 3.3.3 Sharing Intervention findings

The sharing intervention produced the following summarised findings:

#### 3.3.3.1 Personalised items harder to share

One participant attempted to share her mobile (a personal item) with their partner. It made them feel very uncomfortable due to the fact that it was a personalised item and one that was kept on them constantly during the day. “It is like sharing underwear”. Furthermore, the item itself extends beyond the physical form; as content is quite valuable in terms of creating or maintaining experiences and memories. The simcard of the phone was removed and swapped with their partner. This meant that existing messages and content
were still present in the phone, except for contact details. It initially made the participant feel uncomfortable due to the personal content inside, however the fact that they were also sharing the partner’s phone gave comfort that they had content that was quite personal. It was seen as a trade-off. In this case, the participant was not inclined to look into the content of the phone due to a break in privacy.

3.3.3.2 Enhance sharing by detaching memories

It was discussed how the sharing of a personal item became quite intrusive. This lead to a fascinating insight into robberies and a strong connection to the feelings that take place after noticing you are robbed, “...feels like you are standing in the rain naked!” It is in fact the instant separation from your items that creates a sense of displacement and instantly reflection on the meaning of these objects to oneself. As the participant stated “...it shows that the object is not that important!”. This made way for possible alternatives that focus in on the fact that to make an individual share we may need to look at alternative solutions that focus on the experience, or memories of an object instead of form; especially in light of objects that have more personal meaning to the user.

3.3.3.3 Damage and availability worries

Shared electronics with a friend - broadband modem - was completed by a participant. The modem was not used during the day. The participant had a strong connection to digital artefacts - such as ipods, macbook etc... It was stated when prompting to think of possible alternatives to sharing that they were afraid “...people may destroy them [sunglasses]” and the fact “I should be able to have them whenever I want”. These thoughts were also highlighted by another participant. This appears to be a strong deterrent to sharing things with other individuals; in addition to the emotional elements that one has with the object attachment. In contrast, the loss of meaning seemed to not be of importance to the likelihood of object sharing possibilities. Therefore, it was obvious that focus needed to be placed on providing comfort to the user that their objects were safe in the hands of another individual and provide evidence of how often you suddenly wish you had that particular item on you. It was also suggested that seasonal items were ideal for sharing; like outdoor furniture on balconies.

3.3.3.4 Sharing and the anonymous transaction

Many participants found it quite difficult to share objects due the inability to find the appropriate person and object. One participant believed that sharing is important and doable as long as there is some sort of exchange/transaction. A participant indicated that sharing secrets with a stranger was an option thought of during this intervention; as it has no threat to the participant. “sharing secret with a stranger is easier; chat room and confessions not putting much at stake”. Here it was the fact that the non-direct interaction with the
other individual created a sense of comfort and ease. They were hidden in the system or service provided.

### 3.3.3.5 Sharing as an experience transaction

The participant decided to share a performance experience at Folkets park. Run by a dance group, “contact improvisation” focused in on quiet interaction with other strangers on stage with music in the background. There are no rules with regards to the interaction, and individuals are open to experience movement and interaction in their own way. "it is something so uncommon and you have to go beyond all the walls and comfort zones, we are usually groomed in avoiding that behaviour". The experience of sharing such an activity prompted reflection on sharing with strangers more from an activity perspective. It made the participant reflect on what is required in the sharing of an object; the unexpectedness of what the object holds, its story, and the transaction that could come with it in other forms. Therefore, an experience would be an interesting layer to add to an object, indicated by the participant, ““sometimes, you can’t foresee what you are going to get back from sharing an object”

At first this comment was seen as a negative, however if we analyse it further the participant indicated that the mystery of getting something back was quite intriguing; if there is some confirmation that there will be a gain from the transaction in some form. “what we gain or get back is always something that benefits our identity, and if we don’t think it will benefit identity, i don’t think i will do it!”, commented the participant.

### 3.3.4 Impressions

The impressions set of interventions were designed to play on participants impression management performance and identity, as discussed in the literature (section 1.1) and findings from stage I (section 3.2.2). It was used to focus in on the very elements that create an individual’s perception of self, how they wish to be perceived in their social contexts, and a reflection on things that are used in that performance. In essence, it takes a slice into their identity. It exposes their potential vulnerability in these areas and therefore creates natural reflection on their actions and perceptions. Furthermore, it was felt that it was important to separate this intervention from focusing on objects and more on performance in context.

Participants were asked to select one or more of the interventions to conduct over the course of a week:

#### 3.3.4.1 Comfort Zone

Participant enters an area which is perceived to be not fitting to their “status-quo” (i.e. cafe, walk-down particular street, attend an event). The purpose of this intervention was to, as it states, push the participant out of their comfort
zone of social spaces they usually wish to be associated to or seen in. It was used to make them reflect on why they may have not seen themselves associated to that particular context or situation, and what was observed and felt pre, during, and after the event.

3.3.4.2 Removing

Participant was asked to hide various things from their home that “show off” something or portray a "social fit". This was done over a course of a week so participants have a chance to invite friends/visitors over. This was to examine the importance of things/objects that had some social visibility reasoning for their existence in the home, and an extension of what was elicited in the findings from Stage I (section 3.2.1.8, 3.2.1.2).

3.3.4.3 Dress up or down

Participant is asked to dress in a way that they usually dress based on the context or situation that they are in. This may be done by just changing a particular item of clothing, or accessory. It was used to interrogate the use of fashion in identity forming, as it was harder to elicit in previous studies.

3.3.4.4 Conflicting

Participant is asked to “show off” a thing that usually does not fit with the perceptions they wish to make on others. This intervention was focusing on being more obvious in the impressionable element of being. The intentions were to make participants reflect on what it felt like to draw attention to oneself and the existing methods they may use for attention grabbing.

Most participants did at least one of the interventions outlined above. Participants were asked to explore the various interventions in their minds before and after the week of intervention activities. This was to help formulate thoughts on possible insights into the types of interventions they would do, and the ones they would not. This helped feed into the design material.

3.3.5 Impressions intervention findings

The impressions interventions produced the following summarised findings:

Unfortunately participants found this group of interventions group hard to act on. It was due, mostly, to the uncomfortable nature of stepping outside the general way of acting in particular environments and situations. Furthermore, an attempt to discuss the potential of each intervention and how each participant may have felt in acting out resulted in little insight without doing.

3.3.5.1 Relaxing comfort zone is refreshing
One participant left the kitchen unclean while friends were over. It made them feel more relaxed, even though everyone noticed. The participant associates cleanliness and orderliness to his personality traits and wishes to keep that impression. There was no valid link here to the study.

Furthermore, when asked about the places the individual wishes to be seen in, he instantly responded with Lilla Torg, Malmö. It helps build an impression of oneself, where the style of individuals, prices and places creates a sense of who he is. He did not attempt to challenge this in the study by completing an intervention.

3.3.5.2 Forming new perspectives

As part of the “dress up and down” study, a participant changed how he dressed at work during casual Fridays. It became quite enlightening for him, with the use of more colours in his outfit. By adjusting this perception of oneself it provided a sense of freedom and individuality that prompted his manager to give him a “cuddle”. The participant mentioned that they would do activities like this more often in their daily lives and could see it extend beyond just outfits that were worn; into activities, or new experiences.

3.3.6 Audit

The final intervention was to ask participants to examine the things that they own and use in their homes, or other places of choice. It then asked them to audit these things. Why do you use a particular thing? Have a think. Remove them from their sight. Hide them. Take them away to ease temptation.

The purpose of this intervention was to elicit the reasoning as to why the thing was hidden, what feelings were created during the hiding of the thing, and post reflection. It was to explore a basic method of making an individual reflect on potential object usage and therefore the relation to materialism. This intervention is basic in nature, however it hoped to provide some clear insights into the types of things people perceive to be important or can hide in their home, and to explore the reactions that were given upon hiding.

