A better world by design?
An investigation into industrial design consultants undertaking responsible design within their commercial remits

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A BETTER WORLD BY DESIGN?
An Investigation into Industrial Design Consultants Undertaking Responsible Design Within Their Commercial Remits

Doctoral Thesis by Norman Stevenson
A Better World By Design?
An Investigation into Industrial Design Consultants Undertaking Responsible Design Within Their Commercial Remits

by
Norman Stevenson

Doctoral Thesis
Submitted in partial fulfilment of the requirements for the award of
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June 2013

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ABSTRACT

Growing recognition of the profound topics affecting society; including population changes, social issues, and environmental crisis; is emphasising the need for industrial designers to address additional goals beyond those associated with purely commercial targets. Industrial design consultants, however, have a myriad of complex and inter-related elements influencing their work. This thesis investigates those influences and offers a portrayal of what affects industrial design consultants addressing more responsible design goals within their commercial remits.

It reviews the literature relating to the nature and role of industrial design, and its relationship with society’s larger needs. From this, it expounds the methodology underpinning the investigation, and describes the phases involved. Two main studies were undertaken to pursue the research objectives: an explorative workshop involving 19 participants from design practice and academia; and a series of semi-structured in-depth interviews involving a total of 31 industrial design consultants, leading academics, and design-related strategic consultants.

From the analysis of the data, three sets of key observations and theory are presented in the thesis. The first set of findings examines the range of influencing factors acting on the consultant and their work by depicting the characteristics of the main elements constructing the product creation context. The second and principal set of findings identifies what determines the possibility for consultants to incorporate responsible design goals within their work. Using a framework derived from the analysis, and drawing on interview data for empirical backing, it expands on six key areas, identifying a critical determining factor for each. The third set of outcomes combines the findings from the primary data with existing knowledge on design actions and behavioural theory, to depict the formation of an industrial design consultant’s behaviour and their tendencies towards responsible design. In this way, the research offers a thorough investigation of what affects industrial design consultants addressing more responsible design goals, by considering the characteristics of their circumstances; the determination of their possibility to act; and what shapes their individual behaviour.
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Finally, my heartfelt gratitude to my friends and family at home, y Churra, for their unwavering support and encouragement throughout the PhD journey.

Go raibh mile maith agaibh!
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1.0 INTRODUCTION

This chapter introduces the research project presented in this thesis. It explains the focus of the investigation and provides the context from which to view the contents of the subsequent chapters. Beginning with an explanation of the background and central concepts for the project, it sets out the main aim and the objectives for the research, concluding with an outline of the thesis structure and contents.
1.1 > Background to the Research

Industrial design is a young profession, and in many ways it is still evolving what its contributions to business and society can be. Consultant designers offer client companies broad sets of capabilities, from aesthetics, design for production and human-centred design; to innovation, strategy, interface design, and the generation of meaningful product experiences (Kotler & Rath, 1984; Zaccai, 1990; Lorenz, 1994; Cooper & Press, 1995; Hargadon & Sutton, 2000; Stevens et al., 2008; Olsson & Holm, 2009). Throughout their history, however, their skills have been directed predominately towards assisting commercial goals through the design of distinct product offers that appeal to consumers and entice them to purchase (Heskett, 1980; Sparke, 1983; Whiteley, 1993; Meikle, 2001; Borja de Mozota, 2003; Amit, 2006).

Today, a growing recognition of the profound topics affecting society, calls for designers to address additional goals beyond those associated with profit-making. Issues such as ageing populations, environmental crisis, social inequalities and diminishing quality of life; coupled with an awareness of design’s potential to have a more positive influence; have raised wide felt concerns (not least of all from designers themselves) for the implications and responsibilities of industrial design’s current role (Sparke, 1987; Whiteley, 1993; Cooper, 2005; Walker, 2006; Bhamra & Lofthouse, 2007; Fuad-Luke, 2009). The contributing effect on many environmental problems from the production, use and afterlife of products that designers create, for example, is becoming a matter of urgency (Manzini, 1994a; Dewberry, 1996; Mackenzie, 1997; Margolin, 1998; Lofthouse, 2001; McDonough & Braungart, 2002; Walker, 2006; Bhamra & Lofthouse, 2007; Fuad-Luke, 2009). Moreover, extending the model of user requirements to incorporate the needs of a larger segment of society, is rarely accomplished in the commercial sphere (Sims, 2003; Dong et al., 2004; Davey et al., 2005; Hewer, 2007; Clarkson & Coleman, 2010).

Design may well be “the most powerful tool yet given to man with which to shape his products, his environment, and, by extension, himself” (Papanek 1984, p.102); but, if industrial design is to extend its reach to incorporate society’s greater needs, a deeper understanding of what is currently preventing it, is required. The
designer’s circumstances and the realities of their commercial context are seldom regarded or accurately accounted for in the discussions surrounding the topics. However, a greater appreciation of the factors shaping their opportunities and behaviour would offer a stronger foundation for future efforts looking to improve the designer’s positive effect. Addressing that gap in knowledge is the focus of this research thesis.

1.1.1 > Central Topics
The research focus is constructed around two main subjects: responsible design as a goal; and industrial design consultants. These central topics are briefly clarified below:

1.1.1a > Responsible Design
In the context of the research, the term ‘responsible design’ is used to broadly encompass the areas of: sustainable design, ecodesign, universal design and design for social responsibility. It encapsulates the notions contained within those topics, and is intended to signify: design which effects a positive change on the greater needs of society. These greater societal needs include issues associated with ageing populations, environmental crisis, health, disabilities, social inequalities, diminishing quality of life and well-being, crime, and poverty.

Figure 1.1: Explanation of responsible design
1.1.1b > Industrial Design Consultants

This research investigation focuses on industrial design consultants as the main subject group. Industrial design involves the design of products and systems for mass production; and can be defined as:

“the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer.”

(IDSA, 2010)

Industrial design consultants are designers who operate by gaining commissions from a variety of clients, as opposed to those who are a direct employee to a single manufacturer (Heskett, 1987). In the UK, the number of consultancies involved in product and industrial design approaches 2,000; approximately a third more than in-house design teams (derived from Design Council, 2010) (see section 2.2.5) and as such, their output constitutes a significant portion of the commercial industrial design work produced. Moreover, because they are commissioned by numerous clients, consultants have a broad reach and more prolific involvement with the manufacturing industry and the products they produce.

1.1.2 > Influence and Affect

Within the thesis, two terms; ‘influence’ and ‘affect’; are central to discussing the research topic and are used widely in the text. In general, these words are synonymous; however, they denote slightly different notions. If something ‘influences’, this suggests that it has a capacity to have an effect but that it may or may not contribute to the outcome; whereas if something ‘affects’, this suggests that it does have an effect. The use of these two terms in the thesis content reflects this perspective.

1.1.3 > Funding

The research presented in this thesis was funded by an Engineering and Physical Sciences Research Council grant, obtained through Loughborough Design School, in collaboration with Loughborough School of Business and Economics.
1.2 > Author’s Background and Personal Motivations

Before returning to academia to pursue a PhD, the author worked for ten years as an industrial designer; both in-house with LG Electronics at their European design centre; and as an industrial design consultant with Design Partners, a strategic product design consultancy on the outskirts of Dublin. The eight year period as a consultant, included involvement with global clients in consumer electronics, healthcare and domestic goods; such as Dell, Logitech, Slendertone and Hasbro; and samples of the work completed gained recognition from design awards including Red Dot, Good Design and IF.

A long standing interest in the potential for design to contribute more to society’s greater needs underlies the motivation for the research presented in this thesis. This interest was originally expressed as an attraction to green architecture in the early 90s, and later developed to incorporate Inclusive Design and other social concerns during further undergraduate studies (at the National College of Art and Design, Dublin; and the University of Industrial Arts, Helsinki); culminating in a degree thesis advocating the adoption of a responsible design approach by industrial designers (Stevenson, 1999).

The experience of professional practice, however, provided a broader appreciation of industrial design, and highlighted the complexity to achieving those responsible design goals in the commercial context. It also contributed to the author’s awareness and concern for their own role as a designer; and highlighted the importance, reach and timeliness of the topic. This sparked a desire to resolve the discordances between commercial design’s apparent disregard for society’s needs, and aspirations to contribute positively to an appreciable future; motivating a return to academia to pursue in-depth research on the topic in a formal manner.
1.3 > Research Intent

This section states the principal aim for the research project, and sets out the intentions, objectives and main research questions, which directed the investigation activities.

1.3.1 > Research Aim

The aim of this research is to provide an understanding of what currently affects industrial design consultants undertaking responsible design goals within their commercial work.

The intention is to provide a detailed portrayal of the scope of factors influencing industrial design consultants undertaking responsible design through their commercial work. The research is aimed at providing an accurate and representative description of the problem, as opposed to offering a particular solution. It was felt that without a thorough and clear understanding of the real circumstances affecting the industrial design consultant, any efforts aimed at enabling them may be misdirected, or targeted at a less critical factor. It is hoped that a more detailed and holistic portrayal of the consultant’s situation would enable more targeted and effective efforts towards increasing their responsible design actions.

1.3.2 > Research Objectives

The specific objectives of this research project are:

1. To critically review existing knowledge relating to: the nature and role of commercial industrial design consultants; the requirement for design to address larger societal needs; and the relationship of the industrial design field to those needs.

2. To portray the industrial design consultant’s context, and account for the array of elements affecting their commercial design work.

3. To identify what determines the possibility for the industrial design consultant to undertake responsible design.

4. To examine what shapes an industrial design consultant’s behaviour and whether it incorporates responsible design objectives.
5. To provide a representative portrayal of the industrial design consultant’s circumstances and what potentially affects them enacting responsible design within their commercial role.

1.3.3 > Main Research Questions
In the process of the research, the following main questions were addressed:

1. What affects the industrial design consultant and their work?
2. What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit?
3. What shapes the industrial design consultant’s responsible design behaviour?

1.4 > Thesis Structure
The body of this thesis comprises of a further six chapters. A short description of the contents for each is provided below.

Chapter Two: Literature Review
The chapter following this one reviews the literature and existing knowledge regarding industrial design, and its relationship to the topics encompassed within responsible design. It contains two main sections. The first explores the nature and role of commercial industrial design, particularly within consultancy practice. The second examines the requirement for design to address a broader set of society’s needs (including an ageing population, environmental crisis, and social inequalities) and the current understanding of the possibility for commercial designers to do so. The chapter concludes by identifying a set of research questions that directed the primary research enquiry and which are addressed in the content of the thesis.

Chapter Three: Research Methodology and Methods
The third chapter presents the methodology and methods which underlie the research project. It begins with a review of available research approaches and offers justification for the adopted methodology. Following this, it details the research design that structures the investigation and describes the studies
undertaken to accomplish the aims and objectives of the project. This includes an account of the samples involved, the study procedures, and the analysis of the data collected. In addition it discusses the reliability and validity of the research to support the thesis.

**Chapter Four: Findings A - The Industrial Design Consultant’s Context**

This chapter presents the first set of research findings, which portray the circumstances surrounding the industrial design consultant and their design work. It describes the main actors involved in product creation, and accounts for the influences associated with their characteristics. The chapter concludes with a model describing the product design context. This provides a illustration of what can affect the consultant, and a basis to further examine their engagement with responsible design goals within their commercial remit.

Chapter Four addresses the research question:

*What affects the industrial design consultant and their work?*

**Chapter Five: Findings B - The Key Determining Factors**

Chapter Five presents the second, and main, set of findings from the research studies. Using a framework consisting of six key areas derived from the analysis of the primary data, it provides an account of what determines the possibility for industrial design consultants to achieve responsible design goals within their commercial remit. Under each of the six areas, the main determinants affecting the consultant are described, incorporating the data and findings from the main study interviews, and concluding with the identification of a critical factor for each.

Chapter Five addresses the research question:

*What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit?*

**Chapter Six: Theory Development - The Industrial Design Consultant’s Formation of Responsible Design Behaviour**

This chapter presents a development of theory which examines what shapes an industrial design consultant’s design behaviour and whether it will incorporate
responsible design objectives. It reviews existing knowledge regarding design activities and the antecedents to pro-social behaviour, in combination with the findings from the primary research to propose a theoretical model depicting the conditions of a consultant’s responsible design behaviour.

Chapter Six addresses the research question:

*What shapes the industrial design consultant’s responsible design behaviour?*

**Chapter Seven: Discussion**

The penultimate chapter reflects on the research project and discusses its outcomes. It reviews a number of key topics which emerged during the investigation and draws together a set of dominant themes and considerations highlighted. It also considers the implications and importance of the findings and how they relate to existing knowledge.

**Chapter Eight: Conclusions**

The final chapter draws together the conclusions and findings presented in the previous content to reflect on the significance, and contribution to knowledge, of the main thesis. It evaluates how the research aim and objectives are met, and summarises the main conclusions drawn from the research. From this, it discusses the limitations of the project in addition to offering suggestions for future work leading from the findings.

Table 1.1 outlines the purpose and outcome of each chapter and presents a summarised overview of the thesis structure and content.
<table>
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<tr>
<th>Chapter 1: Introduction</th>
<th>Purpose</th>
<th>Outcome</th>
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<tbody>
<tr>
<td>To introduce the research and provide an overview of the thesis structure</td>
<td>The research aims and objectives; a set of validated research questions; the research topic, and identify the gap in the knowledge</td>
<td>To review the existing literature and theory surrounding the research topic, and identify the gap in the knowledge</td>
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<tr>
<th>Chapter 2: Literature Review</th>
<th>Purpose</th>
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<tr>
<td>To outline the research methodology selected through review of available approaches; and to describe the research studies undertaken</td>
<td>The research methodology and design; and a detailed account of the methods undertaken</td>
<td>To present the findings relating to the first research question: What affects the industrial design consultant and their work? A descriptive model of the elements affecting industrial design consultants within their commercial remits</td>
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<th>Chapter 3: Research Methodology and Methods</th>
<th>Purpose</th>
<th>Outcome</th>
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<tr>
<td>To present the findings relating to the first research question: What affects the industrial design consultant and their work? A descriptive model of the elements affecting industrial design consultants within their commercial remits</td>
<td>The research methodology and design; and a detailed account of the methods undertaken</td>
<td>To present the findings relating to the second research question: What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit? A framework of six key determining areas; and a set of corresponding critical factors</td>
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<th>Chapter 4: Findings A</th>
<th>Purpose</th>
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<tr>
<td>To present the findings relating to the second research question: What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit? A framework of six key determining areas; and a set of corresponding critical factors</td>
<td>The research methodology and design; and a detailed account of the methods undertaken</td>
<td>To present the findings relating to the first research question: What affects the industrial design consultant and their work? A descriptive model of the elements affecting industrial design consultants within their commercial remits</td>
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<th>Chapter 5: Findings B</th>
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<tr>
<td>To present the findings relating to the second research question: What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit? A framework of six key determining areas; and a set of corresponding critical factors</td>
<td>The research methodology and design; and a detailed account of the methods undertaken</td>
<td>To present the findings relating to the first research question: What affects the industrial design consultant and their work? A descriptive model of the elements affecting industrial design consultants within their commercial remits</td>
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<th>Chapter 6: Theory Development</th>
<th>Purpose</th>
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<tbody>
<tr>
<td>To present a development of theory relating to the third research question: What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit? A theoretical model depicting the formation of responsible design behaviour</td>
<td>The research methodology and design; and a detailed account of the methods undertaken</td>
<td>To discuss the results of the research project and consider the implications of the emergent findings</td>
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<th>Chapter 7: Discussion</th>
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<tr>
<td>To present a development of theory relating to the third research question: What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit? A theoretical model depicting the formation of responsible design behaviour</td>
<td>The research methodology and design; and a detailed account of the methods undertaken</td>
<td>To discuss the results of the research project and consider the implications of the emergent findings</td>
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<th>Chapter 8: Conclusions</th>
<th>Purpose</th>
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<tr>
<td>To present a development of theory relating to the third research question: What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit? A theoretical model depicting the formation of responsible design behaviour</td>
<td>The research methodology and design; and a detailed account of the methods undertaken</td>
<td>To discuss the results of the research project and consider the implications of the emergent findings</td>
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Table 1.1: A breakdown of the purpose and outcome for each thesis chapter
Chapter Two:  

2.0 LITERATURE REVIEW

This chapter reviews the literature and existing knowledge regarding industrial design, and its relationship to the topics encompassed within responsible design. It contains two main sections. The first explores the nature and role of commercial industrial design, particularly within consultancy practice. The second examines the requirement for design to address a broader set of society’s needs (including an ageing population, environmental crisis, and social inequalities) and the current understanding of the possibility for commercial designers to do so. The chapter concludes by identifying a set of research questions that directed the primary research enquiry and which are addressed in the content of the thesis.
2.1 > Introduction

This chapter presents a review of the literature and existing knowledge related to the research aim. It serves three interlinked purposes: to explain the context and background for the investigation and locate the research within the field; to identify the gap in the knowledge which this research will address; and to identify aspects that may affect designers addressing responsible design goals, along with potential influences which require further consideration.

Given the breadth and novelty of responsible design, combined with the specific focus on industrial design consultants, it is not unexpected that there is a lack of literature directly covering the research topic. Instead, any relevant knowledge is distributed across diverse and disconnected areas, prompting the need for a broad review which brings together the understanding available for both aspects. To achieve this, the chapter is presented as two sections. The first presents the existing knowledge regarding industrial design practice, with particular attention on consultancy design. It examines the origins and background of the field; industrial design’s engagement with business; along with the characteristics of contemporary industrial design and designers; in order to identify what influences the industrial design consultant’s role and what they can achieve. The second section reports on the need for design to address a broader set of societal issues. It examines a set of topics; including environmental concerns, ageing populations and social responsibilities; and investigates the existing understanding regarding industrial design’s relationship to them.

These two strands of enquiry can be represented by the following initial research questions:

What are the role and characteristics of consultant industrial designers, and what affects what they can accomplish in that role?

What additional concerns require design’s attention, and what are the barriers and enablers to commercial design addressing them?

These directed the review of the literature; the outcomes of which generated the main research questions for the primary studies (see section 1.3.3 and 2.4.2).

The full contents and structure for this chapter are illustrated in figure 2.1.
2.2 > Section A: The Role and Characteristics of Consultant Industrial Design

This section of the literature review will explore what industrial design entails, and what shapes the consultant industrial designer’s role in today’s world. Beginning with a brief outline of the historical origins, it goes on to establish the functions industrial design performs; followed by a discussion of its relationship with business, and an exploration of its evolving role. In addition, it examines the nature and characteristics of consultancy industrial design along with the traits typically demonstrated by designers. In this way, it identifies the existing understanding of what is required of industrial design consultants, and what affects what they can accomplish in their role.

2.2.1 > The Origins and Early Role of Industrial Design

Though the origins of functionally optimised design can be traced back to classical antiquity, it is only since the twentieth century that we can speak of design for industry which resembles ‘industrial design’ in its modern sense (Bürdek, 2005). Starting out with the purpose of applying art to industry (Meikle, 2001) industrial design\(^1\) stemmed from the new organisational structures (the division of labour and the increase in large scale modern industry) of the industrial revolution (Heskett, 1980; Heskett, 1987). Although there was notable progress towards a recognised profession in Europe in the early 1900s; through the work of designers such as Peter Behrens, the Deutscher Werkbund, and the Bauhaus teaching institution; it was in 1920s America that industrial design, as we know it, emerged (Sparke, 1983).

Driven by an expanding economy and changing consumption patterns, industrial design’s initial role was to serve manufacturers who aimed to increase sales, and who wished to distinguish the articles they produced from those of their competitors (Sparke, 1983; Meikle, 2001).

During the challenges of the Great Depression, the popularity of industrial design grew and the basis of the modern profession was formed, predominantly brought

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\(^1\) The term ‘industrial design’ is believed to have been coined by Gilbert Seldes (Sparke, 1983) and is thought to have had its first use in 1919 when Joseph Sinel printed it on his business card; using it in reference to drawings of industrial objects for advertisement (Cheney & Cheney, 1936).
about by the “big four” New York designers: Walter Dorwin Teague, Norman Bel Geddes, Henry Dreyfuss and Raymond Loewy (Heskett, 1980). Their work defined the designer’s early functions as those of: improving a product’s appearance; increasing its suitability to use; and strengthening the economy of its manufacture (Meikle, 2001). As industry grew, widespread development of mass-production; miniaturisation of parts; and the potential of new materials, offered greater opportunities for expression and aesthetics, and soon purely visual aspects began to dominate industrial design’s role (Heskett, 1980). This was particularly evident in products from the streamlining period of the 1930s and 40s, for example (Meikle, 2001; Bürdek, 2005); and by the middle of the twentieth century, designers were frequently finding their role relegated to that of ‘stylist’ (Zaccai, 1990). Industrial design was dependent on industry for its raison d’être and despite efforts by idealists, it was becoming institutionalised as a sales technique comparable to advertising (Sparke, 1983; Meikle, 2001). In 1950, Henry Dreyfuss remarked:

“One cardinal point which should be made unmistakably clear ... is that industrial designers are employed primarily for one reason: to increase the profits of the client company.” (cited in Whiteley, 1993, p.17)

Many designers at that time, however, insisted design should also deal with human expectations and capabilities (Zaccai, 1990). This can be illustrated by the title page of Dreyfuss’ 1955 book ‘Designing for People’, which stated:

“We bear in mind that the object being worked on is going to be ridden in, sat upon, looked at, talked into, activated, operated, or in some other way used by people individually or en masse.

When the point of contact between the product and the people becomes a point of friction, then the industrial designer has failed.

On the other hand if people are made safer, more comfortable, more eager to purchase, more efficient - or just plain happier - by contact with the product, then the designer has succeeded.” (Dreyfuss, 1955, title page)

Spurred by this outlook, designers began approaching their design work from the perspective of the consumer (Heskett, 1980). They gave regard to the user’s physical relationship to the product, as well as their wishes, needs and tastes. New design approaches were initiated, including some of the first consumer research (Heskett, 1980; Sparke, 1983); for example, Bel Geddes grouped society into four main categories according to their expectations and material possessions, and used these groupings to inform design and marketing decisions (Sparke, 1983).
After the war, America saw its economic system move from one based on scarcity and need to one of abundance and desire (Meikle, 2001). The saturation levels for many products were being achieved, and within this newly formed consumerist society two significant aspects of industrial design’s role came about; design as a social language, and design as an expression of lifestyle (Whiteley, 1993). Another lasting characteristic from the early industrial design consultants was the designer’s eagerness to work across a vast range of products (Sparke, 1983). As Cheney and Cheney expressed in their often quoted phrase, designers were able to work on objects, ‘from a lipstick to a steamship’ (1936, p.58). This diversity was encouraged by the Society of Industrial Designers in America who required its members to show involvement in three or more product categories (Sparke, 1983). Furthermore, the designer’s ability to adapt their talents to the needs of commercial industry was one of the main contributing factors for the growth of the industrial design profession (Heskett, 1980; Sparke, 1983) and one which still has significance today.

2.2.2 > What is Industrial Design?

At its most basic, industrial design concerns the form and creation of products for mass manufacture (Heskett, 1987; Cooper & Press, 1995; Tovey, 1997; McDermott, 2007). Its scope is not confined to a single manufacturing process; a particular category of artefact; or a limited set of materials or medium; and as such, industrial designers are involved in a vast range and diversity of products (Forty, 1986; Heskett, 1987). According to Heskett, the task of industrial design is “to produce a plan and specification of a form or mechanism for large-scale production” (1987, p. 110). This idea that industrial design is about planning the characteristics of a product occurs regularly in explanations, but does little to account for the scope of the designer’s involvement, or to distinguish it from the other professions involved in the creation of products. That said, the industrial aspect of industrial design should not be overlooked, and the need to enable successful replication of products with appropriate quality is fundamental to its role (Amit, 2006). In addition, the designer is expected to consider such aspects as safety, cost, manufacturability and marketability, on top of the basic provisions of form and function (Kotler & Rath, 1984; Austin et al., 2007).
At the core of their activities, industrial designers need to resolve both the requirements of the consumer/user, and those of the client company.

“Design is the process of seeking to optimize consumer satisfaction and company profitability through the creative use of major design elements (performance, quality, durability, appearance, and cost) in connection with products, environments, information, and corporate identities.” (Kotler & Rath, 1984; also cited in Cooper & Press, 1995; Lothhouse, 2001).

This dual focus towards the user and the client is echoed in the IDSA’s (Industrial Designers Society of America) definition of industrial design which states:

“Industrial design (ID) is the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer.” (IDSA, 2010)

Further to this, the IDSA also comment that “the industrial designer’s unique contribution places emphasis on those aspects of the product or system that relate most directly to human characteristics, needs and interests.” (IDSA, 2010)

One facet of this is ergonomics which deals with matching the product to the physical characteristics of its users in a way that supports functional efficiency, and limits (or prevents) discomfort and negative effects (Norman, 1988; Dul & Weerdmeester, 1993; McDermott, 2007).

“The importance of ergonomics has become enhanced in recent years; indeed, the industrial designer’s analysis of the human dynamics associated with using a particular product or performing a particular task often becomes the driving force behind the design development.” (Zaccai, 1990, p.3)

Pirkl (1994) and Norman (1988) argue that creating a product which communicates the function and means of operation should be the first order of importance for industrial designers.

Another aspect relating to the user is the requirement to meet their needs and interests. Classical theories have divided needs into two groups: primary needs are those whose satisfaction is essential for sustaining basic life, while secondary needs are “those that are born from the relationship among human beings and which are imposed by society on the individual” (Morales, 1984, p.118). Today, the majority of commercial industrial design addresses needs of the latter type; moreover, it is predominantly concerned with aesthetic appeal, representing lifestyle values,
meeting cultural and emotional expectations and enhancing experiences (Zaccai, 1990; Whiteley, 1993; Shove et al., 2005). “At its core, industrial design has been about creating objects of desire” (Fry, 2009). Put in today’s context of environmental stress, this is frequently seen as a negative aspect or one to be treated with caution. However, aesthetics and beauty are also important positive aspects of design. Not only do attractive things work better but they contribute to a more pleasant and enjoyable existence (Norman, 2004; Sudjic, 2009). “Beauty has utility. It makes us feel good” (Viemeister, 2003, p.145). Aesthetics is intrinsic to design (Potter, 2002) and although the design of a product needs to address a broad set of criteria including its function, manufacture and appearance, the resolve of the aesthetic is almost unique to the designer; ensuring its importance in their role.

2.2.3 > Industrial Design, Engineering Design and Product Design

Although the disciplines of engineering design and industrial design share a common space in the development of manufactured products, they are significantly different. The engineering designer’s skills and training are focused on the product’s mechanical function with a view to achieving efficiency and economy for a specified technical performance; whereas the industrial designer will be concerned more with resolving those aspects of the product which contribute to its usefulness, appeal and suitability to the consumer (Cooper & Press, 1995; Tovey, 1997; Dumas, 2000). “Put in crude and somewhat questionable terms, the engineer makes the product work, while the industrial designer makes it sell” (Cooper & Press, 1995, p.25). The difference between both disciplines is further accentuated by the contrasting work methods and thinking processes involved (Cooper & Press, 1995; Lawson, 2005). Typically engineers have a better understanding of what is required from the early stages of a project and they tend towards a process which is relatively systematic, precise and almost mechanical; whereas the designer’s requirements are likely to be expressed in more vague terms, and their art and craft derived education encourages a more imaginative and unpredictable approach (Lawson, 2005).
‘Industrial design’ and ‘product design’, on the other hand, can be considered as interchangeable terms which are most often used to refer to the same field. ‘Product design’ is typically used as a modern alternative to ‘industrial design’ (McDermott, 2007) with many industrial designers using it as they find the term ‘industrial design’ does not adequately communicate the work they do; suggesting instead the design of factories or industrial equipment (Tharp & Tharp, 2009). For the purposes of this thesis, therefore, both terms are assumed to have the same meaning.

2.2.4 > Industrial Design and Business

In 1974, the then chairman of IBM, Tom Watson Jr. proclaimed in a lecture at Harvard University that “good design is good business” (Walton, 2001, p.6). More recently, the UK Design Council (2008) and the Cox report (2005) reiterated this view, declaring that design is key to business success as it: improves productivity, efficiency and quality; adds value through new and innovative product offers; combats global competition; and identifies new markets and investment. Industrial design has also been identified as an inextricable part of innovation (Dumas, 2000) which is increasingly recognised as one of the most important currencies for business and the new economy (Hargadon & Sutton, 2000; Andrew et al., 2010).

“In the face of globalization, successful companies can no longer grow by following their present paths. They must create new paths - and here design can make a difference” (Austin et al., 2007, p.9).

However, despite evidence to link good design with better financial performance (DTI, 2005; Hertenstein et al., 2005; Austin et al., 2007; Design Council, 2008) the actual level of industrial design’s contribution is difficult to confirm as it is impossible to isolate its effect from the other aspects of business (Meikle, 2001; Buchner, 2007). Moreover, there is evidence to suggest that the actual use and perceived value of design falls short of its potential. For example, a UK Design Council study found that only 32 per cent of larger businesses and 15 per cent of SMEs actually regard design as integral to their practice (2008).
For those companies who are employing industrial design, it seems its main perceived contribution is in creating meaningful distinction (Lorenz, 1994; Borja de Mozota, 2003; Stevens et al., 2008; Brown & Katz, 2009). In a study with thirty three European SMEs, Borja de Mozota (2003) found that design is seen first as a differentiating tool; scoring highest for its impact on brand, product appearance, and perceived quality. Manufacturers recognise that products which are more exciting and appealing to the consumer can elevate the offering above those of the competitors, even without a technological differentiator (Stevens et al., 2008). Lorenz (1994) observes that industrial designers have become key to creating that appeal, and that this is not just through manipulation of shape and appearance, but also by affecting the character of the product. A significant element of industrial design’s contribution today, therefore, is the creation of less tangible outcomes, such as transforming a commodity into an experience, or reducing complexity to create value (Shove et al., 2005; Austin et al., 2007).

The focus on the consumer’s experience has grown as a dominant aspect in the design field and the business world in recent years. The ‘experience economy’ followed on from the service economy, and calls for products to make a connection to the users’ emotions and memories (Pine & Gilmore, 1999; Norton, 2005; Brown & Katz, 2009). Such an approach is being adopted more and more (Norton, 2005) and is evolving from a search for meaningful experiences towards a quest for authenticity in the product offering; with the designer playing a pivotal role (Pine & Gilmore, 1999; Mattus, 2008). Although these approaches currently still concentrate toward secondary needs, there is a suggestion that a desire for authenticity may open up the possibility for other larger topics and societal needs to also enter into considerations and gain value. Working against this, however, is the limited perception all too often held by business that: “Quite simply, the role of designers has always been to translate and communicate the value of a business idea to consumers.” (Sawhney & Prahalad, 2010, p.1)
Industrial designers can generally be categorised under two broad terms: as a direct employee of a manufacturer in the form of an ‘in-house’ designer, or as a consultant designer who gains commissions from a variety of clients (Heskett, 1987). Apple, Nokia and Sony, for example, have internal design groups which design their products; while IDEO, Frog and DCA are examples of design consultancies which get involved in the design of products with various client companies. In other instances, the categories of in-house or consultant do not apply so fittingly. Philips Design and BMW Designworks are examples that bridge both categories by functioning as independent design offices serving their mother companies, while also offering services for commission to other select clients. In a similar manner, companies with internal design groups often complement their capabilities with expertise from external consultants (Austin et al., 2007). A further category could also be offered to describe those designers who are both designer and producer of their own products (Margolin, 2003).

Gemser and Van Zee (2002) explain that reasons for acquiring design services externally from a consultancy may be due to a lack of resources, or as a matter of company strategy.

> “An organization seeks outside expertise to add talent and technology it cannot maintain on a day-to-day basis, to speed up the development of products and services, and to jump-start change and innovation with specialized skills and processes.” (Tennity, 2003, p.10)

Design consultancies gain exposure to a wide diversity of industries and product areas, affording them broad knowledge and skill sets; including insights into lifestyle trends and social developments, as well as expertise in a variety of materials and processes (Hargadon & Sutton, 2000; Austin et al., 2007; Stevens et al., 2008). Their wide exposure also allows them to gain ideas in one context which can be cross-pollinated or applied elsewhere (Hargadon & Sutton, 2000). Furthermore, as an outside party, consultants are ideally positioned to challenge the underlying assumptions regarding their client’s product solutions; and they can also act as facilitators, co-ordinating the process and aiding communication across the client company’s business sections (Lorenz, 1994; Olsson & Holm, 2009).
There are over 1,900 consultancies in the UK involved in product and industrial design; which amounts to approximately a third more teams than in-house design groups (derived from Design Council, 2010). Industrial design consultancies are typically small, with two-thirds of those in the UK employing less than five, and just under 90 per cent with less than ten employees (Design Council, 2010). Consultancies are commonly formed to fulfil the aspirations of the founding designers and the firm’s directions, targets and organisation, are heavily influenced by their personal goals (Bruce & Docherty, 1993). Bruce and Docherty (1993) identified that the main motivations of consultancy management tend to be: the production of quality design; the well-being of staff; and personal fulfilment. Design consultancies can vary greatly in their strategies, operating practices and philosophies. An illustration of this is Gemser and Van Zee’s (2002) comparison of factors differentiating design firms with weak and strong reputations, as listed in table 2.1.

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2 The Design Council quotes 10,800 design consultancies in the UK, of which 18 per cent work in product and industrial design (amounting to 1944 consultancies). Similarly in-house product and industrial design teams number 22 per cent of 6,500 teams (amounting to 1430). However, in-house teams are described as larger, with the statistics suggesting there may be in the region of a quarter more industrial designers working in-house (Design Council, 2010).
### Table 2.1: A comparison of design firms with strong and weak reputations based on McKinsey’s 7S Model (Gemser & Van Zee, 2002, p.39)

<table>
<thead>
<tr>
<th>Industrial Design Firms With Weak Reputation</th>
<th>Industrial Design Firms With Strong Reputation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy</strong></td>
<td><strong>Strategy</strong></td>
</tr>
<tr>
<td>• Limited scope service profile</td>
<td>• Full scope, or niche, service profile</td>
</tr>
<tr>
<td>• Product-oriented</td>
<td>• Client-oriented</td>
</tr>
<tr>
<td>• Domestic focus, both with regard to clients and HR management</td>
<td>• Active globalisation strategy, including multicultural HR management</td>
</tr>
<tr>
<td><strong>Skills</strong></td>
<td><strong>Skills</strong></td>
</tr>
<tr>
<td>• Craftsmanship: skills to optimise the design process</td>
<td>• Entrepreneurship: skills to ‘extend’ the design process</td>
</tr>
<tr>
<td>• Skill development based on the design process</td>
<td>• Skill development based on clients’ needs and wishes</td>
</tr>
<tr>
<td>• Skills rooted in textbook wisdom</td>
<td>• Skills rooted in practice</td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td><strong>Structure</strong></td>
</tr>
<tr>
<td>• Vertically organised</td>
<td>• Flat, horizontally organised</td>
</tr>
<tr>
<td>• Use of ‘mono-disciplinary’ project teams, directed by managing directors</td>
<td>• Use of multidisciplinary, self-organising project teams</td>
</tr>
<tr>
<td>• Project teams operate separately from clients</td>
<td>• Project teams integrated in clients’ organisation</td>
</tr>
<tr>
<td>• Underdeveloped network linkages, mainly with ‘local’ suppliers</td>
<td>• Sophisticated network linkages, mainly with external top specialist</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td><strong>Staff</strong></td>
</tr>
<tr>
<td>• Uniform management team</td>
<td>• Diversified management team</td>
</tr>
<tr>
<td>• HR management focused on specific cultural and educational backgrounds</td>
<td>• HR management focused on creating diversity in culture and education</td>
</tr>
<tr>
<td>• Passive HR management, difficult to attract talented people</td>
<td>• Active HR management, ensuring first pick of talented people</td>
</tr>
<tr>
<td><strong>Systems</strong></td>
<td><strong>Systems</strong></td>
</tr>
<tr>
<td>• Up-to-date technical support systems</td>
<td>• Up-to-date technical support systems tuned to client’s systems</td>
</tr>
<tr>
<td>• Basic communication systems</td>
<td>• More advanced communication systems</td>
</tr>
<tr>
<td>• Quality systems in start-up phase</td>
<td>• Sophisticated quality systems</td>
</tr>
<tr>
<td><strong>Shared Values</strong></td>
<td><strong>Shared Values</strong></td>
</tr>
<tr>
<td>• Briefing of client is given</td>
<td>• ‘Bend’ the briefing of client when necessary</td>
</tr>
<tr>
<td>• ‘Fail safe’</td>
<td>• ‘Safe fail’</td>
</tr>
<tr>
<td>• ‘My-work-is-my-hobby’ mentality</td>
<td>• ‘An honest dollar for an honest day’s work’ mentality</td>
</tr>
<tr>
<td><strong>Style</strong></td>
<td><strong>Style</strong></td>
</tr>
<tr>
<td>• ‘Introvert’</td>
<td>• ‘Extrovert’</td>
</tr>
<tr>
<td>• Prospect hunting is a-selective and not well prepared</td>
<td>• Selective and professional prospect hunting</td>
</tr>
<tr>
<td>• To ignore the (novice) design client</td>
<td>• To help the (novice) design client to exploit design resources effectively</td>
</tr>
</tbody>
</table>
From their findings, Gemser and Van Zee (2002) also identified a set of six critical factors contributing to success in present-day design consultancies; these can be summarised as:

- Being a full design service provider\(^3\) or a niche specialist;
- Maintaining excellent, long-term client relationships and achieving customer satisfaction by understanding and adapting to the needs of the clients;
- Being future-oriented, ready to grab and act on opportunities; and stimulating new business opportunities for clients;
- Using multidisciplinary teams and striving after a varied composition of staff and management;
- Building and sustaining an excellent image by delivering quality products and actively seeking exposure;
- Engaging in a cycle of continuous learning by continuously evaluating their own services and practices; adapting to the changing needs of clients, opportunities and threats of the design environment; and being open to making mistakes (Gemser & Van Zee, 2002).

It was also observed that the less reputable consultancies tend to be oriented more towards the product they deliver, rather than the client they serve; and, that the well-reputed consultancies are less likely to accept the briefing as given by the client (Gemser & Van Zee, 2002). An additional contributor to success, not identified in these findings, could be regarded as ‘over performance’, or offering the client more than they realised they wanted.

“No matter how well I write the brief, I am really looking for something more than I was actually asking for ... The ability to provide that is a good measure of a really good consultant or consultancy, and it marks out creativity in design from most other business resources I can think of.” (Mercer (BT Group’s Head of Design) cited in: Woods, 2010, p.12)

Other attributes of design consultancies can be accounted for by what Dorst (2009) refers to as ‘Design Practice’; the aspects of the design firm not directly related to projects but which contribute to the general character, agenda, and philosophy shared by its designers. These aspects include: the composition of the consultancy, comprising its members and the kind of knowledge and abilities brought together; the physical space, tools, and working methods of the office; the preparation of

\(^3\) Just 11 per cent of the industrial design consultancies in the UK work solely in industrial design (Design Council, 2010)
pitches and the types of clients sought; the development of the design agenda; and internal policies, such as those for selecting and hiring new staff (Dorst, 2009). Dorst (2009) comments that the consultancy’s traits (or ‘Design Practice’) can have a greater influence on the nature and quality of the designs produced than the actual conceptual work that generates them. This suggests that it may also have a significant influence on consultants addressing topics, such as responsible design goals. Ashton (2003, p.3) comments that:

“in a situation where there is no empirical referent for what is right, individuals instinctively look to the agreed norms of their peer group to legitimise their solutions or behaviour.”

Similarly, Lawson (2005, p.240) comments that “design is often a collective process in which the rapport between group members can be as significant as their ideas.”

2.2.6 > The Consultant - Client Relationship

Design consultancies are typically characterised by personal service (Bruce & Docherty, 1993). The quality of client relationships constitutes a significant part of their process, and is often cited as the most important aspect of running a design consultancy (Lawson, 2005; Design Council, 2009). Bruce and Docherty (1993) report that there are three distinct management approaches by client companies towards hiring design consultancies:

- Family approach: companies use one, or a small number of consultancies and encourage them to become ‘part of the family’. This synergistic relationship enables designers to acquire invaluable tacit knowledge of the client company, and usually leads to long-term involvement and a more strategic role.
- Arms-length: the consultancy is kept at ‘arms-length’ and is very much regarded as external to the normal functioning of the company.
- One-off purchase: the consultancy is hired on a ‘one-off’ basis. This may be because the client has no further use for the firm; they are dissatisfied with the work received; or they are unaware of the benefits of further involvement (Bruce & Docherty, 1993, p.408).

Similarly, consulting firms have differing approaches to how they relate to their clients. These can include: involving the client in the early strategic or exploratory work, but not for the design phases; full communication and display of the process to the client, particularly related to the choices made (but no creative involvement); or, inviting the clients to participate as part of the creative process (Friis, 2004).
As with all relationships, client-consultant relationships can be affected by numerous factors; such as personal chemistry, trust, respect and understanding; as well as how they align on different values and drivers (Bruce & Docherty, 1993; DeCesare, 2003; McCormack, 2006; Hakatie & Ryynänen, 2007). Nurturing the client relationship, therefore, requires a combination of personal skills, processes, and support structures on the consultant’s side (Design Council, 2009). In general, long term relationships with clients are desirable for consultancies, as they provide more security, opportunities for better insights, as well as the possibility of earlier involvement; and accordingly, the opportunity for better quality design work (Bruce & Docherty, 1993; DeCesare, 2003; Tennity, 2003; Feldman & Boul, 2005). Further advantages of long-term relationships for both the client and consultancy are summarised in table 2.2.

Foote (2003, p.46) comments that clients hire design consultants for their expertise to solve problems and create opportunities, advising that consultants should therefore take initiative and control; “it is always better to err on the side of assuming more responsibility than less”. In addition, he stresses the importance for the designer to think like the client; to be results-oriented from the client’s business perspective; and to acknowledge that the design work is a means to an end, more likely aimed at producing bottom-line results, rather than a great design (Foote, 2003). Similarly, DeCesare comments that sharing awareness of business goals and carefully matching objectives with the client should be among the consultant’s priorities (2003). These perspectives align with Bruce and Docherty’s (1993) findings, which identify the following prerequisites for achieving successful longer-term relationships:

- Providing appropriate design solutions to clients’ problems and bearing in mind their business needs
- Personal ‘chemistry’, which contributes to obtaining a quality and depth of understanding conducive to successful design solutions
- Mutual trust and respect between the individuals involved, which will assist openness, transfer of information, loyalty, commitment, and confidence in the designer’s ability
- Understanding each others’ language and effective transfer of knowledge, particularly regarding the client’s real concerns, needs and goals.
What these perspectives also present is the consultant in a servile role dominated by the client’s requirements, which suggests what they can achieve will always be at the behest of the client. This may compromise their ability to have effect at responsible design and is an aspect that requires further investigation.

Table 2.2: The advantages of long-term client-consultant relationships
(compiled from: Bruce & Docherty, 1993)

<table>
<thead>
<tr>
<th>Client Perspective:</th>
<th>Designer Perspective:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educating the external designer:</strong></td>
<td><strong>Tacit knowledge:</strong></td>
</tr>
<tr>
<td>Effective design solutions can be facilitated by educating designers about the company goals, business direction, company personality and manufacturing capabilities</td>
<td>Long-term relationships allow the designer to gain tacit knowledge about the client’s company, needs and concerns; enriching the solutions they can propose</td>
</tr>
<tr>
<td><strong>Solutions in advance:</strong></td>
<td><strong>Strategic Role:</strong></td>
</tr>
<tr>
<td>The depth of knowledge gained by the designer from long-term relationship can enable proactive work and a more strategic role</td>
<td>Knowing the client company in an intimate way can enable the designer to take on a strategic role</td>
</tr>
<tr>
<td><strong>Quality and creative work:</strong></td>
<td><strong>Security:</strong></td>
</tr>
<tr>
<td>Long-term relationships facilitate more appropriate and effective use of the designer’s skills resulting in better design solutions</td>
<td>Established relationships provide the consultancy with a sense of security enabling mutually beneficial development</td>
</tr>
<tr>
<td><strong>Consistency in approach:</strong></td>
<td><strong>Other:</strong></td>
</tr>
<tr>
<td>Over the course of a long-term relationship, the design process can be honed to suit the client, and to ensure a degree of consistency and efficiency</td>
<td>It is much cheaper to secure work from existing clients than acquire a new one (Czerniawska, 2002)</td>
</tr>
<tr>
<td><strong>Social and cultural awareness:</strong></td>
<td></td>
</tr>
<tr>
<td>Long-term relationships enable the designer to reflect cultural and social awareness which is applicable to the client</td>
<td></td>
</tr>
</tbody>
</table>

2.2.7 > Contemporary Industrial Design Consultancies

Over the last thirty years, the services provided by industrial design firms have evolved from simply addressing the formal aspects of the product. On one side, Feldman and Boult (2005) remark that consultancies are now hired less for their aesthetic savvy, and more as partners towards improved competition through innovation. Unsurprisingly, design firms have embraced this link between design and innovation, and a number of agencies emphasise it within their main descriptors. For example, IDEO, ZIBA and PDD describe themselves as: “a design
and innovation consulting firm” (IDEO, 2013); “a design and innovation consultancy” (Ziba, 2013); “product and service innovation consultancy” (PDD, 2013); respectively.