Most participants found it hard to explore this intervention and in some cases it was required to point out objects/things that, as the researcher, perceived to be of hiding value. This was judgemental, however usually were identified by the pattern of objects: they appeared more than once in the space (multiple times), appeared to be dormant in use, or where clearly visibly on display (i.e. at the front entrance).

3.3.7 Audit intervention findings

The audit interventions produced the following summarised findings:
3.3.7.1 Moving creates natural reflection

As one participant put it, “The more you move, the less materialistic you become.”. It was stated that moving was particularly interesting as it made the individual reflect on their object attachments. The moving out makes you naturally select items that require removal from your life; in most cases.

3.3.7.2 Forced detachment creates reflection

One participant decided to not interact with their mobile phone during the course of 4 days. Here the phone was left at home during excursions outside. This created a sense of discomfort after realising how routine the use of the phone was and instant gratification in terms of being connected and sharing experiences that would occur during the day. However, after day 4, the intervention lead to relaxation and made natural reflection on the habit itself. It enabled the participant to concentrate on other things that may have been partially ignored in the past; for example riding the bus without spending half the time texting someone. Therefore, it opens the eyes of the individual into the world they are surrounded by.

3.3.7.3 Activities help reflection

A participant also attempted to detach oneself from their phone (iPhone). It was quite unsuccessful, however to distract oneself from using the device the participant went for walks or attempted to do other activities that were more open in nature. This made the participant more aware of the time spent on the phone and how activities, such as walking, were quite infusing to the soul. This was also identified in the literature (section 1.1.3) as an option to make people less materialistic by concentrating on things that are materially light.

3.3.8 Reflection on Stage II

The findings of the interventions did indicate the difficulties in making individuals step outside their comfort zones and to change basic habits and behaviours. However, the findings that did appear from this study indicated some very interesting themes for concept generation. There seemed to be quite an interesting focus that highlighted that changing things every so slightly, and trying something different, did open up the participants perspective and created a refreshing insight into something new. This is quite obvious, however it is an important element to note when designing for such things as reflection on materialism. The ability to push individuals away from existing behavioural patterns and observe things from a slightly different perspective.

The findings from the study have been influential in the finding themes discussed in the next section (3.4).

3.3.8.1 The participants
Two of the participants were new in this study; meaning they had not been part of stage I empirical studies. Therefore, they came to the interventions with no idea of the link to materialism and the overall direction of the research. This proved to create interesting insights, as these participants appeared to be more exploratory in their methods and types of interventions carried out. Perhaps it was by chance that these two, new participants, were more expressive in nature and daring.

3.3.8.2 The intervention designs

The design of the interventions were quite open and exploratory on purpose. However, it was obvious that some participants did not feel compelled to try out most of the interventions. Even discussing the interventions with them resulted in no insights. If recreated, the intervention should include acting out in groups or shadowing techniques. This would enable participants to feel more obliged to take on the interventions.
3.4 THEMES FROM STAGE I + II FINDINGS

In both stage I and II empirical studies there appears to be some defining keywords and themes. These themes have been identified as a starting point for directions used in concept generation; keeping aligned with the overall research question and direction (section 1.2.2).

The studies have shown that there are three (3) distinct areas that the findings fall within designing for reflection on materialistic values and behaviours: sharing, ownership, and self.

All design directions concluded in each theme are expected to result in reflection on individuals’ materialistic values and behaviours.

3.4.1 Sharing

Throughout the studies the concept of sharing, or in other words “use, not own”, appeared in several instances. It was provoked as the researcher, or mentioned in respect to sustainability, or in conversation on the use of things vs. ownership.

3.4.1.1 Experience vs. Identity

Participants on all studies elicited their thoughts on the aspect of sharing things from various different categories; particularly evident in the share intervention (section 3.3.3) for uncommon, common and meaningful items. It was apparent that sharing something requires some form of transaction between the individual they are sharing with. This transaction could be in the form of: exchange, confirmation of recommendation, or simply self-control of identity impressions that others perceive of the individual (discussed in section 3.3.3.4, 3.3.3.5). However, from deeper discussions the self-control of how one is to be perceived was a significant driver of the sharing transaction. It was only when the discussion of experience and the forms of experience embedded in the object, or the sharing experience itself, created more significance in the sharing process. This lead to the following possible design direction:

A. Elicit more of the experience association to an object that is shared as a form of transaction, while making the act of sharing impressionable.
3.4.2 Ownership

Materialism, consumption and ownership go hand-in-hand. It was obvious from the start of the research that the power of ownership and the urge to own an object and form meaning from it is a large force that contribute to the behaviours and values embedded in materialism. Therefore, ownership has been used here as an overview theme of the following directions:

3.4.2.1 Memories/Experience vs. Object Meaning

Participants seemed to retain objects based on a strong meaning developed during their attachment. This meaning is generally guided by experiences and memories (embedded or context driven) (**discussed in section 3.2.1.1**). However, it was usually not visible that the meaning also was associated to their self with regards to status, identity and the impressions they wish to make on others. Once this case was proven, several participants expressed that if the object was replaced with something similar the meaning associated with the “object” would be detached and the embedded representation of the associated memories/experiences would become more apparent (**discussed in section 3.3.7.1, 3.3.7.2**).

An example was given of this by associating the act of robbery and the feelings associated to the object on return. Prompting more reflection on memories (**discussed in 3.3.3.2**). This became more apparent when participants were asked to remove/hide objects. This act created reflection on the object(s) in question. This lead to the following possible design direction:

**B. Detach the memory/experience from the object to elicit the importance of such elements instead of its form**

3.4.2.2 Accepted vs. Ideal Showing-off

Participants expressed a need to form an ideal self - this is quite evident in various literatures on self perception and identity discussed in the background literature section of this paper (1.1). However, it was evident that the following elements were quite common from all participants:

- **Achievement** is an important association to ownership. i.e. owning a car;
- **Lifestyle**, or perceived lifestyle gained from owning things or having specific experiences;
- **Rarity** or exclusivity is important with regards to the purchase of luxury items;
- Physical (tangible) is important instead of virtual as it has form and "showing off" potential;

- Impression on others is strongly linked to visibility and tangibility of things you own;

- Sustainable actions, such as recycling, is intangible and not visible;

- Status quo is important, where they individual fits or wants to fit;

- Wealth is a huge indicator of status quo and the connection to objects owned.

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**FIGURE: Fight between identities (visualised)**

There appeared to be a mix of accepting the fact that an individual was fighting an internal battle with their multiple identities or social group belongings (*discussed in section 3.2.2.2, 3.2.1.8, 3.2.1.6*). However, once this fight became clear to the participant it is was also discussed that this particular battle would never end, and that there is a strong belief that you will never be satisfied in achieving the status/identity you wish to portray. This lead to the following possible design direction:

C. *Make this fight between multiple identities more socially visible*
3.4.2.3 “Don’t like” vs. Short Term Gratification

In general, the act of materialism is related to a meaningful association to an object or just for the fact of purchasing for non-meaningful pursuits in relation to social influences. However, from the interventions, all objects discussed had some form of meaning and therefore it was difficult to elicit values and perceptions associated to non-meaningful objects. The definition of meaningful in itself is subjective. It was apparent, however, that the objects that participants “don’t like” were generally purchased for short term gratification to resolve a need, copy another for achievement (identity/status), or lured in as a desire that has never been met. This lead to the following possible design direction:

D.  *Focus on short term gratification from highly materialistic objects leads to potentially higher dislike, in time.*

3.4.3 Self

The self has been touched on constantly throughout this research. It is the primary driver of the elements discussed so far in relation to the values and behaviours formed around materialism and the act of consumption. Therefore it is an important direction to consider for potential design directions within the concept generation stage.

3.4.3.1 Reflection on self vs. Materialism

In general, participants indicated that they usually explore their identities and are aware explicitly or implicitly of how they interact with their social surroundings, interactions and use/ownership of objects.

However, it became apparent in the interviews that some individuals found it hard to reflect in this way, and the association to object and oneself, in the formation materialistic values and behaviours.

This was also obvious in light of the stage I studies, where most participants, half way through the interview, stated “*I am not materialistic*”. Upon this reflection, the interview appeared to change into a deep analysis of their materialistic ways and the link to oneself. This lead to the following possible design direction:

E.  *Use indirect reflection techniques on object association to create reflection on materialistic values and behaviours.*
Chapter IV
CONCEPT GENERATION
4.1 CONCEPTS

The concept themes have provided direction in the concept generation stage of the design process. Due to creative nature of concept generation and the role inspiration plays, various concepts were realised during the design process throughout the research. However, in keeping with the research question and direction of the research, two (2) goals were defined that each concept was required to fulfil:

*Reflection*: prompts individuals to reflect on their materialism and the consequences of these actions

*Reflection + Enhancement*: individuals reflect but it also provides added-value to the individual by providing some alternative to their current behaviour

Brainstorming techniques were employed to generate concept ideas from the design material captured. In addition, inspiration was sort from various examples found that apply to the domain of this project and research direction.

**FIGURE: Brainstorming examples during concept generation stage**

Three concepts will be discussed here that formed a strong connection to the research completed in this project. Each concept was discussed briefly with peers and supervisor as a mechanism of feedback and input to the ideas.

In addition, a workshop was completed with three (3) participants of the studies. The workshop aimed to provide insight into:

- foreseeing the potential use of each concept as a user;
- main features and forming an understanding of their usefulness;
- possible further refinement of concept development;
- testing core principles in each concept.
4.1.1 The Workshop on concepts

Each participant had been involved in the studies at a point in the research. This was important, as no further explanation was required in understanding the research’s aim, and it allowed the use of existing knowledge of the study. The workshop was held at K3, in the 2nd year Master studio; it provided good space and whiteboards for discussion facilitation. The workshop lasted for 2 hours and 30 mins; spending 45 minutes on each concept (3 were selected to be discussed).

![FIGURE: Concept scenarios mapping for workshop discussion](image)

4.1.1.1 Why a workshop?

Due to the service nature of the concepts, it provided an excellent way of eliciting knowledge and feedback from participants, and an ideal method in discussing concept feedback from a participatory design perspective. It is also great in facilitating brainstorming discussions as potential users of the service are in the same location and situation; they can bounce ideas off each other. It also helped to refine which concepts were ideal in achieving the aims of this research.

Further discussion on workshops is located in section 2.3.3.

4.1.1.2 How was it done?

Each concept was explained using diagram mappings on large pieces of taped together A3 paper. Various colours of post-it notes and images were used to identify actors and actions in the flow of the diagrams. This enabled the participants to visualise the various aspects of the concept after initial explanations and during discussions.

Concepts were explained by acting out and talking through a scenario. This proved to be effective in participant understanding. Upon completion of the concept explanation, various questions were asked that had been highlighted on the concept maps and diagrams. Questions were designed to gather an understanding of various aspects of the concept that were missing, or required
further clarification from a user perspective. Participants were asked to brainstorm and write down potential notes during discussions.

The feedback from the workshop is outlined in each concept’s section.

![FIGURE: Participants (and me) in workshop](image)

### 4.1.2 Concept explanations

This section details the description of each concept. The concepts are: *perspective, experience augmented sharing, and material object reflection*. The last concept, *material object reflection*, was considered unworthy of further refinement and therefore an overview is given of the concept and a brief discussion on the feedback from participants. Visuals and diagrams have been included to help form a complete understanding of the concept and the inner workings.

The concepts were not implemented, therefore each explanation has been written to focus on the core principles of each concept; where finer service details have been replaced with participant feedback and core conceptual explanation. Each concept section is outlined as follows:

1. Concept is explained along with a simple scenario that provides a story of the concept in action;

2. Feedback from the workshop is discussed and implications on the service design;

3. Related work is outlined to provide a base of what others have done and what elements can be proved possible, or potentially incorporated into the service;

4. Further details are provided with an outline of the concept’s service stages and features:

   **Service stages outline:** This diagram details the major service stages of the design. A service stage is a collection of features that form a specific function of the service. They have been separated into three distinct sections of the service. Each service stage is described briefly.
**UIs:** Example user interfaces are presented to give an indication of the core principles of the main service stages for each concept.

5. A reflection discussion on each concept is outlined in the *contribution chapter.*

Further service details of each concept can be found in the appendix.
4.2 “Perspective” concept

Target: users that are medium/highly materialistic and shop often.

Platform(s): iPhone Application (mobile), Website.

Stakeholders: experience providing agencies, community, financial institutions (banks/credit card).

4.2.1 Overview

From a personal note and understanding gathered from participants: Experiences are important in formulating memories of events and activities that have happened in our lives. They help to enrich our lives and provide greater understanding of who we are as individuals and open our perspectives on various elements. These experience can range from events, moments, activities, travel, people etc... However, when it comes to materialism, we need to look at the material light activities, outdoors (or indoors), various activities that make people reflect on non-materialistic behaviours (discussed in 1.1.3).

4.2.1.1 What is it?

A service that provides individuals with selected “experiences” from the accumulation of money placed into an account, by the user, held by the service. Experiences are selected by the service and pushed to the user on a regular basis. The choice of experience is based on their purchase history and generated profile of the user, throughout the use of the service. The experience itself is focused on being low in ecological footprint, while providing reflection on the user’s purchasing habits. For example, money added from various petrol station trips will push an experience that would suggest a train ride in the country.

4.2.1.2 What is it for?

It is hoped the user will reflect on their purchasing history, enjoy more “experiences”, and detach themselves from activities that are materialistic in nature; opening up oneself and removing the urge to be materialistic over time. It also will provide a new platform for individuals to enjoy unique experiences that they have not thought about taking in the past, and help create a focus on experience discussions by enabling members to submit/create experiences for others.

4.2.1.3 How does it work?

The user will place money accumulated overtime, via direct debit or manually using various methods, into an account for experiences held by the service.
Purchase history of the user is collected via online and offline store and credit card detail integration. The service gathers the user’s likes, dislikes in terms of activities/experiences, and various other related information, generating a profile of the user. This profile, along with the purchase history, is two sources used in experience selection and matching. The purchase history is used for certain experiences that play heavily on non-sustainable purchases, and are not the only source of experience selection. Occasionally, the service will determine when a user should take on a new experience; integrating to agencies that provide experiences of various types. This experience is sent in a form of a recycled postcard. It provides the user with three (3) options: a paid experience (using money from the account), free experience, or donate to charity. The user selects their experience, enjoys it, and provides feedback in the networks forum. In addition, it allows users to suggest/create their own experiences with community member feedback, and forward/share their experience with a friend.

4.2.1.4 What is the value?

The value is hidden to the user on initial usage of the service. Overtime, it is hoped, the reflection on items purchased, frequency, and the joy given from unique experiences will reduce materialism and consumption. The service can be broken up into three (3) areas where service stages and value can be defined: reflection, experience, network:

**Reflection**

- focuses away from materialism and consumption by forcing reflection on purchase history linked to experience selection;

- opens ones perspective by experiencing new unique things;

- easy account top-up for the experiences. The various methods, direct-debit via bank account, credit card, and even integration with existing services - such as unique stores or bank institutions to round up the total price to the nearest dollar and placing the differences into the account. In addition, online stores can be integrated to allow for additional contribution, or %, added to total purchase price.