Design consultancies are also pushing to position themselves as contributors to their client’s product planning and strategic thinking (Lorenz, 1994; Gemser & Van Zee, 2002; Stevens et al., 2008). In addition to their intrinsic understanding of business objectives (gained from close involvement with clients) firms are demonstrating new approaches to help understand clients, markets and consumers (Hargadon & Sutton, 2000; Friis, 2005) and as this expanding knowledge is increasingly understood and recognised, consultants are moving toward a broader and more strategic role (Kotler & Rath, 1984; Lorenz, 1994; Cooper & Press, 1995; Olsson & Holm, 2009).

Their evolving strategic role has also altered the consultancies approach to their commissions. Friis (2005) explains that traditional design consultancies work in a problem solving mode, and assume the client has already identified the requirements; whereas strategic consultancies will not take for granted that the client has identified the real problem or opportunity space, and will instead treat problem definition as their starting point. Similarly, Gemser and Van Zee noted that the more reputable consultancies in their study would “strive to be actively involved in determining the attributes and determinants of the product at the ‘front-end’ of product development” (2002, p.45). This results in a potentially larger impact given the importance of ‘front-end’ activities in determining the attributes of the final product. A further observation regarding strategic methods is the distinction of those consultancies who develop and document explicit design processes, enabling them to involve other parties in the process more easily; particularly the client themselves (Aagaard & Friis, 2005). Related to this, Tennity (2003) remarks that the success of design consultancies is often fuelled by them bringing a process to the discipline of design.

“The consultancy that can seamlessly blend its methods with the core process of its client, offers an underpinning that is critical to a successful relationship. Better yet is the consultancy that can insert a proven design process into a client's best practice and operations.” (Tennity, 2003, p.12)
Foote (2003) reinforces the importance of this point, highlighting that for many clients the design process is mysterious, and that their lack of understanding fuels uncertainty or even associations with risk.

From the consultancy’s perspective, a major incentive to provide a more strategic offering is the possibility of improved billing figures due to the greater value attributed by business to those higher level services (Olsson & Holm, 2009). Moreover, designers are typically visionary people, who aspire to move towards work of greater impact, so it is a natural progression to link design to strategic thinking (Brown & Katz, 2009). Increased competition; relentless pressure to cost reduce; along with the increase in design services from Asia; may also account in part for consultancies wishing to offer a higher level role (Bhan, 2004; Olsson & Holm, 2009). However, in practice it appears that many clients are not actually connecting design with strategy (Olsson & Holm, 2009). Olsson and Holm (2009) raise the question as to whether this may be due to how designers understand strategy from a corporate perspective; and they align with Cooper and Press (1995) in asking whether consultancies are able to successfully communicate the values of strategic involvement to their clients. Given the high percentage of smaller firms in the industry today (Olsson & Holm, 2009; Flood et al., 2010) it is also feasible that size is a factor, and that the offer of strategic services is more successful coming from larger consultancies.

Overall, the consultant’s evolving strategic role suggests they may gain opportunity to have greater impact on the product, and potentially incorporate more responsible design concerns. Whether this is the case, is an aspect which requires further investigation.

2.2.8 > User-Centred Design

Another significant development in industrial design is the move towards more user-centred and participatory design. Also referred to as ‘empathic’ design, or ‘co-operative’ design, McDermott describes this as:

“a methodology for the commercial development of new products which employs methods from marketing research, anthropology and psychology to
connect the designer with the user during the design process. ... The basis of this approach is that designers learn how consumers really use products, as opposed to how the designers would like them to be used.” (2007, p.227)

According to Austin, et al. (2007) user-centred design is one of the most identifiable areas of development in industrial design in recent years. User-centred approaches provide research material and inspiration by immersing designers in the use context, allowing them to experience and uncover latent requirements, thus contributing to more effective products and product acceptance (Norman, 1988; Abras et al., 2004; Burns et al., 2006). Abras, et al. (2004) also explain that as part of this approach, users can be involved in the design process at individual stages; or as partners or co-designers participating throughout the process.

User-centred design has found significant application to areas outside of the commercial sector also; demonstrating its potential relevance for responsible design. For example, in 2009 IDEO (partnered with IDE, Heifer International, ICRW, and the Bill & Melinda Gates Foundation) created a Human-Centered Design toolkit for NGOs and social enterprises to help them seek new solutions for communities in need (IDEO, 2009). A further example is the ‘do tank’ RED, which existed as part of the UK’s Design Council from 2004 to 2006. Central to their ‘transformational design’ approach was placing the user at the heart of new solutions by collaborating with the pupils, teachers, patients, nurses, prisoners and prison officers that they were developing for (Burns et al., 2006).

Despite general enthusiasm for user-centred design, however, it has also generated a level of scepticism. On one side, it incurs additional time and cost, but more crucially, its effectiveness is dependent on the expertise of those involved; particularly in facilitating user involvement, communication, and the interpretation of the information gained (Abras et al., 2004; Austin et al., 2007; Bredies et al., 2010). At the more involved level of participatory-design, in particular, there seems to be a greater degree of reservation. Sener & Van Rompuy quote a concern raised within their research with Procter and Gamble that “the use of the co-design method relegated the role of the designer to merely a technical facilitator”; also commenting that the co-design sessions “illuminated the complexities of allowing end-users to engage in design activity” (2005, p.24).
2.2.9 > Other Trends in Today’s Industrial Design Field

Given how young the field of industrial design is, it is not surprising that it is still continually evolving, and as such, there are numerous other developments and trends recently evident. A number of those most dominant in the changing role of design are briefly described below. These are relevant because they potentially offer new avenues for responsible design goals to enter into the design process.

2.2.9a Design for Sustainable Behaviour:
Design (through its involvement in the production of things we interact with) is necessarily involved in influencing human behaviour. ‘Design for Sustainable Behaviour’ refers to design work which mindfully intends to alter or influence the behaviour (patterns and habits) of the users who will interact with the product, service, or environment being designed, and is being embraced particularly for applications with environmentally and socially beneficial aims (Lilley, 2007; Lilley, 2009; Fabricant, 2009; Lockton et al., 2010). Figure 2.2 shows an example in the form of the piano staircase by The Fun Theory (2009) which employs sound in a fun way to encourage people to use the stairs instead of the escalator.

2.2.9b Service Design / Design for Services:
In recent decades discernible changes have occurred in the economic basis of industrialised nations, from manufacturing to the provision of information and services (Mager, 2008). In response to this, Service Design has grown as a new discipline to deal with the touchpoints; or, functionality, form, interfaces and experiences; associated with those intangible services (Meroni & Sangiorgi, 2011). This new design paradigm has particular significance for sustainable thinking in the form of Product Service Systems (PSS) which are based on substituting services for the manufacturing-driven model of consumption (Thackara, 2005; Tukker & Tischner, 2006; Meroni & Sangiorgi, 2011).

2.2.9c Community-Derived Design / Crowdsourcing Design
Collaboration has been a key concept in business and design for many years, however, in recent years this has been given greater scope through social networking and open-source thinking (Esslinger, 2009). The result in design terms
has been community-derived or crowdsourced design (Esslinger, 2009; Maher, 2011), and the growth of enterprises; such as Local Motors’ “crowd-powered automotive manufacturing” (Local Motors, 2013) (see figure 2.2); Quirky’s “social product development” (Quirky, 2012) and OpenIDEO, “an open innovation platform” who have been directed specifically at tackling larger social issues through open community involvement (Open IDEO, 2013). Such ventures are altering the process of designing and impacting the role and relevance of the designer in those cases. To what extent this will ultimately affect the consultant is outside the scope of this research; but it is also identified as a potential influence on the inclusion of more responsible design goals within their work, based on a wider social involvement.

![Figure 2.2: Piano staircase by The Fun Theory (source: The Fun Theory, 2009); and the first community-designed vehicle, Rally Fighter, by Local Motors (source: Local Motors, 2013)](image)

2.2.10 > Characteristics of Designers

Design is a way of life (McCormack, 2006; Mattus, 2008). It is a way for the designer to impress upon the world their personal vision of how it should be (Lawson, 2005; Mattus, 2008). Their main focus is on creating new objects, styles and solutions which aim to excite and redefine the future (Mattus, 2008); and their actions are directed towards making sense of the social and emotional relevance of the products they design (Leberecht, 2009). For many, what is unfamiliar is not appealing, but for designers, new experiences and sensations are craved after (Durling, 2003; Mattus, 2008). Designers are motivated by new ideas and feelings of exploration; and they see things in a way, which McCormack (2006, p.23) describes as “almost child-like”, in that they experience the world as something new, exciting and unconstrained (see also, Durling et al., 1996).
In descriptions of designers, creativity dominates as their main quality and is regarded as the central aspect to their thinking (Durling et al., 1996; Marina & Cooper, 2003). Empirical research has shown that creative persons are typically characterised by particular personality traits, and that some aspects of personality are co-related with creative ability (Feist, 1999; Durling, 2003). Feist (1999) observes that creative people tend to be less accepting of norms, less conventional, and less conscientious; while also being more self-confident, driven, impulsive and affective. These characteristics may explain why formal methods are not readily adopted by designers; “rigid methodologies are a poor cognitive fit with the designers’ looser and more playful way of working” (Durling et al., 1996, p.6).

Designers’ creativity and approaches are strongly linked to abductive thought and intuitive ways of working (Davies & Talbot, 1987; Cross, 1990; Cross, 1999; Durling, 2003). Abduction is a form of logical inference established by Charles Sanders Peirce in the late 1800s based on the logic of conjecture, or ‘educated guess’ (Burch, 2010). Unlike deductive or inductive logic which cannot offer any new findings, abductive logic, or ‘generative reasoning’ accounts for insight and the creation of new knowledge (Martin, 2007; Kolko, 2010).
Durling (2003) demonstrated that 79 per cent of a design student sample showed a marked preference for intuition; substantially more than an expected 24 per cent for a normal population. Similarly, in a study of RDIs (Royal Designers for Industry) Davies and Talbot (1987) also demonstrated the heavy reliance on intuition in professional design practice.

Mattus (2008) suggests there are three groupings (with fuzzy boundaries) for professional designers: a tiny percentage who are rare and brilliant geniuses; a middle tier composed of the majority of designers – gifted generalists with a wide range of skills and talents; and a third group who are highly proficient at certain skills, affording them a relevant part in the design world. In practice, however, design firms often base their work methods on multidisciplinary teams with designers specialising in their competency; for example, “some designers perform early investigations, such as user interviews and competitor product surveys, while others help visualize new concepts and ideas” (Austin et al., 2007, p.7).

Another division of designers is the differentiation between what are termed as ‘functionalists’ and ‘stylists’ (Kotler & Rath, 1984). Although these groupings are stereotypes, they do indicate a basic variation that exists between different design approaches. The functionalist leans towards providing good functional performance and tends to be more responsive to hard requirements such as marketing and technical research; while the stylist is directed more towards the visual appeal of a design and will prefer to work more from inspiration, paying less attention to hard requirements (Kotler & Rath, 1984).

An additional consideration is the demographic composition of designers as a group. In the US and the UK, the vast majority of designers are white, middle-class, university-educated, able-bodied and male. Formosa and McDonagh (2005, p.8) make the point that: “These designers, no matter how talented, are not representative of the global population for which they will ultimately design”. As

5 The IDSA (Industrial Designers Society of America) and the CSD (Chartered Society of designers) report that less than 10 per cent of their members are female (Formosa & McDonagh, 2005).
such, it is questionable whether they relate easily to some of the responsible design topics being considered.

2.2.11 > Industrial Design as a Profession

Industrial design is commonly referred to as a profession in the literature, and in common reference; however in practice, this has not been achieved. Smith and Whitefield (2005b, p.10) advise that the defining characteristic of a profession is the “formation of an accreditation and regulatory body that controls both standards of practice and entry into the profession”; but that this is absent from industrial design (Smith & Whitfield, 2005a). Krippendorff (1995) adds that in comparison to other ‘harder’ disciplines (such as engineering or business) design is already weak in discourse, and that there is currently no area of expertise which designers agree they could claim professional competence in, exclusive of other professions. Drawing a comparison to the profession of medicine, Smith and Whitefield (2005b, p.13) suggest that to aid its professional profile, design needs “to emphasise its contribution to society to gain recognition for its achievements, not only at the specialist level but also at the local level.” This suggests that undertaking more responsible design could possibly contribute to industrial design gaining greater professional recognition. Madsen considers that responsible design is defined by professionalism and the designer’s duties to fulfil their work-related obligations to clients, employers, third parties, each other, and society; adding that “behaviour on the part of design professionals that does not further the social good and the well-being of society would be unprofessional in nature” (1991, p.11; 2005, p.39). This relays a desire for designers to have more positive impact, but goes little way to understanding why it is not more widely embraced.

2.2.12 > Section Conclusions

Since its origins, industrial design has been dependent on industry for its raison d’être, and the consultant designer’s main role has been to assist their clients in profit generation by creating distinct, appealing products that entice potential customers to purchase. To achieve this, consultants aim to resolve the
requirements of both the user, and the client company, which involves balancing numerous aspects; such as the product’s appearance, manufacture, commerciality, and suitability to use; many of which frequently clash or compete.

Typically, industrial design consultancies are small. They are formed to fulfil the aspirations of the founding designers, and are also driven by their personal goals. Design firms offer the advantage of broad knowledge, insights and skill sets gained from exposure to different product sectors, and companies typically choose to employ them due to a lack of resources, or as a matter of company strategy. At the core of consultancy work is the client relationship, and its importance is frequently cited as central to both running a successful firm, and to determining what the designer can achieve through their work. In general, long term involvement with clients is desirable for consultancies, but as in all relationships, numerous factors influence the outcome, and varying dynamics result from the different approaches taken on either side. Other aspects of the consultancy, including its composition, character and working methods, can also have a great effect on their work, and may influence the designs they produce more than the conceptual work preceding them.

In recent years, industrial design firms have evolved to position themselves increasingly as partners in innovation, and they have also gained greater involvement in the planning and strategy of their client’s products. These changes have altered consultancies’ approaches to commissions, with many striving for broader roles, particularly at the ‘front end’ of projects. In reality, however, current success in these approaches may be confined to larger consultancies or with larger clients. Other notable developments in the industrial design field include the evident growth of user-centred design, as well as developments in the areas of service design, crowdsourcing, and design for sustainable behaviour. Regardless of these changes, the main characteristic of design consultants (and designers in general) is their creativity. Consultant designers rely heavily on abductive thought and intuition, and their motivations stem from a desire to explore alternative options and search for new ideas. In this way, they present great potential to positively impact the products they gain involvement with.
2.3 > Section B: Responsible Design

This section investigates the broader needs of society which constitute the notion of responsible design; including sustainability, ageing populations, and social responsibility. It reviews the background to the topics, as well as how they relate to design; and considers the resultant expectations placed on the industrial designer. In addition, it investigates a series of design approaches aiming to address those topics, along with the existing knowledge regarding their incorporation into the work of commercial industrial designers.

2.3.1 > Concern for the Role of Industrial Design

Concern for the role of industrial design and tensions between serving commercialism or society have been evident in the profession since the middle of the twentieth century (Sparke, 1983; Sparke, 1987; Whiteley, 1993).

“The industrial designers are now questioning the fundamental basis of their occupation. They are concerned about the social implications of their commitment to industrial production and some of them now doubt whether there is any value in their dedication to the formal qualities of products, or whether aesthetics are relevant to mass production. The time has come, they believe, for a reappraisal of the tenets on which their profession is founded”. (Reid, 1973; cited in Sparke, 1983, p.83-4)
Fuelled by the social, technological, and environmental watershed of the 1960s, many designers began to actively consider design’s implications for society, resulting in a wave of new ideologies (Fuad-Luke, 2009). Several approaches emerged, including green design, consumerism, responsible design, ethical consuming, ecodesign, sustainability, and feminist design (Cooper, 2005, p.11-2).

A number of key figures contributed the foundations for these new lines of thought, including Vance Packard, who published *The Hidden Persuaders* in 1957 exposing the exploitive techniques of advertisers; and Ken Garland, a British Graphic designer, who wrote the *First Things First* manifesto in 1963 calling for visual communicators to use their skills for more worthwhile pursuits (see figure 2.5). Other seminal contributions were those which formed the origins of the environmental movement, including Rachel Carson’s *Silent Spring* (1962), *The Limits to Growth* by Meadows et al. (1972) and *Small is Beautiful* by E.F. Schumacher (1973).
Notable among the voices of the era was that of Victor Papanek (Jackson, 1993). In 1970, Papanek wrote the polemical book *Design for the Real World* which opened with the frequently quoted declaration: “There are professions more harmful than industrial design, but only a very few of them” (1971, p.ix). Throughout the book he lays down an opposition to designers only using their skills for ephemeral goods and profit production; calling instead for their design action toward the social imbalances and neglected areas of modern society (Papanek, 1984). *Design for the Real World* advocates a compassionate anti-consumerist approach to design, introducing notions of design for the ‘third world’, the disabled and the elderly, along with the responsible use of environmental resources (Whiteley, 1993; Morelli, 2003; Davey et al., 2005). Papanek’s proposal has been misunderstood as asking to substitute *all* commercial design with design for the world’s real needs, and he clarifies in the second edition: “Nothing could be further from the truth: all I suggest is that we add some intelligently designed goods to a global marketplace now flooded with manufactured ‘bads’” (1984, p.69). Regardless, the author’s harsh criticism of market-based design, and his pitting of socially responsible design against commercial design, limits his view of the social designer to interventions outside the mainstream market (Whiteley, 1993; Margolin & Margolin, 2002). In this way, Papanek’s work sets the goal for what design should achieve, but distances itself from the commercial designer and how they could actually meet those targets within their remit.

### 2.3.2 > Concern for Man’s Effect on the Environment

Since the 13th century, there has been an awareness of man’s effect on the environment (Chapman & Gant, 2007) but it was during the 1960s and 70s; triggered by social unrest and the oil crisis; that the ecological movement found a pronounced voice (Davey et al., 2005; Walker, 2006). In 1962, Rachel Carson published *Silent Spring*, which highlighted the toxic effects of chemicals from industrialisation on man and the environment; marking for many the start of the modern environmental movement (Dewberry, 1996; Walker, 2006; Visser, 2009b). A decade later (1972) as photographs from the Apollo 17 space mission exposed the finite nature and fragility of the Earth (Walker, 2006; Fuad-Luke, 2009) *The Limits to
Growth (a report commissioned by the Club of Rome) concluded that based on the world’s growth rates the planet’s biophysical limits would be reached within the next 100 years (Margolin, 2007; Visser, 2009b).

This first wave of events gave birth to the Green Movement and the emergence of a number of NGOs, such as Friends of the Earth and Greenpeace (Walker, 2006; Bhamra & Lofthouse, 2007). Then, in the 1980s, economic crisis and environmental catastrophes, including Chernobyl, initiated a second wave of concerns (Bhamra & Lofthouse, 2007), which penetrated the mature industrial societies, leading to new policies and demand for environmental quality in the marketplace (Manzini, 1994b).

By the time of the UN Conference on Environment and Development (also known as the Earth Summit) in 1992, the extent of most social and environmental issues had been revealed by scientists (Walker, 2006) and among the outcomes of the summit was the adoption of Agenda 21; a wide-reaching blueprint for action toward sustainable development, signed by most of the world’s national leaders (Margolin, 1998; Fuad-Luke, 2009).

“For the first time, the world had a document that pulled no punches in mandating extreme measures to counter the harmful environmental effects of the expansion model.” (Margolin, 1998, p.85)

2.3.3 > EcoDesign

Recognising the contribution of manufactured products on these issues, designers aimed to address their part, and this consciousness gave birth to ‘Ecodesign’⁶:

“design which addresses all environmental impacts of a product throughout the complete life cycle of the product, without unduly compromising other criteria like function, quality, cost and appearance” (Dewberry, 1996, p.32; also cited in Lofthouse, 2001, p.7).

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⁶ A number of other terms including ‘green design’, ‘ecological design’, ‘design for the environment’ and ‘environmentally responsible design’ have also been used for similar concepts (Lofthouse, 2001; Fletcher & Goggin, 2001; McDermott, 2007). In general use, these terms tend to be similar, but where this is not the case, Fletcher & Goggin (2001, p.16) clarify that distinctions involve “issues of scale, ease of implementation, potential environmental benefits and the focus of design activity.” For example, Dewberry (1996) explains that ‘green design’ tends to focus on one or two environmental impacts of the product, such as recycling or the elimination of toxic materials, whereas ‘ecodesign’ addresses environmental impacts across the product’s complete life.
Within this notion, ‘Eco-efficiency’, or achieving “more utility and value from fewer resources”, was encouraged (McDermott, 2007, p.96). Further to this, McDonough and Braungart (2002) underlined the need for a closed-loop system; ‘cradle-to-cradle’; where all waste is transformed into either biological nutrient for nature, or a technical nutrient for industry.

Various tools and strategies have been developed to help designers and companies minimise their product’s effect on the environment through assessment, and by encouraging considerations such as repair, recycling and remanufacture (Mackenzie, 1997; Bovea & Pérez-Belis, 2012). Frequently ecodesign tactics give particular attention to the early stages of the design project, as it was identified that decisions made earlier in the process may yield better effect, and implementation is easier during the initial phases when the project is more flexible (Lofthouse, 2001). However, designers also have a valuable role to play at the operational end of the process (Lofthouse, 2004). Bovea and Pérez-Belis (2012) comment that ecodesign tools should incorporate a life cycle approach, and give regard to the product’s different stages; while also accounting for the traditional requirements of the product (such as its function, performance, safety, cost, marketability, and regulatory requirements). The overall scope of ecodesign approaches can be represented by Charter and Chick’s (1997) proposal for a four-step model of ecodesign innovation which goes from ‘re-pair’ to ‘re-think’ (see figure 2.6). This resembles a similar model of ecodesign innovation by Brezet (1997) who proposes the stages: product improvement; redesign product; function innovation; and system innovation.

“As ever-increasing environmental improvements are achieved, so companies and designers move from the refinement of existing products, to completely rethinking current products and proposing future business” (Lofthouse, 2001, p.11).

Within this, Manzini (1994b) proposes the designer’s role is to offer opportunities for new types of behaviour and give form to an alternative world based on as little resource consumption as possible.

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7 See for example, Bovea and Pérez-Belis (2012) who classify twenty different ecodesign tools for product design.
“The problem for designers can be summed up as follows: how to propose an *existenzminimum* which will appear attractive and will thus be freely chosen in the midst of a variety of alternative proposals” (Manzini, 1994b, p.41).

As well as addressing environmental goals, ecodesign is seen to have additional benefits for the businesses who engage it (Charter & Tischner, 2001; Bhamra & Lofthouse, 2007). “Many studies are indicating that companies implementing ecodesign are able to reduce costs, produce more innovative products and achieve more secure market positions than their less eco-sensitive competitors” (Charter & Tischner, 2001, p.121). Despite this, it appears that ecodesign tools and approaches have not been widely adopted (Brezet, 1997; Charter & Tischner, 2001; Lofthouse, 2006; Bhamra & Lofthouse, 2007). Lofthouse (2006) comments that many of the tools available are overwhelming for designers, and do not take into account the particular characteristics or culture of industrial design. In addition, they frequently

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8 Manzini used the German term *existenzminimum* (devised in the late 1920s to denote the minimum spacial requirements for a large-scale housing project) to refer to proposals which are “in opposition to a model of production and consumption” but which appear to achieve a higher quality of life (Manzini, 1994b, p.41).
fail to show designers how to achieve ecodesign, and seldom recognise that it is not the single priority for the designer, but one of a number of issues to be resolved (Lothhouse, 2006). Among the broad set of factors identified elsewhere in the literature, lack of knowledge and skills; time and costs; market pressures; company ethos and government policy have also been identified as significant factors (Mawle, 2010). In addition, recent research by the UK Design Council found that designers do not feel ecodesign is valued by their clients; instead, only 16 per cent of design consultancies (of all design types) felt that providing green advice was an important factor for winning work (Flood et al., 2010). Despite this, there has been some increase in products which reflect a more environmental attitude, and although slow, signs of progress are encouraging that designers may be undertaking more activity in these areas.

2.3.4 > Sustainable Design

The concept of sustainable design (or sustainable product design) has frequently been misunderstood by designers and the popular press as synonymous to ecodesign, but it is distinctly different. Sustainable design aims to include larger social and ethical aspects (Charter & Tischner, 2001; Bhamra & Lothhouse, 2007) by considering “design criteria within the complex system of sustainable development” (Dewberry, 1996, p.30). The notion of ‘sustainable development’ was first given form in Our Common Future, the report of the UN World Commission on Environment and Development in 1987 (also known as the Brundtland Report) which states:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:
• the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
• the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.”

(World Commission on Environment and Development (WCED), 1987, p.43)

While this definition provides a clear and challenging aim for sustainability, it does however, also generate the important question of what constitutes a need (Cull & Malins, 2003).
In addition to the ubiquitous definition for sustainable development, *Our Common Future* also introduces the idea of the Environment, Society and the Economy as the key components of sustainability; making clear that success in one cannot be achieved at the expense of the others (Findeli, 2008; Visser, 2009b). Known as the ‘tripolar model’ this concept is widely used as the reference model for sustainability (Charter & Tischner, 2001; Findeli, 2008); and has also been expressed in business related terms as the ‘triple bottom line’ with the aim of expanding the conventional economic focus of ‘bottom line’ thinking to include social and environmental aspects (Design Council, 2008).

Faced with the interrelationship of these three elements (environmental, socio-cultural and economic) it is becoming increasingly evident that simply re-designing existing products is an insufficient approach to sustainability; instead, more radical action is required, including the redesign of our habits, lifestyles, and practices, along with how we think about design. (Manzini, 1994b; Lofthouse, 2001; Wahl & Baxter, 2008). Margolin (1998, p.92) comments that the shift of purpose for designers 

“...will entail looking at economic and social development from a global perspective, and addressing the gross inequities of consumption between people in the industrialized countries and those in the developing world.”

In order to achieve this, he states, designers will need to reinvent their culture so that worthwhile projects can be easily identified and realised (Margolin, 1998); arguing (in more recent writing) that “designers have to seek autonomy and use it, if possible, for socially and environmentally productive ends” (Margolin, 2007, p. 12).

Tischner & Charter (2001, p.121) however, portray the other side of the designer’s situation:

“Some companies have started ecodesign activities, but social and ethical aspects are not usually integrated into product development processes. Only a few leading-edge companies appear to have grasped the wider social and ethical issues related to sustainability and have progressed beyond ecodesign.”

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9 It is also referred to as the ‘3 P model’: Profit/Planet/People, or ‘3 E model’: Economics/Environment/Equity
This reality is also described by Bhamra & Lofthouse (2007, p.4) who comment that “Although large industry commitment to integrating environmental and social issues into product development has continued to be on the rise there has been little evidence of widespread opportunity for this type of holistic thinking, in the commercial design industry.”

Similarly Andrews and Robbins (2010) found that the ideals and radical thinking proposed by academia starkly contrasted the constrained reality of the commercial setting. In addition, they (Andrews & Robbins, 2010) observe that integrating sustainable design into consultancies is even more challenging than for manufacturing companies, due to the range of projects undertaken by consultants.

2.3.5 > Our Ageing Population

Another key aspect impacting the expectation on design is the changing demographics of the world’s population. Until as recently as the 1950s, the likelihood of a lengthy period of retired life was low, and as such, little consideration was given to the needs of the older generation (Coleman, 1994). Today, however, one out of every eight persons is aged sixty or above, and by 2050 this will have increased to one in five (United Nations, 2009). “Population ageing is unprecedented, a process without parallel in the history of humanity” (United Nations, 2009, p.viii). People are living longer lives, and the share of the population who are older is increasing. These profound changes to the population raise difficult challenges for modern society and demand the consideration of design and business (WHO, 2002; United Nations, 2009). For example, the likelihood of acquiring a disabling health problem or physical limitation increases with age, and urgent action is required to reduce this burden (WHO, 2002).

Coleman (1994) advises that designers should understand the true needs and aspirations of the older generation, and form a perspective on ageing that breaks from the negative stereotypes of infirmity, recognising instead the active and independent lives of the elderly. Similarly Pirkl calls for designers to accommodate the needs of a multi-age population as a priority; commenting that “tomorrow’s products and environments must become the means to a richer and more rewarding life for all who would use them” (Pirkl, 1991, p.58-9).
From a business perspective, the shifting epicentre of a market previously dominated by the youth, coupled with the sheer size and consuming power of the older population (Thackara, 2005) should ensure that companies are attracted to their needs, at least on some level (Pirkl, 1991; Whiteley, 1993). However, it appears business is slow to reflect this, and the real requirements of the older generation are not yet adequately met (Whiteley, 1993; Coleman, 1994; Pirkl, 1994). Thackara (2005) points out that the elderly are treated as a passive market with the majority of innovations being short-sighted and aimed at symptoms, rather than enabling their greater involvement in the community.

2.3.6 > Universal and Inclusive Design

In the 1970s, an American architect, Michael Bednar noticed how improved accessibility for the disabled usually meant better access for everyone, and suggested that a new “universal” approach, beyond accessibility, was required (Institute for Human Centered Design, 2012). The term ‘Universal Design’10 was later coined by Ron Mace, another architect and wheelchair user (Institute for Human Centered Design, 2012) and the notion grew to embody “the design of products and environments to be usable by all people, to the greatest extent possible, without adaptation or specialized design” (Mace et al., 1997, p.1; Bound & Coleman, 2005, p.56).

“... [T]he key and common shift in thinking was to replace the view that people are disabled by physical and mental impediments with the more radical proposal that people are disabled by designs and environments that do not take account of the full range of human capabilities.” (Clarkson & Coleman, 2010, p.1)

Also relevant is the realisation that we can all at times be inhibited in using products due to the particulars of our circumstances (for example, tiredness, injury, or obstacles and impediments related to carrying or attending to something). Even outside of these occurrences, a universal design approach can benefit users through ease of use, lower fatigue, increased efficiency and less errors; for example kerb

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10 Comparable design philosophies also exist under the terms: ‘Design for All’, ‘Inclusive Design’, ‘Accessible Design’, ‘Barrier-Free Design’ and ‘Design for Inclusion’ (D’souza, 2004; EIDD - Design for All Europe, 2004; Bound & Coleman, 2005). Typically, America and Japan use the term ‘universal design’; in Europe ‘design for all’ is used, while ‘inclusive design’ is used in the UK.
cuts which were introduced for people in wheelchairs, but are more often used by people with bicycles, push chairs or wheeled luggage (Clarkson et al., 2003). Advocates of universal design compiled the following set of principles as guidance for designers:

1. “Equitable Use - The design is useful and marketable to people with diverse abilities;
2. Flexibility in Use - The design accommodates a wide range of individual preferences and abilities;
3. Simple and Intuitive Use - Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level;
4. Perceptible Information - The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities;
5. Tolerance for Error - The design minimizes hazards and the adverse consequences of accidental or unintended actions;
6. Low Physical Effort - The design can be used efficiently and comfortably and with a minimum of fatigue;
7. Size and Space for Approach and Use - Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user’s body size, posture, or mobility.” (Preiser & Ostroff, 2001)

Law (2010) comments that the first step towards successful accessibility action by any business is to adopt a social model of disability which recognises users with disabilities as part of the customer base. In addition, Law (2010) identifies the following as enablers for incorporating accessibility into businesses: establishing executive-level backing; establishing accessibility as a priority on the agenda; taking a planned, proactive approach; making accessibility a shared task; providing enabling resources; and, providing sources of accessibility expertise.

Despite the widespread awareness of universal design approaches, and a few successful examples (such as OXO Good Grips products, or the Omron digital thermometer shown in figure 2.7), adoption of inclusive design by manufacturers and professional designers has been slow (Sims, 2003; Dong et al., 2004; Hewer, 2007).

“Designers instinctively design for able-bodied users and are either unaware of the needs of users with different capabilities, or do not know how to accommodate their needs into the design cycle.” (Keates et al., 2000, p.45)
In a three-year study of the practice of universal design in the United States, Vanderheiden & Tobias (2000) found that universal design was perceived by most as a special interest, one which would slow down the time to market, and increase design, manufacturing, and customer support costs.

“The strategy for most major companies is to target their primary products toward the middle of the market and allow other smaller companies to target any specialty application markets (which is the closest thing they have in their models for people with disabilities).” (Vanderheiden & Tobias, 2000, p.3)

Similarly, Ingram (2004) suggests that designing for all users is easier outside of commercial considerations where it does not conflict with segmentation strategies, such as niche marketing and personalisation. Using the example of the Nintendo Gameboy, he explains that for some brands, exclusivity (and therefore a lack of inclusiveness) is an essential part of their image and business approach (Ingram, 2004).

In another study carried out with manufacturers and retailers in the UK, Dong et al. (2004) observed that ‘lack of business case’ and ‘perceived sacrifice of aesthetics’ were the two main barriers to inclusive design for manufacturers, while the significant barriers for retailers were ‘perception that inclusive design is more expensive’ and ‘perception that it can be complex to design inclusively’. These findings aligned with other UK studies which also indicated that poor client backing; lack of awareness and knowledge; along with lack of resources (time and money) were the major barriers for designers (Keates et al., 2000; Dong et al., 2004; Dong & Clarkson, 2007). On the other hand, the most effective incentives in favour of
inclusive design were the client having it as a requirement; consumer demand, and successful business cases (Dong & Clarkson, 2007). In their research, Vanderheiden & Tobias (2000) observed the important effect of regulation also; however Dong et al. (2004) remark that in the UK, government regulation was not perceived as an effective driver. Instead, they identified the ‘potential market for those currently excluded’ and ‘consumer dissatisfaction’ as the top two drivers (Dong et al., 2004).

Overall however, it seems impractical or impossible, for all products to be designed for use by everyone; but it is equally unreasonable to have to produce small quantities of special designs to accommodate each individual user group (Vanderheiden, 1990). Despite developments in additive manufacturing, the vast majority of production runs are ultimately driven by economic viability, and therefore, meeting the design requirements of all users will depend on finding a resolve between what commercial design can provide and what will require specialised solutions. Vanderheiden (1990) concludes that where there are simple and low cost options to facilitate a greater scope of user, this can be an obvious and substantial benefit.

2.3.7 > The Needs of Poorer Nations and Design for Social Impact

Another major area demanding design’s attention is the needs of poorer and less developed nations. Possibly the clearest representation of the social needs of poorer countries is the UN Millennium Development Goals (listed below). These eight targets, agreed by the world’s nations and leading development institutions, form the basis for much of today’s development efforts and highlight the challenges faced by the world’s poorest (United Nations, 2005):

- Goal 1: Eradicate extreme poverty & hunger
- Goal 2: Achieve universal primary education
- Goal 3: Promote gender equality & empower women
- Goal 4: Reduce child mortality
- Goal 5: Improve maternal health
- Goal 6: Combat HIV/AIDS, malaria & other diseases
- Goal 7: Ensure environmental sustainability
- Goal 8: Develop a global partnership for development

(United Nations, 2005)
In the past, much of design’s involvement with social development had been apart from the commercial world; however, in recent years a number of commercial design firms have been involved in social impact, and there has been a growing interest in the use of design by foundations and NGOs (Acharya et al., 2008; Continuum, 2008). Some examples of product outcomes are shown in figure 2.8. Regardless, the involvement of design is tiny in relation to the needs of the social sector.

“Ninety-five percent of the world’s designers focus all of their efforts on developing products and services exclusively for the richest ten percent of the world’s customers. Nothing less than a revolution in design is needed to reach the other ninety percent.” (Polak, 2007)

![Figure 2.8: Examples of product solutions for social impact: (clockwise from top left) Moneymaker Pump, an inexpensive small-acreage irrigation pump produced by KickStart International (source: KickStart, n.d.); LifeStraw, a portable water purifier in the form of a large straw, by Vestergaard Frandsen (source: Fast Company, 2010); Q Drum, a durable container to transport up to seventy-five litres of water by easy rolling (source: Tri-Film, 2009); and, One Laptop per Child, low-cost computers for educating children in developing countries, founded by Nicholas Negroponte and designed by Fuse Project (source: news.com.au, 2010).]
One side of the problem is that the value of design is not recognised by the social sector, and collaborations with designers are not affordable or typical (Acharya et al., 2008; Continuum, 2008).

“... even when design firms, employing first class talent, declare that they want to have “impact,” ultimately they are driven by the underlying economics of their firms. The truth is: Hard reality often trumps good intentions.” (Continuum, 2008, p.3)

An effort to overcome these issues was an initiative by The Rockefeller Foundation called Accelerating Innovation for Development (Acharya et al., 2008). In 2008, they hosted a workshop with leading design professionals from consultancies including Continuum, Elephant, Jump, Zago Design and Design Concepts, to explore new approaches to design’s involvement in social change (Continuum, 2008). The following are a set of pertinent observations gleaned from the workshop report:

- Designers must understand the user base in greater detail if they are to successfully leverage their work through NGOs.
- Evidence of the validity and effectiveness of design’s involvement is required; suggesting the need for a robust set of metrics to indicate how it is useful.
- Shared knowledge and experience, combined with thought leadership on best practices would support design’s more effective involvement.
- Progress is more likely if action is attached to specific initiatives, as opposed to abstract problems.
- Collective action has greater power.

(Continuum, 2008)

The Rockefeller Foundation also commissioned IDEO to research and produce a how-to guide on design for social impact (IDEO, 2008). This was aimed at assisting design firms to make social impact work part of their business (Acharya et al., 2008). IDEO’s guide points to the following five challenges for design consultancies who wish to collaborate with development organisations: how to; modify the way they work; educate others; develop networks; identify funding streams; and modify their structure (Acharya et al., 2008). Using these challenges as directions, the guide offers 28 ideas for different ways in which design firms might engage in social change; each with varying levels of impact, benefits for the firm, and investment requirements (see figure 2.9). These options demonstrate the number of ways design firms can be involved in social impact; however, they are all based on action
which is separate from regular commercial work and which relies on involvement with an NGO as a client. Regardless, the descriptions of the proposed ideas offer clues to some of the factors influencing a design firm’s effective involvement with social change. These can be grouped as:

- The need for special expertise, training and revised processes;
- The importance of credibility;
- Challenges of communication and interaction;
- Willingness to collaborate;
- Effectiveness of partnerships and collaborations;
- Financing (funding or fees);
- The level of commitment, patience and capacity for involvement;
- The limitations and capabilities of the NGO partner;
- Available knowledge (e.g. through ecosystems and networks);
- The motivation and passion for involvement.

(Acharya et al., 2008)

Figure 2.9: Modes of engagement for social impact
(recompiled from: Acharya et al., 2008, p.40-1)
2.3.8 > Corporate Social Responsibility

One aspect of commercial business which addresses goals beyond those of profit generation, is the concept of Corporate Social Responsibility (CSR). CSR is essentially about a company’s voluntary obligation to move beyond legal responsibilities; which provide a moral minimum for company conduct (what should not be done); and towards integrating socially responsible behaviour into their core values (what should be done) (Cooper, 2005; Davey et al., 2005). This notion involves issues such as human rights, environmental responsibility, working conditions, community involvement and fair trade (Blincoe, 2004; Wyatt & Archer, 2004; MacGregor, 2007). A lack of agreement among businesses and experts make it difficult to provide a straightforward or universally acceptable definition of CSR (Watts & Holme, 2001; Cooper, 2005; Collings, 2006). The WBCSD (World Business Council for Sustainable Development) however, offer the following working definition:

“Corporate social responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.” (Watts & Holme, 2001, p.3; also cited in MacGregor, 2007)

There has been a lot of scepticism, however, regarding CSR. While some authors describe it as a real response to changes in socio-political and ethical perspectives (Blincoe, 2004; Cooper, 2005) others suggest it is just ‘window dressing’ (Davey et al., 2005; Hardjono & Marcel van Marrewijk, 2001) or a ‘band aid’ approach (Porritt, 2007, p.270) used to placate consumers (Stern, 2004; Crook, 2005; MacGregor, 2007). In this way, there is a strong requirement for businesses to ‘walk the talk’ and replace brand promises with brand integrity, if they are to be seen to genuinely embrace CSR (Collings, 2006; MacGregor, 2007; Porritt, 2007). Individual consumers are adopting a more socially responsible attitude to purchasing (Brightwell, 2008) and in an economy where 70 to 80 per cent of market value comes from intangible assets such as brand equity, intellectual capital and goodwill

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11 Corporate social responsibility is also referred to as ‘social responsibility in business’, ‘corporate citizenship’ (CC), ‘sustainability and corporate governance’ and ‘corporate responsibility’ (CR); with those from the US often preferring to talk about business ethics (MacGregor, 2007).
(Russell, 2008) the benefits of a positive reputation, are appreciable (MacGregor et al., 2007).

Crook (2005) however, comments that ultimately the idea of CSR will not best serve society because it reflects a mistaken analysis of capitalism. The question remains as to whether it could, nonetheless, pave the way for business to better provide for society’s needs in the future (Porritt, 2007). Either way, CSR features heavily in current business activity. Almost all FTSE top 100 companies release a CSR report to accompany their annual report (Collings, 2006) and it is now widely accepted that a company’s value is determined not only by market behaviour, but by its overall reputation and social competencies (Hardjono & Marcel van Marrewijk, 2001; Blincoe, 2004; Porter & Kramer, 2006).

### 2.3.9 > CSR and Design

Given industrial design’s strong connection to business (see section 2.2.4) CSR is also potentially a factor which may impact the expectations on the designer, as well as their opportunities to have a more positive impact.

“It is clear that design has a role in delivering the corporate social responsibility agenda (design for social responsibility), and there are many examples of how this takes place both in the public and the private sector” (Cooper, 2005, p.17).

One clear role for designers is in aiding communication and embodying the CSR values of responsible companies directly into their products (Blincoe, 2004; Collings, 2006). Firms are keen to convey their ‘good citizenship’, especially to those consumers conscious of their moral values when shopping, and as CSR matures, it is felt by some that this will impact design directions and innovations (Blincoe, 2004; Crook, 2005; Collings, 2006). Blincoe (2004) comments that we have not yet seen the real influence of CSR on design, advising it is paramount that the design profession learn about social responsibility, as companies will increasingly look to work with designers who are committed to responsible behaviour. However, Cooper (2005) explains that there is a need for further work before designers can deliver an effective response.
“First, clients and designers need to further define the dimensions of social responsibility and identify places where design can contribute to the overall goal of corporate social responsibility. Second, the delivery of design solutions must be supported by evidence. There is therefore a need to understand the impact of design interventions. ... And third, we must understand the design decision-making process, the tradeoffs to be made, and of course how this contributes not only to corporate social responsibility but also to the overall objectives of society, as well as of business.” (Cooper, 2005, p.17)

2.3.10 > Socially Responsible Design

Developed alongside the corporate social responsibility movement, socially responsible design (SRD) bases its approach on the idea that the unique skills which designers possess can not only respond to commercial needs, but can also contribute to addressing the challenges of today’s society (Cooper & Press, 1995; Cooper, 2001; Davey et al., 2005). It involves design extending its influence in a more policy-based or interventionist role and addressing social, political, environmental and economic issues (Davey et al., 2005). Davey, et al. (2005) outline the scope of what SRD could impact based on eight core areas within four wider domains (see figure 2.10). These are:

- Government: by helping to make local, regional and national governments more responsible and representative;
- Economic Policy: by promoting responsibility and sustainability;
- Fair Trade: by supporting workers rights and reducing exploitation of poorer economies;
- Ecology: by minimising environmental impact;
- Social Inclusion: by combating discrimination and social exclusion;
- Health: by improving people’s health within society, in addition to promoting better patient care and health service;
- Education: by improving the quality and facilitating better learning;
- and Crime: by minimising its impact, reducing the number of incidences and alleviating fear of crime.

(Davey et al., 2005)

Davey et al advise that: “The level and domain in which SRD is practised will depend on the nature and aims of the organisation, and the context in which it is undertaken” (Davey et al., 2005, p.6). However, these domains, and the related
design work, typically lie within the public sector, and it is not apparent how they could overlap with the remit of the commercial designer. In a similar manner to designing for social impact (see section 2.3.7) design faces the challenges that its potential contribution is not typically recognised by sectors outside the commercial sector, and furthermore, it is still not affordable or routine for them (Continuum, 2008).

![Diagram: The eight tenets of socially responsible design](image.png)

**Figure 2.10:** The eight tenets of socially responsible design (Davey et al., 2005, p.7)

### 2.3.11 The ‘Social Model’ and the ‘Market Model’ of Design

In the years since the initial generation of social design ideologies, a rich and broad knowledge base has been developed for market-based design, but those areas advocated by the likes of Papanek, have gained little deep thought or enquiry, and have had few accomplishments (Margolin & Margolin, 2002; Morelli, 2003). However, efforts to implement design for social needs indicate that a model of design; alternative to purely ‘design for the market’; should be possible (Margolin & Margolin, 2002). Moreover, the call for design to address those needs continues to
recur, with growing urgency. For example, in his keynote speech at the 2002 Common Ground conference, the then president of the ICSID (International Congress of Societies of Industrial Design) identified the need for a new design agenda to address the requirements of both the top end and bottom end of the world order (Butenschön, 2002): “…it is now more important than ever that designers boldly confront that ‘other’ situation, the situation facing us beyond the shop shelf and the stuffed wallet” (Butenschön, 2002, p.3). At the same event, Margolin and Margolin (2002) put forward the idea that product design addressing human needs does not preclude designers from designing products for sale. Unlike Papanek (1984) they view the ‘social model’ and the ‘market model’ not as binary opposites, but instead as two poles of a continuum (Margolin & Margolin, 2002). However, in regard to differentiating both models, the authors only briefly offer the point that it is the priorities of the commission which define the differences (Margolin & Margolin, 2002) and it is obvious deeper understanding is required. In addition, they acknowledge that while many market-based products can also meet social needs, the market cannot be expected to satisfy all requirements, as some concern people outside commercial reach (Margolin & Margolin, 2002). This generates a point of interest as to where the boundaries are, and how they are determined.