**Experience**

- free to join and not all experiences require money to be completed;

- a mysterious gift. The user is not required to think of unique experiences, they are provided for them, in time.

**Network**

- ability to share experiences with a friend (member) and send experiences to someone you believe deserves it;
- community involvement in experience creation; ability to create new businesses using experiences.

In addition, the value of the concept can be viewed in connection with design direction themes:

**B. Detach the memory/experience from the object to elicit the importance of such elements instead of its form**

Experience is a broad term. However, experiences are the opposite to object association, and is key in the design of this concept. It provides users with new ideas and fulfilment that they may have not taken on themselves in the past. It focuses purely on experience, while using the concept of purchasing to promote reflection on the choice behind the experience.

**A. Elicit more of the experience association to an object that is shared as a form of transaction, while making the act of sharing impressionable.**

Again, the experience is key in this concept. Identity, status and self is touched on with regards to community aspect of sharing, sending, and creating experiences. It is hoped, that this unique platform enables individuals to “show off” their experiences in a new and interesting way.
4.2.2 Participant Feedback

Participants in the workshop highlighted a few points to consider when designing and implementing this service. The points discussed here were taken into consideration and have been incorporated into the service design. Some of the discussion has been touched on briefly in the concept explanation (above).

4.2.2.1 Experiences and selection

The concept requires selecting an appropriate experience for the target user, therefore participants agreed that it should concentrate on pushing and experience that is slightly off their desire. This would push them into experiences they would not traditionally take on. The experiences should be something that is a little different or unique, and not something that you could easily perform by yourself. For example, attending a pre-arranged experience at a kindergarten which entails reading a book to children. “I would do that!”, suggested and shouted one participant. The question on ecological low footprint experiences did not add much excitement to the conversation. It was agreed that highly “sustainable” experiences should be incorporated, however by making individuals experience things would, in itself, counteract the purchasing on material objects over time; participants argued.

It was suggested that experiences should be pushed to the user every so often, to stop users’ ”saving” for big experiences. There should be smaller experiences that build up to bigger, more expensive overtime.

The surprising element of receiving the experiences may not be accepted by some; although this could be seen as a challenge, and the service should be designed to focus in on that challenging aspect - achievement.

It was agreed that choosing experiences based on the purchasing history of the user would be quite an interesting element of the concept. All participants of the workshop indicated it would make them think “what did I do that made me deserve this experience?”.

Participants brainstormed on a list of potential unique experiences that could form part of the service with a focus on a low ecological footprint. These experiences fell under four (4) distinct headings: helping, understanding others, forming new perspective, and activities - here is a sample of the agreed upon experiences:

- **forming new perspective**: city roof tours, tourist in your own town/city (stay at backpackers, visit the sites), buddhism/meditation retreat, get to know your trees, reading a book to a class of kindergarten kids, close your eyes in the woods and imagine new songs for things you hear;
- understanding others: experience another life/job for a day (small group of people 2-3 shadow with someone for a day; i.e. garbage collector), join friends in examining water-life in a pond, donate two pieces of clothing;

- activities: learning to make something (chocolate, beer), visit a farm, free trip on public transport for a whole day, fly a kite, stay gazing, airport plane viewing, restore old stuff, sing in a choir, piano lessons, singing lessons;

- helping: feed animals and create habitations, help homeless (kitchen hand), hospital assistant to cheer up kids - clown day!

4.2.2.2 Topping-up the experience account

The core concept was based on the fact that we all have spare change and what better way to use that as an account top-up mechanism! After asking participants what they thought of the initial idea and the use of change in topping up the account, there was a clear mixed response.

"Lots of stores need to be controlled" - in reference to a “change machine"

"I like change a bit and it is good for coffee", "A lot of people don’t like coins"

On the discussion toward a “change machine” installed at stores for the service. It was suggested that the option of selecting a key store(s) for the machine would be the best option. “That would be easy to collect my chain in my piggy bank, and take the piggy to the store and empty my change!” Or add the machine at the recycling points for bottles etc...

Overall, the ways of providing change, or topping up the account, would be ideal if it could be done at ease and integrated with existing services or the actual purchase point (i.e. the cashier). In this case the concept focused primarily on removing the physical aspect of change as a collection method and more on the virtual.

4.2.2.3 Purchase history guilt influencing experience uptake

Participants agreed that it needed to play on guilt and attempt to push individuals into taking the experiences on offer, even for free experiences. The idea of using the purchasing history, or suggested the benefits of taking on such experiences, would be an ideal method used as a comparison tool for guilt.

4.2.2.4 Human elements create signing up desire

It was noted that the service must have strong human elements, due to its nature, and provide a comfort factor that promoted a non-evil corporation. It is a slightly invisible service. It was suggested that the experiences were sent via a handwritten style environmentally friendly postcard that could be forwarded to friends.
4.2.2.5 Sending and sharing an experience with a friend

Participant enjoyed the idea of sending an experience to a friend. "Love it! It is like a new type of postcard". It was noted that people want to share experiences with a friend - but not always. "Like experience sharing, good part". "It would be nice to pick a friend, maybe through Facebook, that knew that would somehow benefit friend this experience". One participant suggested that the service should select an individual to share an experience with. Participants agreed that it would make it more appealing and provide some mystery around the process of selection.

4.2.3 Purchase history and experience matching

In proving that purchase history of items could be matched with experiences. Receipts were analysed from one participant over the course of several weeks. Specific patterns were highlighted in the purchases made and then a reflection on how those patterns could be implemented in experience selection were made. The patterns identified that purchases could be matched to experience based on the following attributes: store type, item name and branding with associated with database of pre-defined qualities (i.e. high eco-footprint), frequency of item purchase, luxury items, indoors or outdoors placement.

Possibility of matching experiences was abstracted in thought. It would look at the type of experience (indoor or outdoor), eco-footprint, material-light opposites (i.e. petrol purchases should result in a public transport/sustainable experience), frequency of purchase type (i.e. purchasing/renting dvds should result in an outdoor experience).

![FIGURE: Receipts analysed](image)

In addition, it has been proven that a purchase history recording service (similar to blippy.com, section 4.2.4.3) can gather information as detailed as the item name, brand and purchasing store.
4.2.4 Related work

![Image](image1)

**FIGURE: Examples of related work**

Various works have been identified that display similarity and/or prove the possibilities of implementing various aspects of the service:

### 4.2.4.1 Smart profiling

iTunes iGenuis ([www.apple.com/ipodtouch/features/music.html](http://www.apple.com/ipodtouch/features/music.html)): service that profiles your music and suggests other music to listen to, or creates playlists based on a specific song by matching various elements of that song to others.

### 4.2.4.2 Service integration website

Online payment sites that provide booking functionality with hotels around the world. This is an integrated service with booking systems to the hotel and payment gateways included. An example of possibilities of integrating with existing experience providing agencies.

### 4.2.4.3 Purchase history online

Online service ([www.blippy.com](http://www.blippy.com)) that records your purchase history through online accounts (stores) and bank/credit card transactions. The service then posts your purchases on Facebook or twitter allowing for your friends/followers to comment. An example of purchase history recording capabilities.

### 4.2.4.4 Experiences in a box

A purchased box ([www.smartbox.com](http://www.smartbox.com)) of experiences defined by types: region (paris), restaurants, spa retreats etc... The purchaser is provided with a booklet of discounts with maps and descriptions of the service/experiences they can take advantage of within a given time period.

### 4.2.4.5 Using price different for account savings

Bank of America provides a service for all card related purchases where the cost of the transaction is rounded up to the nearest whole dollar. The offset
from this roundup (the change) is then placed into your savings account. (http://www.bankofamerica.com/promos/jump/ktc_coinjar ). An example of using existing account/credit card services to help top-up another account.

4.2.4.6 Points and reward programs

There are various reward programs implemented around the world for shoppers that provide mechanisms for discounts or purchasing of more items based on the amount of money you spend at a store (https://www.flybuys.com.au). Fly Buys Australia is a long running program that facilitates such a reward system successfully. A card is provided that is scanned at participating stores that tops up your points account based on the amount of money you spend. You use the points to buy more things or holidays! These programs are inspirational with regards to the service elements and similarity to this concept. It proves a system of this type is doable and attractive.

4.2.5 Service outline

The service stages have been outlined into the three (3) concept areas: reflection, experience, and networking. Each service stage has been outlined with a brief description of its functionality along with sample iPhone user interface diagrams on features that are core to the concept.

Further refinement on service stages can be found in the appendix.
1. REFLECTION

1.0 History of items purchased collected/visualised by the service

1.1 Process of adding money to the service account

1.2 Notification received by the user of experiences selected by the services

2. EXPERIENCE

2.0 Account setup

2.1 Accounts arranged to provide experiences and scheduling and redemption

2.2 Experiences are selected based on user profiling, purchasing history, and account balance

2.3 Profiling completed during account setup for experience matching

3. NETWORK

3.0 Feedback

3.1 Friends network features (Facebook) to enable experience sharing

3.2 New experiences to the network

3.3 Users can suggest experiences and feedback is needed

SUSTAINABLE MATERIALISM

Experience Creation

Experience Sharing

Experience Notification & Acceptance

Purchase History

Purchase Setup

Account Top-up

Service Stages
Hej!

You have a new experience awaiting you!

I have selected some experiences for you to choose from. I know you will enjoy them. Have a look at them on the front!

Then, select your experience online at www.experienceit.com by signing into your account!

Regards,

experience selector
4.3 “Experience Augmented Sharing” concept

Target: Users that are medium/highly materialistic and shop often.

Platform(s): iPhone Application (mobile), Website.

Stakeholders: community, logistics providers.

4.3.1 Overview

“Use, not own”/sharing strategy has been highlighted as a strong candidate in promoting more sustainable solutions (discussed in section 1.1.8) and for reducing aspects of consumption and thus potentially materialism. The empirical studies explored this further; it was evident that sharing needed to be more interesting to have appeal to the participants.

4.3.1.1 What is it?

A service that enables users to share things with other users through a simple, yet effective, ebay style marketplace format. It uses a feedback system for trust and has integrated logistics for convenient pick-up and delivery. The core of the service is that the user can attach and view experiences of their shared objects; it is like an augmented collection of media that form the object’s history. These experiences are in the form of images or stories added to the object by the borrower. Searching is focused on experience tags rather than pure item descriptions. For example, a potential borrower of the item can find items of interest that align with potential locations it has been, events, memories, stories attached by the owner and/or other borrowers of that item. It brings a new dimension to sharing. Bidding or requesting an item is achieved through feedback mechanisms associated to the amount shared and experiences augmented with shared items. The higher both feedbacks the more likely you will “win” the item you wish to borrow from the sharer. It focuses on local logistics (with a small zone of delivery) and provides support for community sharing. The aim of the service is to make sharing fun, by augmenting experiences to the shared item. An additional core of the service is to use visuals and intelligent reflective prompts that create reflection on the items the user owns, their usage, and the potential for sharing.

4.3.1.2 What is it for?

It is designed to enable easy and effective sharing of everyday items the user owns by allowing searching defined to a specific community or region that focuses on community involvement and the reduction of unsustainable transport of item delivery. The augmenting experiences of any kind to the items
they are borrowing creates an interesting and unique benefit to the sharing process. This service is focused strongly on item experiences from search, tag clouds, to bidding/requesting, and the feedback mechanisms. The integration of reflection mechanisms on existing item ownership is key in prompting users to reflect on their items usage and ownership values. This two cores of augmenting experiences and reflection on ownership in a community based online marketplace form a new dimension to sharing.

4.3.1.3 How does it work?

The service works by using a ebay marketplace style setup for experience/item searching, bidding, requesting, and logistics of items. The addition of items owned by the user is integrated with a purchase collecting service and barcode scanning integration. The user is required to complete a simple item sharing scheduler that provides the service with information on when the item will not be used by the user. Overtime this information about the item’s availability is used to prompt reflection on its usage vs. not-used time and create an urge to share. In addition, other reflection mechanisms are employed to prompt sharing such as: requests from users for the item, an overview of experiences created by users with same item, and statistics about the community and the item’s sharing capabilities. Users can “bid” using their sharing and experience augmenting feedback (high points better chance of “winning” a bid); which is determined by past transactions between borrower and sharer. Searching for items is focused on using experience cloud tags or experience search terms; with the ability of item descriptions. These experiences are augmented to the item (like a history) added by the borrower and owner, in the form of images/videos/text/comments. They are confirmed by the owner of the item on return and can only viewed after a complete transaction; like a gift waiting to be viewed (getting something back as pointed out by participants in section 3.3.3.4). Logistics is organised by the users and with the potential for integrated local logistic services for larger items. There is no cost for the service and no transaction fee during the sharing process; purely based on feedback on no. of items shared and no. experiences augmented in the past.

4.3.1.4 What is the value?

The value of the service can be highlighted in its core principles: easy item listing features, reflection on ownership of items, sharing with experience augmenting. These principles can be broken up into three (3) areas where service stages and value can be defined further: reflection, sharing network, and experience impressions.

Reflection

- Focuses on easier and efficient item adding by using barcode database integration and purchase history services;
Reflection on item usage and availability is key to prompt users to share out more of their items when not in use.

**Sharing network**

- Community focus and local logistics is promoting sustainable sharing and creating a positive behaviour change in the surrounding communities;

- More experience augmented and sharing transaction create the ability to request and “win” items to borrow.

**Experience impressions**

- Free service that prompts users to take advantage of a unique addition to items - their experiences.

In addition, the value of the concept can be viewed in connection with these design direction themes:

<table>
<thead>
<tr>
<th>Design Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Focus on short term gratification from highly materialistic objects leads to potentially higher dislike, in time.</td>
</tr>
<tr>
<td>The ability to reflect on items, and the experiences attached to the same item by other members in the service, enables the user to judge their connection to the object and its meaning. This may make them realise their materialism attached to the item, and hence examine the gratification actually achieved by owning that item.</td>
</tr>
<tr>
<td>B. Detach the memory/experience from the object to elicit the importance of such elements instead of its form</td>
</tr>
<tr>
<td>Augmenting experiences is hoped to create a detachment from the actual form of the item and focus more on the experience itself that the item helped facilitate.</td>
</tr>
<tr>
<td>A. Elicit more of the experience association to an object that is shared as a form of transaction, while making the act of sharing impressionable.</td>
</tr>
<tr>
<td>Again, augmenting experiences will provide a new approach to viewing item attachment and thus sharing. The experiences added to the item may create a new form of impressions or “showing off” and help facilitate a new form of experience status of owned items instead of pure item status in society.</td>
</tr>
</tbody>
</table>
4.3.2 Participant feedback

Participants in the workshop highlighted a few points to consider when designing and implementing this service. The points discussed here were taken into consideration and have been incorporated into the service design. Some of the discussion has been touched on briefly in the concept explanation (above).

“I like you can add the history of an object, share something, and I get a story back! NICE!”

4.3.2.1 What items would I share and why?

Participants were asked what they would share. It was noted that you would probably only share things that you would never use, or like. “I would have the stuff I want to share, and the stuff I don’t like that much. That means I can only borrow crappy stuff!” one participant commented. It was suggested to make things easier to share, use barcode recognition database integration, or give examples of things to share, even ask the community if anyone has a particular item to share (requests). A participant suggested that telling people what you would use your item for would be an interesting prompt to share it, “It could also be more interesting if you know what people would use it for, like a wedding”.