In reaction to Margolin and Margolin’s proposal for a ‘social model’ of design, Morelli (2003) observes that:

“While it may be useful to separate and emphasize socially responsible design as a clearly defined disciplinary area, it is also very important that the distance from the existing market-based design practice does not preclude any possibility for cross-fertilization between the two areas.” (Morelli, 2003, p.4)

Relating to this, he comments on how the social services sector is an example where market-driven initiatives are filling the space left from shrinking public intervention. Morelli (2007) also suggests that because the majority of designers regard their social role as complementary to business strategy, they are critical of initiatives not aligned with a market-driven approach. This ‘economic rationalism’ contributes to the separation of market-based design and socially responsible design with little exploration of any middle ground, hindering design’s impact on social needs and development (Morelli, 2007).
2.4 > Conclusions

This chapter reviews the current understanding of industrial design consultants’ relationship to responsible design by bringing together a breadth of diverse areas regarding industrial design practice, and the need for design to incorporate a broader set of societal issues in its work. Within the contents of the review, it establishes and explains the context and background for the research investigation, and examines the current understanding of what affects consultant designers addressing responsible design goals. In addition, it identifies the gap in the knowledge which this research project aims to address.

The literature review offers a number of factors which are considered to affect the design consultant’s activities and their ability to enact the different constituent topics of responsible design. In addition, a number of areas that are potential influences were recognised in the course of the study. These two sets of observations are listed in summarised points in the next section. Overall, however, the literature review revealed that there is a lack of a holistic perspective, or overview, of the situation, and a shortfall in the understanding of how the factors and influences relate. It is also evident that the details of the consultant’s circumstances and commercial context are not fully regarded, or established. As such, further empirical research is needed to determine a more detailed and representative understanding of what affects the industrial design consultant undertaking responsible design goals within their commercial role.

2.4.1 > Summarised Observations from the Literature Review

The following is a list of observations gleaned from the literature, that bear relevance on the research topic, and may affect the consultant undertaking responsible design. These formed a foundation for the primary research and were carried forward for further investigation.

Consultant Industrial Design:

- Since its origins, industrial design has been dependent on industry for its *raison d’etre*; and the consultant designer’s main role is to assist their clients
in profit generation by creating distinct products that appeal to customers and entice them to purchase.

- Industrial designers offer a broad set of functions and typically have to resolve multiple aspects of the product which frequently clash or compete.

- The core of the industrial designer’s activities is regarded as resolving both the requirements of the user, and those of the client company; however, these requirements are typically dominated by secondary needs.

- The consultant’s relationship with clients is cited as the most important aspect of running a design consultancy, and constitutes a central factor in what they can achieve.

- A main factor contributing to building a reputable consultancy is a client-oriented approach (rather than product-oriented). Coupled with the requisites for successful relationships, this reinforces the dominance of the client in determining consultants’ actions.

Characteristics of Consultants:

- The vast majority of designers are not representative of the sectors of society which need design’s consideration and this may influence how they relate to the needs incorporated in responsible design.

- Creativity dominates as the designer’s main quality. They crave new experiences and sensations; have a heavy reliance on intuition and abductive thought; tend to be less accepting of norms and convention; and are more driven, impulsive and affective, which may explain why rigid methodologies are a poor fit.

- The ‘Design Practice’ of a consultancy; comprising of aspects such as their composition and client base; their knowledge and working methods; and internal policies and agendas; can have a greater influence on the nature and quality of the designs produced than the actual conceptual work that generates them.

- Industrial design consultancies are typically small, and it is questionable how thorough an impact they can actually make given they are often only involved for short periods with a stop and go approach.

Design and Business:

- Despite increasing recognition of design’s value for business, there is also evidence to suggest that its actual use falls short of its potential.

- Where design is being employed, commercial industry typically sees design’s role as communicating the value of a business proposition to the consumer; and its main perceived value is in creating meaningful distinction.

- Consultancies offer the advantages of broad knowledge and skill sets, as well as insights from exposure to different product sectors, and they are typically acquired due to a lack of resources, or as a matter of company strategy.
• As an outside party, consultants gain the possibility to challenge the client and their underlying assumptions regarding the product solution, which may present an opportunity to introduce responsible design goals.

The Evolving Design Industry:
• Industrial design is commonly referred to as a profession; however in practice, this has not been achieved. There may be an interrelationship between professional progression and responsible design.
• Recently, consultancies are gaining greater strategic involvement with their clients, which may afford them possibility to have greater impact on their client’s outputs.
• Design is evolving to incorporate approaches such as user-centred design, service design, and crowdsourcing, which may provide new avenues for responsible design goals to be considered.

Design and Broader User Groups:
• Designers serve as the main representative of the user in the product creation process; however, extending the profile of that user beyond the client’s targeted consumer has proven a difficult challenge.
• Despite the size and consuming power of the older population, their real requirements are not yet adequately met. This may be because designers instinctively design for able-bodied users; because they have poor awareness and knowledge; or because there is poor client backing.
• The main recognised barriers to inclusive design are: lack of business case; client perception that it would slow time to market, increase costs, and impact aesthetics; and because it clashes with marketing strategies.
• Market opportunities, customer satisfaction, and possibly legislation, are potential drivers for inclusive design.

Design and the Environment:
• Despite apparent additional advantages for business, ecodesign has not yet been widely adopted. This may be because many of the tools available: are overwhelming for designers; do not indicate how to generate solutions; do not take into account the particular characteristics of industrial design; and fail to recognise it is not the single priority.
• A lack of knowledge and skills; time and costs; market pressures; company ethos; government policy; and designers not feeling it is valued by clients; have also been identified as significant factors affecting the enactment of ecodesign.
• Sustainable design requires radical action; however, few companies grasp the social and ethical aspects and there has been little evidence of opportunities for holistic sustainable thinking in the commercial design industry.
• The consultant’s ability to attain autonomy and use it has been highlighted as an important enabler for sustainability; however, the scope of knowledge required due to the range of projects they are involved in is a likely barrier.
• Including ecodesign in the early stages of a project may be advantageous, because implementation is easier, and earlier decisions may yield more impact. Designers also have a valuable role to play at the operational end of the process.

Design and Social Responsibility:

• Growth in the relevance of CSR suggests business may be more responsive to incorporating responsible design goals; however, further understanding of where design can make an overall contribution is required.

• Much of design’s past involvement with social development had been apart from the commercial world; but, in recent years a number of commercial design firms have been involved in social impact. However, this has been reliant on involvement with NGOs or the public sector.

• Some of the relevant factors influencing a design firm’s effective involvement with social change are: the need for special expertise; the importance of credibility; effectiveness of collaborations; along with motivation and commitment.

• In theory, the market model and the social model are not opposed, but form two poles of a continuum; however, it is not clear where commercial design can position itself.

• It is suggested that the majority of designers see their social role as complementary to business strategy, and that this ‘economic rationalism’ contributes to the separation of market-based design and socially responsible design.

2.4.2 > Emergent Research Questions

From the investigation of the literature three key questions have been formulated to guide the primary research.

Firstly, although the existing knowledge identifies a number of factors affecting the industrial designer’s work, little exists that focusses specifically on industrial design consultants. Where the literature relates to the consultant, it tends to focus on individual aspects of consultancy practice, meaning a complete and holistic view of what affects the consultant and their work has not been well represented. This requires further empirical research, and as such, the first research question is:

What affects the industrial design consultant and their work?

In a similar way, disparate pieces of research have contributed knowledge regarding what affects designers undertaking the different aspects of responsible design;
however, this knowledge has not sufficiently regarded the particulars of the consultant’s circumstances. Moreover, there is a lack of an overview of how these factors relate, and no conclusive insight into what determines the consultant’s possibility to have effect. This highlights a critical gap in the existing understanding and will be addressed by the second research question:

*What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit?*

Finally, there has been little focus on the individual designer and what forms their actions. Ultimately, it is the consultant themselves who will decide to what extent they attempt to address societal needs, and as such, greater understanding is required of what informs those decisions. This aspect will be addressed by the third research question:

*What shapes the industrial design consultant’s responsible design behaviour?*

These three main research questions directed the primary investigation and formed the objectives by which to reach the overall research aim. They are addressed in Chapters Four, Five and Six, respectively.
3.0 RESEARCH METHODOLOGY AND METHODS

This chapter presents the methodology and methods which underlie the research project. It begins with a review of available research approaches and offers justification for the adopted methodology. Following this, it details the research design that structures the investigation and describes the studies undertaken to accomplish the aims and objectives of the project. This includes an account of the samples involved, the study procedures, and the analysis of the data collected. In addition it discusses the reliability and validity of the research to support the thesis.
3.1 > Introduction

Research can be considered as the systematic process of enquiry, seeking to develop or contribute to generalizable knowledge (and one’s own knowledge) through the discovery of non-trivial facts and insights (Drew, 1980; Sharp et al., 2002; Bell, 2005). The research methods employed provide the systematic means by which the research is accomplished, while the methodology provides the rationale and philosophical assumptions which direct the use of those methods (Dunne et al., 2005). The application of different research approaches (methodologies and methods) will produce different forms of knowledge about the phenomena being studied, and underpin the findings and claims (Robson, 2002; Blaxter et al., 2006). This section will discuss the methodology and methods adopted for this project, and how they are appropriate for the research enquiry.

3.1.1 > Initiating the Research

As part of the application for the PhD position, a research proposal was submitted containing provisional research questions and a proposed methodology for the intended enquiry. These emerged from the researcher’s industrial design background and professional design experience and were formulated from a preliminary review of the literature. The contents of the proposal initiated the project, and set the early focus and start point for the research.

The formal research project began with a comprehensive review of the literature aimed at identifying existing knowledge related to the research topic; and with the additional task of validating, or revising, the proposed research focus and aim. It should be identified that the research aim and objectives were refined as an ongoing process throughout the project. This is in keeping with a flexible (or qualitative) research design (Robson, 2002) as discussed below in section 3.3.

The literature revealed that although our understanding of society’s needs is expanding, the enactment of responsible design approaches by designers, particularly commercial designers, is still as yet, minor. The limitations of the reported knowledge highlighted the need to gain further appreciation of the true
nature of the designer’s context and to expand our perception of what affects their ability to impact those larger societal goals. This recognised shortfall in knowledge set the research purpose and focus for the project.

3.2 > Research Purpose

Robson (2002) identifies four classifications which can be applied to the purpose of a research enquiry: exploratory, descriptive, explanatory and emancipatory. A comparison of these is presented below in table 3.1.

Table 3.1: Comparison of the four purposes for a research enquiry
(Robson, 2002, p.59-60)

<table>
<thead>
<tr>
<th>Classification:</th>
<th>Characteristics:</th>
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</thead>
<tbody>
<tr>
<td>Exploratory</td>
<td>• To find out what is happening, particularly in little-understood situations.</td>
</tr>
<tr>
<td></td>
<td>• To seek new insights.</td>
</tr>
<tr>
<td></td>
<td>• To ask questions.</td>
</tr>
<tr>
<td></td>
<td>• To assess phenomena in a new light.</td>
</tr>
<tr>
<td></td>
<td>• To generate ideas and hypotheses for future research.</td>
</tr>
<tr>
<td></td>
<td>• Almost exclusively of flexible design.</td>
</tr>
<tr>
<td>Descriptive</td>
<td>• To portray an accurate profile of persons, events or situations.</td>
</tr>
<tr>
<td></td>
<td>• Requires extensive previous knowledge of the situation etc. to be researched or described, so that you know appropriate aspects on which to gather information.</td>
</tr>
<tr>
<td></td>
<td>• May be of flexible and/or fixed design.</td>
</tr>
<tr>
<td>Explanatory</td>
<td>• Seeks an explanation of a situation or problem, traditionally but not necessarily in the form of causal relationships.</td>
</tr>
<tr>
<td></td>
<td>• To explain patterns relating to the phenomenon being researched.</td>
</tr>
<tr>
<td></td>
<td>• To identify relationships between aspects of the phenomenon.</td>
</tr>
<tr>
<td></td>
<td>• May be of flexible and/or fixed design.</td>
</tr>
<tr>
<td>Emancipatory</td>
<td>• To create opportunities and the will to engage in social action.</td>
</tr>
<tr>
<td></td>
<td>• Almost exclusively of flexible design.</td>
</tr>
</tbody>
</table>

This research enquiry is concerned with both exploration and portrayal of the circumstances affecting industrial design consultants. However, Robson (2002) clarifies that a task is descriptive when sufficient is already known about the topic,
and exploratory where this is not the case. Explorative research provides insight and understanding of an area, particularly when the problem is unclear, or the research area is new (Robson, 2002; Gray, 2004). From the literature review it was evident that research into responsible design (and its constituent parts) is still a young field of enquiry; particularly relating to commercial industrial design consultancies. Furthermore, the main research questions aim to gain new insights and understanding of the phenomenon (see section 1.3.3). Given the novelty of the research area and the investigative nature of the enquiry, therefore, the research project is predominately exploratory. However, Robson (2002) also explains that it is not unusual for research to be concerned with more than one purpose, and considering the outcomes will also identify and explain relationships and patterns relating to the consultant’s situation, it could also be described as exploratory moving towards explanatory in purpose.

3.3 > Research Type
At a broad level, there are two types of research approaches. Robson (2002) describes these as ‘fixed’ and ‘flexible’ research designs, but they are commonly referred to as quantitative and qualitative designs, respectively. Quantitative (fixed) research aims to produce causal determinations which are expressed as a quantity or an amount; it typically relies on statistical analysis of quantitative data and normally requires a theory or developed conceptual framework, known in advance (Schwandt, 2001; Robson, 2002; Bell, 2005; Neuman, 2007). Qualitative (flexible) research, on the other hand, aims to understand and explain the meaning of social or human action and is typically less pre-specified and more exploratory in nature; it relies more substantially on qualitative data (often in the form of words) but can also incorporate methods which result in quantitative data (Schwandt, 2001; Robson, 2002; Bell, 2005; Neuman, 2007). In addition, for qualitative (flexible) research, the aspects of the research design tend to be revisited, with the final details emerging as the project progresses (Robson, 2002). Table 3.2 lists a comparison of quantitative and qualitative research.
Table 3.2: A comparison between quantitative research and qualitative research
(Neuman, 2007, p.88)

<table>
<thead>
<tr>
<th>Quantitative Research:</th>
<th>Qualitative Research:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test hypothesis that the researcher begins with.</td>
<td>Capture and discover meaning once the researcher becomes immersed in the data.</td>
</tr>
<tr>
<td>Concepts are in the form of distinct variables.</td>
<td>Concepts are in the form of themes, motifs, generalisations, and taxonomies.</td>
</tr>
<tr>
<td>Measures are systematically created before data collection and are standardised.</td>
<td>Measures are created in an ad hoc manner and are often specific to the individual setting or researcher.</td>
</tr>
<tr>
<td>Data are in the form of numbers from precise measurement.</td>
<td>Data are in the form of words and images from documents, observations, and transcripts (but may include data in the form of numbers and quantities).</td>
</tr>
<tr>
<td>Theory is largely causal and is deductive.</td>
<td>Theory can be causal or non-causal and is often inductive.</td>
</tr>
<tr>
<td>Procedures are standard, and replication is assumed.</td>
<td>Research procedures are particular, and replication is very rare.</td>
</tr>
<tr>
<td>Analysis proceeds by using statistics, tables, or charts and discussing how what they show relates to hypotheses.</td>
<td>Analysis proceeds by extracting themes or generalisations from evidence and organising data to present a coherent, consistent picture.</td>
</tr>
</tbody>
</table>

Given this research enquiry explores social-based phenomena and focusses on understanding the design consultant’s context and behaviour, a qualitative (flexible) approach was most appropriate. Creswell (2007, p.39-40) discusses that qualitative research is conducted for a variety of reasons including the following which are relevant to this research:

- because a problem or issue needs to be explored;
- because we need a complex, detailed understanding of the issue;
- because we want to understand the contexts or settings in which participants in a study address a problem or issue;
- to develop theories when partial or inadequate theories exist for certain populations and samples or existing theories do not adequately capture the complexity of the problem we are examining;
- and, because quantitative measures and statistical analyses do not fit the problem.
Furthermore, adopting a qualitative perspective enabled the attitudes, experiences and behaviours of the participants to be sited at the centre of the data collected.

### 3.4 > Research Strategy

Although the general characteristics of qualitative research are the same, a number of specific strategies have evolved from the various disciplines within the social sciences (Hancock & Algozzine, 2006). Research strategies define the logic for the research activities and can determine the approach to collecting and analysing the empirical data (Yin, 2003; Blaxter et al., 2006). Creswell (2007) describes five major qualitative approaches to research inquiry, each with a different focus and application. These are outlined in table 3.3, below.

<table>
<thead>
<tr>
<th>Approach:</th>
<th>Focus:</th>
<th>Type of Problem Suitable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Narrative</td>
<td>Exploring the life of an individual</td>
<td>Needing to tell stories of individual experiences</td>
</tr>
<tr>
<td>2: Phenomenological</td>
<td>Understanding the essence of an experience</td>
<td>Needing to describe the essence of a lived phenomenon</td>
</tr>
<tr>
<td>3: Grounded Theory</td>
<td>Developing a theory grounded in data from the field</td>
<td>Grounding a theory in the views of participants</td>
</tr>
<tr>
<td>4: Ethnography</td>
<td>Describing and interpreting a culture-sharing group</td>
<td>Describing and interpreting the shared patterns of culture of a group</td>
</tr>
<tr>
<td>5: Case Study</td>
<td>Developing an in-depth description and analysis of a case or multiple cases</td>
<td>Providing an in-depth understanding of a case or cases</td>
</tr>
</tbody>
</table>

Narrative ¹ and phenomenological approaches were not applicable for the research goals here, as their focus is on studying an individual’s life; and the subjective experiences connected with a particular phenomenon, respectively (Robson, 2002). Although the research investigates the behaviour and culture of consultants, an

¹ Also referred to as biographical or life history research.
ethnographic approach was not appropriate either, as the research intent (see section 1.3) is not primarily concerned with describing the subject group’s shared patterns (values, behaviours, beliefs and language) as is appropriate for ethnography (Creswell, 2007). With regard to case study research, this involves the exploration of an issue through a particular case, or small collection of cases, each bound by a specified social and physical setting (and time scale) (Miles & Huberman, 1994; Robson, 2002; Creswell, 2007) and such an approach did not meet the initial intention for the research project. This may have proved an appropriate approach for the refined research aim, if the right case opportunities were identified and recruited, however, this was not apparent at the early stages of the project when the strategic decisions for the project were made.

The remaining option, grounded theory, seeks to generate a general explanation (a theory) of a process, action, or interaction, which is inductively derived, and therefore grounded in the data obtained from the study (Strauss & Corbin, 1998; Robson, 2002; Creswell, 2007). It is both a research strategy and a particular approach to analysing the data generated from that research (Robson, 2002). On an initial level, grounded theory appears to be an appropriate strategy to direct the research intent here. However, pure grounded theory involves strict systematic procedures which; despite the existence of three evolved and diverging approaches: Traditional Glaserian, Evolved Straussian and Constructivist Grounded Theory; present a number of issues for this project.

- Traditional Glaserian grounded theory provides the dictum that prior knowledge and review of the literature should be avoided for fear of contaminating or impeding the researcher’s analysis (Birks & Mills, 2011; Robson, 2002). This seems an unrealistic requirement (Robson, 2002) and in the case of this research, both the literature and the researcher’s prior professional knowledge were considered resources for meeting the research objectives.

- Including literature does not conflict with the Straussian approach; which instead considers it an additional voice in the research (Mills et al., 2006); however, Straussian grounded theory stipulates a strict strategy and approach to coding (Birks & Mills, 2011) and this was perceived as overly prescriptive for the research objectives.

- In addition, each grounded theory process involves concurrent data generation and analysis based on (purposive) theoretical sampling to a point where eventually theoretical saturation is attained (Strauss & Corbin, 1998; Mills et al., 2006; Creswell, 2007). This was considered impractical within
the constraints of the PhD project due to both the challenge of recruiting professional participants, and the difficulties associated with planning an ‘open-ended’ research process.

Given its strict systematic approach, it is not surprising that genuine cases of grounded theory are few; and that research studies frequently apply the term incorrectly to denote an approach where theory has emerged from the data (Bryman & Burgess, 1994; Ezzy, 2002). As such, it would be inaccurate to claim that this research follows pure grounded theory; instead, the research is essentially a qualitative exploratory approach, which borrows from grounded theory. Grounded theory is particularly relevant as it advocates that resultant theories should be inductively derived from the data; and although the research approach does not strictly adhere to the other requirements, this notion was adopted in the research process to guide the data collection, analysis, and formation of theory.

3.5 > The Research Design

Robson (2002) explains that selection of data collection methods is based on the kind of information sought, along with the participants and the circumstances involved. Overall, the research design and data collection methods for a project should be selected to suit its research aim and objectives (Robson, 2002; Creswell, 2007; Flick, 2009). As a simple rule of thumb, Robson (2002) suggests the following approach:

- “To find out what people do in public, use direct observation.
- To find out what they do in private, use interviews or questionnaires.
- To find out what they think, feel and/or believe, use interviews, questionnaires or attitude scales.
- To determine their abilities, or measure their intelligence or personality, use standardised tests.” (Robson, 2002, p.224)

Furthermore, different methods tend to be linked with different research strategies; grounded theory, for example, is primarily based on interviews (Creswell, 2007).

The aim of this research is to provide an understanding of what currently affects industrial design consultants addressing responsible design goals within their
commercial work. Examining the goal further, the following three main research questions were identified:

- What affects the industrial design consultant and their work?
- What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit?
- What shapes the industrial design consultant’s responsible design behaviour?

To address these questions, a research design based on four iterative stages developed. The first stage involved a comprehensive investigation of the literature and existing knowledge. This was followed by two stages of primary data collection: an explorative multidisciplinary workshop, and a series of semi-structured in-depth interviews. Succeeding from this, the fourth stage involved the analysis of the data and a period of review, reflection and abductive reasoning to complete the generation of theory. Figure 3.1 below, illustrates the research design indicating how the four stages relate to each other, and to the overall findings. More detailed descriptions of the data collection phases are provided in the sections that follow; including an account of the sampling, research procedure, and data analysis.
Figure 3.1: The research design, indicating the stages of the project and the research studies involved.
3.6 > Stage 1 - Literature Review

The review of existing knowledge; literature and secondary sources; served three purposes for the research project: to explain the context and background for the investigation and locate the research within the field; to identify the gap in the knowledge which this research will address; and as a form of data collection to identify aspects that influence or affect designers addressing responsible design goals.

Although there has been much reserve about using literature in qualitative research in the past (some of which stems from Glaser and Strauss’ Grounded Theory texts from the 1960s) the use of existing literature is becoming increasingly relevant, particularly as a source of insights and information for context knowledge (Flick, 2009). Given a large aspect of this research project is focused on understanding and portraying the context of industrial design consultants, existing literature and findings from other studies was identified as an important source of primary data.

From the literature study, an initial set of factors influencing the consultant were identified, and a preliminary description of the design consultant’s context was created. This was achieved through a systematic review of the literature coupled with a thematic organisation of the findings. The set of observations obtained contributed to the primary data set and provided a tentative understanding to inform the subsequent studies. These were also combined with the findings from the workshop data analysis to generate a preliminary theory describing the system of potential factors affecting the consultant (see also section 3.7.3, and Appendix C).

3.7 > Stage 2 - Explorative Workshop

To expand (and verify) the data obtained from the literature review, a research study, in the form of a workshop, was developed. The aim of the workshop was to investigate the core of the research topic, and to identify relevant factors. It consisted of a set of activities primarily based around group discussion. Group discussions can be an effective means to explore a research topic, and are
particularly suited to the exploratory phase of a research project (Barbour, 2007). Apart from being an efficient method; as data is collected from several people at the same time; the group dynamics and interactions between participants can probe and spur additional layers of information (Flick, 2009). In addition, participants tend to check and balance each other’s opinions; which also helps to indicate what is important, as well as the levels of consensus (Robson, 2002). In this way, the group becomes “a tool for reconstructing individual opinions more appropriately” (Flick, 2009, p.197).

To make best use of the workshop study, it was important to involve a diverse set of participants with experience pertaining to the subject matter, and to encourage their interactions and discussions around the topic. To achieve this, a set of activities were devised to be run as part of a seminar in the UK, organised by the Sustainable Design Network (SDN). The event was themed around the topic of social sustainability, and included a set of presentations by participants in the morning. The workshop took place in the afternoon, and was preceded by a ‘warm-up’ activity which supported another research project investigating social design thinking and design students.

![Figure 3.2: The workshop study, held as part of the SDN Social Sustainability seminar](image)

3.7.1 > Workshop Sampling

Nineteen participants from design practice and academia attended the seminar; including recognised contributors to the field of sustainable design. The attendees
were arranged into three separate groups for the workshop. The composition of the groups was pre-decided to ensure each had a common level and suitable dynamic, as it was felt that random or mixed groups may be dominated by the more authoritative or experienced participants (Flick, 2009). This arrangement resulted in one group of ‘experts’, one of ‘designers’ and a third ‘wild card’ group. Further details on the individuals in each group is provided in Appendix A.

3.7.2 > Workshop Procedure

After a brief presentation explaining the content and subject matter for the workshop, participants were asked to complete the first task, which consisted of an individual questionnaire sheet requesting their initial response to the question: What factors have an effect on industrial designers achieving more responsible design? In addition to providing individual feedback data, this was also to allow participants to flush out their initial thoughts and form ideas to contribute to the group discussion. Following this, a second short task required each group to create a diagram or description of an industrial designer’s role (see figure 3.3 for a sample). This allowed the members of the groups to form a shared grounding for the main task. In addition, it provided an opportunity to observe their opinions on a designer’s role.

For the main activity (task three), each group was provided with a profile picture representing a designer and asked (in a similar manner to the individual task): What factors have an effect on [their designer] achieving more responsible designs? Participants were requested to discuss this in their groups, and to prepare a short presentation using a display sheet and materials which were made available. By including an image of a fictitious designer, the intention was to provide an individual character as subject for the group’s discussion. The use of personas has been shown to aid consensus among a group; and also to help them focus activity, rather than attempting to account for an unknown or diverse set of options (Cooper, 1999; Long, 2009). The profile images provided in the workshop were arbitrarily generated to serve similar purposes.
A set of cards was also provided for this task (see Appendix B.3); each of which represented a stakeholder identified from the literature review. Although these cards were intended as an optional tool to provoke debate, each group included them as a central element of their discussion and presentation. Participants did however, react to the cards, making changes and additions. At the end of the exercise a member from each group presented the work that had been completed. Reproductions of the presentation sheets are included in Appendix B accompanied by representations of the other material used in the workshop. A sample presentation sheet is shown in figure 3.4.
3.7.3 > Workshop Data Analysis

All the workshop activities and discussions were audio recorded in full, and the relevant passages were transcribed. These were combined with the individual questionnaire sheets, and the sets of presentation sheets from the two group tasks; to form a complete data set for analysis. The aim of the analysis was to identify any influences and factors which the participants felt could affect the designer addressing responsible design goals. To achieve this, ‘coding and clustering’ (Miles & Huberman, 1994; Robson, 2002) of the data was performed, comprising of the following steps:

- The content of the transcripts and workshop sheets were coded in vivo to highlight any influencing factors identified by participants.

- A comprehensive list of all the aspects raised was compiled, with similar aspects grouped under a single topic.

- The topics were organised taxonomically and categorised based on their relationship to the designer.
These findings were then combined with those from the literature review, and a set of central themes was identified to form a provisional description of the system of factors at play (see Appendix C).

3.8 > Stage 3 - Interview Study

The main data collection for the research project consisted of a series of semi-structured in-depth interviews with industrial design consultants, leading academics and design-related strategic consultants. The structure and line of enquiry for the study was informed by the findings from the earlier studies, however, the aim of this stage was to investigate in depth the research topic wholly, and afresh, from the perspective of the participants.

Interviews are suited to research that is explorative and which aims to investigate the attitudes and experience of the participants (Robson, 2002). They are widely applied in qualitative designs, and are particularly appropriate for this research as they are useful where: the questions are open-ended or complex; the knowledge sought is implicit or tacit; and where the respondents may enjoy talking about their work rather than filling in questionnaires (Robson, 2002; Flick, 2009). Commonly, interviews can vary in their degree of structure or standardisation. Using semi-structured interviews allows a greater level of flexibility; enabling the interviewer to adapt the questioning to suit the direction the interview takes, and facilitating more in-depth probing of the respondent’s views and opinions (Flick, 2009). Table 3.4 summarises the advantages and disadvantages of using interviews:
Table 3.4: The advantages and disadvantages of using interviews as a research method
(Compiled from: Robson, 2002, p.272-273)

<table>
<thead>
<tr>
<th>Advantages of Interviews:</th>
<th>Disadvantages of Interviews:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews are a flexible and adaptable research method</td>
<td>The lack of standardisation raises concerns about reliability</td>
</tr>
<tr>
<td>Asking people directly is a shorter route to seeking answers</td>
<td>Interviewing is time consuming</td>
</tr>
<tr>
<td>It is possible to modify the enquiry to follow up on responses or investigate underlying motives, therefore facilitating greater depth of information</td>
<td>Carrying out interviews requires a particular set of skills and the quality of the data can depend on the abilities of the researcher</td>
</tr>
<tr>
<td>Non-verbal cues may aid understanding of the responses</td>
<td>Interviews require careful preparation and planning</td>
</tr>
<tr>
<td>It has the potential to provide rich and highly illuminating material</td>
<td>Transcription and analysis are time consuming</td>
</tr>
<tr>
<td></td>
<td>Biases are difficult to rule out</td>
</tr>
</tbody>
</table>

3.8.1 > Interview Study Sample

The interview study was carried out during the period of January through to April 2011 and involved a total of 31 participants in the UK and Ireland. These comprised of:
- 22 industrial design consultants; of which, 18 were managing directors, directors or sector managers; and 4 were senior or lower-tier designers
- 5 design-related strategic consultants
- and 4 leading academics in the topic area

The main focus of the study was industrial design consultants, however it was felt that representatives from academia and other design-related strategic consultancies could also offer valuable insight. The additional participants from academia were selected based on their research and dominance in an area related to the research topic; while the design-related consultants included a number of consultants; not strictly industrial designers; but whose work closely resembled product design and incorporated objectives connected to responsible design.

During the analysis, attention was given to ensure the data from the different groups was regarded according to its origin.
The industrial design firms approached were sourced from personal contacts, the design press, the BDI (British Design Institute) database, and internet searches; and also included a number of referrals from participants. The initial list of possible candidates was reduced through an evaluation of websites and online portfolios which aimed to sift out less established firms or those whose work was less typical of industrial designers; for example, those involved predominately in graphic design and communication, or in product manufacturing and liaison with vendors. It was also desirable that potential participants showed examples of work with recognisable brands as a means to identify a reasonable calibre. In addition, consultancies who had been approached for colleagues’ studies within the prior twelve months were omitted to avoid any aggravation and to respect previous preferences for involvement, while also conserving the possibility for future enquiries by other researchers. In this way, the selection can be described as purposive sampling (Robson, 2002).

In total, 24 industrial design firms were approached by e-mail, and 12 different consultancy firms participated in the study. The breakdown of participants is represented in figure 3.5. These included a number of junior and mid-tier designers; however, senior members of consultancies were mainly targeted as it
was felt their knowledge base and experience would provide a more proven and rich source of information. This was backed by observations from the pilot interviews (see section 3.8.2). Of the design consultants who participated, the majority practiced industrial design for over 20 years and the sample includes a cross-section of firms who are prominent in the industry or at the leading-edge of industrial design practice in the UK and Ireland. Appendix E contains further details on the individual participants.

3.8.2 > Interview Study Pilot

A pilot of the interview study was carried out at the beginning of the research phase. The original intention was to run a group workshop with an industrial design consultancy in Ireland. This was organised to align with a quieter time in the firm’s calendar; however, in the days preceding the scheduled workshop, it became evident that the office was getting very busy and that most of the designers would be unable to participate. Rapidly changing circumstances, such as these, are not uncommon given the nature of consultancy work, and it was anticipated that it would be very difficult to set up an alternative arrangement (particularly as the firm was entering a busier period). At the risk of missing the opportunity altogether, it was decided to adapt the workshop material and run individual interviews instead, which were arranged in a more casual and flexible basis to make allowance for the office work load. Moreover, this provided the opportunity to try out and test the intended interview format which was being developed, and thus became the pilot for the interview study.

In all, eight members of the consultancy; three design directors, three senior level designers, and two lower-tier designers; participated. For the interviews with the designers (but not the directors), two of the closed card sorting activities originally designed for the workshop were adapted and incorporated into the interviews for testing. This allowed the opportunity to assess whether these would be included as part of the interview structure. The tasks are briefly described below, and a reproduction of the tools used are included in Appendix D.
3.8.2a > Card Sorting Task A (See figure 3.6)

A set of 17 cards was provided, each with a topic printed on it. The topics were obtained from the literature as examples of commonly referenced issues affecting society today. The participant was asked to sort the cards onto three separate sheets, according to how they each relate to their current work as a design consultant. The three sheets contained the following titles:

- We aim to address issues associated with these topics [Green]
- We should address issues associated with these topics, but we can’t [Amber]
- These topics are not directly relevant to us [Red]

Once the sorting was complete, a discussion was instigated regarding the reasons for the resulting arrangements. In this way, the main purpose of the task was to provoke discussion.

![Figure 3.6: Example of card sorting task A](image)

3.8.2b > Card Sorting Task B (see figure 3.7)

A set of 10 cards was provided, each with a typical project objective printed on it. Again, these were sourced from the literature as common objectives faced by a consultant designer in commercial projects. The participant was asked to arrange the cards in order of the priority they would give to each objective on a typical
project. The outcome was then used as an opportunity to discuss the reasons and factors affecting the consultant and their priorities.

![Card sorting task](image)

**Figure 3.7:** Example of card sorting task B

The pilot interviews proved a rich source of data and were included in the main study data set. In addition, they provided an assessment of the interview template and were used to refine the line of questioning for the subsequent interviews. After the pilot study, it was confirmed that more senior members of consultancies would be targeted for the remainder of the study, given the richness and relevance of the feedback obtained in the pilot. It was also determined that a more straightforward interview technique would be used, without the card sorting tasks. Although the
tasks served as a good way to provoke discussion, it was felt that it was not adequate to warrant the time and disturbance required. In addition, it would have been difficult to incorporate them into interviews which were not undertaken in person. Furthermore, it was noted that they did not feel appropriate in the discussions with senior consultants, whose conversation took place at a higher level. Instead, the interview questions were adapted to ensure they incorporated a similar level of provocation and that they provided alternative approaches to the topics covered by the tasks. Two of the flash cards developed were however kept as optional devices for the additional interviews, as discussed below and shown in figure 3.8.

3.8.3 > Main Interview Study Procedure

Interviews were carried out in person where possible, and tended to be at the participants’ offices, or a cafe close by. In the situations where it was impractical to meet, or where it was unsuitable for the respondent, Skype calls were arranged as an alternative. The length of the interviews was targeted at forty five minutes to ensure a level of in-depth discussion, while also respecting the participants’ busy schedules. In most cases, however, the respondents were happy to extend this, and many of the interviews lasted over an hour. This was fortunate, as the breadth of the research topic necessitated longer discussion where possible.

The three sets of respondents (designers, academics, and other consultants) each offered different perspectives for the research, and therefore, three separate lines of questioning were tailored to suit. After a number of interviews were held, it was also recognised that each respondent tended to offer a distinct principal contribution. Therefore, the structure of subsequent interviews was refined to try to identify each respondent’s main contribution in the early stages, in order to appropriately target the rest of the questioning. A semi-structured interview technique facilitated this easily (Flick, 2009); however, the format of each interview and the topics covered, varied greatly across the full set of interviews. Given the objectives of the study, it was felt that the benefit to the data outweighed any drawbacks from inconsistent structure. This aligns with the characteristics of
qualitative exploratory research, as discussed earlier in section 3.3. The final structures for the interviews can be reviewed in the interview sheets in Appendix F, accompanied by the other material used in the study.

Flash cards were incorporated into a number of interviews to prompt additional discussion when suitable (see figure 3.8). The first of these contained a list of the terms linked to responsible design, and was used to ascertain the participants’ understanding and opinion of the topics; but more so as a means to discuss what relevance they had to their work. The second card contained a provocative statement for the purposes of prompting further discussion on the central research topic.

![Figure 3.8: Reproduction of flash cards used in a number of the interviews](image)
3.8.4 > Main Data Analysis

The interviews were each recorded in full using an electronic dictaphone, or call recording software for those by Skype. Additional notes were taken during, and immediately after the interviews, and were documented on the interview sheets (See figure 3.9, for an example). Any other material introduced by the participants (such as sketches or diagrams) was also collected or photographed and included in the data set to supplement the recordings.

Figure 3.9: Sample interview sheet with notes (see also Appendix F)
In preparation for data analysis, each interview recording was transcribed in NVivo software. This software was also used for the coding process. The key advantage to transcribing in NVivo, was maintaining a continuous link to the raw recorded data during the coding and analysis. This made it possible to re-listen to the original interview and verify the context and interpretation of the data thread at any point; thus alleviating issues associated with a change of medium (such as decontextualisation, superficial coding and truncated data threads) (Gibbs, 2007).

To facilitate this, the transcripts were each broken into segments of varying length, determined by the flow and contents of the speech. The recordings were mostly transcribed verbatim, however sections which were clearly off topic (erroneously) were paraphrased and marked by bracketing. These could be returned to and transcribed if later required. For a sample of the transcriptions, see Appendix G.

Once prepared, a thematic analysis was performed on the data. Thematic analysis is a method to identify and analyse themes within the data which are then combined and compared to form theoretical constructs (Boyatzis, 1998; Ezzy, 2002).

At the centre of the analysis is the coding process. A code is a word or phrase used to summate and capture the essence or evocative attribute of a portion of text (or visual data) (Saldaña, 2009). Coding, therefore, involves identifying and linking, under an index or code, several passages of text which share the same key trait (Gibbs, 2007). The data analysis process consisted of four coding stages, each of which is outlined below.

The first stage involved an initial coding of the data in place. This entailed examining the transcripts line by line and highlighting words, portions of text, or sentences, particularly relevant to the research questions. These acted as signposts within the data, and consisted of two colour codings; red to indicate a topic of interest, and magenta to mark an insightful or pertinent issue. As this was applied directly to the transcript, it was automatically reproduced across the spliced sections of data, and could be continually amended throughout the process.
For the second stage, course coding of the data was performed to organise and structure the data into provisional groupings for further analysis (Saldaña, 2009). The codes for these groupings were generated from the earlier studies and revised to suit the actual content. Figure 3.10 shows the set of course codes which were applied.

![Figure 3.10: Set of course codes applied in stage two coding](image)

('sources' refers to the number of participant interviews included in that category; while 'references' refers to the total number of referenced quotes)

The third stage consisted of fine coding the data by scrutinising the sections of transcript in each of the topic categories from stage two (see figure 3.11 for a sample section of fine coding as illustration). This involved a combination of descriptive coding (also known as topic coding) and thematic coding to identify emergent themes (Saldaña, 2009). A theme can be defined as “a pattern in the information that at minimum describes and organises the possible observations and at maximum interprets aspects of the phenomenon” (Boyatzis, 1998, p.161). These themes provide the foundation for theory constructs (Saldaña, 2009).
The aim of the fourth stage was to weave various themes together into a coherent narrative. This entailed restructuring the coding hierarchies by combining and comparing the codes and themes from the fine coding to create constructs and overarching concepts. As part of this, the existing codes were challenged, reconsidered, and renamed where required; resulting in a reduced set of unifying topics. Analytic memos, which were written throughout the coding process, were also reviewed as part guidance for this analysis stage.
It is important to note that content analysis was not an objective of the data analysis, and consequently, a topic raised by a single participant was given the same consideration as those repeated by a number of respondents. This is particularly relevant as the interviews took different courses for each participant, and as such, the importance of the topic is not reflected by its level of referral.

3.8.5 > Presentation and Referencing of Data

For the purposes of confidentiality, research participants’ names have been replaced with an alpha-numerical coding in the thesis content. These signify the identity and the type of respondent, along with the transcript entry cited. For example, ‘IDC:03, 16’; refers to the sixteenth entry in the interview transcript from industrial design consultant three. In a similar way, ‘ACD’ is used for interview respondents from academia, and ‘DCO’ signifies ‘design consultant - other’. Workshop participants are coded as WPA, WPD and WPO signifying academic, designer and ‘other’; while references to team work are labelled WT:Red, WT:Green or WT:Blue, and content from the individual response sheets is marked as IRS. Table 3.5 presents the full set of abbreviations used. Further details of the research participants are provided in Appendix A and E.

Table 3.5: Abbreviations used in alpha-numerical codings for participant content

<table>
<thead>
<tr>
<th>Workshop Data Abbreviations:</th>
<th>Interview Data Abbreviations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPA  Workshop participant - academic</td>
<td>ACD  Academic</td>
</tr>
<tr>
<td>WPD  Workshop participant - designer</td>
<td>DCO  Design consultant - other</td>
</tr>
<tr>
<td>WPO  Workshop participant - other</td>
<td>IDC  Industrial design consultant</td>
</tr>
<tr>
<td>WT:Blue / WT:Red / WT:Green  Workshop team - Blue / Red / Green</td>
<td>IRS  Individual response sheet</td>
</tr>
</tbody>
</table>
Transcript quotes were also lightly edited to remove speech-specific elements that interfere with the meaning in print (primarily space-fillers such as “eh” or “um”); however, caution was taken to avoid affecting the implicature or integrity of the content.

3.9 > Trustworthiness of the Research

How to appropriately assess qualitative research is a contentious topic, and the literature on methodology is filled with debate regarding legitimacy, trustworthiness, and its relationship with the canons of scientific enquiry. Many of the approaches employed within quantitative (or fixed) research are not feasible within qualitative (or flexible) research designs; such as those based on replicating circumstances; and therefore, alternative procedures for ensuring trustworthiness are called for (Robson, 2002; Gibbs, 2007). These are typically reviewed within the classical criteria of reliability and validity.

3.9.1 > Reliability

Reliability refers to the concern that the research instrument produces consistent results (Robson, 2002). For qualitative research, this involves both the reliability of the research methods and practices employed, as well as the honesty, care and thoroughness of the researcher, as the primary research tool (Robson, 2002; Flick, 2009). The aim is to minimise the errors and biases in the studies (Yin, 2003).

To maintain a reliable approach within this project, an audit trail; consisting of full records of all activities, raw data, research notes, and details of the analysis process; was recorded and maintained for each stage of the project. In addition, the activities and the researcher’s involvement were continually explicated; by the researcher, and through supervision; to understand how the data was produced and how the research practice could be improved and made more reliable. This reflexivity also aided awareness of potential biases.
Researcher bias can occur when the researcher’s assumptions and preconceptions affect their behaviour in the research setting, perhaps in terms of the decisions or selections made; or in their understanding and interpretation of the research situation and data (Robson, 2002). To avoid this, a high degree of sensitivity and responsiveness to contradictory evidence was maintained throughout the studies. In addition, the researcher’s genuine curiosity (and confusion) regarding the research phenomenon, coupled with the complexity of the research query, helped obstruct bias by encouraging adaptability, in-depth enquiry, and receptiveness to new information.

3.9.2 > Validity

Validity is concerned with whether the researcher sees what they think they see, and whether the findings actually represent what they appear to (Robson, 2002; Flick, 2009). Three basic forms of error can occur: seeing a relation or principle which is not correct; rejecting what is correct; and asking the wrong questions (Flick, 2009). Robson (2002) identifies three threats to validity based on the kind of understandings involved in qualitative research; these are:

- The threat to a valid description of observations through inaccurate or incomplete data.
- The threat to a valid interpretation of data by imposing a framework or meaning on what is happening;
- and the threat to the theory produced by not considering alternative explanations.

To reduce these threats, a number of precautions were taken during the process of this research project.

Firstly, care was taken to design suitable studies which would provide data appropriate to the research objectives. For each study, design decisions were explicit where possible; the rationale and activities were recorded; and a complete account of the data collection and analysis is provided here to preface the findings. In this way, the route to an outcome can be traced in full showing how an interpretation or theory was reached. Furthermore, multiple methods (literature review, workshop study and interviews) and different sources (consultant industrial
designers and experts, as well as other designers and consultants) were used permitting triangulation to provide corroborating evidence, and to enhance the rigour of the research (Robson, 2002; Creswell, 2007; Gibbs, 2007).

Opportunities were also sought to test and validate throughout the research process. This occurred within a study; for example, in the interviews where some earlier observations from respondents were introduced into later interviews; between studies; where earlier derived notions and emerging ideas, were used to challenge and verify each other; and in data analysis where constant comparison was used to test for accuracy and consistency during coding. Strauss and Corbin (1990) also comment that the researcher should step back from the research and think about it creatively and with a critical eye. Regular reviews of the project were undertaken in this manner to assert the research direction and analyse the objectives and process. At each stage, the rationale was discussed with supervisors to recognise and avoid threats to validity and reliability. In addition, the research work was subject to review internally by peers as part of university research seminars, and externally at two international conferences.