Participants liked the feature of using prompts to reflect on their items as a way to bump up the quality of the items shared; what others are sharing, what experiences are attached to items, usage percentage of your items not shared, matching requests to your items.

The following common “shareable” items were identified: computer games, nothing “too meaningful”, seasonal objects, basement objects (i.e. chairs), furniture not in use, toys, camping gear. However, participants noted that if they were to use a service like this further uncommon item sharing may develop overtime, due to reflection.

4.3.2.2 Experience augmenting

In reference to the core concept principle of experience tagging, a participant commented “I love it! I would try and go through with it. Human side!”

Concerns of the types of experiences that could be added were not shared by participants. “We let friends borrow our stuff, we don’t know what they do with it?”. The experience is like “extra values that you pick up when sharing a book that has been left around europe”, commented a participant.

The types of experiences were not specific and participants indicated it could range to anything and everything, which was seen as a beauty of the service. These experiences could be in the form of images, video, text and other media items. However, it was agreed that images and video for experience feedback
were important for validity of the augmented experience added by the borrower of the item.

4.3.2.3 Types of transaction scenarios and use

Several possible scenarios were highlighted and discussed with participants during the workshop. Here they are briefly described:

1. *Student Sharing (short term stays)*: ideal for students that on exchange or people with short term stays, they can use the service to borrow from others in the local area.

2. *Seasonal Sharing (based on seasons)*: lots of items are not used during particular seasons (i.e. outdoor furniture), could this have more use if shared out and be used for other reasons (i.e. events)?

3. *Request placement (borrower is away, but owner needs their stuff back)*: what happens if the item you shared out is required back, but you cannot get in touch with the borrower? well, don’t despair! the service enables you to find a similar item and share from others in the meantime!

4. *Sharing while away or to free up space (as opposed to using storage places)*: away for a period of time, similar to student sharing scenario, why not share your stuff while away?

5. *Quick community sharing (ability to borrow items quickly)*: nice feature to have the ability to borrow smaller items for a shorter period (i.e. blender).

4.3.3 Related work

Various works have been identified that display similarity and/or prove the possibilities of implementing various aspects of the service:

4.3.3.1 Ratio based sharing

Pirate bay is an example where the ratio of how much you upload is compared to your downloading. Here, if the ratio of upload to download is too small you are restricted in downloading data. Therefore, the higher the ratio (more you upload or “share”) the more you can download. This concept is similar to the more you *share*, and the more *experiences* you augment, the more you can borrow from others and the greater chance you have at “winning” a bid for an item.

4.3.3.2 Marketplace platforms

eBay is a key example in this case. It provides functionality of a traditional online marketplace that enables the seller (owner) and purchaser (borrower) to
provide item details, pricing and feedback, with integrated logistic services and payment gateways.

4.3.3.3 Sharing repositories

Various sharing services have now been developed in recent years due to the strong social innovation sustainability focus. Many of these examples (outlined in section 1.3.1) use marketplace like methods highlighted in this concept however do not focus on the added benefit of augmenting experiences and reflection on items owned.

4.3.3.4 Stories/experiences alive

Examples of services that enable a form of experience augmenting.

- Stickybits is a new service that enables you to barcode anything and add stories to the barcode.

- Four square ([www.foursquare.com](http://www.foursquare.com)): application that enables you to geo-tag things so you know where they are.

- Book crossing ([www.bookcrossing.com](http://www.bookcrossing.com)): online tracking system of books that have been left at places around the world for the next reader to collect. The experience is based on where the book has been. Other individuals leave their interests ([http://postsecret.blogspot.com/](http://postsecret.blogspot.com/)), such as library book receipts, in books to the individual that has similar interests can find them online. Using social networking to its advantage!

4.3.4 Service outline

The service stages have been outlined into the three (3) concept areas: reflection, sharing network, and experience impressions. Each service stage has been outlined with a brief description of its functionality along with sample iPhone user interface diagrams on features that are core to the concept.

Further refinement on service stages can be found in the appendix.
1. REFLECTION

Purchase items added to the service through various methods are occasionally visualised in ways to prompt reflection on use and sharing.

1.1 Details on item borrowing availability, finer details, and logistic options.

1.2 Objects added to service are reflected and shared through sharing details and visualisation.

2. SHARING NETWORK

Account sign-up procedure through application or site.

2.1 Borrower submits request to sharer for item borrowing.

2.2 Sharer confirms transaction, logistic arrangements confirmed.

2.3 Returning borrow item from sharer.

2.4 Sharing transaction feedback.

2.5 Quick borrow item to "sharer".

3. EXPERIENCE IMPRESSIONS

View and record experiences, augmented to the shared item.

3.1 Review and confirmation of augmented experiences: shared often attaches to the item on return.

3.2 Search by augmentation item.

3.3 Search by tag and item description.

SERVICE STAGES

1.0 Object added

1.1 Scheduling details and sharing

1.2 Reflection

Visualisation

2.0 Request/return item to "sharer"

2.1 Bid/Request item to "borrow"

2.2 Confirm logistics

2.3 Confirm sharing transaction

2.4 Transaction feedback

2.5 Quick borrow

3.0 Augmentation feedback

3.1 Search by augmentation item

3.2 Search by tag and item description

3.3 Experience impressions

Object reflection

Search by tag and item description

Feedback on shared item transactions

Items that can only be borrowed briefly

Returns borrow item from sharer request

Searching focus is performed by experience tags and item description

Review and confirmation of augmented experiences: shared often attaches to the item on return

Searching focus is performed by experience tags and item description

Object added

Items added to service through various methods are occasionally visualised in ways to prompt reflection on use and sharing.

Items added to service are reflected and shared through sharing details and visualisation.
**Sustainable Materialism**

1. **Reflection**
   - Apple iPhone: User Interface Examples
   - Numbers are associated to service stages (previous diagram).

2. **Sharing Network**
   - Outdoor furniture set
   - Borrow it!
   - Share it!

3. **Experience Impressions**
   - Experiences [Beach]
   - Borrow it!

**Recently Purchased**
1. Ocean
2. New York
3. Hollywood movie
4. Earthquake
5. Hotel
6. Vacation
7. Tsunami
8. Celebrity
9. Michael Jackson
10. Sweden
11. 21st birthday
12. Flight
13. Elephant
14. War
15. Disease
16. Forest
17. Crash

**UIW Window 320x480**

**Item Share Scheduler**

- Select a date
- December 2008

- It’s been to Airley...
- Beach...
- Outdoors...
- Parties...
- 21st bday party...
- Hollywood movie...
- Wedding...

**Share Them!**
- Did you know, you use these on only 30%-40% of their potential. Are you looking for this exact outdoor furniture set?
- A member is looking for this exact item! Make their day!
- Why haven’t you shared your outdoor furniture yet?

**Share It!**

**Search**
- Beach
- Wedding
- Cycling
- Hawaii
- Ocean
- Spring
- Outback
- New York
- Emergency
- Hotel
- Vacation
- Tsunami
- Celebrity
- Michael Jackson
- Sweden
- 21st birthday
- Flight
- Elephant
- War
- Disease
- Forest
- Crash
4.4 “Material Object Reflection” concept

Target: highly materialistic individuals that shop often.

Platform(s): iPhone Application (mobile), Facebook integration.

Stakeholders: online barcode database, social network (Facebook).

4.4.1 Overview

The study design was a major influence in the inspiration behind this concept. It uses strongly the elements of the probing study and touches on various aspects of the findings captured in each study. The intention is to facilitate reflection on object ownership in a way that potentially mimics the reactions witnessed in the first study during the interview process (section 3.2.3.4). However, it was noted that the human element of these studies is lacking greatly in this concept, and various core principles, which would make it a strong candidate for further development. The concept is outlined briefly here and the reflections.