3.9.3 > Research Ethics

In accordance with the University Ethical Advisory Committee, an Ethical Clearance Checklist was completed for both of the studies undertaken involving human participants (workshop and interview study), and was deemed to conform with the ethical checkpoints. Each participant was informed of the purpose and details of the study prior to their involvement. For the workshop, this was incorporated into the introductory presentation; while for the interviews, a participant information sheet (see Appendix F.1) was sent ahead of the interview, and the main content was repeated in the introduction. For both studies, informed consent was sought from each respondent for their involvement and for the recording of the information (see Appendix F.2). Participants were also made aware that their involvement was voluntary and could be retracted at any point before, during, or after the study. Further to this, information was provided relating to the whistle-blowing policy and who to contact should they have any concerns or issues with the
study. All information provided by participants was kept confidential to the researchers, and the storage of all data complied with the Data Protection Act 1998.

3.10 > Conclusion

This chapter presents the methodology and methods which underpin the research project. It considers various methodological directions and explains how the investigation aligns to an explorative qualitative approach which borrows from grounded theory. Explorative research is suitable for gaining understanding and insight in new areas; and given the research aim, coupled with the novelty of the subject; this was fitting for the investigation. Similarly, qualitative research was chosen as it is more applicable to exploration and explanation of issues related to human actions and their context (in this case industrial design consultants and their commercial context). In addition, the approach of inductively deriving theory and understanding from the data; as advocated in grounded theory; was used to guide data collection and analysis.

The chapter also presents an outline of the research design adopted for the project, along with a description of the studies undertaken. The research project consisted of four stages, incorporating two primary data collection studies; an explorative workshop, and the main study interviews; bracketed by a literature review and a phase of analysis and theory generation.

From the findings identified in the data analysis, a series of key observations and theory regarding design consultants and their relationship with responsible design goals, were generated. These are discussed in detail in the following three chapters. Chapter Four discusses the characteristics of the elements at play within a consultant’s context. Chapter Five describes the key determining factors and their effect on design consultants. Chapter Six examines the formation of consultants’ responsible design behaviour, by marrying the primary research findings with existing theory on behaviour and design activity.
Chapter Four:

4.0 FINDINGS A: THE INDUSTRIAL DESIGN CONSULTANT’S CONTEXT

This chapter presents the first set of research findings, which portray the circumstances surrounding the industrial design consultant and their design work. It describes the main actors involved in product creation, and accounts for the influences associated with their characteristics. The chapter concludes with a model describing the product design context. This provides a illustration of what can affect the consultant, and a basis to further examine their engagement with responsible design goals within their commercial remit.
4.1 > Introduction

A central objective of this research investigation is to gain an understanding of the complex circumstances affecting industrial design consultants’ activities; particularly those aspects which impact their engagement with responsible design goals. The research studies undertaken (literature review, workshop, and interviews) provided an in-depth understanding of the consultant’s context, and exposed a myriad of factors at play within it. This chapter presents the first set of findings gained from the research which describe the characteristics and variances of the key actors involved in the product design process. It highlights the main influences they contribute, and their effect on what the consultant designer can achieve.

This chapter addresses the research question:

*What affects the industrial design consultant and their work?*

At its most basic, consultant product design involves a set of four key groups: a consultancy and its designers; the design project and product (or service); the client organisation; and the users. This rudimentary set of actors is illustrated in figure 4.1, and is used to structure the main contents of the chapter. Each group is explored in a separate section which concludes with the main influences relating to their characteristics. From these, a model representing the consultant product design context is constructed, incorporating and accounting for the array of elements influencing the consultant’s work.

![Figure 4.1: The rudimentary elements of consultant product design](image)
4.2 > Characteristics of Consultancy Design

The first actor in the industrial design consultant’s context is the consultancy firm they work for. Below is an account of the characteristics of design firms identified from the research, and chiefly drawn from the discussions with the consultants who participated in the interview study.

4.2.1 > Industrial Design Consultancies

The research participants explained that industrial design consultancies operate by offering a set of design services for commission and that this commonly involves assisting clients or filling the gaps in their capabilities (see also Tenny (2003) and Gemser & Van Zee (2002)). Design firms typically offer a range of functions for a variety of different business sectors, resulting in a wide diversity of work and skill sets.

“In general we’re probably exposed to about 12 different commercial sectors, so that’s nice and varied, so we’re a very broad church and the products and work ranges from FMCG\(^1\) at one level, to medical, nursery equipment, communications, IT projects, service design, experience design. So it really is a very wide spread.” (IDC:18, 3)

With regard to the services they provided, participants spoke about front-end skills such as consumer research and trends; core skills including idea generation, styling, and detail design; implementation and testing, including mechanical engineering, Life Cycle Assessment and 3D mould flow analysis; as well as vendor liaison and activities related to bringing products to market. In addition, it was clearly evident that consultancies do not just provide design services, but can frequently cross over into business and marketing realms (IDC:08, 2; IDC:07, 23; IDC:13, 7; IDC:12, 13) (See also: Maciver, 2011).

Despite the variety of their work, it was common for firms to have specialties or to demonstrate a particular strength in certain areas. For example, one participant discussed how the firm he worked with was engineering based and tended to exercise a more rationale- and evidence-backed approach (IDC:20, 22). Other cases included a consultancy whose main focus was on building their clients’ brands (IDC:

\(^1\) ‘FMCG’ signifies fast-moving consumer goods.
and another whose central offer was based around semiotics (IDC:11, 66). These different approaches have perceivable effects on both the work a firm attracts, and also the resultant design outcomes. Similarly, it was not unusual for consultancies to have a particular client, or a product sector, which dominated their work. In some cases it was evident that this reliance on a main client also had a significant effect not only on the firm’s growth, but also on the particular skill set and working methods they had developed (for example, IDC:06; IDC:20; IDC:15).

In the UK, industrial design consultancies are typically small, with the Design Council (2010) reporting that two-thirds employ less than five, and just under 90 per cent have less than ten employees. For larger firms it was evident from participants that the organisational structure tends to be based around quite flat hierarchies, and a number of participants referred to this as a positive which reduces internal barriers (IDC:20, 12; IDC:17, 60).

The design firms involved in the research also demonstrated variation in the business models they employ. One director explained their firm adopts many different approaches, based on combinations of retainers, fees and royalties, as required; and that they also operate a ventures division as an incubator for new product ideas (IDC:18, 33). In contrast, another participant was running a one-person consultancy which operates solely by involving other sub-contractors (IDC:09, 24).

4.2.2 Design Consultancies’ Resources

Design projects typically require shared involvement from multiple members of a consultancy (IDC:11, 24) and this, coupled with the obvious preference to work an office close to capacity (or even over capacity) means the organisation of resources is a critical aspect of running a design firm. One element of this is the human capacity of the consultancy; while another is the importance of having designers who can flex and adapt their skills to different projects. One manager explained:

“... it's looking at what does a project need, if you could draw up your ideal; ok; well what do we have available and what's the best marriage between those two?” (IDC:20, 6).
In this way, firms have to juggle resources to suit projects; however, a number of comments revealed that this is not necessarily uniform, and that projects for more dominant clients often command more, or better resources over others.

The range of capabilities across the firms interviewed varied, and a number of participants mentioned they also involve external companies or freelance contractors when additional or specialist services are required (IDC:13, 26; IDC:17, 55; IDC:18, 47). For many, sustainable design was treated in such a manner. Although it was sometimes touched on via internal champions (IDC:22, 19) or a form of knowledge share (IDC:13, 36) (in a similar way to other peripheral interests), it was frequently seen as something that was not yet necessary as an in-house competency (IDC:17, 55; IDC:13, 41; IDC:18, 50).

“I can’t see that we can afford to put -; to actually have one expert on like sustainable design, if that’s the only thing he did. No, it’s just not workable for us. I’d much rather … pull somebody in as a consultant” (IDC:13, 41).

The size of the design firm, is one clear factor affecting this. The smaller a team, the more multifunctional each member needs to be, whereas it was discussed that as a consultancy grows it can move from being a company of all-rounders to employing more specific specialists (IDC:22, 18; IDC:20, 9; IDC:11, 28). On the flip side, there was evidence to suggest that the larger a firm gets, the more designers are assigned to a particular client or product type, or to perform a certain skill (IDC:20, 10; IDC: 21, 13; IDC:11, 10). In addition, larger firms carry the added challenges of bureaucracy, communication issues, and loss of agility (IDC:11, 24; IDC:20, 11).

4.2.3 > A Design Firm’s Culture

It was apparent from the research that design consultancies each acquire their own character and culture;² with most also demonstrating a guiding ethos; either innately or explicitly. These characteristics seem to originate from how the consultancy is formed, and evolve with their working methods; the people they

² Dorst (2009) refers to this as ‘Design Practice’; the aspects of the design firm not directly related to projects but which contribute to the general character, agenda, and philosophy shared by its designers.
employ; and the clients they attract; in what appears to be a mutually reinforcing relationship. For example, one design director explained how consultancies and clients often share values and have a natural draw and compatibility to each other:

“... consultancies will offer a certain kind of design; there will be a certain set of values around it which the clients will be looking for when they choose their consultant. They’ll be looking for a sort of a, a good fit, a good casting if you like” (IDC:06, 14).

A more extreme example of this, was where a particularly business-driven director had no real interest in sustainability and asserted that clients are not interested either (beyond legislative requirements) (IDC:18, 49-51). Given this did not align with the general findings, it instead suggests it was particular to the clients that consultancy attracted, which possibly shared similar views, values or objectives.

In a similar way, it was perceivable how designers (and other personnel) employed by a consultancy tend to align with its values and culture. This is not surprising, as on the one hand, a consultancy’s culture is built from its members (IDC:11, 16) while on the other hand, an alignment is required to sustain the designer’s involvement with that firm. In this way, a firm’s members, ethos and interests are key factors in a designer’s development, and may bear significant influence on their actions and motivations while working there (IDC:02, 37; IDC:11, 16) (See also Ashton (2003) and Lawson (2005)). One consultant, for example, commented that his actions are reliant on the philosophy of the consultancy he works with (IDC:02, 37). This presents an interesting notion of deferred responsibility, which will be examined further in Chapter Six.

It was also discussed how it can be difficult to change the culture of a consultancy, particularly for larger firms, as it is often woven deeply into the fabric of the practice. In relation to this, consultants spoke about how clients and potential clients formed ideas about a firm’s offer, and that it can be hard to steer those perceptions in other directions (IDC:11, 12). As such, the character of a consultancy can have a significant effect on the work it attracts and the manner in which it operates. In many cases consultants; especially those in more senior roles; work to attract new clients and bring in fresh work; however the clients a consultant can
attract will ultimately be influenced by the traits of the firm, along with the services and type of work they can offer.

4.2.4 > Consultancies are Businesses

It should not be overlooked, that at their core, consultancies are businesses and have to survive in a competitive industry. This critical aspect clearly overarches the decisions consultancies make and the directions they choose. As one managing director commented:

“You can obviously do great work for, em, for no profit if you wish, but you might have difficulty staying in business very long and feeding the kids etc.” (IDC:10, 46).

Further to this, one participant described how she gets frustrated at people who feel designers should just get out there and do more responsible projects, acknowledging that it is not so easy given consultants need to get paid and make a living (ACD:04, 7).

Across the participant consultancies, some commented that they have more work than they can get through (IDC:21, 23; IDC:18, 17) while others remarked on how they have always had to strive to survive and build their business (IDC:07, 31). In either case, it was evident that a firm’s prospects are primarily dependent on the client base they can establish and grow.

“We really win all our business through repeat business and referrals and people moving on; going away and remembering us and remembering the great job we did over there, so now can we do it here.” (IDC:18, 17)

Further to this, one director explained how a typical path for an industrial design business is to get involved with a company when it is small, and as that company grows, so does the stream of work (IDC:10, 48). A critical part of a design firm’s business survival, therefore, is the quality of its relationships with clients. This topic was discussed frequently throughout the interviews; suggesting it is the single most important aspect of a consultancy. (This aligns with the literature, such as: Gemser & Van Zee, 2002; Lawson, 2005; Design Council, 2009).

Consultants explained that each relationship with a client is different and that a key ability is being able to adapt or flex to suit, in order to provide them with what they
need (IDC:13, 14; IDC:22, 17). Some discussed how they try to empower their clients; or aim to work in a collaborative manor, thus serving the client less as an outsider and more as a part of their team (IDC:17, 21; IDC:13, 10; IDC:11, 40; DCO: 01, 17).

“And sometimes it’s about energising the person you work for. Somebody once told me when we started up, your job is to make the person who hired you look great, you know.” (DCO:01, 17)

Consultants also remarked on the necessary investment to build relationships, and how stronger and more established client relations enable them to be more effective and efficient at their job, due to the insights, knowledge, and trust they can build up (IDC:21, 18; IDC:17, 21; IDC:22, 17; IDC:20, 13; IDC:03, 6; DCO:04, 15).

“I think, hopefully to our merit, some of the best clients we have are the ones that have been with us for the last 10 / 15 years; that we inherently know exactly what they’re needing to do. We know the kind of characters and the way they want to do something, so we can be more effective in working with them. And, we are part of their team.” (IDC:17, 21)

It was also apparent that often in long-standing relationships, the consultant can understand the client’s company brand as well as the client does, or even better than some of the individuals working there (IDC:19, 16; IDC:21, 7). However, despite this, a number of consultants commented how it is still necessary for them to constantly persuade clients of their value; explaining that in the client’s eyes, they are only really as good as their last job (IDC:06, 38; IDC:22, 15; IDC:18, 13).

4.2.5 > Constraints Associated with Working in a Consultancy

It was evident from the research that consultancy work carries with it a set of distinct demands. A number of directors explained that as an external supplier, consultants are exposed costs and as such need to constantly deliver (IDC:22, 15; IDC:18, 13; IDC:06, 38).

“However important, or however long standing and, eh, rewarding and fruitful a relationship is with an existing business customer, you’re still vulnerable. You’re always vulnerable, there’s always politics and there are always games to play with making sure you are delivering and it is effective” (IDC:18, 13).

In response to this, consultancies are constantly aiming to prove themselves; often under demanding conditions (IDC:18, 13; IDC:22, 15).
“... you want to prove to them that no matter what they throw at you, you can handle it.” (IDC:22, 15)

The nature of consultancy work, therefore, can result in demanding timescales, and heavy workloads for the designers, and this is often made all the more real by hard-set product launch dates.

“... you know, our products go to Walmart, go to Tesco, they go to John Lewis - they are delivered on that day, at that time, and you work back from that point ... that's the target and that's what you've got to achieve, otherwise they just send the product back” (IDC:18, 51).

Furthermore, designers need to deal with the changing demands and requirements of their clients. Discussing his work with a particular company, one consultant explained:

“The work load's very very fast and constantly changing, you know, the goal posts are constantly moving. ... You write a quote and you find a week later, that - we're not doing that anymore, you know. You have to be really really flexible all the time and it's just quite consuming just to keep on top of it all.” (IDC:21, 5)

As such, numerous participants commented on shortage of time as a real issue (IDC: 20, 29; IDC:05, 49; IDC:18, 23) also discussing that this meant they did not often have the opportunity to consider the broader aspects of their job, such as the topics being discussed for this research (IDC:04, 56; IDC:11, 76).

4.2.6 > Section Conclusions

The consultancy a designer works for contributes a crucial influence on them, given it constitutes their professional environment and is also the over-riding determinant of the work available to them. This influence originates from both the firm as a whole; including its values and culture; as well as the management and employees which form the consultant’s peers. From the research, the following set of variances and characteristics relating to design consultancies were identified which affect the consultant and their engagement with responsible design:

- The consultancy’s size and capacities
- The competencies and services they offer
- Their knowledge base
- Their design approaches, strengths and specialties
• The clients they attract and those which dominate their work
• The quality of the relationships they construct and maintain with their clients
• How they adapt their services to the needs of the client
• The firm’s culture, including its guiding ethos, agendas and values
• Their business approaches and business performance
• The constraints and demands associated with consultancy work
• Their regard for responsible design goals

The dominant aspect relating to consultancies is that they are in the business of providing a service for their clients, and as part of this tend to shape their offer to suit the needs of each commission. This willingness to adapt is a central aspect of consultancy work, and it became apparent from the research analysis that the details of how it is enacted, contribute significantly towards the consultant’s engagement with responsible design. This topic is given further attention in Chapter Six.

4.3 > Characteristics of Client Organisations

At the core of product creation, and therefore central to the industrial design consultant’s context, are the clients they work with. In this section, the characteristics of client organisations are presented and discussed based on the observations identified in the research.

4.3.1 > Who is the Client?

When considering the characteristics of client organisations, the overarching observation is that every client is completely different (IDC:13, 14; IDC:17, 25). A consultant’s clients can range from start-ups and SMEs³ to global brands; each bringing a particular set of challenges and opportunities.

“… they’re all differently demanding, and I don’t think there are any standards or rules that you can apply” (IDC:18, 61).

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³ ‘SME’ signifies small to medium enterprises
From the interview comments, it was evident that each client varies greatly in their approach to product creation, the resources they have, and how they function. For example, some companies manufacture their products themselves while many rely on external vendors (typically in Asia). Similarly, some client companies incorporate retail selling (such as Marks and Spencer and Home Depot, or those who operate through online outlets) while others rely on channelling their products through third party retailers. Client organisations can also widely vary in their incumbent skill set, and may involve different sets of disciplines from marketing, engineering, design, sales and project management; through to research and development, firmware, quality assurance, and brand management. Further to this, it was clear that, depending on their capabilities, clients required different services from consultancies, and worked with them in very different ways.

Typically consultancies deal with a client contact or project team; however these may range from an autonomous group who are enabled to act and make decisions (or the entire company in the case of a small business); to an individual who acts as little more than a representative for the rest of the company (IDC:05, 19; IDC:08, 14; IDC:06, 21; IDC:13, 14; DCO:02, 26). Even when the client contact is empowered, there is still the issue of how responsive they are to the designer’s input. Consultants explained how some client contacts can know exactly what they want, but in so doing may be unresponsive to alternatives (IDC:05, 18). Others, as one director commented:

“… have never done it before and they want to do everything; ‘this is my chance, I’ve got this new job and I want to change the world’” (IDC:19, 16).

From the consultant’s discussions it was apparent that the main point of contact is often from a company’s marketing section, however other arrangements with engineering, product development departments or procurement teams, for example, were also referenced, and it was discussed how this can heavily influence the direction of the project (DCO:04, 4; IDC:14, 18; IDC:12, 85). Furthermore, in some cases, it would be more accurate to consider a company brand as the actual client, as it is the brand’s values and characteristics which determine the product attributes.
4.3.2 > Size and Structure

An obvious distinction between different client organisations is their size. Larger clients tend to be better established and offer multidisciplinary client teams; while smaller clients may be undertaking product creation for the first time, and are often composed of one or two people who perform all the roles. Some of the respondents commented that in such cases, smaller clients approach them thinking they need design, but they actually require a number of services from marketing right through to engineering, and there can be as much involved in advising them on how to develop their business idea, as on the design of their product (IDC:08, 2; IDC:21,14). While this may suggest an opportunity for the consultant to incorporate more responsible design into the product, one participant highlighted that the challenge with smaller clients is that “they just haven't got the budget for you to spend the time on it” (IDC:21, 16). Furthermore, it was evident that their concerns are typically dominated by getting the product to market; making sales and generating a return on their investment (IDC:07, 27; IDC:08, 2; IDC:10, 26).

Larger clients, on the other hand, frequently suffer from more levels of management obstructing their actions and limiting their agility (DCO:05, 44; DCO: 01, 25; IDC:22, 13; IDC:13, 14). For example, one director commented on how the design process has become more layered in recent years; explaining that he might present to a product manager, who then presents to someone else within the company, and so on (IDC:22, 13). It was also underlined that within large client companies, it can be difficult for members to maintain a shared or common vision, and that varying agendas and a lack of alignment frequently affect projects (IDC:01, 8; IDC:05, 21). In a related area, one director expressed frustration at the apparent dissemination of responsibility and decision-making exhibited by many larger clients (IDC:13, 8, 16).

“... what we’re increasingly finding is that the way companies are structured, they can’t actually agree on anything anymore, because they’re simply not allowed to.” (IDC:13, 16)

For one respondent, their experiences with large organisations provided a particularly fervent perspective:
“Some organisations are just massively dysfunctional to tell you the truth. I mean, I’ve been some places that are pure crazy. Like I’m always amazed planes don’t fall out of the sky more and things like that, it’s just ... I think it’s so crazy how large systems work because they’re all so completely irrational for the most part. That’s really challenging” (DCO:01, 25).

4.3.3 > Client Motivations

Regardless of size, the pursuit of commercial objectives is the obvious and common trait across client companies. Consultants explained that their clients’ main responsibilities were bringing products to market; typically in very competitive landscapes; and that they are primarily driven by sales and quarterly performances (IDC:07, 27; IDC:03, 17; IDC:10, 6; ACD:02, 6; IDC:16, 25; DCO:05, 41).

“... it’s not only a national policy objective, em, that the economy grow, but it’s also the priority and objective of any commercial firm; so that the pressure is always to cut cost, to increase profits, to expand markets; and design, especially, I think industrial design, is seen as able to help do all those things.“ (ACD:04, 6)

In many instances, commercial drive translates to bottom line thinking, and consultants felt that this created a key barrier to progress; explaining that it can be very difficult to help clients see beyond it (IDC:20, 29; IDC:22, 25; ACD:04, 8; IDC:18, 49; WPD:01).

“We design products for XXXX [client name] which are all plastic and we sit there going ‘fuck, you know, how about using some different materials guys?’ and all they’re worried about is how they can get a half a cent out of the manufacturing cost” (IDC:22, 19).

Overall, the client’s cost concerns were considered one of the main factors by participants across the studies.

“I think there are a lot of factors, but the bottom line is always the biggest factor, you know, how much more is it going to cost.” (ACD:04, 8)

Participants also discussed that clients can often demonstrate tunnelvision and shortsightedness in their approaches to products.

“... they’ll think about: ‘I need x number of these units to meet the demand in this market and I want to go to China and get them made’” (DCO:04, 44).

One director commented that many clients are already very directed when they approach the consultancy, and that they just want to get the design done;
explaining that by the time they have knocked on the door, it is almost too late to input on many of the large design decisions, and that this can be very frustrating (IDC:18, 65).

In addition, it was recognised that the actions of a client team can be heavily influenced by the operations and mechanisms of their company. One particular example was described where a client company had a bonus scheme which rewarded certain achievements, such as getting a concept through to the next level, or reducing cost on a product. From the consultant’s perspective, it was questionable whether this benefitted the performance of the final product, or just proliferated a certain kind of result (IDC:21, 6).

4.3.4 > Business Strategies
The participating consultants explained that overall, client companies tend to be directed towards expanding and maintaining their product’s customer base, but it appears this can be approached in two distinct ways: some brands aim to meet their customer’s needs, while others aim to direct them and give them what they did not yet know they wanted - Apple being the typical case example (IDC:08, 18; IDC:12, 33; DCO:05, 25; IDC:19, 7; IDC:06, 28). With regard to this, a number of respondents expressed that they felt the vast majority of clients act according to what is happening in the market, and are simply reactive to competitor actions or what they perceive their customers want (IDC:06, 13; DCO:05, 25; IDC:12, 33; DCO: 04, 39; IDC:08, 18; IDC:01, 16).

“Unless there’s a consumer push towards it, or unless a competitor is doing it, they’re not going to be that interested” (DCO:04, 44).

This approach clearly impacts the client’s receptiveness to new directions, and the steps they are willing to take; thus affecting the designer’s opportunities to have influence, or incorporate additional targets. For example, one design director discussing their client base, explained:

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4 The distinction between each could be regarded in terms of the understanding of customer needs, where consumer leadership requires an additional level of insight beyond the knowledge of how to be responsive.
“[We] typically work with clients that are relatively, you know mainstream, I suppose you call them ... who are not looking for the most innovative design, the most kind of, avant-garde work, or the most individualistic kind of work, they're tending to look for pretty mass produced broad appeal, em, good quality, but not amazing, just a kind of normal expectation kind of standard of design.” (IDC:06, 16)

Similarly, another director communicated a case where a well-known brand was seeking his assistance to be more innovative, but classified themselves as fast-followers:

“And that's a lovely case of a huge corporation that -, you know, who's highly respected and renowned for its products, that has a complete dilemma within the organisation: the design department is constantly being pressured to be innovative, and the marketing dept is saying, 'no, no, no, we don't want -, we're good at fast following, if someone sets the trend'.” (IDC:12, 51)

4.3.5 > Adversity to Change and Risk

It was discussed in a number of interviews how working with client organisations presents an array of barriers to change and new ideas. Depending on the company, they may vary in their effectiveness at decision-making or dealing with risk. Furthermore, individual members may be more or less open to change; they may demonstrate resistance to new ideas or being proven wrong; and egos may feature as potential barriers. One design director expressed that for him, client contacts were usually the weak link in achieving a good result (IDC:19, 12).

Within the data collected, there were multiple references to how the client’s adversity to risk impacts design opportunities (IDC:13, 18; DCO:02, 13; IDC:11, 54; IDC:12, 51). A number of consultants felt that the client’s mitigation of risk was often deeply integrated into much of their thinking, thus presenting a real and obstinate barrier.

“You know, stage gate processes, I mean, everything is thrown in to actually de-risk, but very often what it actually does is, it not only de-risks, it seems to -, it seems to, em, smother it, you know” (IDC:13, 18)

A related example was provided by another consultant who explained how a client they work with - a global electronics manufacturer - is sensitive to what they call ‘NUDs’; design elements which are ‘new, unique or difficult’:

“... they're trying to avoid those and, becoming more sustainable and responsible is actually a NUD, and will always be a NUD.” (IDC:01, 54)
Also of relevance was evidence that the client’s adversity to risk can propagate to the consultant, in that they frequently take on their client’s traits and interests. A number of consultants spoke in a manner which demonstrated a wish to absorb their client’s risk, or avoid exposing them to it. For example, one consultant discussing non fossil-fuel polymers commented:

“... the client is going to be taking a risk unless they have a guaranteed supply chain of the material, and we don’t want to expose our clients to that risk” (IDC:09, 39).

However, it is also necessary to consider the aspect of risk within the business context that directs it, and one respondent was forthright in explaining that shareholders invest on the basis of a return; commenting:

“... when you say shareholders, that’s not Mrs. Miggins with her five hundred shares in Unilever, that’s your pension fund that has bought shares in Unilever, and what they need to see is that company gently keeps going upwards and it keeps making a little bit more profit than it did last year and they keep paying dividends. Simple as that.” (IDC:16, 25)

On the other side of this topic, were comments in relation to the client understanding their limitations. Consultants discussed how some clients are not aware that they cannot approach their products as though they are Apple or Method (a innovative producer in FMCG); they have hidden constraints or are unaware of their limitations altogether; while others possibly could emulate those brands, but stifle their own innovation by means of their process (IDC:19, 14-16). As a consequence of these misalignments, it is not unusual for consultants to end up providing something quite different to what the client originally thought they were looking for (IDC:18, 21).

4.3.6 > Appreciation of Design

It was also apparent from the respondents that clients comprehend and appreciate design to varying degrees. Some can demonstrate a sophisticated understanding of the importance of design, while it was felt others do not recognise the breadth of input design potentially has for their products (IDC:05, 14; IDC:12, 9; IDC:14, 45; DCO:04, 23; IDC:22, 8). For example, one director contrasted between working for
a retail client, who he described as a sourcing operation; and working for a client such as Nike, who are design-led and have a strong design heritage (IDC:11, 36).

“... some clients are very design savvy; some haven’t got the faintest fucking clue what they’re doing. You know, they’ve never spoken to a design agency, never worked with one, have no idea what the process is. And others are hugely experienced; might have come from an agency, so know what the process is about” (IDC:11, 38).

Consultants also spoke of clients who still consider design as colours and graphics, or a way to provide a bit of styling gloss on a product (IDC:12, 9; DCO:04, 23). In addition, they discussed how it is still poorly represented in many larger corporations, and often unrecognised altogether in SMEs; meaning consultants are not always granted a wide remit or purpose (IDC:12, 7, 37; ACD:03, 16).

“Quite often you'll find corporations engage industrial designers because they kind of think they have to, not because they actually want to ... they're just ticking a box ... they're not actually committed to it” (IDC:11, 36).

This causes obvious issues for the effect a consultant can achieve.

4.3.7 > Section Conclusions

The client is the central aspect of consultancy work and therefore almost every characteristic of a client organisation bears influence on the consultant designer, and contributes significantly to their remit and opportunity to have effect or undertake responsible design goals. From the research, the following main influencing factors relating to the characteristics of client organisations were identifiable:

- The client’s commercial concerns
- The business sector they operate in
- The client organisation’s size and structure
- Their resources and incumbent skills
- Their approach to manufacturing and retail
- Their brand and brand values
- How and why the client organisation involves the design consultancy
- Their treatment of risk, responsibility and decision-making
- The culture and ethos of the client organisation
- Their business strategies and objectives
• The client’s perception and appreciation of design
• Their expectations and what is acceptable to them
• The traits of the main point of contact and project team; such as which discipline they are from, and how empowered or enabled they are
• The client organisation’s reception to responsible design topics

A number of these factors can be applied equally to the client contact or team the consultant deals with; to the higher levels within the company; and to the organisation as a whole; for example, attitudes towards design, or attitudes towards responsible design topics.

4.4 > Characteristics of the Design Project and Product
The product to be designed, and the project around it, are the focus of the consultant’s activities, and therefore constitute primary aspects of their circumstances. This section presents the main characteristics derived from the research regarding these central aspects.

4.4.1 > Design Projects
From the research it was apparent that the purposes for undertaking design projects can be many and varied, but that they often relate to the business aims of the pending outcome. Products can perform very different roles for businesses. These can range from core offers which generate the bulk of a company’s revenue; to ‘flagship’ products, which serve to showcase the company’s offers and technologies as a means to build the brand image and generate opportunities for future product lines (IDC:08, 02). Furthermore, a product may be a predominantly new undertaking, or one which builds on the company’s existing products (or even those from competitors). In each case, therefore, the objectives and parameters of the project can be very different. For example, a global client of one of the participant consultancies categorises their projects into five types, according to the degree of design and engineering involvement required. At the lower end of the scale is a product upgrade, where an existing product would be revised in a minor
way; such as surface decoration or cosmetic details; requiring minimum engineering and design activity. At the other end of the scale is a ‘blue sky’ project - led perhaps by a marketing opportunity or new technology - where the product format and direction is unknown; thus requiring a more extensive approach and significant engineering and design involvement.

Similarly, a participant from another consultancy (IDC: 21, 24) explained how they use a simple graph to consider what form of project is being undertaken (see figure 4.2). Each quadrant represents a different type of project. In the bottom left, (A) are ‘cloud projects’, where what the product will be, and how to do it, are unknown. Above it (B) are ‘playroom projects’, where the client knows how to do something, but does not know what to do with that technology. At the bottom on the right hand side of the graph (C) are projects where the client knows what the product will be, but not how to do it: “so how do you get an air freshener to release instantly when you walk into a room, or something” (IDC: 21, 24). And above that (D) are what were referred to as ‘task projects’, where you know what it will be and also how to do it.

Figure 4.2: Tool to consider what type of project is being undertaken (recreated from IDC:21 interview sketch)
A number of consultants commented, however, that the majority of their activity relates to incremental design changes, as opposed to broad or radical advances (IDC:19, 23; IDC:03, 24).

“... most of what we do is iteration. Most of what we do is, you know –. No-one really does that much breakthrough innovation, this is just, this is iteration.” (IDC:19, 23)

This dominance of iterative design aligns with the literature; for example, Trott (2001) identifies two categories for products: ‘continuous’ products, which expand on existing products, and ‘discontinuous’ products which introduce radical innovations; noting that only ten per cent of all products fall into the latter group (see also: Cross, 1990; Cooper & Press, 1995).

4.4.2 > Project Constraints

It was clear from the interviews that design projects incorporate numerous constraints; most often related to time and budget. Projects are normally scheduled to PLDs (product launch dates) and frequently this is inflexible, or based on meeting a significant sales opportunity, such as Christmas or back-to-school dates (IDC:18, 51). Another major constraint is the product price point (or selling price) which may be set according to market research, competitor products, or what is acceptable to retailers and customers. This typically affects what can be achieved on a product in that designers have to consider the impact of their design ideas on the product’s costings (for example, the number of parts; the materials selected; or the finishes proposed). Consultants spoke of products in terms of tiered price points, explaining that there are different design challenges for each: a higher tier product may have more budget for design elements but needs to justify a higher price point; whereas entry level products often have tight costings, thus demanding a different kind of creativity (IDC:01, 69; IDC:04, 23).

In addition to the commercial requirements associated with projects, respondents also spoke about the practical demands which typically affect their involvement. Again, budget and time constraints dominated their comments. Projects will have deadlines, schedules and budgets assigned, and consultants were quick to comment
how these can be particularly challenging in consultancy work (IDC:21, 6; IDC:20, 29; IDC:18, 13) (See also section 4.2.5 above).

One of the additional factors affecting consultants is the changeability of projects. A number of consultants recounted how project requirements frequently changed, often causing major disturbances (IDC:20, 14; IDC:05, 22; IDC:21, 6).

“I would say almost every project would have some aspect of new information at some point down the line; and sometimes it’s they’ve found a new partner; or they’ve found a new technology; or they have new data; or there’s a new stakeholder that has this opinion; or there’s a shift in where they want to reposition this market; or something integral to the company happens, like a shift in business units or people leave. So, yeah, I’d say nearly every project I could probably identify one or two things that really disrupted the project” (IDC:05, 22).

4.4.3 > Product Characteristics

Consultancies can be involved with the design of products across a diverse range of product sectors. Within the set of interviews, consultants referred to over a dozen distinct categories included in their portfolios (see table 4.1, below); each of which may be broken down further into broad sets of product types.

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<th>Table 4.1: Product sectors included in the participant consultancies’ portfolios</th>
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<tbody>
<tr>
<td>Medical and health products</td>
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<td>FMCG (Fast Moving Consumer Goods)</td>
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<tr>
<td>Consumer electronics</td>
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<tr>
<td>Housewares and domestic goods</td>
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<tr>
<td>Furniture</td>
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<tr>
<td>Transport and automotive</td>
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<td>Packaging</td>
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Respondents discussed that the details of these different sectors, and the design priorities for each, can vary significantly.
“... we work on consumer products, we work on business to business professional products, ... we work on professional equipment systems, and, you know, in our view, the big design drivers are actually different in all those categories” (IDC:13, 46)

For example, packaging design is dominated by cost and material reduction, along with product protection, and the need to use iso-modular dimensions⁵ (IDC:21, 34; IDC:16, 27); whereas in the medical sector, the primary concerns will be patient safety and adherence to regulatory requirements (IDC:11, 62; IDC:16, 20). These varying design drivers affect not only the product outcome, but may also influence the actual design process. One consultant explained:

“The particular requirements for designing medical devices require a much greater, sort of stringent approach to design history files; em, having some evidence behind decisions being made” (IDC:16, 4).

Furthermore, it was apparent that the priorities of a product impact its relationship to responsible design goals in different ways; for example, one manager discussed how the medical device sector should be more responsive to sustainability concerns, but due to the numerous caveats which impose restrictions (for example, a requirement for sterile materials) it is possibly one of the worst sectors to act (IDC:20, 16).

In a related observation, it was curious to find that consultants tended to feel that sectors other than those which they worked in, would provide better opportunities for responsible design goals.

“So, if we were working in packaging, for example, then I think they would be much more relevant and connected subjects. But, because so much of our work is either in consumer electronics or in interiors transport, em, actually the role we have in connection to these topics is still quite small, at this point in time.” (IDC:14, 51)

In one instance, participants from two different product sectors within the same consultancy both referred to the other as possibly having better opportunities to address responsible design topics (IDC:21, 47; IDC:20, 17).

One additional relevant aspect is how frequently a product is redesigned. In the case of medical devices or large innovations, the project itself can often take as

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⁵ Iso-modular refers to the modular sizing of packaging to adhere to standard size measurements, and to ensure that transport boxes and pallets are filled correctly and optimally to avoid additional expense or damage during transport.
much as five years or even more, and there can be long intervals between redesigns (IDC:20, 19; IDC:19, 24). In comparison, other products, such as those in the consumer realm, may have had multiple iterations released during the same period. A product’s complexity no doubt influences the ease and frequency of its redevelopment; as does the related level of risk and investment involved. For example, one director explained how FMCG companies can be more experimental because there is lower costs and investment involved than say consumer electronics; and this becomes even more challenging (and risky) when you move towards automotive, for example (IDC:17, 28). These aspects obviously affect the scale and frequency of change which will be achieved for a product; and as such (given the propensity for iterative design and progress) also impact its likelihood to engage additional objectives, such as those relating to responsible design.

4.4.4 > Section Conclusions

It was clear from the exploration that every design project differs, and that each product to be designed carries with it a set of particular attributes. Moreover, these characteristics greatly influence the extent of what the consultant can achieve through their work. From the research, the following key influencing factors were identified relating to the characteristics of products and design projects:

- The purpose of the design project and its priorities
- The product’s business sector and the type of product involved
- The product’s price point
- The business objectives for the product
- The brief and specification for the product
- The level of incremental or leap-change design being undertaken
- The resources and constraints associated with the project; such as budgets and schedules
- The frequency of redesign, and the details of previous iterations
- Regulations which apply to the outcome
4.5 > Characteristics of the User

Ultimately, the focus for a product; and thus the focus for the client and designer; is the end user.

“As a design consultant, I think primarily your role is to represent the consumer⁶. ... when you are asked by a company to design something, the first thing you have to have in mind is who the end user is going to be and how they are going to interact, relate to the thing that you’re designing, so we have to champion that cause.” (IDC:22, 3)

This section presents an account of the characteristics identified from the research relating to the ‘user’.

4.5.1 > Who is the User?

It was evident from the research that regarding the user as a manifest or single target is not representative of the reality.

“The difference between consumers and customers is a big distinction, em, you know, who’s buying it versus who’s using it. Or, who’s going to make the decision about where your product is even on the shelf for somebody to come along and buy, is an important one.” (IDC:16, 15)

Firstly, the user and the purchaser are not always one and the same. For example, designing a product which will be bought by an adult for a child involves considering what is attractive to the adult, based on their consideration of what the child will like, in addition to what the child themselves will like. Where the usage of the product extends to more than one set of people, this gets further complicated.

“So for example, with pharma products, there’s a chain of people that might be involved. So you’ve got the consumer, which is the person who buys it; who invariably is someone who’s higher up the chain. Then you’ve got the nurses, who might be the people that use the products; they’ve got to know how it works and how it functions. But then there’s the argument that, well there’s the patient who might have to wear this thing for x amount of days” (DCO:04, 47).

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⁶ Within the workshop discussions, a number of the participants debated the use of the term ‘consumer’, as it supports connotations of consumption; preferring instead to see the purchaser as a user (WPD:03, 86; WPA:14, IRS). Similarly, this was brought up by one of the interview respondents who felt our way of looking at material culture needs to change to recognise human beings as more than consumers within a corporate model (ACD:02, 44). Within the research, however, it was not unusual for designers to refer to users as consumers, possibly reflecting a business perspective, and as such, the use of the term within the thesis (particularly quotations) reflects this.
To regard all the ‘users’ therefore, it is necessary to consider everyone involved with the product, from the sales team through to the people dealing with the disposal (or reuse) of it at its end of life (DCO:04, 47).

Similarly, there is not always a straightforward line from the client producing the product to the customer purchasing it, and as such, retailers and distributors are also ‘customers’. Moreover, they each have their own interpretation of what will sell and what will meet the requirements of the final purchaser and user. As such, the expectations and perceptions of each decision maker; such as the purchaser, retailer, distributor, client contact and client organisation; constitute elements of who the ‘user’ is for the designer, and can bear significant influence on the product outcome (see also section 5.7).

4.5.2 User Requirements

Regardless of the other influences, a key aspect of designing products is the requirements of the end user; however, throughout the interviews consultants expressed a view that often target users do not clearly know what they want, and this opinion was accompanied by reservations about traditional market research (IDC:12, 21; IDC:22, 16; IDC:01, 66; IDC:16, 18). One director in particular communicated strong feelings that a diminution in the reliance on market research would help reduce the number of spurious products being produced and aid the possibility for designers to achieve a more positive impact (IDC:22, 30).

It was evident from the interviews that there are two lines of access to information regarding the intended market. Where the project (or more likely, the budget) permits, design firms are increasingly undertaking research to understand the market segment; however, consultants explained that frequently the client will direct them as to who the market is, and that this may or may not be representative of the actual purchasing group (DCO:04, 47; IDC:06, 26; IDC:01, 16; IDC:08, 6).

“Brands go after this non existent end user who’s this kind of amalgam of several different kinds of people really, not satisfying any one perfectly” (IDC: 06, 26).
A number of consultants raised the point that often clients make assumptions about the person who uses their products, or worse, have no real understanding who their customers actually are (IDC:16, 15; DCO:02, 14). One consultant (working in environmental consulting) explained that in his experience, the majority of SMEs do not undertake any market research or focus-group activities (DCO:02, 16). In addition, he recounted an example where an equipment manufacturer was adding functions to their product to combat free-falling sales only to discover, when asked, that their potential customers were not buying the product because it looked ugly (DCO:02, 14). Further to this, a design director explained:

“I think you come out of college thinking I’m designing for people, you know, I’m designing for end users. When you become a consultant, you’re quickly faced with the reality that you’re designing for clients, and even, their interpretation of their end users, perhaps, or what they’re willing to accept of your point of view on it, so you get into all kinds of knots … because it’s not always a clear line” (IDC:06, 17).

4.5.3 > Consumer Pressure and Consumer Choice

In the workshop discussions, there was some debate as to whether the consumer is a passive or active influence. One respondent felt that:

“… the marketing almost — and advertising, dictates to the consumer what they want, so actually the consumer is a passive creature in the whole thing” (WPD:03, 57).

On the other hand, there was recognition of cases where consumer pressure had brought about a change in action, such as with Nike’s labour arrangements (WPA: 14, 71). In the interviews, participants observed that consumer pressure seems more effective where damage to a brand’s image is a greater fear, or where the market is particularly sensitive, such as with baby products or health goods (IDC:01, 47; IDC:08, 6). For example, one director recounted how concerns for the toxicity of polycarbonate has resulted in it being removed from all products related to baby food (IDC:08, 6). As such, it was felt that consumer opinion will have more impact where it has a direct and perceivable effect on sales figures.

Consultants did recognise that there needs to be demand from the market to assist with responsible design, but some commented that there is very little pressure being felt in certain sectors, such as consumer electronics, medical, or even
transport (IDC:14, 53; IDC:08, 13; DCO:04, 39; IDC:20, 16). In addition, there appeared to be large differences in attitudes geographically.

“Whenever I did research in Germany, sustainability and eco were so high up on the agenda, and then I did the same research in the US and I had doctors - so educated people - telling me that the entire sustainable design thing and the entire -, the whole global warming thing is a fallacy. ... if that's the biggest market for your product, you've got no real reason to change the way you're making it at the moment.” (DCO:04, 39)

In a related comment, it was highlighted that even people who do recognise the issues often do not see their own relationship to it, and therefore do not change their actions or purchasing decisions (DCO:03, 39). Further to this, one respondent discussed the level of consumer support that organic food and fair-trade products are currently receiving, commenting that it is still less than one per cent of the market in the UK, and even if it doubles or triples, it would not carry significant impact (ACD:04, 9).

Overall, it was recognised that consumers’ choices are free-willed and that they are often led by what is in their own interests (IDC:07, 37; IDC:15, 33; IDC:16, 33). As an illustration of this, one director offered a contrarian anecdote which discussed how in the mid ‘90s when most detergent companies were pushing their ‘eco’ products, the fastest growing detergent brand in the UK was based around an overt performance message that was the antithesis of the green campaign (IDC:15, 33).

Further to this, one director mused:

“Designers and marketing people are always talking about the beauty and good, and you know, everything’s great, but a lot of motivations come from the dark side. People use things or like things sometimes for not such good reasons. There are needs people have because people are not angels, they are a whole gamut of things.” (IDC:06, 51)

4.5.4 > Section Conclusions

It was evident from the research that the notion of the ‘user’ or ‘consumer’ is not straightforward. In one regard, the actual ‘user’ may involve numerous different user groups; and similarly, the ‘customer’ or ‘consumer’ may be constructed from a number of different parties and their perceptions. Furthermore, it is apparent that consumers’ actions are driven by a myriad of motivations, many of which are not
always correctly accounted for. Ultimately, the impact of consumers/users on the design work is indirect and based on the client’s interpretation of their requirements, along with the consultant’s understanding. As such, the effect of users’ opinions is dependent on it being recognised, understood and regarded as important, which frequently only occurs by means of sales figures and the interpretation of market research.

From the investigation, the following influencing factors were identified relating to the characteristics of users and customers:

- The level and quality of knowledge regarding the intended market; and the interpretation and importance given to it by those involved with the product creation
- The users’ and customers’ expectations
- Their motivations and purchasing behaviour
- Their priorities, requirements and concerns
- Their engagement with brands
- How informed they are; particularly their awareness of, and regard for, responsible design topics

4.6 > External Factors

In addition to the factors at play within the product creation setting, a number of others; external or peripheral to it; were identified which also exert key influences on the product and the consultant. Those which were most prominent in the research data, are discussed here briefly.