4.4.1.1 What is it?

An application that enables the user to reflect on the things that they believe identify with oneself. This reflection is done through asking the user to select (i.e. ten (10)), or take images, of things that they believe associates them to their identities. It then asks a series of questions - formulated from the first study - that focuses in on status, identity and their association to the item chosen. Linked through Facebook, the application will compare with other friends using the same application, the items they have selected, and show anonymous matching. Further reflection is then prompted by viewing items that individuals have less in common within their network, based on the same answers given to the questions asked when identifying items.

4.4.1.2 What is it for?

The aim is to enable the user to reflect on their attachment to items, therefore on their identities, by showing what others find fulfilling and form identity towards. This reflection would prompt questions on their ownership and potential materialism held by the user.

4.4.1.3 How does it work?

The user can add items through purchase history services, image taken of the item itself, or selection through a pre-defined database of items. They would...
be asked to select the items that most identity with them with several questions that indicate their association value - status driven, social visible, makes them feel good, memory attachment etc... These items would then be compared to other friends that use the same application through a social network integration (i.e. Facebook). Items that are most common will be visualised more distinctly. However, the user would be able to reflect further by selecting the item and visualising other items that their network has the least similarity with. The questions asked during the item identifying stage would be used on these items to help the user reflect on the importance of the items to the individual(s) who have selected them. This would create natural reflection on identity and item association in three (3) stages: adding the items, being asked questions on their selection, and reflecting on other individuals least common items.

4.4.1.4 What is the value?

The value of the service can be highlighted in its core principles of: individual reflection and comparison reflection.

**Individual Reflection**

- Prompts user to reflect on their association to items at an individual level.

**Comparison Reflection**

- Friend network comparison of owned items creates a sense of identity reflection on a holistic level. It makes individuals reflect on what exactly is their association and if it is driven by a materialistic desire instead of a need.

In addition, the value of the concept can be viewed in connection with these design direction themes:

<table>
<thead>
<tr>
<th>C. Make this fight between multiple identities more socially visible</th>
</tr>
</thead>
<tbody>
<tr>
<td>By comparing this identity creation and reflection based other individuals in the network would make the users expose such elements.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Focus on short term gratification from highly materialistic objects leads to potentially higher dislike, in time.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The questions asked during the reflection stage on identity ownership and what others have answered for their items would create a reflection on gratification of object usage.</td>
</tr>
</tbody>
</table>

| E. Use indirect reflection techniques on object association to create reflection on materialistic values and behaviours. |
From the studies, any form of identity analysing or reflection made individuals re-think their materialistic behaviours and values and question the social influences of these.

4.4.2 Participant feedback

Participants in the workshop highlighted a few points to consider when designing and implementing this service. Most of the points made were against a service of this type due to its non-humanistic nature. Some of the discussion has been touched on briefly in the concept explanation (above).

4.4.2.1 Reflection in an app creates materialism

“Are people actually interested in reflection on their artefacts?”, commented a participant.

There appeared to be more negatives associated to this concept. The participants believed that the uptake of the concept would be of an issue and that it may result in creating bigger issues, even materialism itself due to the social connection utility of comparing. In general, comparing things was not a like for most participants. It actually may make individuals not use the application; the fact that they are comparing their objects and having to take pictures and manually enter details into the application.

In addition, it was noted that most individuals believed that this application would not be exactly fun to use with the current positioning of the concept. The fact that it is using the study design and placing it in to an application removes the humanistic side. “First part of study forced participants to select and reflect; it was human!” , said one participant.

Network comparison to friends is concerning.

4.4.2.2 Lacking context

“The concept is lacking context or situations that make materialism”

Most negative remarks were directed at the 2nd part of the concept. Using other friend’s objects to form some form of reflection on your state of association to favourite things and questions. “If I use the app, it makes me pinpoint people on what they own. That very behaviour would make me reflect” commented a participant.

4.4.2.3 Don’t like, but suggestions...

Participants pointed the following to attempt to improve the concept:

- Focus on the audience more. Maybe it should be shop-a-holics or people that have problems;
- Need to find a way to remove context completely from the artefact. Questions could do this, however you must be careful on the type of questions asked;

- It was suggested that the concept ask the question “Take 5 pictures of the things that would make friends identify you?”. This would touch more on the things that you believe you are and have a strong association to the Facebook network comparison functionality.

4.4.3 Related work

There is not a lot out there that has been done for this type of concept. However, one distinct social networking application has been sourced as a key example for this concept:

4.4.3.1 Compare People Application

On Facebook there is an application that compares your friends based on various questions. It uses your friend network and stores specific information that individuals have answered about you during their comparing. This is an example of using social networking functionality built into an application that allows for information comparison and evidence that individuals are willing to use comparison based applications in general.

4.4.4 Service outline

The service stages have been outlined into the two (2) concept areas: individual reflection and comparison reflection. Due to the outcome of this concept, further details and refinement are not necessary and have not been outlined in this paper.
1.0 Item purchased details is added into the app (various methods)

1.1 Prompted to select (10) items that “identify you”

1.2 Prompted to answer questions based on ownership, status and identity (similar to Study #1)

2.0 Friend’s items are compared with user’s list through network (Facebook enabled)

2.1 Items are listed that are similar to friends

2.2 Least similar items and related answers to reflection questions are shown. Further reflection is enforced through

In “Identify you” list, items are listed that are similar to friends
Chapter V
CONTRIBUTION
5.1 DISCUSSION

5.1.1 Outcome

This research has explored the elements that exist in the formation of our materialistic values and behaviours that are associated to the items we purchase and apply meaning to. It has examined how participants in the studies go about associating themselves to various items in their daily lives and the degree social influences play in the formation of the desire to purchase, use, and discard. The findings have concluded the importance of self identity and status with regards to the selection of various items, and the role they play in defining an individual with the social group they are, or wish to be portrayed as belonging to. This has reconfirmed existing theories and literature in the materialism domain, highlighted in the symbolism of products, impression management, and role definition stimulus properties of products (discussed in section 1.1.4). The study designs, particularly the probing, have been extremely important in eliciting their capabilities as mechanisms for reflection on materialism. They have enabled the exploratory aspect of the research and provided insight into how our lives are affected by our social surroundings with regards to materialism.

5.1.1.1 Research questions answered

Now, let us look back at the research questions outlined at the start of this report (section 1.2.2), and discuss how this research has explored possible answers to these questions:

Research Question 1: How can we design for reflection on our materialistic values and behaviours that are embedded in the things that we own?

The research provided interesting insights into the degree of reflection possible and the various elements that create the reflective process on existing values and behaviours. In stage I studies, the probes and the interviews elicited (presented in section 3.4.1.1) the importance of experience and memory attachment associated to an object and the strength of detaching that from the object in question, in new and interesting ways, as a possible reflection technique. Furthermore, the struggle to associate oneself to multiple identities was clearly apparent, and the purchasing and association to objects that helped in this performance was a clear indication of the acting out of such theories of impression management (section 1.1.4); using props (items) and actors (others) to define ones self perception and impression on others. It was also interesting to note the reluctance individuals portrayed when the mentioning of “materialism” was introduced into the interviews, and the ability to achieve this through the probes and indirect questions that, in some ways, became deeper as the interviews progressed due to the constant questioning on object selec-
tion and reasons for their attachment from a social/identity creating and maintaining viewpoint. It created a sense of negativity and resentment in others for being “that way”, or the participant being accused of such behaviours. It is obviously something that is quite ingrained in modern society as a negative, and that it is indirectly hidden from public discussion or view, unless an individual clearly displays a very large and expensive item that is viewed as purely desire based and unsustainable in nature. It is important to also note here the cultural differences and their affect on the boundaries of accepted materialism in society; not focused on during this research.