4.6.1 > Cultural Setting

One main aspect recognised in the research is the effect of the political and socio-cultural setting. Numerous participants commented on how the core of the research topic relates to the fact that industrial design is a product of the commercial system, and the consultant is almost inseparable from serving consumption and profit creation.
“It's the white elephant in the room for a designer. We're constantly redesigning products that if you were honest you'd say don't need to be redesigned fundamentally ... we redesign them because there's an insatiable desire to consume and buy more things and that's the whole capitalist system that we're in ... and I, I think we're part of that problem ... You're caught in a whirlwind, you know, everybody is really. I don't see how we can change the insatiable desire to consume, that the western world are totally fascinated with” (IDC:04, 16).

It was explained that enacting responsible design in a commercial setting is challenging because industry is on a road of progress based on economic growth and expansion, which tends to direct all the activities within it (ACD:02, 6).

“... the pressure for economic growth is so all-encompassing, it's so systemic and so intense.” (ACD:04, 11)

As such, it was felt by many respondents that a fundamental shift is required before any real progress can be made. In this regard, there was reference to how the recent financial crisis caused people to question the priority of economic growth and offered an opportunity for alternative economic models; but that little became of it (ACD:04, 7).

Conversely, it was also felt that:

“It's tough economic times to be trying to make sustainable arguments right now for a lot of things, cause it's not always easier or cheaper” (IDC:16, 33).

Further to this, it was discussed how economic pressures are also acting on design firms, affecting their ability to survive; and possibly impacting the consultant’s role and their willingness to challenge the client, or turn down less responsible work (WPA:01, 92; WPO:01, IRS; WPA:03, IRS).

“... there is a delicate balance between making a living and being a responsible and ethical person” (WPA:03, 158).

In addition to the overall context, the influence of macro and micro trends which occur within the cultural setting were also pointed out: such as how increasing gas prices impact purchasing decisions on cars (IDC:08, 19); the impact post consumer recycling systems have on the effectiveness of product recycling (IDC:09, 60; IDC:08, 9) or how increasing labour, material, and fuel costs will likely mean products can no longer be made as cheaply (IDC:22, 20).
Similarly, other elements that contribute to the cultural context were touched on, such as the media, which was acknowledged as a key influencer on public perception and awareness (IDC:02, 94); or technology which was considered by some as an important contributor, or by others as the main determinant of any progress towards responsible design goals (IDC:15, 32; IDC:02, 84; IDC:07, 47; IDC:08, 9).

“So as a designer, the best service that we can provide at the moment is to engage in the most socially responsible design solutions that we can currently, while technologies are being developed and advanced to the point where we could begin to hope of completely biodegradable solutions; completely sustainable solutions; or completely carbon neutral solutions; or completely energy neutral solutions.” (IDC:02, 84)

It was also discussed how products are both influenced by their cultural context, and possible influences on it (DCO:05, 11). One example is the first generations of mobile phones which reflected accelerating and mobile lifestyles, but in so doing, can be said to have reinforced those trends and contributed to their growth. In relation to this, design’s importance in setting more positive trends which could improve the cultural context was emphasised (IDC:22, 22).

4.6.2 > Design Community and Profession

Another relevant influence identified from the research is the industrial design community, and the profession as a whole (ACD:03, 6; IDC:14, 26; IDC:10, 47; IDC:15, 38; IDC:12, 66; IDC:13, 49; WPA:03, 154; WPA:02, 29). It was acknowledged, however, that industrial design has not yet established a professional status (see also section 2.2.11).

“So industrial design still doesn’t know whether it’s a technician based profession, where you’re just a technical person doing a skill and doing what the client needs, or you’re a proper profession; you’re respected for that, and as a professional, you are giving not just your skills, but your expertise and your advice.” (ACD:03, 6)

Participants discussed how industrial design is not well represented by a professional body in the UK (IDC:10, 58; IDC:13, 49; IDC:15, 36) and reported it has little presence in the Design Business Association, which is dominated by other larger design disciplines (such as graphics and branding). It was also reported how
efforts by organisations such as British Design Innovation (BDI) are being made to rectify this (IDC:10, 58; IDC:13, 49; IDC:15, 36).

From the research, it was indicated that acting as a more unified population could benefit both the industrial design industry, as well as responsible design goals in the following ways: 

- Developing the design industry’s own understanding and maturation of its role and responsibilities;
  
  \[I think there’s probably about 70 or 80 per cent of the practitioners who actually are in some kind of messy middle and who aren’t quite sure what they’re for, frankly, would be my slightly harsh assessment.\] (IDC: 15, 40).

- Communicating outwards and upwards (within a client company) what industrial design is about, and the distinct value it offers (IDC:15, 38).

- Helping to guide industrial design practice and convention. An example of this is collectively refusing to do free pitching, or competitive pitching, which is felt to be damaging to the industry as well as to the quality of the design results (IDC:13, 51; IDC:21, 9).

- Knowledge building and sharing (IDC:09, 63; IDC: 13, 51; ACD:03, 46);
  
  \[I think in the UK, we’ve got a hell of a lot of small one-man-bands, small groups that need to network more … to share knowledge without the fear of commercial suicide\] (ACD:03, 46).

- Forging better links with industry, other disciplines and academia (IDC:12, 66; IDC:15, 38).

- Setting and maintaining standards for practice;
  
  \[We talk about the design industry as being some cohesive standardised bunch of people, but I have to say, the number of jobs we’ve picked up in the past where the first sit-down meeting we have with the client and they say ’well actually, we used an ID company two years ago; it was a bloody disaster’\] (IDC:13, 57).

- Creating networks, facilitating partnerships and collaborations (ACD:03, 46; IDC:10, 47); for example, one director described situations where membership of the BDI enabled him to contact other members regarding problems; to make enquiries about a client; to source freelancers and sub-contractors; and also to form collaborations to compete for work or grant applications and schemes (IDC:10, 47, 48).

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7 See also Smith and Whitefield (2005b) who explain there are two distinct perspectives as to how professional certification would aid industrial design; outward facing benefits in the form of credibility and autonomy; and inward facing benefits in the form of an enhanced design culture.

8 Free pitching, or competitive pitching is where companies get a number of consultancies to pitch ideas unpaid and then choose who to work with on the basis of the ideas presented (IDC:13, 51).
• Increasing the profession’s credibility and influence, both within industry, and towards policy forming or strategy creation (ACD:01, 3; IDC:13, 49);

  “... as a design industry, in theory pretty well everything we’ve spoken about today, certainly in terms of influence, is going to be much easier if you’re working as a group rather than as a whole lot of individuals.” (IDC:13, 49)

A key aspect addressed was the need for a stronger code of conduct to guide designers (WPA:03, 154; WPA:02, 29, ACD:03, 4). It was felt that if designers provide not just their skills, but their expertise and advice, then there should be ethics and standards to guide this (ACD:03, 6).

  “If we’re a profession ... we should have our own standards, our own code of conduct, and that code of conduct should look at our ethics and our responsibility to the planet, to the human race or whatever, and therefore we should respond to clients in that same way, and clients should expect that from us.” (ACD:03, 4)

In addition, the value of design role models and exemplars was mentioned (WPD: 02, IRS; IDC:06, 96; IDC:22, 22).

  “It would be wonderful to think that there could be designers in the future that could somehow find that voice and be chosen ... get pointed to as a bell level for what is good, and ultimately serve this whole idea” (IDC:06, 96).

4.6.3 > Legislation

Given the scale of the topics being investigated, it was not unexpected that government intervention and legislative action would be highlighted by participants as key external influences. In the workshops, it featured among each of the group discussions and was also listed on a number of the individual response sheets.

  “In current practice, I would say that policy and legislation is the main thing that ‘moves’ designers to achieve more responsible design.” (WPA:05, IRS)

Interview respondents too, commented on its importance; many feeling that due to the complexity and magnitude of the issues, any real progress depended on higher level intervention and policies (IDC:08, 10; IDC:22, 30; IDC:02, 66; ACD:04, 11; ACD: 02, 16; IDC:15, 31; DCO:05, 42; IDC:14, 55; DCO:03, 39).

  “Ultimately, it’s got to be a legislative thing; I think it’s got to be a government, top-down thing.” (IDC:22, 22)
Within the interview responses it was felt that currently most action is reliant on companies ‘volunteering’ their efforts, and that overall, a moral perspective will be insufficient to achieve the broader goals (IDC:22, 30; IDC:02, 84). Furthermore, it was highlighted that many issues - such as pollution - have indirect costs and will therefore likely only be tackled by systemic change brought about through legislation (IDC:15, 31).

A number of different regulatory mechanisms were discussed in the interviews: at one end of the scale respondents mentioned the option of levies and penalties, or actions similar to FDA\(^9\) drug approval; while on the other side, incentives and the use of compliancy markings, such as RoHS (Restriction of Hazardous Substances) or WEEE (the Waste Electrical and Electronic Equipment directive) were discussed (ACD:04, 11; IDC:08, 10; ACD:02, 16; IDC:16, 33). However, it was also acknowledged that legislative devices are complex approaches in themselves, which may introduce new or additional sets of challenges; for example, one professor while discussing environmental legislation, commented:

“... the problem with government legislation to incentivise is that if it’s acting unilaterally, then it becomes uncompetitive because people go for the cheapest; and corporations, you know, in a global culture will move somewhere else if the environmental legislation in one place is too restrictive and affecting their profits, so they move somewhere else; so you need international agreement and you’re not going to get it.” (ACD:02, 16)

4.6.4 > Education and Academia

Participants also acknowledged the important influence education and academia can play, both as a means to impart knowledge and values to future designers and actors within the context; and also as a key contribution to the understanding of the topics, and how to address them (IDC:06, 60; ACD:02, 16; WPA:02, IRS; WPA:03, IRS; WPD:02, IRS; WPA:09, IRS; WPA:10, IRS; WPD:03, IRS; WPD:01, 88). Furthermore, it was considered important for consultant designers to have an ongoing education feeding personal development and the standards of the industry (ACD:03, 6)\(^10\).

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\(^9\) FDA signifies the Food and Drug Administration

\(^10\) Gemser and Van Zee (2002) also identified that engaging in continuous learning is a critical factor contributing to success in present-day design consultancies.
With regard to design education, however, there were some comments that in the UK it is often skill-driven, and what is needed is stronger foundations in thinking, rationale and knowledge (IDC:17, 57; IDC:14, 34). This also relates to a conversation within the workshop which concluded that ‘training’; imparting a skill; and ‘education’; enabling the designer to understand how to use that skill appropriately, and in an informed way; are both required (WT:Green, 39-46).

4.7 > The Industrial Design Consultant’s Context

The objective of this chapter was to account for the influences which may affect industrial design consultants by examining the circumstances surrounding their work. From the research data and analysis it was possible to generate an illustrative model of the elements involved in the consultant’s context, and how they relate to each other and to the product creation process. Figure 4.3 presents a diagram depicting this model. It visually summarises the findings from the first level of analysis and helps to portray the main influences acting on the industrial design consultant within their commercial remit. This also offers a basis from which to expand the research findings in the following chapters, and to examine more closely the design consultant’s engagement with responsible design.
Chapter 4 | The Industrial Design Consultant’s Context

Figure 4.3: Chapter conclusions - The industrial design consultant’s context
4.8 > Conclusions

This chapter aimed to address the question: what affects the industrial design consultant and their work? The overriding observation from this first set of findings is that every situation is different for a design consultant; each client varies greatly and no two projects are the same. Clients can range from individuals or SMEs, to multinational corporations, each with differing sets of incumbent skills and disciplines, and each undertaking product creation in distinct ways. They engage industrial design firms for particular purposes, and have different appreciations of design, as well as varying perceptions of the consultant’s role; which result in varying remits for the consultant in each case. How design consultants relate and adapt to this are key aspects which will be given further consideration in Chapter Six. In addition, client companies sustain their own organisational culture, ethos and business strategies; and their reception to change or new ideas, coupled with their treatment of risk and decision-making, will affect efforts to incorporate additional objectives, such as responsible design.

Consultancies work with clients from a wide range of business sectors. As such, the products they are involved with vary considerably; each offering a unique set of priorities and challenges aimed at serving any from a host of business purposes and objectives. Moreover, projects will vary greatly in their level of incremental or leap change; with the majority of design work not typically involving substantial innovation or opportunity for significant advance. Instead, viability and market-related goals, such as cost, sales figures, and schedule, tend to dominate.

The target market for a product is also a key factor, however it was evident that the user or customer is not a straightforward notion. It may include a set of different user groups, and is often based on the perceptions of the client or other involved parties. In addition, the attitudes of the actual market are diverse, and can include motivations less supportive of responsible design topics. It was recognised that in many sectors, consumer interest for these topics is not clearly evident, and that the effect of any pressure from the market will depend on whether it is perceived as an impact on sales figures.
The consultancy the designer works for will also critically affect what they can achieve, in that it is the main determinant of the work that is available to them. The services offered by a firm, along with its competencies and specialities will heavily affect the clients they attract. Similarly, the quality of a consultancy’s client relationships impacts their effectiveness and is crucial to maintaining and growing business. Furthermore, the other members of the consultancy along with its culture and ethos can bear a significant influence on the design and values exercised by an individual consultant.

In addition, external influences may affect the consultant and the other parties involved in product creation. Those most significant include legislation, education, technological advances, and the media; as well as the overall socio-cultural context which sets the commercial and economic paradigm for the consultant’s work. The influence of the design community was also highlighted, however it was acknowledged that a professional status (and strong code of ethics) which could benefit the pursuit of responsible design, is not yet established.

The full identified set of variables influencing the consultant and their work; collated from the section conclusions; is presented in Appendix H.
Chapter Five:

5.0 FINDINGS B: THE KEY DETERMINING FACTORS

This chapter presents the second, and main, set of findings from the research studies. Using a framework consisting of six key areas derived from the analysis of the primary data, it provides an account of what determines the possibility for industrial design consultants to achieve responsible design goals within their commercial role. Under each of the six areas, the main determinants affecting the consultant are described, incorporating the data and findings from the main study interviews, and concluding with the identification of a critical factor for each.
5.1 > Introduction

Chapter four presented the first set of findings from the research analysis which described the industrial design consultant’s context and the characteristics of the elements within it. It offered a model which portrayed the circumstances influencing consultant designers and provided a basis to investigate what they can achieve through their commercial work. This chapter builds on that and presents the findings from a second level of analysis which explores in more depth the extent to which industrial design consultants can undertake responsible design. Through an investigation of the research data collected, it examines how the consultant designer’s possibility to engage with responsible design topics is determined, and identifies a series of critical aspects dictating the prospect.

This chapter addresses the research question:

What determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit?

5.1.1 > The System of Determining Factors

During the research exploration it became apparent that there are a number of overarching concerns involved in understanding what determines the consultant’s possibility to engage in responsible design. Through analysis of the data collected it was possible to establish a set of six pertinent areas. These were derived by considering how the identified factors relate to the consultant and the task of responsible design, and recognising that they can be organised into distinct fundamental themes. The result is a system structured around six key areas which encompass all the factors, and which together determine the consultant designer’s possibility to achieve responsible design.

The six key areas are:

A: The knowledge and understanding of how to address responsible design goals

B: The consultant’s motivations

C: The consultant’s capabilities

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1 A preliminary theory for these was established from the literature review and the analysis of the workshop data. This is included in Appendix C. (See also section 3.6 and 3.7.3.)
D: The opportunity available
E: The level of influence the consultant has
F: What is implemented\(^2\)

Figure 5.1 depicts the system of determining factors identified from the analysis; indicating how the six key themes are formed from a larger set of factors recognised in the data. The possibility for an industrial design consultant to undertake responsible design is dependent on the details of these six areas; each of which is determined by a series of other influencing factors; which are in turn affected by characteristics of the consultant’s circumstances.

The system of factors diagram also illustrates an overview of this chapter and provides the framework for its content. Each chapter section presents a separate area, and explains its relevance, along with the set of constituent topics it incorporates; leading to the identification of six critical factors (one per area) which are key in determining the consultant’s possibility to undertake responsible design. The contents draw extensively from the main study interview data and findings; thus offering a portrayal of the current state of affairs for the participating industrial design consultancies.

\(^2\) Looking at the six key areas more generally, they can also be rephrased to account for the possibility to achieve any goal; that is: the possibility to achieve a goal is determined by; the understanding of how to achieve that goal; being motivated to achieve it; being capable of achieving it; having the opportunity to achieve it; having an influence; and, how the intention is implemented.
Chapter 5 | The Key Determining Factors

Figure 5.1: The system of determining factors
5.2 > First Key Determining Area: The Knowledge and Understanding of How to Address Responsible Design Goals

Intentionally achieving any goal is heavily dependent on understanding how to approach it. From the research analysis, it was apparent that of paramount importance for design consultants (or others) to be able to address the needs of society is having knowledge and understanding of what is required to make a positive and realisable impact. Throughout the interviews, however, there were indications that this is something which is not yet established, and consultants portrayed uncertainty and frustrations as to how to direct their efforts. Even designers demonstrating a keen interest in addressing responsible design goals were unsure as to where best to start, and how to be most effective.

“I want to make sure I'm toiling away in an area that's going to have a - make a difference. So I want to know where that is, and that's the stumbling block ... I think that's where we're stuck.” (IDC:20, 34)

5.2.1 > The Need for Clear and Appropriate Information

A central aspect identified in the research is the need for guidance and information which is clear, consistent, and useful. While consultants asserted a confidence in having the design abilities to deal with the issues, they frequently commented that there is a lack of appropriate and robust knowledge to assist them.

“... for those of us who do get the downstream responsibility of our actions, you know, there is a duty there to push and nudge and try and get better behaviours; but there's a very, very crystal clear line which is that when we've tried pushing - it can be as simple as trying to not paint phones - we'll just hit a brick wall, because the knowledge about the impact is too -, too fuzzy” (IDC: 15, 33).

A number of respondents explained that suitable information is not readily available, and that looking into the topics can be like entering a minefield (IDC:08, 9; IDC:14, 57). The diversity of consultancy work, combined with the complexity of the topics to be considered, adds to these difficulties.

“... for most practicing designers, unless they're working in a very defined and well understood space, there is so much information that one needs to, to tackle, to actually get a really good insight into something; to be effective. It's very challenging, I believe, to be effective in these different spaces.” (IDC:14, 59)
However, designers mainly remarked that when information does exist, it can often be unclear, contradictory, or insufficient for their needs. A common example offered referred to material selection based on environmental concerns:

“I think some of the thinking is a bit muddled ... I've read so much on, you know, in terms of energy use in creating a material. I mean, you read it one way and this is the one you'd select; you read it another way and you'd select this one, and they're completely different materials. ... I don't think yet, everything's as clear as it really needs to be” (IDC:13, 39).

Despite existing efforts towards providing aids for designers, consultants were still requesting tools which are efficient, less complex or overbearing to use, and which are appropriate to the way they work (IDC:19, 31; IDC:09, 65; IDC:13,41; DCO:02, 36).

“What we need to understand is how you implement. We need to understand what the physical manifestation of some of this stuff is, in terms of product design” (IDC:13, 41).

From their remarks, it was apparent that consultants require quick ways to generate effective and viable proposals. One consultant explained how he would rather have a ‘ready reckoner’ over a tool that can provide more accuracy, but with greater effort (DCO:02, 36). Another spoke about wanting objective measures which reliably aid decision making, commenting that obtaining such guidance should be based on the “greatest upside for the smallest downside” (IDC:20, 33). In addition, suitable ways to assist framing proposals, and defending them to clients, were also sought (IDC:19, 31). (This relates to section 5.6.1 below).

At the core of the consultant’s comments and requirements was the critical need for credible, robust and dependable information which they can have confidence in. Throughout the interviews, respondents expressed doubt regarding the reliability of available information, and many of their intentions seemed undermined by these rocky foundations. For example, one managing director summarised his views as:

“... you're asking your client to potentially compromise the immediate saleability of their product in order to take a very long, odd, uncertain bet that somebody in the future might actually benefit from that. Now that kind of choice will never be won. That's just a dumb choice.” (IDC:15, 33)

3 See also Lofthouse (2006) which outlines that a combination of guidance, education and information, along with well considered content, appropriate presentation and easy access, are all critical to the success of (ecodesign) tools for industrial designers.
5.2.2 > Topics Were Only Recently Highlighted

A key aspect expressed in the interviews is that the topics have only really been highlighted relatively recently, and participants called attention to the fact that the knowledge is still evolving and is in flux. One design director illustrated this, remarking:

“A similar analogy, I guess, would be when I was a kid we were told to eat a lot of fat because it was good for us. And then, you're not allowed to eat any fat because it's bad for you, and then, actually some fats are quite good for you. It's that sort of [thing]” (IDC:13, 41).

A related opinion was that there has been insufficient time to make the scientific and technological progress required to advance (IDC:15, 32; IDC:02, 84).

“At the end of the day, we're just assembling lego bricks, so very often you need new lego bricks and you need technology to do that. So, for example we've been trying to argue for use of recycled plastic ... [but] it took a completely parallel event of somebody actually working out how to process regrind plastic - to guarantee the properties - to create a vendor that we could then buy from.” (IDC:15, 32)

This example also indicates how consultant’s depend on other developments as they themselves have limited influence to prompt the progress needed.

Furthermore, participants felt that given these are relatively young topics, the industrial design and manufacturing industries, are still adjusting and trying to understand how to act. Consultants felt that it is still ‘early days’; particularly relative to the time required to make change happen. They explained that most clients have established ways of carrying out their business and it was underlined that it can take several years to bring about any significant change in an organisation (IDC:19, 24; DCO:01, 11; IDC:16, 23).

“... the corporate responsibility plans have maybe hit, what, last five years, six years and that's -. Some of these innovation projects are five to ten years long. I know of two or three at the moment which are just very long-term R&D projects to shift behaviour. And then, it takes a bloody genius to shift behaviour that quick on something - in a couple of years, with standard production lines and things like that” (IDC:19, 24).

Another crucial aspect highlighted in the research was that, as yet, many of the topics within responsible design do not have a consistent shared understanding or definition, and that commonly they are still ‘open to interpretation’. In addition to
the obvious confusion and misinterpretation which can result, participants explained that this facilitates disparate and varied approaches as well as the possibility of spurious claims. For example, it was felt that declarations of sustainability rely as much on the definition and interpretation of the term as they do on the details of the solution. Furthermore, it was highlighted that there is a lack of alignment on what constitutes an actual improvement. Regarding this, one respondent noted:

“So, traditionally we’ve [designers] gone into any situation with the notion that, you know, we’re going to make things better, but it’s this concept of well, what is better? Who defines what better is?” (ACD:01, 20)

5.2.3 > Unattainable Goals

To add to the challenge, it is apparent that there is no absolute for the goals under consideration. For example, 100 per cent sustainability is not a real concept; nor is ‘sustainability’, as such, an attainable goal (see also Chapman & Gant, 2007). Instead, what may be considered is a more sustainable solution by comparative measures, but even this was considered quite challenging currently.

“I think proving the argument that man’s activities are affecting the climate was a piece of cake compared to proving to people on an individual product - and everything else - basis, that route A is better than route B, because you really have to take very holistic views and you have to make -, you have to decide what your measures are and there are too many means of measuring it out there, I think.” (IDC:16, 31)

The existence of different measurements towards environmental impact, for example, was frequently referenced with frustration. A number of respondents expressed that there needs to be a single, consistent and common means of assessment (IDC:14, 61; IDC:20, 38; IDC:16, 29). Typically consultants have to use the same form of dialogue as their clients, but this is difficult with the variation which exists. For example, Marks & Spencer were quoted as a client who operates their own measurement system for sustainability.

“... it feels like you’re in that problem that even if you did choose to arm yourself, and say, ‘we’ve looked at all the options ... we’ve chosen this one. We’ve taken our design and we’ve evaluated it and we present you that design with that information’, you’re still vulnerable to somebody saying, ‘yeah, well we don’t use that scale, we use this scale.’” (IDC:16, 29)
Further to this, it was felt that the various information and tools that are available seldom connect up or relate to each other (IDC:16, 29; IDC:09, 65). In addition to the practical constraints caused, this obstructs more holistic approaches. Moreover, the notion of making comparison between or across the different aspects of responsible design creates further complexity.

5.2.4 > Key Findings

It was felt by the consultants that the understanding of the topics is still, as yet, insufficient. There is a lack of clear, consistent, and useful guidance which is suitable for their needs; and more importantly, which they can have confidence in. Consultants seemed unsure where to best direct their efforts, and what denotes an actual improvement. In addition, there was a discernible need for evidence that the consultant’s endeavours would, in fact, make a difference.

The critical factor: The possibility for design consultants to address responsible design goals is dependent on whether the consultant can identify and understand how to effectively address them.

5.3 > Second Key Determining Area: The Consultant’s Motivations

The consultant’s motivations and interests will doubtlessly affect what they wish to achieve through their designs. Their values, aspirations and objectives, along with the sense of responsibility and enablement they feel, filter the designer’s perceptions; affect their actions; and will determine the extent to which they consider responsible design goals within their work.

From the research, three discrete aspects relating to the consultant’s motivations were recognised: the designer’s personal motivations; their professional objectives, and their attitudes towards responsible design goals.
5.3.1 > The Designer’s Personal Motivations

The personal motivations of the consultants interviewed could be regarded generally as a wish to gain fulfilment and pleasure from their work. Naturally what constituted the details of these objectives varied according to the individual. One aspect discussed was the attraction to the variety of work and challenges which consultancy design presents (IDC:10, 46; IDC:18, 7; IDC:22, 15). Another, was the consultants’ desires to design good (or great) products. These were typically characterised as designs which are: simplified and free of superfluous details; authentic and meaningful; and which would be valued and have longevity (IDC:04, 22; IDC:05, 36; IDC:19, 26; IDC:06, 65; IDC:07, 19).

“I’d say, kind of, an underlying goal for most designers is to produce a product that would last a lifetime, or that people would cherish” (IDC:05, 32).

Along with this, a number of consultants viewed what they do as solving problems; with some also communicating eagerness towards making life easier for the user (IDC:04, 14; IDC:03, 23; IDC:16, 10).

“If you can improve on a product that someone uses every day, even in the smallest way possible, if you just incrementally improve it, I think that’s making a difference, you know.” (IDC:03, 23)

Regardless of the particulars, however, there was a strong suggestion that consultants place their own motivations below those of the consultancy and, more so, those of the client. For example, one mid-level designer remarked:

“As a working consultant, I am ultimately reliant on the philosophy of the company; the design consultancy, that I work for” (IDC:02, 37); also commenting later: “… your ambitions are always mitigated by your responsibilities to the client’s perspective” (IDC:02, 70).

It is not particularly surprising that the consultant’s motivations relate to those of the consultancy given an alignment is required both for the designer to fit in well, and for them to perform their job easily. Furthermore, the culture and ethos of a consultancy plays a significant influence in a designer’s development, and also therefore, their motivations (See also section 4.2.3).
5.3.2 > The Consultant’s Professional Obligations

Despite their personal objectives, it was apparent from the research that the central motivation of the consultant was to fulfil their professional role. Throughout the interviews, consultants asserted a strong wish to meet the requirements and expectations of their clients, and it was evident that this was the principal facet which defines their actions.

“I see my job as helping my clients achieve what their objectives are - trying to do it in the best way from a design point of view” (IDC:16, 27).

Most of the consultants perceived their role as that of advising, directing or supporting the companies that commission them; however some expressed it as being a ‘gun for hire’ (IDC:02, 53; IDC:06, 4; IDC:18, 11). In general, it was apparent that consultants are willing to tailor their offer to suit the client. For example, one director explained how certain clients look for them to consult and lead them in new directions; while others are just looking for specific knowledge or skills; and depending on the project, they will fulfil either type of role (IDC:17, 5).

Consultants also emphasised that ‘having an opinion’, ‘challenging the client’, ‘questioning information’ and ‘pushing boundaries’ were vital to their role, and that providing these functions is often why they are commissioned.

“You know, our role is to go in there and understand where they're going with the product and then just push that little bit further - 'have you thought about this', 'what about this new material'... So, we're always trying to answer what the client is expecting of us, but then push them, make them think about things a bit differently” (IDC:22, 11).

Importantly, however, there was a caution as to what level of challenge is appropriate. In regard to sustainability issues, for example, one respondent felt that “if you do come in too hard, you kind of scare clients off at the minute” (IDC:17, 37); while another commented: “You can offer all those things and you can influence that, but how far they're prepared to take it is a tricky one to push” (IDC:22, 27). In this respect, the research indicated that consultants will make allowances for what they perceive the client can do, or would be willing to do. Respondents communicated that they wished to act in the best interests of their clients, and demonstrated sensitivity to potential consequences and risk on the client’s side; often taking on a responsibility for it; sometimes in a hidden manner.
“... cause as a designer you’re -, you yourself are making the trade-offs, you’re not even being asked necessarily by the client to do it, you are sort of reading the client as to: OK, this is roughly what they can tolerate and what they can do ...” (IDC:06, 16)

Another main aspect of the consultant’s role is representing the user. Typically, the parts of the product that users touch or interact with visually and emotionally are the designer’s responsibility; and within their comments, the participating consultants underlined this as a key part of their work.

“Well, as a design consultant, I think primarily your role is to represent the consumer. ... when you are asked by a company to design something, the first thing you have to have in mind is who the end user is going to be and how they are going to interact / relate to the thing that you’re designing, so we have to champion that cause.” (IDC:22, 3)

Overall however, designers were acutely aware of needing to offer options which the market, and the client, would be willing to accept. Moreover, gauging this is critical to their overall effectiveness as designers, as well as to their business prospects; especially given their reliance on client relations to succeed (see section 4.2.4).

5.3.3 > The Consultant’s Motivations Towards Responsible Design

Of crucial relevance to the possibility of consultants addressing responsible design goals is their awareness and opinion of those objectives. Within the interview discussions, most consultants did acknowledge that it was incumbent on them to address the needs of society; however, sentiment ranged from deep commitment that it is the right thing to do (IDC:22, 21) to an attitude of not wanting to make matters worse:

“It’s not particularly that we want to do good, but we don’t want to do anyone any harm” (IDC:10, 40).

It was also asserted by one director that there is no real discussion about the topics as there is no demand from clients in regard to them (IDC:18, 49-51).

Some consultants seemed to consider the goals mainly in business terms; for example, as positive differentiators in the market place or a means to increase sales
and for some, their perspective was strongly shaped by their clients’ interests and standpoint (IDC:07, 23; IDC:18, 49). These attitudes indicate how consultants have a strong tendency to adopt similar objectives to those of their clients (see also Maciver & O’Driscoll, 2010). For other respondents, aspects such as inclusive design, were considered integral to how designers should work; although it is evident that even here, their perception of these notions had been influenced by a commercial viewpoint.

“Again, when you start thinking about ‘universal design / inclusive design’, that’s inherent in how we’re designing products anyway … because it’s often driven by consumer groups and personas that we’re designing for … so we’re always making sure that it can be used, or it’s appropriate for a wider area of people.” (IDC:17, 42)

Overall, however, there were strong sentiments from the consultants that they are heavily restricted in what they can achieve and in how they can have effect. Numerous consultants remarked that they are not sufficiently empowered to act on these topics, or that most of the issues require top-down influence and depend on factors far outside their role and remit (IDC:08, 10; IDC:22, 30; IDC:02, 66; ACD:04, 11; ACD:02, 16; IDC:15, 31; DCO:05, 42; IDC:14, 55; DCO:03, 39). Such opinions express a separation from the issues, and may account in part for why consultants do not typically address them more in their work. (This will be returned to in Chapter Six).

In addition, consultants were very conscious of the complexity and scale of the topics, and it was evident, that they struggled with the moral ambiguities and dilemmas of their actions. For example, some of the consultants discussed how actions do not simply have a positive or negative action, but can often impart both, and that even positive actions can have negative effects in unintended ways (IDC:04, 45; IDC:06, 71).

“I’m not sure you can always anticipate what are the positives, and what are the negatives; what are the unthought-of consequences of the design decisions we make.” (IDC:06, 71)

Similarly, one managing director discussed the good and bad aspects associated with cars, and how as human beings, we regularly deal with these kinds of dichotomies (IDC:07, 45).
Furthermore, from the discussions it would appear that consultants rely on their morals more as a ‘keeper of standards’ rather than as a driving force. For example, some expressed that they were willing to turn down clients or projects that fall outside their moral standards, however, there were limits to how it was incorporated in the full range of their activities.

“I’ve had clients come to us and want to do things that are, you know, unmarketable, technically unfeasible, silly, dangerous and it would be wrong, you know, if you’re going to be professional about it, not to at least try your best to advise them not to take that course, but sometimes, em, you know, committed to a contract, the client wants you to do something, you can’t persuade them, you do it.” (IDC:10, 19) (See also section 6.4.4).

5.3.4 > Key Findings

It was apparent that the central motivation of consultants is to fulfil their professional role, and their strong will to meet the requirements of the client overshadowed other objectives and personal motivations. Consultancies position themselves as a service to their clients and as such, tailor their offers to suit requirements. Accordingly, consultants were cautious about pushing clients too far, and it was apparent that any efforts towards responsible design goals will be mitigated by what the client and the market would be willing to accept. Furthermore, there were strong sentiments from the consultants that the issues require top-down influence and depend on factors far outside their role and remit; and that overall, they are heavily restricted in what they could achieve. This affected their overall sense of responsibility, which was evidently a factor in their relationship to the topics.

The critical factor: The possibility for design consultants to address responsible design goals is dependent on how important the goals are to the consultant, and how empowered and responsible they feel to address them.
5.4 > Third Key Determining Area: *The Consultant’s Capabilities*

In order to achieve progress towards responsible design goals, industrial design consultants have to be able to generate compelling options and proposals, and this is determined by the skills, abilities and knowledge they possess.

5.4.1 > Creativity and Visualisation

At the centre of the consultant’s capabilities is the high level of creativity which they typically boast. Designers demonstrate a distinct mindset of exploration and idea generation, which includes challenging existing notions and asking ‘what if’ questions (see section 2.2.10). This offers the potential for different thinking and new directions to be introduced into clients’ products. In addition, it was pointed out that such a mindset also encourages similar thinking in others (ACD:01, 18).

The consultant’s deftness to think holistically and look at the big picture whilst simultaneously paying attention to finer details was also underlined in the interviews; with some participants distinguishing this as a key feature of being a good industrial designer (IDC:10, 13; ACD:03, 23; ACD:01, 18).

“*The thing that designers do right, if they’re good designers is they actually do tend to think holistically around the topic. So they do tend to embrace, you know, all the wider factors; the sustainability factors, the user engagement factors ... If they’re good designers they can embrace all these factors, without being told to do it by a client - they should be aware of it.*” (ACD:03, 23)

This suggests that consultants have potential to not only incorporate larger topics into the products they design, but also to widen the perspective of their clients so they may also view their products in a broader, more responsible, context.

Designers are also adept at visualising and representing ideas, and a number of respondents stressed the importance of this in helping to give form to more responsible alternatives so that people can contemplate them (ACD:04, 13; IDC:18, 25; IDC:12, 11; IDC:07, 5; ACD:03, 25).

“*The power of the designer is to envision, to visualise alternative futures. That’s what the designer can do, because they can make - . They have the*
ability and the skill and the creative process to be able to tangibly manifest alternatives ... They can make it real so people can respond to it.” (ACD:02,14)

Further to this, participants explained how designers make proposals more appealing and therefore have the potential to create compelling exemplars of responsible design (IDC:21, 41, IDC:22, 22). However, it was acknowledged that these capabilities can equally be applied to making less responsible options appealing. In addition, one director commented that designers contribute to trends, and that if they can set a trend of sustainability or inclusivity, for example, it may bring publicity to it and broaden awareness (IDC:22, 22).

5.4.2 > Resolving Requirements

Designers operate in a space occupied by constraints, variables and contradictions, and as a means to create proposals, they need to resolve or balance those aspects with the requirements of the project. One design director explained that compromises have to be made, whether it is working with the material and process; the project constraints; or the kinds of people involved (IDC:06, 16). Similarly, another consultant remarked:

“I think managing compromises is a large part of the design process ... every day you're dealt with another compromise and it's how you absorb these and how you merge them in with what you're doing that makes it effective or not.” (IDC:03, 47)

The crux of being an industrial design consultant, therefore, could be considered in terms of two key aspects: the ability to recognise the important elements of a project, or those that are going to have the most influence on the outcome; and being able to combine those elements to produce effective and compelling options, despite the restrictions. Respondents explained that just being able to marry a technically challenging requirement with a consumer insight, for example, is significant, and that these are skills design consultants are very strong at.

4 See also Keeley (1994) who comments that designers offer three key abilities for business strategy: they can represent users; they have conceptual skills suitable to changing artefacts; and they can visualise and simulate things that do not exist in ways that allow others to experience them.
“... it's what briefs often challenge us to do, and strangely, you discover that not many other people do deal in those terms, those contradictions, those conundrum spaces.” (IDC:16, 10)

It was also felt, however, that often the target is already very demanding without the inclusion of additional objectives, such as responsible design goals. One director remarked:

“When you’re doing highly innovative products, quite often, just trying to create something’s hard enough and then you pile on all this other stuff on to it.” (IDC:19, 22)

Another director summarised that it will always be about getting the best possible outcome rather than the ideal (IDC:06, 57). Importantly, this highlights that trade-offs and judgements are an integral part of designing; and that how they are undertaken has a key effect on the outcome, and the level of responsible design incorporated (see also section 6.2.4).

5.4.3 > Broad Skills and Varied Experience

Industrial design consultants are unusual in the breadth and diversity of their work, and those interviewed spoke of involvement with a wide variety of clients and product areas (as discussed in section 4.3 and 4.4).

“... we have designed motorcycles, we've designed trains, we've designed aeroplanes and we’ve also designed medical devices and surgical equipment.” (IDC:22, 6)

Their diverse exposure affords consultants broad knowledge in different materials and processes for example; along with rich insights into social trends and market behaviour.

“... by us having that cross sector knowledge and experience, we’re able to, I guess, sell all that embedded knowledge we have on the way different sectors and different spheres of society work.” (DCO:04, 17)

Recognising the value of this, a number of participants mentioned how they try to work on methods for sharing information internally, to encourage insights and knowledge transfer between sectors (IDC:17, 7; IDC:13, 36). One example was where a consultancy encouraged designers to champion an area of personal

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5 This also relates to the ‘wicked’ nature of design problems. For example, Lawson comments that design is not a matter of optimising, but rather of getting things good enough, or ‘satisficing’ (2004b, p.11). See Chapter Six for more regarding this.
interest, allocating time for them to attend seminars, undertake research, and to share the knowledge gained through an internal database or office presentations (IDC:13, 36). Again, these capacities could also benefit the encouragement of more responsible design within an office.

The consultant’s experience with client companies also makes them privy to an understanding of business strategy; and it was evident that numerous firms blur the line between design and business or strategic consulting (IDC:08, 2; IDC:07, 23; IDC:13, 7; IDC:12, 13). This is also beneficial to responsible design as it was acknowledged that consultants will need a commercial outlet if it is to have effect, and this requires a understanding of the commercial context.

“... you’re not going to have an influence on things where commercial questions are going to reign supreme unless you understand the commercial questions; unless you understand that world; unless you’ve taken the time to get to grips with ‘right well, why are you saying that that’s too expensive?’” (IDC:16, 29).

However, it appears that much of the consultant’s knowledge is gained from their practical experience, and is therefore quite dependent on their client base and the type of companies they are involved with. In relation to this, respondents highlighted that it is not unusual for a firm’s work to be dominated by one product sector or client; or similarly, for a designer to be ‘typecast’ in their work; suggesting their experiences - and therefore the related knowledge they gain - may actually be quite focussed (ACD:04, 20; IDC:20, 10; IDC:11, 10; IDC:21, 13). More importantly, the strong reliance on client experience for knowledge acquisition highlights the need to find suitable ways of introducing new areas of information into consultancies; such as those related to responsible design; which may lie outside the client’s normal requirements (see for example: Ashton, 2003).

5.4.4 > Adaptability

A designer’s ability to adapt and be flexible is recognised as one of their key capabilities, and in the case of the consultant, this is particularly relevant due to the changing circumstances and level of variability involved in their role. Respondents discussed how consultants need to have the skills to design and behave differently
for different clients; explaining that they do not have a singular process, but tailor their approaches to suit the particular requirements of a situation (IDC:14, 14, 16; IDC:06, 22; IDC:05, 6).

“... one of the really unique skills of designers is their ability to be flexible, work in different ways, co-operate in different kinds of ways with different groups of people but still look to find an outcome and bring everybody in the direction of creating that outcome and giving meaning to it.” (IDC:14, 47)

In addition, this adaptive nature coupled with their broad knowledge, and good communication skills, enables consultants to interpret and cross-communicate between the different groups involved in product creation.

“We’re good at talking and understanding marketing people; we’re good at talking with engineers, with production people; we care about the product right through the process. ... so the relationship between all of those elements, gives us the vocabulary and also the attitude that enables us to work across the organisation.” (IDC:12, 37)

This facilitates the designer to promote their intentions; and also potentially to encourage action such as responsible design; across disciplines. Moreover, as an outside party, they are ideally positioned to challenge and query the requirements and underlying assumptions informing new product solutions (DCO:03, 17); possibly enabling new directions and alternative thinking to be introduced.

In a similar way, it was mentioned that these attributes also mean consultants are in a position to work with other parties, such as external vendors to help improve approaches; or possibly policy makers and the government to encourage responsible design initiatives (ACD:04, 23; IDC:09, 63; IDC:22, 19; IDC:15, 26).

“We’ve been instrumental in identifying with some very very interesting new suppliers coming through who will guarantee properties on recycled plastics, so we’ve been guiding our clients and encouraging them to encourage the people they work with to get them on as suppliers.” (IDC:15, 26)

5.4.5 > Missing Strengths

In addition to the abilities identified above, a number of areas which are not typically strong in designers were also recognised in the data, and are briefly discussed here.
Designers are often poor at literacy or discourse skills, and do not display strong tendencies towards formal reflection or reporting about what they do. It was felt that this impacts the development of the industrial design field, and if overcome could benefit knowledge development, and responsible design goals (ACD:01, 4; WPA:01, IRS). Additional comments discussed how design education contributes to this issue by favouring the more creative skills in students (ACD:01, 4); however, designers are intuitive and viscerally lead, so this proclivity may also be based on more fundamental traits; making it difficult to change easily. Outside of that, design consultancies are typically small and often do not have the spare capacity for discursive activities. This was evident among the participants with regard to recording case studies, for example, or producing material to promote their firm.

“... there’s no lack of willingness, in my opinion, of people wanting to promote case studies and material and stories that they have to tell, it is just a matter of resource. You’ll be very aware that the majority of the ID industry is made up of small businesses and it’s just not something that is, eh -; you know, PR is a luxury, and we get around to doing it when we can.” (IDC:12, 64)

A more important issue is the ability to communicate effectively to non-designers and other parties involved in the product creation process. Some consultancies explicitly identified this as one of their strengths (IDC:13, 20; IDC:15, 10); however, it was also highlighted as a common shortfall of many design consultancies (IDC:13, 20). Similarly, designers do not often manage their design process in any formal manner, and respondents discussed how a consultant’s inability to articulate how they do something can prevent them from achieving a more effective interaction with their clients (IDC:12, 77; DCO:04, 23). Further to this, the method of arriving at solutions is often innate to the designer making it difficult to communicate their reasoning.

“What happens typically with industrial designers is that they find it difficult sometimes to verbalise why it is they’ve done something, because it’s come from within, you know, it’s an innate, em, skill, or a gut feel. They’ll usually put some sort of reason behind it, but not always that robust” (IDC:11, 66).

One firm with a strong background designing medical devices was unusual in that they adopted a strong degree of rigour across their approaches. They reported that where this was applied with clients outside the medical industry, it was greatly valued and seen as distinctly different from how conventional firms operate (IDC: 16, 4). It was also felt that more explicit explanation of process and backing would
aid the dissemination of responsible design by making its benefits more understandable and accessible to clients (ACD:03, 19; IDC:20, 19).

5.4.6 > Key Findings

Consultants boast a number of competencies which support their prospect to positively address responsible design goals. In particular, their distinct creativity, communication skills and ability to envision and represent alternatives, were identified by respondents as valuable potential contributions. Similarly, the consultant’s flexibility along with their capacity to think holistically and resolve multiple requirements were also highlighted as significant. However, consultants typically have poor discourse skills, and it was felt that this was an area which, if improved, could enable them to be more effective; and may support their undertaking of more responsible design.

The critical factor: The possibility for design consultants to undertake responsible design is dependent on their ability to embody it in a compelling form and incorporate it within the designs they propose.

5.5 > Fourth Key Determining Area: The Opportunity Available

The extent of the possibility for design consultants to effect change will be limited to the design opportunities available to them, and those which they can create within their remit. From the research, it was apparent that for the majority of their work (excluding proactive work or private ventures) a consultant’s opportunities are predominantly determined by the characteristics of the client; the project; the product; and the market; as well as the phases and duration of their involvement.

5.5.1 > Characteristics of Clients

At the centre of the consultant’s circumstances is the company they are commissioned by; and respondents were quick to point out that no two client
opportunities are alike. As was discussed in section 4.3, it was evident that each client can vary not only in terms of their objectives, interests and capabilities; but also in their willingness to adopt new directions or risks, as well as in their attitude to the design consultant’s involvement. For example, some clients are quite empowering and offer lots of freedom to explore, while others have set agendas and are simply looking for a means to realise them (IDC:11, 36; IDC:03, 4; IDC:05, 18); thus reducing the consultant’s opportunity to have impact. Similarly, many clients have an adversity to risk which limits the extents of the design opportunity available, particularly where the introduction of new ideas or directions is involved (IDC:13, 18; DCO:02, 13; IDC:11, 54; IDC:12, 51) (see section 4.3.5).