The interventions in stage II studies created another layer of insight related to testing reflective prototypes that could be incorporated in the development of possible concepts in promoting reflection on materialism. The interventions were loosely defined and partially influenced by the findings achieved in stage I. This loosely defined nature to the intervention designed prompted the participants to be more involved in the process and restricted the boundaries of what was possible as a reflection method. In addition, the findings indicated some key insights into aspects of sharing. Sharing is a transaction, and this transaction requires something that is fulfilling for both individuals involved in the process. The transaction also extends beyond the physical form into an individual’s identity and the self-control of the perception others have of them. They are transacting elements of their identity and status. Furthermore, in the audit intervention (presented in 3.3.6) it appeared that forcing individuals to detach from their beloved objects made them reflect on their behaviours; as long as the an experience was highlighted in its place.

**Research Question 2: How can we embed these understandings in Interaction Design based solutions, that influence and promote sustainable materialism?**

The service design concepts defined in this research are examples of how we can embed the understanding of materialism and promote reflection on their negative aspects of these values and behaviours within Interaction Design solutions. During concept generation stage, the workshop provided insight and feedback into their validity, uptake potential, and usefulness, of the services defined. The service design concepts touched on what, now can be seen, as two prominent reflection conclusions of the study findings: experience creation and action as a mechanism for reflection on product purchasing, in conjunction with social connection. This has been exemplified in the services developed: directly through the relationship between the items purchased; reflection on their usage through intelligent comparisons with non-sustainable activities; social network integration for facilities to maintain self-identity and impression management elements; and a platform that created natural reflection and indirect prompts without pushing down on people’s behaviours or values. For example, in the “Perspective” concept the service selection of experiences, and promoting these experiences is at the heart of addressing the importance of materially light activities to reduce material desires. The connection to product’s purchased is the driving reflection element, the social elements is created through the networked sharing features and feedback on experiences taken. In the “Experience Augmented Sharing”
service, the reflection is prompted by the history of product’s purchase, potential usage, other users experiences with similar items, and requests for the item. The experience augmenting provides a new method of narrative for sharing and is particularly linked to using augmentation as a method for prompting more sharing by individuals with potential for promising behaviour changes.

5.1.1.2 Contribution angles

Overall, the knowledge contribution can be summarised from several angles:

1. **findings on understanding materialism from an interaction design perspective** that do not focus on the performative material behaviour of an artefact (*section 3.2 & 3.3*);

2. **exploratory methods and study designs that initiated reflection** captured in both the findings and defined concepts (*section 3.1 & 3.2*);

3. **design themes that promote reflection** on materialistic behaviours (*section 3.4*);

4. **exploring how service designs can prompt reflection** on materialistic lifestyles and behaviours (*section 4.1*);

5. **concepts** and the underlying elements that contribute to the services defined (*section 4.1*).

The intention of this research has not been an attempt to define materialism and to suggest a complete list of principles that should be applied when attempting to design for interaction design solutions that encourage reflection. It has simply explored the space and provided a base for further research in understanding the complexities from a social and reflective standpoint, as opposed to an object’s performative properties; as identified as current research in Interaction Design (outlined in section 1.1.7).

5.1.1.3 Future behavioural trends

In ending the discussion, let us turn to the potential of future behavioural influences and changes embedded in the service designs, in addition to the purpose of creating reflection on materialism. Several possible developments of future behavioural trends have been noted in the “Perspective” and “Experience Augmented Sharing” service concepts and could also be used in the promoting and uptake of the concept if implemented:

In the “Experience Augmented Sharing” service:

1. Enables individuals to "borrow" things for short term use and to experience it before purchasing, therefore reducing the consumption of objects overtime;
2. May remove the use of storage facilities by allowing individuals to share out their items constantly due to the scheduling mechanism;

3. Self-contained service that enables the individual to find similar items if they are unable to get their shared out item back in time, due to sudden need. Share from someone else in the meantime!

4. Reflection mechanisms and integrated purchase adding features enables individuals to reflect on object use and connect materialistic behaviours, force reflection, and create an urge to share more meaningful objects;

5. Experience augmenting may create new forms of use for particular objects based on their context and situations. Objects may be part of a constant experience story, where individuals particularly want to borrow an item to add to these experiences.

In the “Perspective” service:

1. User purchases items that are more sustainable in nature more often, due to the types of experiences that are selected for the user;

2. Sharing experiences with friends through a networked service becomes more of a mysterious gift and adds to the social fabric of the service.
5.2 CONCLUSION

5.2.1 Learnings

5.2.1.1 Difficulties eliciting pure materialism

The dynamics of materialism as a concept are quite complex and deep and, at times, have doubted the ability to elicit any valuable findings that could contribute to the world of knowledge for the questions being asked by this research. Determining materialism, by definition, through product purchasing or object attachment is difficult and and is quite hard to separate from the concept of consumption; due to the social and personal elements embedded. However, the service designs should encourage the individual to make this distinction on what purchases and ownership is related purely to over-consumption with, or without, any substantial materialistic influences. Either way, the user of the services will be forced to reflect on both of these concepts which, in turn, is a benefit to living more sustainable in the long run, it is hoped, by reducing consumption overall.

5.2.1.2 Time factor

We always want more time! However, it would of been ideal to have more time to reflect on the findings from each study and explore further the use of interventions in conjunction with experience prototyping methods to elicit, in field and context driven aspects of the possible research directions on materialism reflections. The social elements of the research naturally require specific periods of time to test the potential of behaviour and/or value changes. It future, the type and focus of such research should fit with the available time.

5.2.1.3 Moments

This research has creating some enlightening moments. It has open my mind with regards to our materialistic lifestyles and the objects and things we attach meaning to. At times, the deepness or breadth of the research had created some movements of complete “dark space”. The project lead into strange, uncharted territories for myself. Some participants confided deep and meaningful discussions, that elicit interesting understandings on why they attach meaning to objects and the social constructs that reinforce them; linking right back to childhood. It surprised me in the beginning. However, it made since that desires can be created from a “wish list” over time.
5.2.2 Future work

5.2.2.1 Bigger picture consequences

It must be noted the bigger picture consequences of the services defined. How will this affect people if these services are used? Will people lose jobs in these industries by potentially reducing consumption of materialistic based products? Will these people go into “experience” providing organisations instead? Could the services create new forms of materialism through the social elements of sharing with friends? These questions can only be asked if further prototyping is conducted on the service designs themselves with possible users of the services. It is unfortunate that this could not be completed in the period of this research, however the primary knowledge contribution has indicated the potential of the reflective methods developed and services created.

5.2.2.2 Further concept refinement

Further prototyping is necessary for the services defined and the possibilities of uptake overtime. Due to the lack of field testing it was hard to elicit the impact they would have on materialism. Both concepts have potential for implementation. However, my heart was focused more on the “Perspective” service; due to its overall uniqueness. Ideally more is required in specifying the type of experiences that a potential user would want and the integrations that would be needed to specific “experience sources” (the people that provide the experience).

5.2.2.3 Further exploration

More research is required in the domain of Interaction Design in understanding the very aspects of materialism and social influences. It is a fascinating area that has great potential for further development in design solutions that encourage individuals to change these behaviours or reflect in due course.

In addition, cultural influences in the perception of materialism would provide fascinating insights into how individual cultures praise or penalise materialistic behaviours in developed countries; the main contributors of consumption driven lifestyles. This could extend to analysing the various degrees of materialism within non-developed countries and the potential for re-use in designing for the first world.
Chapter VI
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Chapter VII
APPENDIX