Some of the consultants interviewed also felt that understanding what the client is open to; and capable of; is a key aspect in maximising their opportunities. However, it was highlighted that gaining a real understanding is extremely challenging, not only because it requires time and effort, but also because the goalposts move and can be affected by numerous factors. Furthermore, it was remarked that even when the constraints within a client company are identified, this does not necessarily mean they will be acknowledged, or that they can be overcome.

“… once you know what the constraints are, no-one really wants to -; it’s this huge elephant sitting in the corner of the room, and nobody’s talking about it. You know, I mean, you could do an interview with me on what the constraints of XXXX [consultancy’s name] are and it’s kind of like, you’ll get there in the end, and then you won’t be able to do anything about them.” (IDC:19, 15)

The opportunity can also depend on the departments within a client organisation that the consultant is involved with. Each discipline will have its own motivations, and depending on how a project is being led, the circumstances can differ greatly.

“I’ve worked for marketing, marketing-led companies where, yes of course, the marketing people rule and therefore what they say goes. I’ve equally worked for engineering companies where, you know, the engineers hold, hold the high ground.” (IDC:12, 85)

Further to this, one managing director felt strongly that the way design services are commissioned is one of the major challenges right now, explaining:
“... where there are large projects driven by procurement teams within a client company, then, yes, you get stuck in a process defined by procurement, which frequently leads to a disastrous result.” (IDC:14, 18)

In addition, the business model, ethos and competencies of a design firm, will affect the clients they can attract (see section 4.2) thereby setting the range of opportunities available.

A key client factor affecting the consultant’s opportunity for responsible design is of course their interest in the topics. From the research it was clear that the client’s focus is typically dominated by commercial interests, and that other objectives; such as those relating to responsible design; are greatly overshadowed, unless they evidently benefit the business goals.

“The reason that sustainability is low down on the criteria of success when we're picking those concepts, is because the top ones are so -­-; it's commercial success that's so important, so the way to make sustainability important is to make it the reason for a commercial success and it's heading that way, isn't it?” (IDC:21, 45)

From the participants comments, it was apparent that responsible design goals, such as sustainability and inclusivity, get very mixed receptions from clients, varying from a complete absence of interest, to enthusiastic embrace. One consultant explained:

“I've never had it [sustainability] well received. I've never done it on a project and felt I've come out of that meeting being more professional in their eyes, or being more -­-. It's only ever been a negative experience.” (IDC:21, 33)

In contrast, another consultant quoted a case where the client embraced inclusive design to the extent that it became entrenched in each design step they took (IDC: 22, 26).

The key aspect highlighted from the interviews is that ultimately a client company’s approach to responsible goals is dependent on the priorities and attitudes from the top down (IDC:22, 19; IDC:20, 29; DCO:02, 22).

“It comes down to the person who's paying the bill at the end of the day and what their, what their moral compass is telling them, or their business compass is telling them.” (IDC:20, 29)

As such, the opinions of the decision makers and those in the more senior positions, is one of the critical aspects dictating what the consultant can achieve.
5.5.2 > Project Characteristics

In addition to remarks relating to clients, participants also advised how the priorities and constraints of each project are a key aspect in determining their opportunities. Again, design projects can vary greatly in their characteristics: some are undertaken to innovate or to design discontinuous ‘blue sky’ products; but the majority tend to be concerned with making incremental revisions or cost reductions (see section 4.4.1). Similarly, projects can serve different business objectives; such as to cement a current market position, or to showboat a new technology; and in each case, the level of opportunity for the designer; and the potential to include responsible design; differs substantially.

At an obvious level, if the brief for a project requests action towards responsible goals, this presents a significant opportunity for the designer. A number of consultants quoted such cases, explaining that when a project is formulated around an accommodating premise, they can have notable effect (IDC:11, 62; IDC:20, 16). However, many participants remarked that responsible design objectives are not often high up the list of priorities. One consultant explained the typical treatment of sustainability in a brief, for example:

“... when you have the objectives for a project, it’s always the bottom one. I can probably say, yeah, 99.5 per cent of the time it’s always the last: ‘if it can be, then that’s good’” (IDC:17, 35).

Another consultant concurred, explaining that it often only exists in a brief as nothing more than a token gesture (IDC:16, 25).

A further observation is the apparent increase in broader or more open briefs, typically occurring as clients seek deeper insight and direction (IDC:19, 2; IDC:11, 46; IDC:18, 29).

“... the questions have become larger, broader, more ambiguous; the briefs have become ... board of director briefs, rather than middle management briefs. You know, a middle management brief, used to be in the early nineties, would be: ‘design me a toaster’; the brief now is very much, eh,’how do we recruit youth to our brand over the next five years?’” (IDC:19, 2)

Many of the consultants expressed a preference for this kind of work, and a number of them pointed out that these more open work requests often facilitated them doing some of their best work (IDC:15, 12; IDC:13, 26; IDC:12, 85). Such briefs also
suggest a better opportunity to include responsible design goals in the project. However, it was recognised that the priorities on a project are typically set by the client team’s objectives and motivations; and that these, along with their interest in responsible design topics; have a greater impact on the actual level of opportunity available.

In addition, consultants were quick to identify the constraints typically associated with commercial work; such as time to market, price point and legislative requirements, as well as budgets and additional project-related constraints; each of which impact the level of opportunity available (see section 4.4.2).

“About 80 per cent of our clients come to us with a budget and a brief, and you know that it’s bloody impossible; there’s no way that you can deliver to that brief for the budget” (DCO:05, 44).

Furthermore, participants called attention to the tight time-scales and demanding workloads inherent in consultancy work (see section 4.2.5). Interestingly, a number of the consultants commented that because of these, they seldom have the room to analyse what they actually do, or to fully reflect on topics such as those being discussed (IDC:01, 46; IDC:04, 53; IDC:11, 76).

“You know, a lot of times you end up in a kind of a daily process of projects, and what-nots, and em, you get very little time to give these things thought.” (IDC:01, 46)

5.5.3 > Product Characteristics
The category and type of product to be designed are also crucial factors. Consultants discussed the different product sectors they are involved in; such as medical, industrial, or fast moving consumer goods; and how the priorities and characteristics - and thus the form of the opportunity available - varied for each (See section 4.4.3). For example, the medical sector tend to be more regulatory driven and backed by stringent approaches; while other sectors are more consumer-led, or driven by fashion and trends.

“... there are huge differences. I mean consumer products are emotional purchases; business to business products aren’t. Business to business products are pretty well always very inclusive products. ... You might know who you’re going to be selling it to; you don’t always know who’s going to be using it.” (IDC:13, 46)
Similarly, each sector has its own set of constraints; for example, in the medical sector there can be tight restrictions on materials, and they are typically very slow moving (IDC:20, 16). Participants also discussed how responsible design issues featured differently in each product category, attributing this to the varying priorities of the sector, as well as the differing importance on consumer opinion for each. For example, one consultant explained how medical devices are not greatly influenced by consumer opinions, and as such, there is less pull from that direction (IDC:20, 16). Similarly, another consultant discussed how it can be difficult to effectively incorporate sustainability factors in high-tech products because of consumer perceptions:

“If somebody’s selling something on a high-tech basis, like, for example, like a camera, it’s very difficult to be able to persuade people that it’s high-tech and that it’s recyclable, or full of recycled materials ... that's a big challenge, that's a really big challenge” (IDC:09, 33).

In addition, it was evident from participants’ comments that other factors; such as the life expectancy of a product, the frequency of its redesign, or the level of complexity and technology included in it; affect how a product relates to responsible design goals, and the level of opportunity available to incorporate those goals in its design (see section 4.4.3).

5.5.4 > Target Audience and Market
Respondents also underlined the significance of the product’s intended market in determining the level of opportunity available to address responsible design goals. It was noted that some user groups have a stronger interest in the topics than others, and that this can improve the opportunity for effect in certain cases. However, as discussed in section 4.5.3, for the most part, consumer pressure is not a significant pull and was felt to only have an impact where it has a perceivable effect on sales figures.

Conversely, there can be a restriction resulting from the characteristics of the user group targeted:

“... if you’re working on consumer products, you know, with a targeted ... demographic of between 18 and 22, OK, you can treat it inclusively within a
bracket of 18 to 22. But actually what people are very often after are ... exclusive products, so it’s not always easy in that situation.” (IDC:13, 37)

Furthermore, the target audience inflicts an additional indirect constraint in that proposals need to fall within their expectations or what they are willing to take on (IDC:06, 39; IDC:17, 19; DCO:02, 22).

“If you try to bring that radical vision - and it doesn’t have to be necessarily a very radical thing, but it’s radical enough - all in one go, then my experience is that it translates to market failure, people don’t see it, they don’t get it, they don’t know what you’re talking about. You’re speaking a language that they’re not ready for yet ... I think to effect change, real change, you probably need to do it in steps and bring the mass audience along with you in those steps.” (IDC:06, 39)

Another director concurred, explaining there is a need for “surrogates”, or short-term reward solutions, which help to bridge the user towards a required long-term behaviour change (IDC:15, 33).

In other respects, the activities of the product market, and the competitors operating there, can have a large effect; both on what is acceptable to users, and on the client’s perception of what is appropriate. A number of consultants commented that the majority of clients are mainly influenced by competitors and the market (see section 4.3.4).

“90 per cent of clients are reactive and they only go by either what competitors are doing, or what they’ve just heard the consumer might be interested in” (DCO:04, 44).

However, it was also discussed how some larger brands can be effective in leading their audiences, particularly if consumers trust or sign up to that brand’s values (IDC:06, 20; IDC:07, 16). Such cases could provide a greater opportunity for designers to have an effect, if responsible design topics were embraced by such brands.

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6 This relates to the opinions of designers in the literature also. For example Liedtka and Mintzberg (2006, p.16) quote the architect Frank Gehry who argues designers must provide “conceptual handrails” in radical designs—something familiar for users to grip amid the changes swirling around them, to steady their confidence in strange settings.”
5.5.5 > The Stage and Duration of the Consultant’s Involvement

The opportunity available to the consultant is also heavily dependent on the stages and duration of their involvement.

“And I think it all comes down to where you’re involved, to what degree you’re involved, and how long you’re involved for” (IDC:19, 19).

Consultants explained how in different situations they are hired to contribute services at varying stages of a product’s design and development, and that this affects their opportunity to influence the outcome.

“Other clients ... we have influence on configuration but probably not on bill of materials. Other clients, we have a certain amount of influence on the overall strategic look and feel, but not on the actual products themselves, if you see what I mean, not in terms of product planning.” (IDC:15, 17)

In this way, if a consultant is commissioned towards the end of the product’s development to add styling to an already fundamentally designed product, for example, this drastically reduces their opportunity to incorporate responsible design goals into the product solution.

One manager explained that there is a direct relationship between their influence and the number of disciplines they have involved on the project (IDC:20, 15).

“Where I think our most successful projects are is where we get involved with multiple elements: design research, ID, and engineering ... So those ones where it goes across the disciplines, we have a fairly significant impact, or we can do.” (IDC:20, 15)

A number of the participants also commented that early involvement on a project can be valuable for gaining greater effect on the final outcome, but some remarked that further on in the process is where the compromises tend to occur, so a longer involvement is also of benefit.

“... in fact the designer gets listened to less and less as the concept develops which is why it’s so important for the designer to say their piece strongly at the very first presentation and to put a strong concept on the table on day one, because if they don’t -... Your vision, or your point of view, is ultimately less and less evident from that day on in real terms.” (IDC:06, 36)

Conversely, consultants who operate in front-end projects explained that in the early stages of projects; when the requirements are still undefined; it can often be difficult to successfully introduce additional targets, such as responsible design goals, because there is less structure or understanding of the project direction (IDC:17, 37).
5.5.6 > Key Findings

The central determinant of a consultant’s opportunities is the client, and with regard to addressing responsible design topics, it was evident from the research that the attitudes of the client from the top down, along with how those topics ranked in the priorities of its members, significantly affect the consultant. It was also evident that frequently the client’s commercial focus overshadows such objectives. Other determinants include the characteristics of the product and project, and these vary substantially across a consultant’s work, with each aspect providing different constraints and opportunities. In addition, the consultant’s level of involvement on a project and the phase of their participation impacted the form of opportunity available to them. Ultimately, it is also dependent on the consultant’s ability to recognise or create opportunities and favourable circumstances.

The critical factor: The possibility for design consultants to address responsible design goals is dependent on the importance assigned to those goals by the client; the characteristics of the commission; and the consultant’s ability to recognise and avail themselves of opportunities within them.

5.6 > Fifth Key Determining Area: The Level of Influence the Consultant Has

Given the nature of the consultant designer’s role, their effect; and their possibility to incorporate responsible design goals into products; is heavily dependent on the level of influence they exert on the final outcome and the decisions leading to it. The consultant is an outsider to the client company; typically only a small part of the overall process; and not a main decision maker; therefore, they are ultimately dependent on the client’s buy-in for their intentions to get carried forward and to have effect.

“So let’s say that you are a designer who’s very strongly wanting to make the world better by having more sustainable designed products out there, that’s the same situation as a designer just wanting to make the world a more beautiful place, so you can have the drive, but without the influence, you can’t really change very much. So, in part, it needs the top of the company to truly
believe and be aiming for triple bottom line and it needs design to have an influential position within the organisation as a whole” (IDC:16, 28).

Overall, it became apparent from the analysis that the level of the consultant’s effect and influence can be regarded in terms of: their ability to assert their opinions and ideas; the value and reception afforded them; and the extent of their reach. These are discussed further in the following sections.

5.6.1 > Asserting Their Opinions and Ideas

It was evident from the research that the core of the consultant’s influence is their ability to be persuasive, and to get people to share their enthusiasm for the visions they create. One director likened it to being a salesman, explaining how it was necessary to persuade, or cajole to get concepts accepted (IDC:11, 50). Others stressed how offering convincing arguments was a vital part of their role, and crucial to gaining the client’s backing (IDC:15, 15; IDC:04, 40; IDC:10, 26; DCO:01, 20).

“A lot of what we do is convincing. Convincing the client that this proposal is what we should do and what we need to do” (IDC:04, 40).

The importance of being able to offer persuasive backing also meant that for a number of the consultancies involved, the approach adopted actually formed the central and defining aspect of their overall design process. For example, one consultancy employed semiotics as their core methodology because it provided a vocabulary and helped to generate more robust and risk-averse proposals (IDC:11, 66); another consultancy was strongly directed towards evidence-backed approaches (IDC:20, 22); while another office crafted stories based on trends and customer insights as a central design technique and a way to support their designs (IDC:05, 16).

Throughout the interviews, consultants discussed numerous tactics for backing up their proposals and presenting a convincing argument, including: ‘seeing through the client’s eyes’; having evidence, research or back-up; ‘bringing the client along’; and relying on reputation and credibility. These different approaches are presented below:
Providing Research and Evidence

One of the main approaches identified in the research was the supply of objective evidence and data to better inform decision making and opinions.

“So, rather than trying to be: ‘we think’; it would be a case of: ‘the data suggests that’; and I think that’s more valuable for a client” (IDC:20, 26).

Such backing is typically generated from an analysis of trends, consumer insights or ethnographic research, but one respondent explained how some consultancies in design and branding have developed their own tools for research and innovation:

“… Interbrand, or The Brewery, or something like that … each of their tools is branded; like ‘Magpie’, which is where Rowntree’s Randoms came from” (IDC: 21, 21).

However, it was also highlighted that it is often more difficult for consultants to provide the same level of quantitative backing or evidence as other disciplines (such as marketing or engineering) given design deals with visceral qualities (ACD:01, 15).

Demonstrating by Example

Among the participants, it was also common to offer backing by referring to examples from previous work. One director explained that part of his early involvement with a client is imparting that he does know what he is talking about, and that this is normally achieved through showing samples of work (IDC:11, 48). Another commented:

“… what people actually want to see is have these guys actually worked in similar products to our products with similar problems, and have they actually been able to make a monumental difference from, from what ‘was’ to what ‘is’. That’s sort of what they’re really interested in.” (IDC:13, 23)

Those consultants involved in their own product ventures were particularly attuned to its advantages in this respect.

“The fact that we actually have products that we have been designing and selling under our own brand; and also having our own design area; tends to make clients more secure in the fact that if we can do it for ourselves, we can do it for them.” (IDC:09, 11)

In related comments, numerous consultants underlined the value of experience, in helping them anticipate and identify suitable approaches, and also in giving them a background from which to draw examples from.
5.6.1c > Building on Credibility and Reputation

The consultant’s reputation and credibility can also provide a level of backing for their opinion, particularly in the situations where there is a personality cult constructed; such as Philippe Starck, or arguably Seymourpowell in the UK. Even outside of these rare situations, the status and respect afforded a consultancy, or their reputation and credibility as a practitioner, can lend significant support to their defence; and numerous participants expressed the importance of these traits (IDC:22, 17; IDC:06, 29; IDC:08, 17; ACD:01, 15; IDC:18, 17; DCO:05, 60; DCO:04, 70).

One related aspect which was also highlighted is the value which could be gained if industrial design was recognised as a profession. A number of respondents felt strongly that, if correctly established, a professional status could afford industrial designers greater respect and greater possibility to advise and influence the client (ACD:03, 4/6; IDC:10, 61; IDC:06, 35; ACD:01, 13; IDC:14, 26); however, it was acknowledged that industrial design is still a way off achieving this (IDC:14, 26; ACD:03, 6) (See also sections 2.2.11 and 4.6.3).

5.6.1d > Engaging with the Client

As a part of convincing and presenting viable proposals, consultants were very aware of the need to engage the client.

“If we haven’t engaged people; if we haven’t engaged them with the particular areas that concern them the most, we will fail; fail to persuade them.” (IDC:10, 24)

Some discussed winning the client over with high quality work or by presenting an element which excites them and captures their imagination.

“It's that ‘wow’ factor that grabs their attention, and our process would always be to try and present a ‘wow’ factor first to buy them in; to get peoples’ confidence and ... stimulate peoples’ interest and then build layers beneath that.” (IDC:10, 23)

Others discussed the value of gaining better understanding of the client’s business environment and being able to present proposals from a position of appreciation (IDC:16, 29; IDC:22, 7).

“Companies are sophisticated things, you’ve got to go in and understand what they're doing, why they need to do it, where they've been, what their market is
going to be like in the future, so that you can understand and advise them how you think they can do things” (IDC:22, 7).

Further to this, participants emphasised the crucial importance of interacting with the client team on their level, and with a vocabulary and language appropriate to the discipline involved (as opposed to ‘design speak’). However, the research also highlighted that to be effective, consultants need to appreciate where they have leverage and can make a valid contribution. For example, one participant explained that if he sits down with an engineer and talks about topics such as tooling costs, his opinions will carry little meaning or credibility, whereas discussing how to design around an issue may (DCO:04, 70).

5.6.1e > Involving the Client and Building Trust

At the core of exerting influence with a client, is the development of trust.

“If you haven’t got their trust; one, you’re not going to get the work anyway, em, but you’ve got to maintain that trust throughout the process. It’s when the trust starts to fracture or get on rocky ground, that’s when problems start coming in.” (IDC:11, 52)

In one way or another each of the tactics above address the client’s confidence in what the consultant brings to the table. As such, consultants spoke a lot about building the client’s confidence by having them involved and bringing them along on the journey. Consultants noted that this aided the client’s buy-in and investment in an idea, helping it gain traction. One manager explained, if a problem or challenge occurs and that aspect of the direction is seen just as the consultant’s view, it can easily be dropped; whereas if there is a level of ownership on the client’s side, resulting from their involvement, it may be given better attention (IDC:16, 15).

“I think, the more they [clients] get involved, the better it normally is. You know, so, it’s not reactive, it’s that they’re involved in it. If they take ownership of it then, again, you’re more likely to succeed.” (IDC:11, 40)

5.6.1f > Building Relationships

The client’s trust is also dependent on the relationship with the consultancy, and most participants underlined this aspect as the key factor affecting their level of influence, to the extent that for many it was their first response when questioned.

[Interviewer] “How much influence do you think the designer actually has on the final product?”
“I’d say quite a lot, but it depends on your relationship with the client and whether the client really trusts you and has a belief in you and a track record working with you.” (IDC:08, 17)

Stronger and more established relationships with clients afford consultancies many advantages; including streamlined processes, along with opportunities to gain insights and knowledge of the client’s business; and it was evident from the research that consultants assign a lot of effort to developing and maintaining their client relationships.

“Sometimes you have to work with these companies for a while to develop real, em, understanding of each other and, you know, get to the point where they trust you. When that works, and there’s a lot of respect, and the personalities all gel, we can be enormously, enormously influential” (IDC:13, 28).

Respondents discussed the importance of compatibility, good communication, and reassurance; also highlighting the benefits of aligning expectations as early as possible in a project. Importantly, however, it was observed that consultants can sometimes compromise their opinions or actions (particularly during early involvements) to avoid jeopardising a relationship or for the sake of building longer term engagements (IDC:06, 14).

5.6.2 > The Value and Reception Afforded the Consultant

Commissioning a design firm may suggest that a client will be open and receptive to the consultant’s opinions and influence, however, it was apparent from the research that this is not necessarily the case. How a client perceives the involvement of the consultancy and the value they give design vary with each arrangement, and can significantly impact the consultant’s effectiveness (see section 4.3.6).

“I think it’s entirely reliant on how receptive your client is to having you involved in the process.” (DCO:04, 58)

This relates both to the client as a company, and also for the individuals within the client teams. Consultants discussed, for example, how client contacts differed in their approach to design and in how they included the designer in the project (IDC: 05, 19; IDC:03, 4; IDC:11, 60). Similarly, other client team members can exercise differing levels of reception to the consultant’s efforts.
“I have worked with mechanical engineers that understood exactly what we’re trying to achieve and maybe took risks here and there to be able to achieve that, but I’ve worked with other ME - mechanical engineers - where we were doing something not according to norm, therefore it must change, and no willingness to budge, and that directly affected the industrial design.” (IDC:01, 65)

In addition, a number of consultants emphasised how the value of design has to be recognised at the higher levels of a company for them to have any real effect (IDC: 16, 23; IDC:14, 30; IDC:12, 7) (see also section 4.3.6).

“… being well heard and well respected by the board of directors, is very important; and they have to understand the role of design, and the potential power of design in the same way that they are beginning to appreciate the role of branding. And they also need to appreciate not just the activity of design, but much more of a design culture and the freedom to explore; or the freedom to think; the freedom to do, em, distinctive things” (IDC:14, 30).

However, according to the respondents, this is not widely the case, and in the SME environment, for example, consultants are still often faced with just getting people to understand the value proposition - that there is a cost for design, but it actually brings a value to the business (IDC:12, 37). In these regards, it was acknowledged that it is up to the consultant to better communicate the value and potential of design to the client, and that this will then assist their effectiveness.

“… there’s this thing that ‘oh, small and medium sized businesses, they just don’t understand design; they just don’t understand’. My arse! They understand pounds -, pounds and pence much better than you do and they don’t see the value in you, and it’s up to good designers to express that value, eh; in using them, rather than somebody else.” (IDC:10, 26)

Also noted, however, was the difficulty associated with trying to identify design’s actual effect. One respondent explained that design is intangible and when it is done really well, it is embedded and inherent to the product, making it tricky to isolate (DCO:04, 49) (see also: Meikle, 2001; Buchner, 2007).

5.6.3 > Extent of the Consultant’s Reach

It was apparent from the research that the potential influence the consultant can have is also directly affected by who they are working with in the client organisation, and the level of influence that person (or team) has. According to the consultant’s feedback, this can vary greatly across clients, and in some instances,
the consultant’s reach is hampered by their client contact’s lack of power or effect.
It was also apparent that the main contact’s effectiveness at decision making and
dealing with risk, change or new ideas; was an issue on many occasions (see section
4.3.5).

“Some of them, all they do is just listen to you and then report back, and that
can be very difficult because you’re not dealing with the stakeholders, so
you’re using this other person as an outlet to communicate what you
do.” (IDC:05, 19)

In such situations, consultants were very aware that how well informed the decision
maker is, will affect the outcome of the decision, and that trying to have more
influence over the completeness of the information can help significantly (IDC:16,
22, IDC:05, 18).

The benefit of a client champion was also clearly recognised (IDC:11, 36; IDC:13, 21;
DCO:01, 15) and it was evident that this had particular significance for causes such
as those related to responsible design.

“If you get somebody ... from the client who’s fully behind it and basically,
represents you internally, then things are more likely to gain momentum and
make it to market, and that has huge effect on the success and the impact of a
design team - it’s actually the client’s relationship within the corporation
you’re working for.” (IDC:11, 36)

More importantly however, participants stressed the crucial value of cutting
through the layers of management and getting in at a higher level within the client
organisation (IDC:22, 14; IDC:21, 17; IDC:12, 7; IDC:19, 18; IDC:13, 14; DCO:01, 15;
DCO:02, 32).

“I think what we have found, as an absolute truth, is that generally speaking,
where things get difficult is when you’re dealing with ... what I would describe
as middle management within the company. Life is always easier when you
go, sort of, higher up the organisational path within the company, and
generally speaking, if you are actually interacting direct with a managing
director or CEO, life seems to be a lot easier” (IDC:13, 14).

For the consultancy, therefore, it is about finding a way into those higher channels,
and there was evidence from the interviews that this goal captured much of a firm’s
attention.
5.6.4 > Key Findings

Ultimately, the client has to agree with what is proposed and believe it is the right step to take, or it will not happen. This is predominantly dependent on the client’s confidence in the proposals, and therefore, the consultant’s ability to offer strong backing and persuasion is critical. An additional aspect affecting this is the quality of the client-consultant relationship. However, the consultant’s level of effect is also dependent on the client’s perception of design and the value they assign it, in addition to the level of influence the client contact has within the company. Overall, consultants emphasised the crucial benefit of dealing with as high up the client’s organisational ladder as possible, in order to gain greater influence.

The critical factor: The possibility for design consultants to address responsible design goals is dependent on them gaining the client decision makers’ confidence that a more responsible design proposal is a better option.

5.7 > Sixth Key Determining Area: What is Implemented

The impact a designer can accomplish is predominantly linked to the final outcome of the project they are involved in. The designer’s efforts can also have effect indirectly as exemplars or inspiration, for instance, but the main impact of most of their activities is linked to the final product which is produced, or the service which is put into action. The consultant’s effect, therefore, and the extent to which they can address responsible design goals, is ultimately dependent on what is actually implemented; and their intentions will only be as effective as what makes it to the market and the user. From the research, however, it was apparent that there are a number of significant factors acting between the consultant’s design and the final outcome.

5.7.1 > Decision-Makers

The consultants interviewed were very conscious that the proposals they put forward to the client are their main voice; and often their only voice (IDC:06, 36).
They were also aware that the selections they make during designing, as well as those made within the design office, determine those proposals, and are therefore crucial to the influence and effect they can achieve.

“... you know, you come up with thirty concepts or something, and you put them on that wall in there and you whittle them down to the six you present ... you’re already filtering out, aren’t you, before you’ve even got to the client, so you’re influencing them that way” (IDC:21, 32).

Consultants were also quick to stress that the majority of decisions; and those key to determining the product outcome; fall not with them, but on the client side.

“So, the decision making about the designs that you create, is very largely outside of your control, and that’s just at the first pass. When it comes to some of the commercial details and implications of, sort of, the choice of manufacturer, the - you know; just endless decisions that get made along the way that you have little influence over.” (IDC:16, 18)

The participants outlined that the main decisions are typically made by the main point of contact; their superiors; as well as those controlling the budgets within the client organisation; and may encompass numerous factors from a wide array of areas, not least of all, the personal tastes or agendas of those involved (IDC:01, 65; IDC:13, 36; IDC:13, 36). For example one consultant remarked on how frequently personal preferences play a major role in the choices made (IDC:01, 65). In addition, a participating design director explained how the choices of the client team have to anticipate and account for the preferences of the other stakeholders.

“... it isn’t just that one person; there’s going to be stakeholders - several stakeholders - that they have to report to and get approval from, not necessarily even tacit approval or verbal approval, more that they know that they need to satisfy other people’s agendas and they’ll try to interpret what that means, and usually it’s governed by sort of em, ‘I think my boss has a certain taste’, or ‘I think my boss cares about the price point more than he cares about the quality’. You know, either they’ll know because it’s been ironed out in discussion or there’ll be a sense of general strategy.” (IDC:06, 21)

5.7.2 > The Influence of the Other Parties Involved

Consultants emphasised that numerous other significant parties are commonly involved in a product’s creation; each with their own motivations and objectives influencing the outcome.
“When we do our presentation, we’ve got, we’ve got us influencing it; we’ve got the sort of global design team influencing the concept; we’ve got Marketing, probably Global Marketing, Local ... you’ve got R&D; you’ve got Quality; you’ve got some guy whose job it is to make sure it runs on time ... They’re picking concepts on ’cause it looks really nice ... They’re picking things because [of] their individual marketing strategies” (IDC:21, 37).

Respondents also mentioned that it is not unusual for these various sets of objectives to clash, and that internal politics can add to the challenges (IDC:21, 6; IDC:05, 21; IDC:01, 8). Moreover, the influence of the other disciplines involved can often have greater impact than that of the consultant’s. For example, one respondent explained:

“... in the two projects we’re doing now, actually the electronic manufacturers are being probably more influential than we are, because they’re directing what can be achieved ... in terms of unit cost and technology that’s available” (IDC:17, 25).

Similarly, consultants discussed other groups that can have a significant effect, and which are not always fully acknowledged. A client’s procurement team, for example, whose decisions are often dominated by cost concerns, can have a fundamental impact on the final version of the product produced. Likewise, the sales team, along with the background histories of previous projects, can carry dramatic influence on the design selection and product decisions. For instance, if a particular aspect of a design was used on a product that did not sell well in the past, there can often be a barrier towards implementing it again.

Conversely, one respondent described an unusual situation where a pharmaceutical client they worked with only implemented a small amount of what they recommended because the client knew their brand, along with their sales and marketing channels, could successfully sell the offer regardless.

“One of our clients actually said ... he said, ‘that’s the problem with this company, it’s that we make shit and get away with it because our sales and marketing are so strong’.” (DCO:04, 51)

In addition to influences which may occur during the main design process; when the consultant has a more involved role; other crucial impacts can occur in subsequent stages, where the consultant’s opportunity to react is reduced, or when they are no longer involved. Once control of the design is handed over for completion by the
client, or their suppliers, it is at the mercy of those parties, and consultants remarked how in most cases it resulted in a depreciated outcome (IDC:18, 61; IDC: 19, 19; IDC:16, 19). One director remarked that “all the best strategies in the world can just fall over in execution” (IDC:19, 19). Consultants recounted cases where manufacturing vendors had made dramatic changes to their designs; identifying that this can be a frequent stumbling block to achieving the intended quality and performance (IDC:09, 54; IDC:19, 20). For example, one respondent explained:

“You talk about sustainability; materials from polymer to metal, you know, are getting changed ... We could do a lovely eco indicator and just tell them where to spend their time on materials, we could do all these - but the Chinese manufacturer will go 'well, I've got this grade material' or 'I'll just use this reground material over here - oh, it failed!'. It's, it is still 'wild west'-like in these areas, however hard you try.” (IDC:19, 20)

Other consultants reported similar experiences (IDC:09, 41; IDC:15, 32); with one director describing how an ‘eco’ range of plastic products they designed was deferred because sufficient recycled material was not available from any of the vendors who could deal with the large production volumes (IDC:22, 25).

5.7.3 > Retailers and the Market
It was also evident from the interviews that there are impacts from parties outside those directly serving the client company. Consultants described how clients have varying avenues to end customers and how there can be some very strong stakeholders along the way (IDC:06, 17; DCO:03, 44). Retailers, for example, decide product placement opportunities based on revenue potential along with their perception of the consumer’s requirements, and their approval can sometimes be the main determining aspect in whether a product is even produced.

“... so the retailer might say ‘sorry we’re not going to accept your design, you may well think it's wonderful, but I don’t think it'll sell’. They’ll come up with some rationale as to why it won’t, or as to why it doesn’t suit their strategies, but ultimately it’s a no, so you’ve not succeeded in designing a product if a retailer isn’t accepting it. So they’ve a lot of power” (IDC:06, 17).

The extended effect of this is that customers can only make choices based on what is available to them, and it is evident retailers have a major impact in this regard.
In addition, the behaviour of the market, along with the other existing or pending products within it, can affect what will be produced, and the features it will contain (IDC:01, 66).

“... for example, we might be working on a project and there might be something similar on the market and that’s not selling well; that will directly affect this project. ... Other times ... all of a sudden, half way through a project, a new product is released that is similar, better or different, and it might actually directly influence the direction of the project” (IDC:01, 66).

This factor is particularly relevant given how reactive many clients tend to be to their competitors (as discussed in sections 4.3.4 and 5.5.4).

Respondents also called attention to the crucial influence market demand and consumer behaviour can have. However, as discussed (in section 4.5.3) it was highlighted that this is only a real force if it is identified by the client as affecting purchasing decisions. Furthermore, it was felt that in a free market, the consumer’s choices are predominantly driven by price, over other parameters (IDC:04, 24; IDC: 01, 47; ACD:02, 16; IDC:14, 55).

5.7.4 > Key Findings

Overall, the designer can only have effect by means of what is finally produced; therefore, what is implemented will ultimately set the extent to which the consultant will address responsible design goals. However, numerous disciplines (internal and external to the client) are commonly involved in determining the final outcome, each of which can have a significant impact; even determining whether the design will be produced. Furthermore, once the designer has left the process, their intentions are at the mercy of those involved in bringing it to production, and the results often suffer.

The critical factor: The possibility for design consultants to address responsible design goals is determined by what is finally produced, and whether their intentions remain intact after the impact of the other parties involved in the product creation process.
5.8 > Conclusions

This chapter presented the second level of findings from the research; examining what determines the possibility for an industrial design consultant to achieve responsible design within their commercial remit. The chapter contents are structured around a framework of six key areas identified from the analysis. These areas together encompass the series of factors at play, representing them at a more fundamental level. Each of the areas needs to be appeased if the consultant is to have effect, and the extent of their effect will depend on the combination of how all six are resolved; that is, the overall outcome may be diminished by any of the six areas. (Appendix I contains an adjunct theoretical discussion of this relationship).

The six key areas identified are:

A: The knowledge and understanding of how to address responsible design goals

This refers to the understanding and knowledge which exists to guide any efforts toward the goals. In order for the consultant to effect a positive change it is necessary to understand, with confidence, what constitutes a positive effect and how it can be accomplished. Any intentional results will be limited to the extent of that understanding.

B: The consultant’s motivations

This accounts for the consultant’s interest in addressing responsible design goals. In order for the consultant to pursue such goals, they need to be driven or inclined to do so, and the extent of their efforts and actions will be determined by what motivates them.

C: The consultant’s capabilities

This represents the consultant’s capacity to create options which could address the goals. In order for the consultant to effect a change, they need to be able to generate options and solutions which can have a positive effect, and this is dependent on their design abilities.

D: The opportunity available

This area regards the level of opportunity available for the consultant to act on the goals. The consultant’s possibility to pursue responsible design goals will be limited by the characteristics of each design job they are involved in and the opportunities it presents and allows.

E: The level of influence the consultant has

This accounts for the level of influence the consultant can achieve. Given the nature of the consultant’s role, this aspect determines their actual effect on the final result, and therefore the extent their intentions get carried forward.
F: What is implemented

This area regards what is finally implemented. In order for the consultant’s efforts and intentions to have effect, they need to get produced, and survive to reach the user. The final outcome will ultimately determine the extent to which the consultant can have an effect.

From the research it was apparent there are a number of challenges and key observations relating to consultant designers achieving responsible design. Firstly, it was felt that the understanding and knowledge of the topics is still insufficient, and that there is not adequate or suitable guidance; which consultants can be confident in; on how to effectively tackle the goals. Participants also felt that many of the topics depend on factors far outside their control. They were very aware of the limits to their remit, stressing that while they can have a lot of influence, they were not the final decision makers. Furthermore, the consultant’s central motivation is to satisfy the requirements of their clients, and this tends to take precedence; overshadowing other objectives.

On the other hand, participants felt confident that they had the capabilities to tackle the goals, and many of their proficiencies; such as creativity, communication skills, and the ability to envision alternatives; support this prospect. Furthermore, there was evidence that consultants are keen to create products which will last and which people will cherish. However, it was apparent that this expertise and motivation will only come into play where opportunities are available and recognised, or where they can be generated by the consultant. In this regard, it was clear that the details of a commission, and more so the attitudes of those within the higher levels of the client company, are critical. Further to this, clients have to agree with what is proposed and believe it is the right step to take, or it will not go forward. This is heavily dependent on the confidence the consultant can build in the client; which involves aspects such as their relationship, the client’s perception of the designer’s involvement, but more critically, the consultant’s ability to persuade and offer strong backing for their proposals. The value of dealing with the higher levels of a client organisation as a means to enable greater influence was also felt to be key.
Ultimately, the designer has their main impact by means of what is produced, and where a proposal akin to responsible design is made, it still needs to make it through to the market sufficiently intact. However, it was evident that numerous other parties and factors impact on the final outcome, many of which exist outside the consultant’s involvement, and as such, the designer’s intentions are often at the mercy of those involved in bringing it to production.

The crux of effective industrial design can be regarded as identifying the priorities and factors of greatest importance for a product, and combining them in a compelling form, despite the restrictions. However, it was apparent that what is possible will be mitigated by what is acceptable, and that proposals need to fall within the expectations of the client and market, or what they are willing to take on. Therefore, for responsible design goals to be achieved more widely, those goals will need to be recognised among the factors of importance for a project and also need to be made sufficiently relevant to the client, the user, and the product’s sales potential.

Figure 5.2 summarises the main conclusions from this chapter, indicating the critical factors for each key area affecting the consultant designer achieving responsible design within their commercial remit.
Figure 5.2: Conclusions - The critical determining factors
6.0 THEORY DEVELOPMENT: THE FORMATION OF RESPONSIBLE DESIGN BEHAVIOUR

This chapter presents a development of theory which examines what shapes an industrial design consultant’s design behaviour and whether it will incorporate responsible design objectives. It reviews existing knowledge regarding design activities and the antecedents to pro-social behaviour, in combination with the findings from the primary research to propose a theoretical model depicting the conditions of a consultant’s responsible design behaviour.
6.1 > Introduction

The previous two chapters investigated the industrial design consultant’s context, and what determines the possibility for the consultant to enact responsible design within their commercial remit. This chapter will look more specifically at the individual industrial design consultant. It presents a development of theory which accounts for the formation of a consultant’s design behaviour, and whether it will incorporate tendencies towards responsible design. This is achieved by combining the observations and learnings from the primary research with existing theory to identify what informs the consultant designer’s responsible behaviour.

This chapter addresses the research question:

*What shapes the industrial design consultant’s responsible design behaviour?*

To investigate this, the chapter consists of three sections which examine:

- What constitutes design activities and behaviours
- What predicates a designer’s prosocial\(^1\) behaviour
- What aspects of consultancy design affect the consultant designer’s formation of responsible design behaviour

6.2 > Design Activities and Behaviours

The first aspect to be examined regarding the consultant’s responsible behaviour is what constitutes designing and design behaviours? Over recent decades there has been an expanding body of research into the activities which make up designing. Much of this research has been brought together in the writings of Bryan Lawson and Nigel Cross, with other significant contributors including Donald Schön, Jane Darke and more recently Kees Dorst. This section collates observations from the primary research with current knowledge relating to what has been referred to as ‘designerly’ ways of knowing, thinking and acting (Cross, 1982) to present a description of the elements incorporated in the design behaviour of a consultant.

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\(^1\) Prosocial behaviour has been defined as “voluntary intentional behavior that results in benefits for another” (Eisenberg & Miller, 1987, p.92).
6.2.1 > Designing

Designers demonstrate their own particular characteristics; many of which have been recognised as distinguishable from other scientific and scholarly ways of thinking (Cross, 2007; Lawson & Dorst, 2009; Visser, 2009a). Visser explains that the level of similarity or difference of design thinking varies in different design situations, but poses:

“the commonalities between all the different forms of design thinking are sufficiently distinctive from the characteristics of other cognitive activities, to consider design a specific, generic cognitive activity” (Visser, 2009a, p.216)

In his seminal paper on design ability, Cross (1990, p.130) explains that designers typically:

“produce novel, unexpected solutions; tolerate uncertainty, working with incomplete information; apply imagination and constructive forethought to practical problems; and use drawings and other modelling media as means of problem solving”.

From the exploration of these activities he also generates the following list of the designer’s core abilities:

- resolving ill-defined problems
- adopting solution-focussed cognitive strategies
- employing abductive or appositional thinking
- using non-verbal, graphic or spatial modelling media

(Cross, 1990, p.132)

These characteristics have been supported by numerous subsequent authors and according to Dorst (2004) reflect a general consensus. However, it is also felt they are somewhat static, and do not adequately represent or distinguish the act of designing (Dorst, 2004; Lawson & Dorst, 2009). From the research conducted in this project, it was evident that designing incorporates both a series of activities, and a set of mechanisms, or tactics, to enact those activities. These two areas are examined in turn below.

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2 It should be highlighted that while design is associated with novelty and originality, a vast amount of industrial design is actually based on iteration and making variations of previous designs (see section 4.4.1) (see also: Cross, 1990; Cooper & Press, 1995). Regardless, Cross comments that “clients often do want designers to transcend the obvious and the mundane, and to produce proposals which are exciting and stimulating as well as merely practical.” (1990, p.130)
6.2.2 Design Activities

Analysis of the interview data revealed that the crux of design consulting can be explained as: meeting (or surpassing) the expectations and requirements of clients by identifying what is of importance on a project, and combining or synthesising those elements (despite restrictions) into compelling proposals which are appropriate and acceptable to the client, customers and users (see also section 5.8).

Within this, there are a set of discernible objectives that overlap or occur concurrently within the consultant’s design activities. These are:

- Formulating the task and recognising the true nature of the design problem or goal.
  “A lot of that is about trying to probe; not always accepting a given statement, but questioning that statement, challenging, trying to understand beneath it, trying to get people to ;-; pushing questions back on to people” (IDC:16, 13).

- Identifying the requirements and objectives of the project, and determining their relative importance for the design outcome, as well as for the client, customers and users.
  “… maybe one of the first things design is good at is trying to work out which are the important bits of information, or which ones seemingly are going to have the most influence on the outcome.” (IDC:16, 12)

- Generating proposals which manifest combinations of those requirements and objectives.
  “As a designer, it’s your interpretation of these elements, and the synthesis of them all ... [that] results in the end design” (IDC:03 , 36).

- Gauging what will be appropriate and acceptable to the client, customers and users.
  “I guess that’s one thing we’re really aware of that you can design something which is quite advanced and new, but whether a consumer is going to take up on it, is another thing - making sure it’s appropriate. Again, it’s back to kind of; is the market really ready for it?” (IDC:17, 19)

- Making their proposals compelling, and providing a form of backing for them.
  “It’s that wow factor that grabs their attention, and our process would always be to try and present a wow factor first to buy them in; to get peoples' confidence and ... stimulate peoples' interest and then build layers beneath that.” (IDC:10, 23)

Lawson (2005) presents a similar model of designers’ cognitive activities and abilities, which builds on Cross’s conclusions (above) along with those of Schön
(1983). It is constructed around the following five sets of skills\(^3\) (a more detailed explanation of these is provided in Appendix J):

- ‘formulating’: referring to the skills used to understand problems and describe them
- ‘moving’: accounting for the skills employed to make design propositions, or ‘moves’ towards solutions
- ‘representing’: referring to the skills used to give representation to the propositions
- ‘evaluating’: meaning the skills used to regulate or evaluate the propositions
- ‘reflecting’/‘managing’: encapsulating the activities which relate to monitoring, supporting and learning from the whole design process


![Figure 6.1: Lawson’s model of design activities (recreated from: Lawson & Dorst, 2009, p.51)](image)

The activities identified in this research project (as discussed above) align with these five skills, but identify two critical refinements: the consultant’s need to understand the relative importance of the design requirements for the client, customers and

\(^3\) Lawson’s model presents similarities to problem solving theories in psychology, such as Sternberg’s Problem Solving Cycle, which contains the following seven metacomponents: (a) problem identification; (b) problem definition; (c) formulation of problem-solving strategies; (d) formulation of mental and external representations and organisations of problems and their associated information, (e) allocation of resources, (f) monitoring of problem solving, and (g) evaluation of problem solving (Sternberg, 1996); however, it can be seen that designers demonstrate their own particular characteristics in how they approach these stages (see Appendix J for more).
users, and to gauge what will be appropriate and acceptable to them; along with the consultant’s need to provide backing and support for proposals, particularly where the aim is to encourage additional objectives such as responsible design.

Numerous other models of designing also exist in the literature; however many tend to be theoretical and prescriptive, rather than descriptive of actual behaviour, and frequently they interpret design as a linear progression. The unstructured nature of designing does not often relate to such a representation; rather, descriptions need to incorporate the tendency for designing to have a lack of prescribed order, and to involve cycles towards a solution. Schön (1983) best articulated this, explaining design consists of: framing a problem; performing moves towards a solution; and evaluating those moves; which then enables the generation of new frames or moves (see figure 6.2). This looping or spiralling progression inherent in designing is echoed in other descriptions including those of practitioners such as Brown and Wyatt (2010).

Figure 6.2: A graphical representation of Schön’s (1983) description of design

To better describe the full scope of design behaviour, however, it is also necessary to examine the mechanisms and tactics which designers employ to enact their abilities. These are investigated in the following section.

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4 For a broad collection of existing design models see Dubberly (2004).

5 See section 6.2.3b for an explanation of framing in design.
6.2.3 > Mechanisms of Designing

A key characteristic of designing is the co-evolution of a design problem and solution. A number of consultants interviewed spoke about how the understanding of a design problem, and particularly what the client requires, evolves during the project and in reaction to the work generated (IDC:18, 27; IDC:08, 6; IDC:22, 17; IDC:21, 6; IDC:20, 14). In this way, a sequential model of receiving a brief and analysing the problem before creating solutions does not easily apply. Instead, it has been identified that design problems and solutions typically evolve alongside each other (Cross, 1999; Dorst, 2003; Lawson, 2004b).

“What you need to know about the problem only becomes apparent as you’re trying to solve it.” (Architect Richard MacCormac, cited in Cross, 1999, p.29)

Design problems are also widely considered as ‘wicked problems’; denoting how they are mostly ill-formulated, open ended and lacking in predetermined solutions or right and wrong answers (Rittel & Webber, 1973; Cross, 1990; Buchanan, 1992; Lawson, 2005; Visser, 2009a). Two main reasons for this are that different parties contribute to the formulation of a design problem (such as clients, users and legislators, along with designers themselves); and that those additional parties involved are seldom able to clearly explain or articulate their input (Lawson, 2004b, p.13).

From the data gathered in this research, it was evident that in practice the extent to which design problems are determined varies across the consultant’s work (see section 4.4). Dorst (2003; 2006) suggests there are three different states: design problems with hard and unalterable requirements, which resemble traditional determined problems; those under-determined, which provide little direction or restriction; and those over-determined, where the level of constraints mean there are many irreconcilable conflicts. However, it would appear from the interview data that two additional dimensions need to be considered: the degree to which it is known what the product will be; and the degree to which it is known how it will achieve its intended function (see section 4.4.1).

Each situation therefore, requires a designer to understand the form of the particular problem and what is required to deal with its indeterminacy. Lawson and
Dorst (2009) stress that the means and activities to do this are at least as critical as those to generate solutions. In relation to this, it was evident from the primary data collected that designers invest a lot of effort challenging and understanding their briefs, or conducting front-end research and exploration, to understand the true design problem. It was also apparent that in the case of the consultant, their formulation of design problems is also dependent on the client, with many of the activities mentioned; such as re-briefing, alignment workshops, and early probing concepts (IDC:11, 46; IDC:19, 15; IDC:18, 19); directed towards the client, and reliant on their input.

Cross (1982; 2004; 2011) explains that the designer’s investigation of a problem is frequently undertaken by quickly generating initial tentative solutions to explore and better define the design task and to allow relevant features to emerge. According to Lawson (2005) this can involve reformulating and restructuring the problem (problem-solving view of design) or may include identifying and developing explicit elements in the design situation (conversational view). Lera (1981) also explains that designers use simplified models, conceptualisations, or internal representations of the design problem to make it more cognitively manageable, and to aid conjecture generation.

**6.2.3a > Primary Generators**

One key observation is the designer’s tendency to introduce an extra element (or group of elements) from their own intellectual program as a substitute for absent problem definition, and as a point of departure to conjecture solutions (Darke, 1979; Cross, 1982; Lawson, 1994; 2004a; Lawson & Dorst, 2009; Cross, 2011). These ‘primary generators’ exist before the requirements are analysed in detail, and are usually self imposed and strongly valued, based on the designer’s own subjective judgements (Darke, 1979). Lawson (2004a; 2005) explains they originate from the collection of overarching interests, beliefs and attitudes which the designer brings to the project⁶; stressing that designers do not enter the design situation empty handed but have their own set of ‘guiding principles’ acquired over

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⁶ Similarly, Buchanan (1992, p.16) refers to the ‘Weltanschauung’ of the designer, identifying the intellectual perspective, or ‘world-view’ of the designer as an integral part of the design process.
time. These principles may concern any aspect of design; such as form and aesthetics, how design is practised, or approaches to technology or sustainability; and in some cases may grow to resemble a design philosophy or theory that characterises the designer’s work (Lawson, 1994; Lawson, 2005; Lawson & Dorst, 2009). For example, in the interviews, one design director explained how they have three facets to how they approach each design situation: insight, creativity and delivery; and that they rely on a overarching philosophy of collaboration (IDC:17, 45). Overall, it is clear that the designer’s preformed principles and primary generators will have a significant effect on the direction the product outcome will take.

6.2.3b > Framing

Schön (1983) established that designers also tend to selectively view design situations from a particular perspective, thus ‘framing’ the context in order to determine their strategies of approach. Posing these settings, enables the designer to handle the complexity of design problems by temporarily suspending some of the issues and imposing a coherence or structure to guide their thinking (Schön, 1988; Lawson, 2005; Lawson & Dorst, 2009; Cross, 2011). Further to this, designers construct new frames as ways of resetting the problem and to offer routes to alternative solutions (Schön, 1983; Cross, 2004). Given each designer will construe a design task differently, this leads them to distinct patterns of designing and differing solution proposals. The designer’s ability to appropriately frame the problem critically affects the quality of their design work; making it a crucial and central skill in designing (Lawson & Dorst, 2009) and by extension, a critical aspect of undertaking responsible design. Although designers often represent their frames by simple metaphors, Dorst (2011) explains they are a complex composite of the designer’s perception of a problem situation; the concepts they have adopted to describe it; and a working principle that underpins their views. In this way, framing can be heavily value-laden and dependent on what the individual designer perceives as higher priority, or of greater interest to them (Murty, 2006; Paton & Dorst, 2011). It was evident in the primary research, that for the consultant, this will also include what is perceived as important to the client, customers and users (as discussed in section 6.2.2).
Other cognitive mechanisms evident in designing include what have been referred to as precedents, rules, schemata, gambits, and ‘types’\(^7\) (Schön, 1988; Lawson, 2004a). Cognitive psychologists argue that rather than amassing features, people form representations or ‘prototypes’ from which to reason and make recognitions (Schön, 1988). Designers constantly gather, reflect upon, and store design references; both from their own area and others; and these provide an important base of precedents and hints for ways of addressing design issues (Lawson & Dorst, 2009). Their experiences and knowledge also contribute to schemata or internalised devices and representations which enable them to interpret events and recognise underlying structures in design situations (Lawson, 2004a; 2005).

Similarly, designers can develop a stock of gambits or ‘tricks’ learned from previous design experiences, which provide sequences of moves that can be applied to assist in progressing aspects of the design (Lawson, 2004b; 2005; Lawson & Dorst, 2009).

Designing, therefore, not only depends on understanding the design situation, but also importantly on drawing parallels or recognising patterns with situations from other contexts, so the designer can apply their accumulated knowledge and precedents (Cross, 2004; Lawson, 2005). This again has a significant relevance for the designer’s ability to recognise opportunities and ways to enact responsible design. It is also clear that the kinds of experiences and references the designer seeks out are influenced by their interests and guiding principles, which are in turn strengthened by the experience gained; resembling a self-reinforcing loop.

Further to this, as designers develop in their expertise, they acquire broader experience and form richer concepts about their domain and responsibilities from which to draw on (Lawson, 2005; Birkett, 2010). It should also be highlighted, however, that how designers design, is firstly subject to the details of the particular circumstances (Simon, 1996); as evident from the findings discussed in Chapters

\(^7\) Schön (1988) who uses ‘types’ to refer to the exemplars, prototypes, precedents, and images which the designer accumulates, notes four varieties: Functional Types, which are examples or typical details used for information or intermediate premises; References, which are particular examples to generate or justify a leading idea; Spatial Gestalts, which are metaphors or gestalt used to interpret the design situation; and Experiential Archetypes which are images of experiences that supply empathic premises for design reasoning.
Four and Five. As designers develop, it is their ability to work within these conditions that progresses, helped by the co-evolution of their design tactics and devices. Lawson (2004a) explains that the development of mechanisms such as schemata, precedents and guiding principles, mark stages of progress in the acquisition of design expertise.8

6.2.4 > Judgements and Balancing Requirements

Design problems involve various criteria, which often conflict or compete with one another (such as aesthetics, materials, production, and human factors, for example, or the requirements of the different parties involved); and as stated earlier in section 6.2.2 the need to find an appropriate resolve or synthesis is central to the designer’s activities (Cross, 1990; Cooper & Press, 1995; Lawson, 2005; Cross, 2007). Further to this, designers have to consider factors that have no common currency for evaluation, which means subjective judgements are unavoidable (Lawson, 2005).

Judgement can be described as a means of decision-making not based on logic, but which is dependent on knowledge accumulated from experiences of complex situations and their consequences (Nelson & Stolterman, 2003). Schön (1988) presents that designers’ judgements are frequently acts of perception in which they recognise matches or mismatches to internal references. Similarly it is proposed that designers make subjective value judgements by using implicit scales of importance or guidelines which they have derived (Lera, 1981; Kolko, 2010). Design judgements, therefore, can be conscious, subconscious or the negotiation between both, and are frequently integrated and inseparable from other design activities. Moreover, Nelson and Stolterman (2003) suggest that designing involves forms of judgement particular to its activities, as summarised in table 6.1.

8 For more on the progression of expertise, see Dreyfus’s model of expertise development (discussed in: Dorst, 2004; Lawson & Dorst, 2009).
Table 6.1: Forms of judgement evident in designers’ activities

<table>
<thead>
<tr>
<th>Forms of Judgement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default judgements</td>
<td>Resembling instinct, these are automatic responses to a triggering situation made without deliberation. Skills, such as driving, are examples of this, where judgements change from being deliberated to being second nature once acquired.</td>
</tr>
<tr>
<td>Appreciative judgements</td>
<td>Determining what is background in a situation, and what is of importance and requires attention.</td>
</tr>
<tr>
<td>Appearance judgements</td>
<td>Determinations of the style, nature and character of designs. These judgements are complex and multi-layered, relating to taste in concept, and grounded in qualities related to consensus; such as a preference based on the designer’s awareness of current styles.</td>
</tr>
<tr>
<td>Quality judgements</td>
<td>Unlike ‘appearance judgements’ which relate to external references, ‘quality judgements’ are made within the confines of the concept itself and relate to a quest for excellence.</td>
</tr>
<tr>
<td>Instrumental judgements</td>
<td>These are the basis of competency or the mediation of the means and instruments to reach a required result.</td>
</tr>
<tr>
<td>Navigational judgements</td>
<td>The ability to make choices in particular environments by formulating essential situational knowledge applicable to that circumstance.</td>
</tr>
<tr>
<td>Framing judgements</td>
<td>As discussed previously, this relates to defining the area or limits of the problem which will be dealt with.</td>
</tr>
<tr>
<td>Compositional judgements</td>
<td>Central to the creation of something new, these are based on forming relationships from the palette of elements to create a compositional whole which will display the desired attributes.</td>
</tr>
<tr>
<td>Core judgements</td>
<td>These are ‘absolute presuppositions’ buried deep inside individuals which form the basis of meaning and value; and are formed by the designer’s character, life experience, creative experience and references of excellence (or ‘experience of the sublime’).</td>
</tr>
<tr>
<td>Mediative judgements</td>
<td>Overarching judgements which determine how the balance and proportion of other judgements determine the outcome of the final ‘whole’ result.</td>
</tr>
</tbody>
</table>

It is evident from these that design judgements are founded on the designer’s character, background, formed values, and professional experience; and that therefore, these aspects are of great importance to the pursuit of responsible design.
6.2.5 > Experience

The significance of experience for a designer is widely described in the literature (Lloyd & Scott, 1994; Lawson & Dorst, 2009; Cross, 2011) and was also clearly discernible in the primary research findings (IDC:22, 6; IDC:10, 14; IDC:20, 31; IDC: 03, 9; IDC:04, 40; ACD:01, 6; IDC:13, 7; IDC:14, 14-16; IDC:11, 48; IDC:16, 18; WT:Blue, 161; WT:Red, 164). Zeisel (1984) explains that designers operate with two types of information: knowledge (or heuristic catalysts) for proposing ideas, and knowledge for testing those proposals.

“Learning design doesn’t just involve skill acquisition, it also involves the learning of declarative knowledge, and the building up of a set of experiences that can be directly used in new projects.” (Dorst, 2004, p. 76)

Throughout the literature, the importance of experience is apparent for the formation of design mechanisms and strategies, as well as for decision making and design judgements (see for example: Lawson, 2005; Cross, 2007; Kolko, 2010). Cross (2004) remarks that experience enables designers to quickly identify appropriate frames, for example, and that expert designers are more pro-active in applying different framings in order to direct solution conjectures. Birkett (2010) also highlights how design experience has particular relevance for how designer’s understand consequences and develop responsibility. She explains development occurs in three areas: knowledge, ethical development and the designer’s understanding of their role in varying contexts; which result in greater understanding of responsibilities and greater ability to “discuss and intervene in the ethical and moral issues of design” (Birkett et al., 2009, p. 975). (The topic of the consultant’s sense of responsibility is returned to in sections 6.4.3 and 6.4.4). In addition, numerous studies identify experience as a critical aspect for forming intuition and developing abductive thought9, which are considered the dominant aspects behind designers’ reasoning and actions (Davies & Talbot, 1987; Feist, 1999; Durling, 2003; Marina & Cooper, 2003; Kolko, 2010). Given its prevalence in relation to the functions of a designer, therefore, the consultant’s experience is clearly a significant factor in their adoption of responsible design also.

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9 The designer’s preferred mode of reasoning is referred to as abductive thinking; a generative reasoning based on the logic of conjecture (or what might be) which is responsible for insight and the creation of new knowledge (Cross, 1990; Martin, 2007; Kolko, 2010). One critical aspect of abductive thought is that it is directly assisted and aided by personal experience (Kolko, 2010).
6.2.6 > Section Conclusions

The industrial design consultant’s core activities can be accounted for by five sets of abilities: formulating the design situation; identifying the importance of the requirements; combining the elements; gauging what will be appropriate and acceptable; and generating compelling proposals with a level of backing. In addition, designers demonstrate skills related to management and reflection which support their design process. These sets of abilities frequently overlap, and design typically resembles a looped or spiralling progression wherein the design problem and solution evolve alongside each other.

To enact these design activities and generate proposals, designers employ a series of mechanisms and devices including: introducing primary generators; framing and reframing the design problem; applying guiding principles; and utilising precedents, exemplars, schemata and gambits. These rely on the designer recognising patterns and parallels with other contexts; and are dependent on them acquiring design knowledge, references, and experience. Moreover, these mechanisms affect what form of design solution the consultant will generate. They are at the core of their designing and, therefore, a significant aspect of their responsible designing also.

A central aspect of design is balancing requirements, which invariably involves making judgements inseparable from the other design activities. Design judgements are heavily dependent on the knowledge accumulated by the designer, and are frequently acts of perception involving comparison to internal references founded on the designer’s character, background, formed values, and professional experience. Experience is a prevalent factor across the topics of the consultant’s design behaviour, infiltrating their understanding of responsibilities; their intuition and abductive thought; as well as their formation and use of design skills, mechanisms and strategies.

Figure 6.3 summarises and depicts the elements of the consultant’s design behaviour identified from this section. Overall, it is apparent that designing is based on conscious and unconscious cognitive processes. It involves reasoned, emotional and habitual behaviours, which are dependent on the designer’s values, interests,
experience, beliefs, and intellectual perspective (or world view). This suggests that in order for the design consultant to undertake responsible design goals, these foundational aspects; the design mechanisms they employ; and the basis of their judgements; will need to be at least partly motivated and informed by notions related to responsible goals.
Figure 6.3: The industrial design consultant’s design behaviour
6.3 > The Predication of Responsible Behaviour

This section will examine a set of theories to identify the main antecedents to behaviour, in particular those motivating prosocial and responsible action.

It investigates the question:

*What predicates the consultant’s responsible behaviour?*

Numerous theoretical models have been developed across different fields, including psychology, economics and sociology to explain the aspects which shape a person’s behaviour, and within the literature there is an almost insurmountable set of related research and writing. For example, Hines et al’s (1987) meta-analysis on responsible environmental behaviour alone comprises of 128 studies (from 380 initially identified); while Bamberg and Möser (2007) expand this by 46 studies (from 163 empirical papers) in their more recent replicate analysis. Similarly, Jackson (2005) reviews a sample of over twenty different theories and models of behaviour in his investigation of sustainable consumption. Despite the breadth of the literature, however, it is difficult to isolate a clear set of variables which predicate responsible behaviour, and there are a number of conflicts and frictions which occur. The sub-sections below investigate the main dissonant topics evident across the literature. In the process, a series of the key theories are evaluated, and related to the primary research data. (Appendix K contains a table summarising a larger set of models reviewed pertaining to prosocial behaviour).

The outcome of this section is a set of antecedents to the consultant’s responsible behaviour, identified from existing theory and validated against the findings from the primary research.

6.3.1 > Background to Pro-Social Behavioural Theories

Early models of pro-environmental behaviour were based on the idea that greater knowledge leads to awareness and concern (attitude), which in turn leads to pro-
environmental behaviours \(^\text{10}\) (Kollmuss & Agyeman, 2002). The importance of knowledge was identified in the findings from this research (see section 5.2); and has also been noted by Hines et al (1987) who identify that individuals with greater knowledge were more likely to engage in responsible environmental behaviours. However, as discussed in Chapter Five, other factors affect the possibility to act, and it is now widely accepted that an increase in knowledge alone does not directly lead to pro-environmental or pro-social behaviour (Grob, 1995; Kollmuss & Agyeman, 2002).

“Behavioural change theories agree that simple linear models are inadequate ... Information does not necessarily lead to awareness, nor awareness necessarily lead to changes in behaviour.” (DEFRA, 2008, Annex E, I)

In a similar way, it has been expounded that having pro-social or pro-environmental values and concerns does not necessarily lead to pro-social or pro-environmental action (Blake, 1999; Jackson, 2005). Numerous studies \(^\text{11}\) have demonstrated a misalignment between attitude and behaviour; and explaining what causes these attitude-behaviour gaps is at the core of many behavioural models and has resulted in an array of different theories.

One aspect which differentiates the range of behavioural theories is the types of variables they incorporate. These can be separated into processes and characteristics that are internal to an individual, such as values, attitudes, personal norms or habits; and those external to the individual, such as incentives, situational constraints and social norms. Some approaches give their main attention to one or other set, but recently there has been an increasing attempt to offer more coherent theories that integrate both; for example the work of Stern and his colleagues (Stern et al., 1999; Stern, 2000) or the Comprehensive Action Determination Model (CADM) by Klöckner & Blöbaum (2010). Integrative models, however, present difficulties for testing, and are less suitable for empirical research due to their complexity and the variation of elements included (Jackson, 2005). Jackson (2005)

\(^{10}\) A person’s pro-environmental behaviour can be understood as behaviour that consciously seeks to minimise the negative impact they have on the natural and built world (Kollmuss & Agyeman, 2002, p.240).

\(^{11}\) One particularly illustrative example was a study carried out by Bickman in 1972, where 94 per cent of 500 participants acknowledged responsibility for littering, but only 2 per cent actually picked up litter strategically placed on the way out of the interview (cited in Jackson, 2005).
explains that as such, there is often a tension in behavioural theories between thoroughness and simplicity, and whether they serve a heuristic role, or function as a framework for carrying out detailed empirical research. The aim of this section and chapter is not to identify a theory suitable for testing, but rather to present a more representative portrayal of the conditions which may affect an individual consultant’s behaviour.

6.3.2 > Rational Choice Theories

One clear distinction among behavioural models can be made for those theories constructed around the idea that behaviours are based on rational choice. Rational choice theory suggests that an individual’s behaviour is motivated by purely rational and calculative deliberations regarding the likely costs and benefits of that action (Scott, 2000). It is built on a number of key ideas including the assumptions that choice is deliberated and rational; and that it is made in the pursuit of individual self interest (Jackson, 2005). However, it is argued by many key authors that decision-making in practice is not carried out in this manner. Simon (1957) (recipient of the Nobel Prize for Economics) identifies decision behaviour he calls ‘satisficing’, which explains that people frequently adopt the first option that seems to work, as opposed to optimising or evaluating for the best approach. Similarly Klein (1998; 2009) highlights that people rarely compare options, let alone systematically review them all for costs and benefits. Instead, he explains how decision-making is usually not analytical at all, but involves: intuition to make quick evaluations; mental simulation to imagine courses of action; metaphors to suggest parallels with other situations; and storytelling to consolidate past experiences (Klein, 1998). Such tactics can be seen to relate more closely to the tactics employed by designers, as described earlier in section 6.2.3.

Tversky and Kahneman (1986) also comment that invariance - the notion that different representations (or framings) of a choice problem by an individual must lead to the same choice - underlies rational theory, but this is not possible as features which are more psychologically accessible at the time of the decision will have greater influence; and these vary. Similarly, the values and beliefs that are
salient at any time differ according to the context or situation in which people find themselves; for example, the strength of a person’s environmental values in a professional context can vary significantly from those in a personal situation, and will therefore feature differently in their decisions to act (Biel 2004, cited in Jackson, 2005). Furthermore, as discussed earlier (in section 6.2.3b) generating variable outcomes by framing and reframing a design situation has been identified as a key device employed by designers, and this conflicts with the notion of invariance.

In addition, many now advocate that people employ a dual system of thinking, incorporating an automatic system (System One) that is fast, effortless, emotional, and backed by tacit knowledge; and a reflective system (System Two) which is slower, more deliberated, logical, and backed by explicit knowledge (see for example, Kahneman, 2003 (also a recipient of the Noble Prize in Economics)). Of these two systems, people rely significantly more on the heuristic principles and easily accessible impressions produced by System One (Kahneman, 2011). Again, this relates strongly to the intuitive nature demonstrated by designers, as recognised in the research, and discussed previously (see sections 2.2.10 and 6.2.5).

One further issue with rational choice theory is the notion that individuals act only out of self interest. This raises the question of why individuals feel an obligation or wish to act in altruistic ways; or to obey norms that lead them to actions which are not in their self-interest (Scott, 2000). Such a topic is particularly relevant to responsible design behaviour and will be returned to in section 6.3.4. Overall, therefore, Rational Choice Theory raises more issues than insights into the design consultant’s behaviour.

6.3.3 > Reasoned Action and Planned Behaviour

The most dominant behavioural theory in the literature is arguably Ajzen’s (1985) Theory of Planned Behaviour (TPB); an adjustment of the Theory of Reasoned Action (TRA) (which has its origins in Fishbein’s Expectancy Value Theory) (Ajzen &
Fishbein, 1980). The Theory of Reasoned Action states that the intention to perform a particular behaviour is a joint function of favourable or unfavourable attitude toward the behaviour, and of a subjective norm that encourages or discourages it (Ajzen, 2011). However, TRA is confined to behaviours where people have complete volitional control, and was later expanded into the Theory of Planned Behaviour, to incorporate a person’s perceived behavioural control (PBC) (Ajzen, 2012). This additional element (PBC) reflects both the external conditions that may augment a person’s ability to adopt certain behaviour, and the individual’s perceived ability to carry out the behaviour (Ajzen, 2011). According to TPB, perceived behavioural control, together with behavioural intention, can be used to predict behavioural achievement (Ajzen, 1991). It assumes intention is the immediate antecedent of behaviour, and that these behavioural intentions are formed from attitudes toward the behaviour, subjective norms and perceived behavioural control which are in turn guided by **behavioural beliefs**, **normative beliefs** and **control beliefs**, respectively (Ajzen, 1991). In this way, TPB posits the antecedents of any behaviour are the behavioural beliefs concerning its consequences; normative beliefs concerning the prescriptions of others; and control beliefs concerning perceived behavioural control (see figure 6.4).

![Figure 6.4: Theory of Planned Behaviour](recreated from: Ajzen, 2006)

Ajzen and Fishbein, however, maintain that behaviour is essentially rational and follows reasonably and consistently from the systematic use of the information available (Ajzen & Fishbein, 1980; Ajzen, 2012). As discussed above, this is not the
case, and it is particularly contestable that design behaviour is accountable as reasoned and conscious intention, given the propensity for emotionally driven action and intuition, for example (see sections 2.2.10, 6.2).

TPB also uses the individual’s perceived behavioural control as a proxy for actual behavioural control, assuming that these perceptions accurately reflect the person’s real control in a situation (Ajzen, 2012, p.447).

“To the extent that perceptions of control are veridical, they can serve as a proxy for actual control and contribute to the prediction of behaviour.” (Ajzen, 2012, p.447)

One issue with the veridicality of this is accounted for by Ipsative Theory, which explains that people tend to over or under estimate a situation depending on how they value the event (Frey, 1988). Moreover for a design consultant, their situational circumstances, and particularly the characteristics of the client (as discussed in Chapters Four and Five) bear a significant influence on their actual control and action, but the details of these factors are seldom known in advance. As such, PBC seems an insufficient proxy for actual behavioural control in the case of the design consultant, as it is unlikely to coincide with reality in most cases.

In addition, TPB does not specifically regard an individual’s motivation to comply with normative beliefs (or perceived social pressure); instead Ajzen asserts that:

“people generally tend to be motivated to comply with their social referents and there is therefore relatively little meaningful variance in motivation to comply measures” (2012, p.444).

However, an individual’s motivation to align with the expectations of others is frequently noted as an important aspect of alternative theories of behaviour (Jackson, 2005). Moreover, ‘motivation to comply’ is a particularly relevant aspect of the design consultant’s circumstances, given on the one side their strong will to meet the requirements of their clients; and on the contrary side, their strong tendencies towards creative individuality and non-conformity (see for example: Feist, 1999; Durling, 2003; Marina & Cooper, 2003). Therefore, despite the fact that TPB is widely embraced in behavioural studies, it does not seem sufficient to account for the consultant’s behaviour.
6.3.4 > Moral and Altruistic Behaviour

A further criticism regarding TPB is its treatment of moral antecedents to behaviour. These are only included in so far as they are accounted for by a person’s attitudinal beliefs; however, it is considered that an individual’s morals and altruistic tendencies, are particularly important to understanding pro-social behaviour (Kollmuss & Agyeman, 2002; Jackson, 2005). For example, Grob (1995) identified that personal-philosophical values have the most important effect on a person’s environmental behaviour.

A key theory relating to moral behaviour is Schwartz’s (1977) Norm Activation Model (of Altruistic Behaviour) (NAM) which presents the premise that altruistic behaviour is predominantly motivated by an individual’s Personal Norms (1977, p. 227). These consist of obligations, sanctions and self-expectations which originate in social interaction\(^\text{13}\), but are constructed by the individual and anchored in their concept of self (Schwartz, 1977). Once activated, they are experienced as feelings of moral obligation (as opposed to intentions) to act in a particular manner, and the more important those norms are to an individual’s self-evaluation, the stronger are their feelings of obligation (Schwartz, 1977). Conforming with those feelings results in favourable self-evaluations, such as pride, enhanced self esteem and security; while violation produces negative self-evaluations such as guilt, self-depreciation and loss of self-esteem (Schwartz, 1977). Schwartz’s full theoretical model describes a process moving from the initial perception of need, to the activation of personal norms and the generation of feelings of moral obligation, to the eventual action (see table 6.2). It emphasises two important notions: an individual’s awareness of the consequences of their actions (AC) and their ascription of personal responsibility for those consequences (AR). These relate strongly to the findings of this research, which identified the consultant’s sense of responsibility as a key factor affecting their likelihood to undertake responsible design (see section 5.3.4). This topic will be examined further in section 6.4.3.

\(^{13}\) Within Schwartz’s theory, social (or subjective) norms are not regarded as a direct effect on behaviour, rather as an indirect factor through personal norms. Other studies, however, support their importance, such as Oom de Valle et al (2005) who demonstrated the direct effect of social norms on recycling behaviour.
Table 6.2: Schwartz’s Norm Activation Model of Altruistic Behaviour
(Schwartz, 1977, p.241)

<table>
<thead>
<tr>
<th>I: Activation steps: Perception of need and responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Awareness of a person in a state of need</td>
</tr>
<tr>
<td>2: Perception that there are actions which could relieve the need</td>
</tr>
<tr>
<td>3: Recognition of own ability to provide relief</td>
</tr>
<tr>
<td>4: Apprehension of some responsibility to become involved</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>II: Obligation step: Norm construction and generation of feelings of moral obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5: Activation of preexisting or situationally constructed personal norms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III: Defense steps: Assessment, evaluation, and reassessment of potential responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>6: Assessment of costs and evaluation of probable outcomes</td>
</tr>
<tr>
<td>(The next two steps may be skipped if a particular response clearly optimizes the balance of costs evaluated in step 6. If not, there will be one or more iterations through steps 7 and 8.)</td>
</tr>
<tr>
<td>7: Reassessment and redefinition of the situation by denial of:</td>
</tr>
<tr>
<td>a. state of need (its reality, seriousness)</td>
</tr>
<tr>
<td>b. responsibility to respond</td>
</tr>
<tr>
<td>c. suitability of norms activated thus far and/or others</td>
</tr>
<tr>
<td>8: Iterations of earlier steps in light of reassessments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IV: Response Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>9: Action or inaction response</td>
</tr>
</tbody>
</table>

In a not dissimilar approach to Schwartz, Geller (1995) posits that individuals need to attain what he describes as a state of ‘actively caring’ as a necessary precursor to pro-social behaviour. Outside of convenience or supportive circumstances, actively caring occurs when an individual’s need for self-esteem, belonging, personal control, self-efficacy and optimism have been satisfied; this promotes a sense of outward interest and concern for others that facilitates altruistic tendency and behaviour (Geller, 1995).

Overall, a moral antecedent seems critical to understanding the consultant’s responsible behaviour. This notion will be taken forward and is explored again in section 6.4.
6.3.5 > External Circumstances and Situational Factors

The main shortfall of Schwartz’s theory, which is also evident in TPB, is the assumption that the existence of personal norms or intentions are sufficient for a behaviour to occur without regard for external circumstances and situational factors. Lewin’s Field Theory (1951) explains that to understand or to predict behaviour, the person and their surrounding conditions must be considered as one constellation of interdependent factors; and as such, analysis should start with the situation as a whole. In relation to design, a similar viewpoint is shared by Simon (1996) who emphasises that design is dependent on the particulars of the circumstances. It should be clearly visible that the findings from this research align with such perspectives. The consultant’s behaviour is critically affected by the circumstances of their situation, as discussed throughout the previous two chapters.

One attempt to incorporate situational factors is the Attitude- Behaviour- Context Model (ABC) by Guagnano, Stern and their colleagues (Guagnano et al., 1995; Stern, 2000), which presents attitudinal factors (A) and external conditions (C) as acting in combination to influence behaviour (B). The model posits that for behaviour to occur the combined effect of attitudes and external conditions needs to be a positive. In addition it explains that the relevance of attitude is strongest when contextual factors are neutral, but as the contextual factors become stronger (either compelling or prohibiting the behaviour) attitude has a less significant influence on behaviour (Stern, 2000). This relationship can be represented by an inverted ‘U’ shaped function, as presented in figure 6.5.

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14 The tendency in social psychology to over-value dispositional factors (attitudes, beliefs or higher level psychological constructs) and to under value the influence of situational variables when accounting for variance in behaviour is referred to as ‘fundamental attribution error’ (Ross, 1977; Jackson, 2005).
Another more comprehensive model which incorporates external circumstances is Hines, et al’s (1987) Model of Responsible Environmental Behaviour (MREB) which treats situational factors (such as economic constraints, social pressures and opportunities) as mediators to counteract or strengthen the other factors influencing the behaviour (See figure 6.6). Constructed from a meta-analysis of previous research, MREB also presents that in order for an individual to enact responsible environmental behaviour they must be cognisant of the need to act; possess knowledge of available and appropriate action; possess the skill to apply that knowledge; and have desire to act, which is affected by personality factors including positive attitudes toward the goal, and a sense of obligation and responsibility (Hines et al., 1987). Ölander & Thøgersen (1995) add that motivation leads to behaviour only if a person commands the required abilities to perform it, and the opportunity to carry out their intentions. The basic premises of these two theories can be seen to closely resemble aspects of the six determining areas identified from this research and presented in Chapter Five. While they add validation to the earlier findings; however, there are a number of additional topics which need to be explored in order to fully account for the conditions of a designer’s responsible behaviour.
6.3.6 > Habit and Past Experiences

Another limitation of TPB and NAM is their treatment of past efforts. In the case of TPB, this is incorporated generally as part of the individual’s attitude; however, this seems insufficient for considerations of consultants’ behaviour. As discussed in section 6.2.5, a consultant’s experience plays a significant role in their activities, and is a key factor in their responsible design behaviour. One theory which gives it more pronounced attention is Bagozzi and Warshaw (1990) who propose that the frequency and recency of previous attempts at similar behaviour, along with the attitudes and expectations of success (or failure) a person forms, impact on future intentions.

Other considerations of past experience relate to repetitive behaviour, particularly where habits occur. In the *Theory of Interpersonal Behaviour* (TIB) Triandis (1976) points out that behaviour is a function of behavioural intentions, the individual’s ability to emit the act (which requires ‘facilitating conditions’) and strength of habit. The more often decisions are made with a satisfying outcome in a similar set of circumstances, the less influence deliberation has, and the more automated behavioural patterns become; resulting in habit becoming a better predictor of behaviour than intention (Triandis, 1976). Verplanken and Aarts (1999) comment that only when habits are weak or absent do the more complex predictors of
behavioural models have relevance. Furthermore, they assert that where a person has strong habits, they are less receptive to new information and give little attention to alternative courses of action (Verplanken & Aarts, 1999).

It is not immediately evident how these observations relate to the consultant’s design behaviour. On the one hand, a consultant’s design circumstances typically vary and they are driven by a search for new and alternative approaches, suggesting they do not conform to habit; however, designers also have a strong reliance on preformed and automated design tactics (such as primary generators, framings and precedents, as discussed in section 6.2.3) and it is this which suggests they may demonstrate habitual behaviour in their designing. (The actual extent to which this applies requires further study). It is possible that how a consultant approaches a design problem may be based on habit, strengthened by the success of past endeavours; and as such, the observations from Triandis, and Verplanken and Arts, may be significant to a consultant developing responsible design behaviour.

Triandis also posits in TIB that a person’s behavioural intentions are a function of social factors (norms, roles, social contracts and the individual’s self-concept); the value to the actor of the perceived consequences of the behaviour; as well as affective factors (Triandis, 1976). TIB is one of the few models to explicitly include affect and emotional responses to a decision and its situation (Jackson, 2005). Given emotion and affect are important aspects of designing and the designer’s construct (Zaccai, 1990; Pine & Gilmore, 1999; Lawson, 2005; Mattus, 2008) this is a particularly relevant addition to understanding their behaviour. Triandis’ inclusion of ‘perceived consequences’ is also a critical device which resembles aspects of Schwartz’s theory, and strongly relates to the findings of this research which identified the consultant’s sense of responsibility as a key factor in their adoption of responsible design (see section 5.3.4).
Another theory which incorporates habit, is Klöckner and Blöbaum’s (2010) integrative *Comprehensive Action Determination Model* (CADM) (see figure 6.8). Combining the main assumptions of the TPB, with those of NAM, habits, and Ipsative theory, CADM proposes that individual behaviour is a function of intentional, normative, situational, and habitual influences, which interrelate differently across time (Klöckner & Blöbaum, 2010). Unlike NAM, which assumes that personal norms are a direct predictor of behaviour, CADM treats them as indirect and mediated by intentional and habitual processes. In this way, it presents that personal and social norms, together with awareness of need and consequences, provide references to generate the behavioural intention. Habitual and situational factors then also mediate the effect intention has on behaviour (Klöckner & Blöbaum, 2010).

CADM integrates a number of factors identified in this section which can be seen as relevant to understanding the consultant’s responsible behaviour; however, the relationship of these factors requires revision to reflect the particulars of the consultant’s circumstances, which are considered in the following section.
6.3.7 > Section Conclusions

Different research fields, including sociology, socio-psychology and economics, provide an impressive variety of empirical studies and explanatory approaches towards understanding behaviour and pro-social activity. It is noticeable that each theoretical direction bears a different relevance dependent on the manner of the behaviour being considered, but that none sufficiently accounts for the consultant designer’s particular circumstances. As such, it was necessary to consider multiple theories to establish what motivates their behaviour. From a review of key theories, it became apparent that a number of internal and external aspects predicate behaviour; and that particular factors will have greater impact in whether that behaviour relates to pro-social and pro-environmental objectives.

An individual’s attitudes and intentions to act are commonly regarded in the literature as the main antecedents to behaviour. These require a person to recognise the need to act, as well as to care, or have a desire to act; and for
altruistic behaviour, Schwartz (1977) highlights the particular importance of a person’s moral feeling of obligation. Such moral feelings depend on their awareness of the consequences of their action (or inaction); the value they place on those consequences; as well as their ascription of responsibility; and are affected by the individual's philosophical values, tendencies and personal norms.

It is widely accepted, however, that a person’s awareness of a need to act, or their intention to act, are not sufficient to lead to the enactment of that behaviour. One crucial factor is the strengthening or counteracting effects of situational circumstances (as was also presented in section 5.5). For behaviour to occur the combined effect of attitudes and external conditions needs to be a positive, and as contextual factors become stronger (either compelling or prohibiting the behaviour) a person’s attitude is thought to have less significance on their actions (Guagnano et al., 1995; Stern, 2000). Social norms and the expectations of others are also potential factors affecting an individual’s behaviour; but these are dependent on the individual’s motivation to comply. In the case of the design consultant, this factor has special relevance given their will to meet the expectations of their clients.

Another antecedent to behaviour that is relevant for the consultant, is their attitudes and expectations of success (in regard to achieving the objective of the behaviour). This incorporates their perceived ability to act; their knowledge of available and appropriate action; as well as their sense of possibility to achieve a result (as also identified in section 5.3). These factors are influenced by the details of the circumstance, and can also be affected by the frequency, recency and outcome of previous attempts at similar actions. Further to this, the more often decisions are made with a satisfying outcome, the less receptive a person will be to new information, and the more likely deliberation will be replaced with habitual thinking. This suggests that altering existing behaviours or introducing new forms of action would require greater stimulus; and is relevant because the consultant’s reliance on preformed and automated tactics in designing (see section 6.2) may resemble habitual behaviour.
In conclusion, a consultant’s adoption of responsible design centres on their attitude and intention towards such behaviour. These are a function of: their personal traits and self expectations; their perceived ability to act and to have effect; and their sense of responsibility (each of which is predicated by a further set of factors) as well as, social norms and incentives; and past experiences. The formation of an intention to act is subject to the existence of habits, and is then facilitated or mitigated by the contextual factors, opportunities, and requirements influencing the consultant’s circumstances; along with their will to comply with those restrictions and expectations. Overall, the consultant’s behaviours do not exist independent of time, in that they are informed by past events; affected by factors at the time of the behaviour; and formed on aspirations and intentions for future outcomes. Figure 6.9 depicts the set of antecedents recognised in the theory review which predicate prosocial behaviour.
Figure 6.9: Antecedents to prosocial behaviour
6.4 > The Particulars of Consultancy Behaviour

Following on from the previous two sections; which examined what constitutes design behaviour, and what predicates prosocial behaviour, respectively; this section will explore how the particulars of the consultant’s circumstances also contribute to their behaviour. Throughout the research and analysis, three notions have presented repeatedly; the consultant’s remit, role and responsibilities. Using the findings from the primary research coupled with existing theory, these three notions will be used as a basis to further examine what shapes the consultant designer’s responsible design behaviour.

This section investigates the question:

*What aspects of consultancy design particularly affect the formation of responsible design behaviour?*

6.4.1 > The Consultant’s Remit

The findings presented in Chapter Four outline (among other things) how a design consultant’s remit varies greatly across clients and with each engagement. As discussed in section 5.5, it is also evident from the data that a consultant’s remit is a fundamental determinant of their opportunity to undertake responsible design, and a limitation to what they can achieve. A person’s remit refers to the task or area of activity officially assigned to them (Oxford Dictionaries, 2010). In the case of the consultant, their remit is predominately decided by the client (in conjunction with the consultancy and the designer). The primary research findings indicate it is mainly dependent on such aspects as the client’s characteristics and requirements; their appreciation and perception of design; and the client-consultant relationship (see also section 4.3).

It was also apparent from the interview discussions, however, that the consultant’s remit is not often explicit or defined. It was noticeable that a degree of attention is frequently required by the consultant to understand what their clients (particularly newer clients) expect from them, and more importantly, what those clients are open to, or willing to accept (IDC:06, 17; IDC:16, 16).
“... you're not developing the whole product, you're doing the design work for a product, so, there's a certain greyness about the boundaries of that remit” (IDC:16, 16).

This perceptible ‘greyness’, suggests that there is notable opportunity for the consultant to influence their own remit; and that the final extents are ultimately reliant on their willingness (and ability) to expand its boundaries, or challenge the client’s perception of what they can offer. “It's more about pushing them within our remit, and a little bit further” (IDC:22, 28). However, it was also identified that a degree of caution is often exercised not to push the client too much, particularly where the progression of a business relationship is in play (IDC:17, 37; IDC:22, 27) (see section 5.3.2). Ultimately, what consultants themselves perceive or interpret as their remit, and what they can successfully impart to the client in that regard, will have a crucial impact on forming their behaviour.

6.4.2 > The Consultant’s Role Assumption

The consultant’s will to meet the expectations of their clients is strongly evident throughout the primary research (IDC:16, 27; IDC:17, 5; IDC:22, 11; IDC:02, 53; IDC:06, 4; IDC:18, 11) (see also section 5.3.2); however, it is also apparent that enacting this is undertaken in different manners, and that variant roles are assumed by the consultant; either consciously or unconsciously. Analysis of the interview data revealed there were a series of different approaches referred to by the consultants involved; and that these can be arranged according to two dualities: the level of leadership, or servility demonstrated; and the level of autonomy, or interaction exhibited. Figure 6.10 shows the array of terms present in the interview data, and their arrangement relating to these two sets of traits. From this, the variance in how consultants approach their clients is clearly visible.
Figure 6.10: The variety of roles assumed by industrial design consultants
It is apparent from the data in figure 6.10 that the role the consultant assumes will have a critical effect on how they behave, and on their potential to undertake responsible design goals through their clients’ projects. For example, if a consultant enacts a more servile role, the inclusion of responsible design topics in their work is more dependent on the client already requiring it; whereas a more assertive role may enable those topics to be introduced in additional situations. Similarly, it is conceivable that incorporating responsible design ideas into a client’s work may be more effective (and less risky) where the consultant has greater interaction with the client; as opposed to acting autonomously, or independent of the client.

Further analysis indicated that the role enacted (or assumed) is a function of the consultant’s general perception of their role and responsibilities, coupled with what they feel will be appropriate and effective in the particular circumstances. The data revealed that this is affected by the following sets of factors:

- Those related to the consultant’s perspective; including their character, confidence, expertise and experience; particularly in relation to challenging the client, or taking a risk; as well as the level of importance they assign to the particular task
- Factors related to the client; such as the consultant-client relationship, the remit the consultant is granted, and the consultant’s awareness of how open or receptive the client is
- Those factors related to the design firm the consultant works for; for example its culture, along with the work approaches and attitudes it adopts and encourages
- And the details of the project at that moment in time, including the budget, schedule, and progress to date; as well as the potential implications of the particular task.

The amalgamation of these factors is embodied in how the consultant feels they can best serve their client at that moment in time; and accordingly, the role they will enact.

“… we are consultants, so we have to act in the best interest of -... of the actual client. In different roles you put on different hats for different areas.” (IDC:08, 2)

One key factor affecting the consultant’s approach is their awareness of the client’s reception to the particular topic in question. Consider for example the notion of
inclusivity; it is possible that a client may range from having an active interest in inclusivity; be open or receptive to it; or be uninterested. In each instance it is likely the consultant would perceive a different approach as appropriate. Moreover, where the responsiveness of the client is not apparent or decisive, the findings suggest that the critical factor then becomes the consultant’s character and their commitment to the topic in question, along with their past experiences at proposing it. One consultant, for example, explained that although his clients do not typically request sustainability, he has attempted to include additional more sustainable options in the proposals he presents; however, this is done as a “sort of freebie”, and for him, they have not resulted in good experiences or been well received (IDC:21, 33-34). Another consultant, who had had recent success with an eco concept for a client, expressed a keenness towards extending this approach to other projects (IDC:01, 82-83). As discussed earlier (see section 6.3.6) the significance of past attempts has been given little consideration in most behavioural theories (with the exception of Bagozzi and Warshaw (1990)) but these examples reinforce its relevance for the consultant’s responsible design behaviour.

Another related facet which was noted is the consultant’s motivation to comply with the requirements of the client and with perceived social norms or pressures; such as those emitting from (or absent from) their colleagues, peers and profession (see also section 6.3.5). Where there is a strong motivation to comply, this suggests such forces will have greater impact on the consultant’s actions. However, it has already been discussed how designers have to balance between satisfying requirements, as well as challenging assumptions and providing appropriate creativity (see section 6.3.3). The data suggests that this is another aspect which varies according to the consultant and the situation. For example, one design director asserted that having an opinion is what consultants are there for (IDC:17, 55); however there was also noticeable sensitivity that a strong viewpoint could conflict with the idea of serving the client.
6.4.3 > The Consultant’s Sense of Responsibility

The other dominant aspect in the findings from the primary research is the consultant’s feelings of responsibility (see section 5.3.4). As discussed in section 6.3.4, Schwartz (1977) identified a person’s awareness of the consequences of their actions, and their ascription of personal responsibility for those consequences, as two important precedents to altruistic behaviour. A critical consideration in regard to the consultant’s responsible design behaviour therefore, is their abdication or ascription of responsibility towards the societal issues it considers.

Kaiser and Shimoda (1999) explain that people can feel two forms of responsibility: *conventional* responsibility feelings derive from social expectations and depend on having knowledge of what is expected, and a person’s readiness to fulfil it (relating to areas such as social approval, fear of atonement, customs, and regard for authority); while *moral* responsibility feelings depend on awareness of consequences and self-ascription of personal responsibility, which relate to causality, freedom of choice, and intentionality. That is, people see someone as responsible when the outcome was intentionally caused by behaviour based on freely made decisions. With regard to conventional responsibility, it is visible from the findings of this research that there is not a clear or established understanding of what is (socially) expected from designers with regard to responsible design topics (see section 5.2). Moreover, it would seem consultants are not experiencing a demand from clients, customers or users which would reinforce any sense of conventional responsibility. Regarding moral responsibility; it is extremely difficult to establish a causal or intentional link between the issues encompassed in responsible design and the actions of design consultants. As one design director expressed,

“*I’m not sure you can always anticipate what are the positives and what are the negatives, what are the unthought of consequences of the design decisions we make.*” (IDC:06, 71)

It is not surprising therefore, that while many of the participating consultants accepted it was incumbent on them to address the issues, there was no real sense of an individual moral responsibility. Instead, there was a shared perception that consultants are part of a complex system, which has a number of issues; and no
distinct accountability or responsibility for those issues was attributed to design’s contribution.

One viewpoint which was presented is that consultants are still getting used to the idea that their actions have consequences. For example, one director expressed the feeling that the profession as a whole is not, as yet, mature enough to assert responsibility.

“Within the ID profession, it’s still horribly immature and there are probably far too many designers who just don’t get it at all, in terms of their responsibility for the downstream, for the impact of their actions” (IDC:15, 33).

Arguably, this is not helped by the lack of available understanding regarding the topics, or design’s relationship to them. Another more significant contribution to the consultant’s sense of responsibility is the notion of role morality and the outlets afforded the consultant to abdicate responsibility. This topic is explored further in the following section.

6.4.4 > Role Morality and Abdicated Responsibility

Role morality suggests that individuals may adopt a different morality depending on the role or post they are fulfilling, and that moreover, they may justify a different moral standard to their own, or the abdication of their responsibilities, because they are performing that role (Gibson, 2003). Owens (2006) explains that individuals may relinquish their personal morality to: institutional values, corporate culture, or the ethical minimums sanctioned by law; in effect becoming conduits for those moral attitudes. In the case of the design consultant this is particularly interesting given they are not only aligned to the design profession, and the firm they work with, but they are also hired by a client company. Each of these groups, therefore, could be considered by the consultant as a major moral actor to defer their individual responsibility to. “Designers think of themselves as good people whose clients make them do bad things” (Keedy, 2003).

Within the primary data collected, there was evidence that consultants can affiliate their values to those of the consultancy they work with. For senior members of the firm, there may be a more equal relationship between their personal morals and
those of the consultancy (either through co-evolution, or alignment); whereas for junior designers, the consultancy may be a significant influence on their morality (see also section 4.2.3 and 5.3.1). For example, one junior consultant asserted:

“As a working consultant, I am ultimately reliant on the philosophy of the company; the design consultancy, that I work for” (IDC:02, 37).

Also strongly evident in the data was the sentiment that the responsibility for the product outcome is ultimately with the client decision makers (IDC:20, 29; IDC:01, 65; IDC:22, 17; IDC:03, 13; IDC:04, 6). One consultant explained, for example:

“I do think designers have a lot of influence, but I think it’s exactly that, it’s influence. We’re not the final decision makers” (IDC:04, 6);

while another asserted: “At the end of the day, it’s the client that makes the final decision” (IDC:17, 23). While this appears to be a true reflection of the consultant’s situation, it is also a key influence on the level of responsibility they are willing to assume.

“What you can do, from your knowledge and experience is influence those priorities, but at the end of the day, we are always servants of our clients, and as much as we would like to do certain things, we’re not always in a position to be able to do them” (IDC:12, 101).

As discussed in section 4.3, clients can view the role of the consultant in very different ways, often hiring them as loyal functionaries or as supportive services. Where consultants adhere to such expectations, this may cause them to reserve moral judgement or adopt an amoral, client-driven, morality (Owens, 2006). A more extreme version of the destructive effects of obedience was demonstrated in Milgram’s shock experiments\(^{15}\) which showed that:

“The essence of obedience consists in the fact that a person comes to view themselves as the instrument for carrying out another person's wishes, and they therefore no longer see themselves as responsible for their actions” (Milgram, 1974, p.xix).

Owens (2006) explains that the profession, the consultancy, and the client provide opportunities for immunity, and are also grounds for the consultant to relinquish any responsibilities towards those, other than who they are working for. This

\(^{15}\) Milgram’s experiments were a series of notable social psychology experiments which measured the willingness of study participants to obey authority figures beyond their personal conscience by administering painful electric shocks to what was in fact an actor (Blass, 1991).
suggests they are less likely to address needs beyond their commercial remit; especially where those goals are perceived as challenging or demanding, as can be the case for responsible design.

A further consideration is the proximity of the topics to the consultant. Within the data there was a suggestion that the designer’s disconnect allows them to feel less responsibility. In a discussion about why design does not address a set of wider needs, one consultant commented:

“the world we’re in is the mass produced world and so we are a bit detached from the realities, the social realities of what that means, you know. We deal with a factory in China over the phone or through e-mail, so we’re distanced from it … I think the nature of the industrial design industry has produced this split … [it’s] easier to turn a blind eye to it maybe, and easier to not think about, for that reason.” (IDC:03, 58)

Similarly, it may be that the consultant’s individual sense of responsibility to topics beyond the brief, diminishes in the confusion and conflicts of having many masters and working as part of a team.

“It's impossible to say where, where the real ownership is, you know. The reality is it's this kind of woven thing where you can't quite tell where the design consultant has stopped and where the client has started. 'Cause that's the nature of consultancy, you're not designing in isolation. You don't get a brief and get sent away and you come back a year later; it's an evolving process over about a year and reacting to the client's expectations and wishes and preferences all along the way. So how much of your kind of, value system is intact in that as it goes along is sometimes very difficult to judge.” (IDC:06, 20)

These contributing aspects are potentially worsened by the consultant’s lack of reflection on such topics; partly attributed to their demanding workloads (IDC:01, 46; IDC:04, 53; IDC:11, 76) “You don’t often get to sit back and sort of analyse what you actually do, oddly enough” (IDC:04, 53).

Overall however, as Gibson (2003) explains, it is unlikely an individual will be either completely morally aligned, or a complete moral chameleon in their role. Giving this further consideration in the light of the research findings, it is apparent a consultant’s likelihood to engage in responsible design behaviour is not only dependent on their morality, but also how that morality relates to those of the client, consultancy and profession; and more importantly, the consultant’s integrity and autonomy to determine their own sense of responsibility and act on it. The
outcome is also affected by practical issues, such as financial impacts or effect to reputation. For example, the implications of a consultant not fulfilling their job are often more apparent to them than those of not achieving responsible design (not that these are mutually exclusive).

One additional distinction which needs to be highlighted, is the difference between avoiding harmful actions and making a positive contribution. Most of the discussion on responsibility has a stronger relevance to the former, however, the aim of responsible design is not just to reduce negative impacts, but also to achieve a more positive effect. From the review of the data, it was apparent that this requires a second shift in the consultant’s thinking, as evident from this participant’s comment: “It’s not particularly that we want to do good, but we don’t want to do anyone any harm” (IDC:10, 40).

6.4.5 > The Consultant’s Sense of Enablement

A further factor affecting the consultant’s responsible behaviour is their sense of enablement. This accounts for the consultants feeling that they can act, and that their actions will make a difference. It also includes the consultant’s locus of control, which represents their perception of their ability to bring about change through their behaviour (Hines et al., 1987). If an individual has an internal locus of control, they believe their actions can have an impact; while those with an external locus of control attribute change to chance, or to other’s who are more powerful (such as superiors, government or God) (Hines et al., 1987). As discussed in section 5.3.3, there were strong sentiments from the participating consultants that the topics depend on factors far outside their control; that they are too large or complex; or that they require action from higher powers, such as government intervention or societal change (IDC:08, 10; IDC:22, 30; IDC:02, 66; ACD:04, 11; ACD:02, 16; IDC:15, 31; DCO:05, 42; IDC:14, 55; DCO:03, 39).

“… until it becomes law, a moral perspective seems to be insufficient to achieve the broader goals. It does come down to society behaving properly and being governed in a way that motivates people to live in that fashion.” (IDC:02, 84)
Further to this, there was a lack of confidence exhibited from consultants that their actions would make a significant difference.

“I think it’s incumbent upon us to do it. Whether ultimately we have an awful lot of effect, I question.” (IDC:22, 22)

These perceptions constitute a notable deterrent to the consultant adopting responsible design behaviour or aspiring to it within the opportunities which may be available.

6.4.6 > Section Conclusions

This section examines how the particulars of the design consultant’s circumstances, especially their remit, role and responsibilities, also crucially affect the formation of their design behaviour. While their remit is predominantly determined by the client, there is a critical grey area in its definition, and as such, what the consultant perceives or interprets as their remit, coupled with what they can successfully impart to the client, will heavily affect their opportunities and have a crucial impact on the form of their behaviour. The consultant’s tendencies towards pushing boundaries or challenging the client; versus their will to comply or be cautious; has a large effect on what will be accomplished in this regard.

The consultant’s wishes to meet the requirements of the client is strongly evident in the primary research findings; but it is also apparent that this is undertaken in different ways, varying in the level of leadership and autonomy demonstrated. The role the consultant enacts will have a significant effect on how they behave and what they are likely to accomplish. More servile roles and less interaction with the client, for example, suggest that new targets, such as responsible design goals, are less likely to be introduced effectively. Analysis of the research data indicates that the role or approach the consultant takes on is set by what they consider will be appropriate and effective to best serve the client at that moment in time. It depends on numerous factors originating from the client, the consultancy, the project, and the consultant themselves. Further to this, the consultant’s awareness of the client’s reception to a topic; coupled with their past related experiences, are clear factors in setting the approach they would adopt. In addition, the consultant’s
motivation to comply, both with the client’s requirements, and with perceived social norms and pressures, will clearly impact their behaviour formation.

A central topic for this research is the consultant’s sense of responsibility, and more particularly their ascription, or abdication, of responsibility towards the societal issues incorporated in responsible design. A key barrier is the opportunity to defer or abdicate responsibility based on role morality and the consultant’s relation to the client, the consultancy, and the industrial design profession. This may facilitate an approach of immunity, or amorality, whereby the consultant acts as a moral conduit or relinquishes their personal responsibilities. A further factor affecting the consultant’s behaviour is their sense of enablement, or the feeling that they can act, and that their actions will make a difference. Overall, however, a consultant’s likelihood to engage in responsible design behaviour is strongly dependent on their ascription of responsibility, along with their moral integrity and their strength of conviction to it. It is also crucial that those responsibilities drive a consultant to not only avoid negative outcomes, but also to aspire to have positive effects.

6.5 > Conclusions: The Factors Affecting the Industrial Design Consultant’s Formation of Responsible Design Behaviour

This chapter presents a development of theory which examines what shapes a design consultant’s design behaviour and whether that behaviour will incorporate responsible design objectives. It is constructed around three areas of consideration: what constitutes the consultant’s design behaviour; what motivates and predicates prosocial behaviour; and how aspects of consultancy design affect the consultant designer’s formation of responsible design behaviour.

A set of key abilities or skills, which compose the core of the consultant’s activities, were identified from the primary research. These consist of: formulating the design situation; identifying the importance of the requirements; combining the elements; gauging what will be appropriate and acceptable; and generating compelling (and supported) proposals. A central aspect of designing is also activating forms of
judgement to evaluate and resolve requirements. In order to enact these activities, designers employ a number of mechanisms and tactics, such as introducing primary generators; framing and reframing the design problem; applying guiding principles; and utilising precedents, exemplars, schemata and gambits. These cognitive tools are based on the knowledge, references and experience acquired by the designer, and also rely on their ability to draw parallels and recognise patterns or similarities with situations from other contexts. As such, responsible design behaviour requires the consultant to form cognitive tools, references and mechanisms appropriate to addressing those goals; and to employ those devices to execute their design activities in a manner which will result in more responsible proposals.

Intentions and attitudes are commonly regarded in the literature as the main antecedents to behaviour; however, a consultant’s intention to act will be mitigated by the particulars of the design situation and will also depend on their remit, and the role they assume. An individual’s intentions and attitudes originate from a series of aspects internal and external to them. From a review of the main behavioural theories it was possible to identify five areas which bear greatest relevance on the consultant’s intention to undertake responsible design behaviour. These are: the consultant’s personal traits, self expectations and aspirations; their sense of responsibility for the outcome; their perceived ability to act and to have an effect; their past experiences; and the social norms and incentives which they acknowledge. The first three of these areas represent the antecedents internal to the consultant, and encompass additional elements which also affect the consultant’s intentions and attitudes, such as the consultant’s personal norms; their awareness of the consequences of their behaviour; and their knowledge of appropriate actions. It should also be noted that many of the antecedents to behaviour have similar relevance for design mechanisms; reinforcing their importance in determining designers’ actions.

Key aspects of the consultant’s behaviour also relate to their remit, role and responsibilities. The consultant’s remit is a crucial determinant of the scope of the opportunity available to them, and their behaviour within it; and while it is predominately set by the client, there is a notable possibility for the consultant to
have an effect on it. As such, what the consultant perceives or interprets as their remit, coupled with what they can successfully impart to the client, will ultimately affect the form of their behaviour.

It was apparent from the primary research that consultants can adopt a variety of roles to enact their remit. These range in terms of the leadership and autonomy demonstrated; and embody what the consultant considers will be appropriate and effective for serving the client at that moment in time. The role assumed in a design situation depends on numerous factors originating from the client, the consultancy, the project, and the consultant themselves; and includes the designer’s awareness of how receptive the client is to the topic at hand; as well as their past experiences with it. Further to this, the role enacted will have a significant impact on the consultant’s effectiveness at introducing responsible design; for example, more servile roles and less interaction with the client suggest they are less likely to be effective.

A further topic which is central to the consultant undertaking responsible design is their sense of responsibility towards those topics; however, based on the notion of role morality, the consultant designer’s involvement with a client, their consultancy, and the industrial design profession; mean there are potential outlets for the consultant to abdicate responsibility for the consequences of their actions. A consultant’s likelihood to engage in responsible design behaviour is dependent on their ascription of responsibility; along with their moral integrity, and their strength of conviction. It is conditional on their sense of responsibility (what they feel responsible towards); their sense of enablement (what they feel they can achieve); the role they enact (how they approach their involvement); and the importance and commitment they assign to the topics (and perceive others assign to them).

To conclude, a model was derived to unify the set of findings generated from the theory development presented in this chapter. The final model, depicted in figure 6.11, illustrates the range and relationships of the factors which can affect the consultant’s formation of responsible design behaviour, including references to the six determining areas identified in Chapter Five.
Figure 6.11: The factors affecting the industrial design consultant’s formation of responsible design behaviour
7.0 DISCUSSION

This chapter reflects on the research project and discusses its outcomes. It reviews a number of key topics which emerged during the investigation and draws together a set of dominant themes and considerations highlighted. It also considers the implications and importance of the findings and how they relate to existing knowledge.
7.1 > Requirements to Achieve Responsible Design Commercially

It has been clear from the early stages of the research investigation that although industrial designers can inspire or educate with the concepts or processes they generate, their ability to achieve responsible design ultimately centres on the outcome of the project they are involved in. For industrial design consultants to effect a positive change on society’s needs, therefore, they have to contribute to more responsible products and services being produced, bought and used. As such, their success is subject to meeting certain requirements common to all products. This section will discuss what those requirements are and the resultant challenges that responsible design will need to overcome if it is to gain wider application.

7.1.1 > Design Selection

The first key requirement involves the consultant’s (responsible) design getting selected by the client. To achieve this, their proposal has to: be manufacturable and saleable within suitable costings; appeal to the selectors and their ideas of what is appropriate for the market (and the other parties along the way); and be the best option in contention according to the priorities of the project. With regard to the latter, this may include factors as diverse as whether the product is on brand, to whether it is a sufficiently strong offer in comparison to competitor products. Ultimately, the design selection comes from the client side, and as such, their interests and objectives constitute the crux of the process. Each aspect of a design will need to appeal to the client and be recognisable to them as something of value, if it is to contribute to its selection. The success of responsible design, therefore, is primarily dependent on the client’s responsiveness, and will require the consultant to present a persuasive proposal within the expectations of the brief. Further to this, at the core of the consultant’s actions, is their wish to satisfy clients in order to maintain and grow their own business, and the work they present is unlikely to put that objective at much risk.
7.1.2 > Production

Following on from its selection, a (responsible) design proposal needs to then survive through development with its intention intact (see section 5.7); and more significantly, it will need to get put into production. In order for the proposal to be produced, company decision-makers and financiers have to approve the investment required for tooling and manufacturing. Given this can be substantially more than the design and development budget (particularly where a client will involve external manufacturers) it is a key go-gate in the process, which is typically driven by evaluations of costs, market opportunities, viability and risk. The emphasis tends to be on quantifiable measures, and overall, the (responsible) product will need to be considered beneficial (directly or indirectly) to the business goals and potential profitability. In this regard, CSR, brand image and customer opinion can be seen as avenues to support responsible design proposals; however, these are relatively minor enablers. If deeper responsible design impacts are to be achieved, larger changes to product offers will need to gain approval, which will demand stronger backing or validation to satisfy business perspectives.

7.1.3 > Reaching the Market

Another key stage in the success of a (responsible) design is its ability to reach the market. Where a client company is reliant on third party retailers or distributors, those parties will have to recognise the product as something they can sell and make profit from if it is to gain ‘shelf space’. This depends on the product offer and mark-up, but more significantly, on their perception of the customers’ requirements and whether they feel the product will appeal to them. Given their importance, it is not unheard of for retailers to have direct involvement in the design process, and they may even be the decider in whether a product is actually produced (see also section 5.7.3). This serves to emphasise that progress towards responsible design hinges on collective action and an alignment of several perceptions across the process; including those of the customers, users, retailers, manufacturers, designers and members of the client company.
7.1.4 > Purchase, Use and Engagement

Once a (responsible) design reaches the market, it will need to be acquired and used, if it is to have effect. Although markets can be influenced; and possibly lead to some degree; it is the customer who ultimately determines whether the product is purchased. This decision can incorporate aspects such as the features, price, performance, ease of use, semantics and aesthetics; as well as the influence of trends, advertising, competitor product offers, and the psychology of the customer. These include elements which are within the designer’s reach, but also many which typically lie outside their influence (particularly if they have a limited involvement on a project). Regardless, design does play a significant role in the lure of a product, and creating appealing solutions is undoubtedly one of the consultant’s key offerings for the success of responsible design (see also section 5.4). This potential contribution is based on a particular skill, however, and without motivation, experience, direction, and appropriate knowledge to inform its application, those capabilities are insufficient in themselves.

For a product to have any real impact on responsible design goals (such as inclusivity or sustainable behaviour) it should be used, ideally for an ongoing period. However, reasons for owning products have multiple facets, including personal rewards; outward expressions; or even notions of identity (Barthes, 1972; Whiteley, 1993; Molotch, 2003; Sudjic, 2009); and many of these drives and desires are susceptible to regular change; not least of all due to the shifting influences generated by commercial industry. Business prospects often depend on this, and clients typically commission consultants for the very purpose of helping to generate alternative options and new desires; which acts against the goal of prolonged product ownership. If people’s satisfaction persisted, or was based on sufficiency, and if products could last, and industry could blossom regardless; expectations of ongoing product engagement could be directed more towards the designer; but unfortunately, this is not the situation.
7.1.5 > Achieving Responsible Design Success

The milestones described above, outline the vital steps for a product to gain success, and they indicate what is required if the consultant is to be effective, regardless of whether the goal is responsible design, sustainability or more aesthetic products. The distinct difference, however, is that certain goals; such as those related to aesthetics or usability; currently align more easily with business objectives and the requirements associated with commercial success. Those goals relate well to attracting the purchaser, and are more readily recognised by the other parties involved. Similarly, they have a perceived commercial value, and they are more central to why the design consultant is typically commissioned.

For responsible design to achieve a similar status, products would have to be considered attractive and commercially viable because they are responsible; and clearly this requires a substantial shift in the mindset and perceptions of not just the designer, but of each of the parties involved (clients, manufacturers, retailers and end users). This seems improbable in the near future given the motivations currently driving product production and purchase. Instead if responsible design is to achieve greater success (within a profit-oriented system) it will need to be commercially attractive and meet the milestones above in addition to offering a pro-social benefit. As such, for products to be more responsible, they will need to do so at little or no additional overall penalty, and preferably with added benefits for the client. Extra time or cost incurred would need to be justified by demonstrating the opportunity for a return, and overall the design proposals which lead to such products will need to be sufficiently appealing to be taken on.

If responsible design is to be driven by designers (as opposed to government legislation, for example) it requires them to offer convincing arguments; or alternatively, to operate stealthily and possibly circumnavigate any need for persuasion. The latter approach, however, seems limited in its reach and unlikely to suit longer-term action, as greater impact on society’s needs requires more weighty changes in products, which is unlikely to be achieved unbeknown to the client. Any significant movement towards more widespread responsible design, therefore, will likely require the client to share in responsible design concerns, or to be receptive
to them and then persuaded of their importance. All too often, however, a client’s approach to product creation is heavily dominated by comparison with competitors, or considerations of cost, price and features. The justification for responsible design approaches, therefore, will need to be persuasive enough to overcome existing mindsets, and clients’ resistances to change and risk. This will require sufficient evidence and back-up, and also demands a level of motivation and commitment from the design consultant. It was evident from the research, however, that consultants do not feel well equipped or empowered to act (see section 5.3.3). This either acts to decrease their motivation, or results from an already waning commitment. Moreover, there is a lack of supporting evidence or suitable metrics to help underpin proposals and to help persuade clients (see section 5.4.5). One director provided the following explanation which summarises well the overall difficulties (also referenced within section 5.2):

“Within the ID profession, it’s still horribly immature and there are probably far too many designers who just don’t get it at all, in terms of their responsibility for the downstream impact of their actions; but for those of us who do get the responsibility; the downstream responsibility of our actions; there is a duty there to push and nudge and try and get better behaviours. But there’s a very very crystal clear line which is that when we’ve tried pushing - it can be as simple as trying to not paint phones - we’ll just hit a brick wall, you know, because the knowledge about the impact is too, too fuzzy; you’re not quite sure what the recovery value chain looks like and so you’re asking your client to potentially compromise the immediate saleability of their product in order to take a very long, odd, uncertain bet that somebody in the future might actually, you know, benefit from that. Now that kind of choice will never be won. That’s just a dumb choice.” (IDC:15, 33)

It is clear from this that if responsible design is to progress in the commercial sector it needs to relate to the workings and objectives of that sphere. It is understandable therefore that there is often a focus on the commercial benefits afforded by the different approaches; such as how inclusive design broadens available markets, or ecodesign has cost benefits. Design consultants operate alongside business, and responsible design will need to occupy a similar position if it is to progress. The milestones discussed above indicate the priorities that dominate consultants’ considerations, and that often overshadow other goals. For responsible design to step out of these shadows, more sophisticated understanding, measurement and examples are required which relate to business objectives and
metrics; and more importantly, which will be recognisable across the sets of actors involved.

Furthermore, it is evident that a single approach will not suit all products; for example, durability is less appropriate for consumables, and can be significantly more challenging when a product is technology reliant, due to continuing advancements. For attempts at responsible design to be successful, the proposals will need to be designed to suit the real characteristics of the product’s use; necessitating multiple strategies to suit the different scenarios and varying life cycles of product ownership. Further investigation is needed to understand what types of strategies would be suitable and what they would entail. More importantly, clear guidance will be required to assist designers in selecting which approaches are appropriate, and in identifying suitable opportunities to apply them.

Figure 7.1 presents a graphic depiction of the requirements to achieve responsible design commercially, as discussed above.
Figure 7.1: The requirements to achieve responsible design commercially
7.2 > Undertaking Responsible Design

At the centre of the research investigation is the consultant designer, and the design actions they perform. This section discusses the individual consultant’s motivation and sense of responsibility to address society’s needs, and whether there are suitable avenues by which to encourage them to include these goals and responsibilities in their concerns.

7.2.1 > The Design Consultant’s Outlook

It was evident from the research participants that they hold clearly different views on what constitutes a contribution to society’s needs. Some consultants appeared to only regard the segment of society they themselves belong to; while for others, reducing annoyances, or adding beauty and convenience to peoples’ lives was felt sufficient. These outlooks may be due to how challenging it is to pursue broader societal goals; but they also indicate a possible shortfall of awareness, knowledge, interest or connection to the topics.

Design consultants act predominate in response to the requirements of their clients and the design firm they work for; and it seems likely a large percentage of their outlook is primarily formed on what they are led to prioritise, and what is expected of them in their role. Given responsible design goals typically occupy a low priority in the commercial setting (if at all), this has a significant effect on the designer’s motivation to undertake them. Even when consultants are willing to challenge briefs or question assumptions, they still tend to do so for the good of the product and ultimately, for the good of the client. For more responsible design to occur, however, they will need to shift their perspective, and their efforts at influencing products will have to expand to also represent other interests outside those of the client.

Responsible design is essentially an aim or aspiration, and as such, designers will have to wish to pursue it; requiring them to identify it as important and relevant for their work. Moreover, if designers are to sustain an interest, they need to have a level of belief that progress is possible, or that the goals are achievable in some
measure. In addition, consultants are conversant with fads and trends, and if they perceive responsible design in a similar light, they will likely be cynical or slow to give it real consideration. However, the topics have only been identified relatively recently, and it was apparent from the research that a greater understanding and knowledge needs to be established if responsible design goals are to receive consultants’ further attention and application. Participants were quick to highlight the need for clear, consistent, and useful guidance which is appropriate to how they work; and more importantly, which they can have confidence in.

7.2.2 > Motivation for Responsible Design

In *Freakonomics*, Levitt and Dubner (2005) highlight that humans respond to incentives. Considering the discussion from this perspective, it is a pertinent query to ask why consultants would take on responsible design, or what their incentives are for addressing it? Where clients make distinct requests for it, there is an easy response; however, this is rare, and it is curious why designers would try to take it on in other cases, particularly where it is not valued by their clients. Moreover, there are ample avenues facilitating consultants to turn a blind eye and abdicate responsibility (as discussed in section 6.4.4) and few stimuli to influence the situation positively.

Most uptake of responsible design (outside of legislative requirements) seems predominately driven by designers wishing to gratify personal norms and values, or their altruistic and prosocial tendencies (see section 6.3.4). Put another way, they pursue it because they have sufficiently strong feelings that it is the right thing to do; and clearly the level of motivation is going to vary greatly with each consultant. If existing theories, from the likes of Schwartz (1977) and Geller (1995) are accurate, this drive originates from an individual actively caring, along with their awareness of the consequences of their actions, and their ascription of personal responsibility for them. The motivation to enact responsible design is dependent on the character, background and experience of the designer, but also their interactions, and the social norms which inform them. These external influences are relevant, not only
because designers function as part of a system, but also because they plug into the social context and zeitgeist to inform their designing.

It is clear from the earlier discussions that if responsible design is to gain a wider footing, there needs to be a shift in perceptions across the parties involved, and not least of all within the design field itself. A central part of this is the value and priority responsible design goals receive in comparison to the other aspects of product design; such as aesthetics, novelty, innovation or technology. In many ways, this relates to what is considered ‘good design’, and it also links to the different evaluators of industrial design; from awards, to advertisements, to the media; each of which contributes to the social norms informing designers (and the other parties involved). However, people; and designers themselves; are seduced by the more desirable aspects of design, such as aesthetics or technology, and accordingly these attract more attention and appreciation. Furthermore, in many sectors; for example consumer electronics; those more desirable facets are the primary reason for a product existing at all. Either way, it is unlikely that responsible design will replace the likes of aesthetics, brand or technology in what people favour; and the challenge, therefore, will be to provide both desirability and responsibility in product designs. Moreover, the consultant’s motivation and interest in responsible design will have to be sufficient not only to overcome restrictions and challenges, but also to elevate it to a level of priority that can contend with those other facets of design, as well as the attraction and incentives associated with them.

7.2.3 > Activating Responsible Design

As discussed, responsible design’s progress centres on providing appropriate information and evoking industrial designers’ sense of responsibility and motivation towards the goals; but to whom these tasks fall is a large part of the dilemma. Certainly educators have a crucial influence in the early stages of a designer’s development; however, their effect can dwindle as a career progresses and as the designer’s views alter with the complexities of the commercial world, which is a very different setting to education. If industrial design operated as a profession
with a regulatory body, this could offer an alternative source of influence; but this seems quite far off, and in the UK, they are still bereft of even an active professional organisation. Were it to exist, a governing body could present strong benefits for industrial design, and for the goal of responsible design (see also section 4.6.3). It could potentially provide guidance and precedents for what is expected from designers beyond clients’ wishes, while also offering a conduit for imparting knowledge and information, once it is generated.

Reflecting on the research, it was discernible that overall there is a shortfall of devices to activate designers’ awareness and sense of responsibility for the topics. Many of the mechanisms that do exist; such as conferences and publications; rely on voluntary uptake (requiring a pre-existing interest or concern) or tend to occur more in the academic sphere, which is typically apart from professional practice. In the documentary film *Objectified* (Hustwit, 2009); Valerie Casey, while discussing the formation of The Designers Accord, relates an anecdote of discovering a toothbrush they had designed washed up on a holiday beach in Fiji. Without comparable moments of realisation and cause to redress, it is questionable whether many designers will contemplate or revise their standpoint, particularly because they do not often have the time or capacity to monitor and review their own broader situation. This is worsened by the fact that the majority of drivers in their daily working life direct them towards business targets, and there is little to direct them towards prosocial concerns. Outside of those drivers changing, or an interjection by another party, it is difficult to anticipate how any significant advance towards more widespread responsible design will occur.

One possible disruption is the waves of younger designers graduating from universities with an increasing regard for the topics. However, it remains to be seen how those academic ideals stand up in a commercial setting which is less responsive than the university institution. While it is fair to assume that the growing attention responsible design topics receive in education will aid progress, it also seems important to realise that without ongoing reinforcement, those efforts will be less effective. A solution would be to nurture their further development, possibly by availing of alumni networks to set up suitable support structures.
7.2.4 > Achieving Responsible Design

The design consultant’s altruistic motivations have been clearly identified in the research findings and discussions as a key aspect of achieving responsible design. It could be argued, however, that all consultancy design incorporates an entangled set of personal and outward motivations, given that products are designed by a consultant, with a client, and for the user and client’s interests. The key issue for responsible design, therefore, is how these sets of requirements are balanced or resolved in each situation, and whether the consultant also incorporates the needs of a broader society as a priority. From this perspective, it is apparent that how responsible design goals are incorporated into the designer’s thought process impacts the manner in which those objectives will affect the design outcomes. For example, if the goals are at a foundational level in how the designer approaches a design circumstance, they will likely have a more fundamental impact than if they are an ancillary consideration later in their thinking. This highlights the importance of nurturing responsible thinking as early as possible in an individual’s development (even before they are directed towards design). It seems likely, however, that regardless of when or how much guidance they gain, a designer’s uptake of the topics will depend primarily on their personality and nature (see also section 6.3).

Ultimately, if responsible design is to be enacted to a greater extent, it needs to be inherent in designers’ repertoires of design mechanisms (see section 6.2). It needs to be an intrinsic part of their thinking and intuition, as well as their methods for understanding problems, posing solutions, and making judgements and evaluations. This could possibly be encouraged by demonstrating to designers the link between responsible design and the gratification that can be gained from adding greater value through their work. It was evident from the research that many designers want their work to have meaning or to make a significant contribution, but that this is not widely obtained in commercial practice. As such, identifying ways to make those objectives accessible and evident could motivate more positive contributions to society. Workshops, seminars and competitions are potential means to simulate the process and demonstrate this; however, the challenge will be

1 This was also directly evident from an exploration undertaken by Frog Design, wherein they explored the meaning of their work, and how it related to human behaviour (Frog Design, 2009).
to attract consultant designers who are notoriously slow to participate; partly due to their typically heavy workloads.

7.2.5 > Consultants’ Responsible Design Reach

A core aspect of achieving responsible design is the extent to which different societal issues are within the reach of the consultant and commercial industrial design; for example it is valid to question whether design consultants can be expected to address poverty or crime (or another specific issue) within their commercial work. This is an important consideration as understanding what is and is not realistically within consultants’ influence, and also what they can potentially be most effective at, would provide useful guidance to aid progress.

The research presented in the main thesis content did not specifically examine this; however, it was briefly touched on during the pilot study interviews by way of a card sorting task (see also section 3.8.2a) which required participants to arrange a set of societal issues according to whether they: (a) aim to address them in their work; (b) feel they should, but cannot; or (c) feel the topic is not directly relevant to them (see figure 7.2).

Figure 7.2: Example of card sorting task A (repeated from section 3.8.2)
Although the main goal of the exercise was to provoke discussion (and it was excluded from the subsequent interviews, as explained in section 3.8.2) the direct findings from the five respondents who completed the task are an interesting point of reference. Table 7.1 shows the accumulated rankings for the 17 topics presented to the consultants involved, and gives some small indication of what they consider relevant to their work. (The half marks occur because one participant placed numerous topics between options.)

Table 7.1: Results from interview pilot study card sorting task ‘A’
(rank in order of perceived relevance to the consultant’s work)

<table>
<thead>
<tr>
<th>Topic:</th>
<th>“aim to address”</th>
<th>“should but can’t”</th>
<th>“not directly relevant”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ageing Population</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Energy Conservation</td>
<td>4.5</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>Health</td>
<td>4.5</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>Decreasing Quality of Life and Well-Being</td>
<td>4.5</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>Disabilities</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Education</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Diminishing Resources</td>
<td>3.5</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>Waste</td>
<td>2.5</td>
<td>2.5</td>
<td>0</td>
</tr>
<tr>
<td>Pollution</td>
<td>2.5</td>
<td>2.5</td>
<td>0</td>
</tr>
<tr>
<td>Consumerism and Consumption</td>
<td>2</td>
<td>2.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Erosion of Cultures and Traditions</td>
<td>2</td>
<td>2.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Environmental Deteriorisation</td>
<td>1</td>
<td>3.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Fair Trade, Working Conditions and Workers’ Rights</td>
<td>0.5</td>
<td>4.5</td>
<td>0</td>
</tr>
<tr>
<td>Water Conservation</td>
<td>0</td>
<td>3.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Poverty</td>
<td>0</td>
<td>3.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Discrimination and Social Inequalities</td>
<td>1</td>
<td>0.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Crime</td>
<td>1</td>
<td>0.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>
The results present a number of issues that the participants feel are relevant to their work and which they aim to address, including a set of four (‘Ageing Population’, ‘Energy Conservation’, ‘Health’ and ‘Decreasing Quality of Life and Well-Being’) which all five participants agreed on. The results also indicate there are two issues (‘Discrimination and Social Inequalities’ and ‘Crime’) which are strongly felt not to be relevant.

Upon further examination of the interview data surrounding this task, it appears that how the consultants ranked these issues may represent the effect they perceive the products they work on can have, as opposed to how effective they can be through their designing. This highlights the consultant’s reliance on their clients, and the projects they are involved in, as their main means of effect.

“So getting to address any of these issues on this particular page, are dependent on our ability to either seek and find clients who want to engage with these subjects or being lucky enough that they should knock on our door, already having developed a philosophy and a set of values in accordance with these subjects.” (IDC:02, 35).

It also raises a query as to whether consultants engage with the wider consequences of their actions; for example a consultant may not feel they can directly impact water conservation, but arguably they could influence it indirectly by designing products which consume less water during their use; however, it may equally be that the products these particular designers are involved in designing do not allow them those opportunities.

It should be reiterated that this was a very limited study, but one which would be interesting to undertake at a larger scale, particularly in relation to gaining further understanding of the consultant’s formation of responsibility (see also section 6.4.3).
7.3 > Recent Developments in the Industrial Design Field

The review of the literature identified a number of noticeable changes which have occurred recently in the industrial design field (see section 2.2.7 & 2.2.9). This section reexamines those developments in the light of the research findings, and discusses whether they could potentially contribute to more widespread responsible design.

7.3.1 > Strategic Design

One, noteworthy development in the industrial design field is the increase in designers’ involvement with companies on a strategic level (Friis, 2006; Stevens et al., 2008; Maciver, 2011). This appears to be propelled on the client side by a perpetual quest for innovation, along with a growing recognition of design’s value (Feldman & Boul, 2005; Stevens et al., 2008); and on the consultant’s side by the maturation and increased experience of the design industry, coupled with designers’ eagerness for greater input on project solutions (Friis, 2006; Brown & Katz, 2009). It is also recognised that strategic functions are typically attributed a higher value by business, therefore offering a better potential remuneration for consultants (Olsson & Holm, 2009).

Previous research has suggested that input into strategic decision making would afford the designer a greater opportunity to positively influence the environmental and social impact of a product (Brezet, 1997; Sherwin, 2000; Lofthouse, 2001). Clearly it brings with it advantages; such as access to higher levels within companies, earlier influence in the process, and the possibility to have a deeper impact on the product direction; however, it is questionable whether these benefits alone increase the level of responsible design the consultant will achieve. The findings in Chapter Five present that the opportunity available to the consultant is only one aspect of the consultant’s possibility to have an effect, and that there are larger factors underpinning it; such as the client’s receptiveness; the consultant’s ability to generate a compelling proposal; and the level of knowledge available to guide efforts. Moreover, it has also been identified in this research that without the
designer feeling a sense of responsibility and asserting it, they are unlikely to endeavour to have an impact, regardless of the level of opportunity available.

### 7.3.2 > Changes in the Design Context

In a similar manner, other developments in the industrial design field suggest that responsible design could be enabled more in the future. Progress in user-centred design, service design and community-derived design (see sections 2.2.8 and 2.2.9) potentially offer new avenues for those concerns to enter into the design process. For example, it is not inconceivable that crowdsourced design or user-centred design approaches, could lend more voices to responsible design objectives; particularly given they have the potential to incorporate a greater diversity\(^2\) of ‘designers’. However, while this could have some positive effect, it is unlikely to present a circumstance that is sufficiently different to overcome the other restrictions; such as knowledge, opportunity and influence, or the situational factors, which also affect designers.

Looking more at the context for design, it was also suggested from the literature review that growth in the relevance of CSR could improve the opportunity for responsible design by increasing clients’ responsiveness to it. Similarly, changes in market approaches and an increasing focus on experience, emotions and authenticity (Norton, 2005; Mattus, 2008; Brown & Katz, 2009) suggest a possibility for concerns beyond secondary needs, to gain relevance. Developments such as these do present more potential for improvements, given they generate a greater demand and receptiveness for responsible design; however, the commercial sector is a beast of a particular nature, and considerable change from predominately serving secondary needs and wants, is likely to be slow or marginal, if at all.

What these discussion points reinforce is that change is unlikely to occur due to a single driver. While there are influences that lend potential support to improvements, achieving any real progress is dependent on a complex system of

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\(^2\) As discussed in section 2.2.10, the demographic composition of designers as a group is not particularly representative of the general population, or the wider user group which could benefit from design's attention.
elements, and an overall combined movement. Throughout the research the findings have supported the notion that design consultants are part of a wider system, albeit a potentially influential part. However, as discussed in section 7.1, responsible design is heavily dependent on an alignment of the other major parties involved, and their shared recognition of its importance. Moreover, the findings presented in Chapter Five, demonstrate how responsible design success is also reliant on the interplay of multiple key factors stemming from a variety of directions, and that many of these are outside the reach or control of even the most avid responsible designer.

**7.3.3 > Evidence-Based Design and Intuitive-Design**

An additional topic related to the development of the industrial design field, which is also sited at the core of achieving responsible design, concerns designers’ methods of support for their proposals and assertions (see also section 5.6.1). In the past, designers’ relied more heavily on personal expertise which manifest itself in gut feelings and an intuitive approach to design decisions. The outcomes of that process were presented to clients, endorsed by examples from previous work; their commitment and passion; and the trust built with the client. In recent years, however, the desire for more informed and substantiated decision-making in the business sector has prompted a dependance on statistics, analysis, and risk assessments; and the necessity for evidence-backed design is overshadowing designers’ intuitions.

“It’s about giving people considered - almost academic - arguments to back the reason you want it to be pink and curvy and things like that” (IDC:10, 63).

This is somewhat understandable given design proposals must co-exist with marketing research and engineering calculations, and must appeal to board level decision makers; but there are signs that the situation has tipped too far towards designing by numbers, and that the full benefit of designers’ intuitions is being lost (IDC:19, 4; IDC:05, 9). Without overcoming this, and finding a more effective means to marry both intuition and evidence, consultants’ potential effect, along with their ability to assert propositional ideas and offer design leadership, may be curtailed. This would have obvious impacts on achieving more responsible designs. Research
is continually recognising the significance of experts intuition in a diversity of fields, particularly in relation to decision making and problem solving (Klein, 1998) and it is not something that can afford to be lost out on in regard to responsible design, or the industrial design field as a whole. Given the complexity of society’s issues, coupled with the shortfall in available knowledge, the full benefit of designers’ expertise, experience and instinct will be needed; however, the potential to generate solutions will be further restricted if the design field does not evolve beyond the dominance of evidence-backed design towards more intuitive-design lead action.

7.4 > Reflections on the Research Approach

The aim of this research has been to provide an understanding of what currently affects industrial design consultants undertaking responsible design goals within their commercial work. It set about portraying a detailed and representative description of the consultant’s circumstances and the factors which are of greatest influence. This section will briefly reflect on the characteristics of the research project as a whole, and how its aims and subject matter impacted the nature and outcome of the enquiry.

7.4.1 > The Traits of the Research Project

From the early stages of the project, it was felt that the main value of this research lay in investigating the overall situation affecting the consultant undertaking responsible design, as without this holistic view, efforts towards improving it could possibly be misled or less effective. This distinction formed the core purpose of the enquiry, and consequently, the main challenges were in dealing with the breadth of the focus, and in finding an appropriate balance between scope and depth of understanding, particularly given the systemic nature of the area being examined.

An initial attempt to navigate these challenges sought to examine what could be reasonably expected from industrial design consultants in regard to responsible
design. This approach served to manage the multiple facets and indeterminacy of the research topic by providing a way to resolve the realities of the consultant’s commercial circumstances with the expectations and requirements for design to do more in regard to society’s needs. However, the concept of ‘reasonable expectations’ proved notional and difficult to work with, and later in the project, as the structure of the investigation developed, it was put aside. Instead, a more direct approach was employed which was constructed of three-tiers to examine: the characteristics of the consultant’s context; the determinants of their possibility to enact responsible design; and the formation of their design behaviour (see figure 7.3). This allowed the primary research to be more straightforward, but relied on in-depth analysis of the data, and abduction, to ensure unifying constructs and a coherent narrative were generated. It also meant there was not a clear partitioning of the research studies to the outcomes, as all the data, including the literature review, contributed and built towards the findings. The approach did, however, align well with the researcher’s background as a designer, and suited their tendencies towards both generative thinking, and alternating between holistic and detailed perspectives. This is reflected in the findings, which present new theory at both the macro level of the subject; in the form of the model describing the consultant’s context, and the system of determining factors; and also at the micro level, in the form of the critical determining factors, and the identification of predicates to individual behaviour.

---

3 ‘Reasonable Expectations’ remains an essentially contested legal concept, for example, and one which is felt cannot be sufficiently refined to meet a consensus (Kerr, 2007; Kuklin, 1997). The main shortfall is that a single test or measure of when an expectation is reasonable cannot be consistently applied across a diversity of circumstances (Kerr, 2007). Mitchell (2003) suggests that the term’s appeal (in contract law) may even be due to its lack of explanatory power.
Figure 7.3: A graphic depiction of the knowledge journey
Another distinct trait of the research project is that it focussed on understanding and describing the problem space more extensively, as opposed to creating or offering solutions. This could be considered atypical for a researcher whose background is in design; however, it was driven by the intention of the research, and was a deliberate decision to ensure the depth of analysis was not cut off prematurely. An alternative research approach that included solution proposals would also have been valid, but would have required identifying a foundation of knowledge early enough in the process to inform potential proposals and to allow time for ideation and testing. The intention of this research was instead to establish a more thorough knowledge base which could better inform subsequent efforts, either from the researcher, or others.

7.4.2 > Responsible Design as the Research Topic
At the core of the research is the topic of responsible design. This was described at the outset as: design which effects a positive change on the greater needs of society, and is used to encapsulate a number of societal issues in need of attention, and the key design movements directed at doing so; including sustainable design, inclusive design and design for social responsibility. Although these existing approaches collectively capture most of the societal issues in consideration, it was felt that it is counterproductive to separate out the different objectives; for example, there is no reason why sustainable design would not also aim to be inclusive. Instead, a single term was sought to represent the potential for design to have a greater positive impact across the topics. That said, it is acknowledged that responsible design is a less defined concept, and that this adds somewhat to the difficulty of dealing with it. The focus of the research, however, was towards understanding the factors and circumstances which affect consultants addressing it, and for a large part, these are independent of the details of the actual goal. Many of the situational factors and the aspects which influence the consultant’s possibility to undertake responsible design would also influence their possibility to address other goals, and in this respect, the research is also about understanding the consultant’s ability to have effect, regardless of the aim.
There are, however, also distinct characteristics to responsible design as a goal; with its key differentiator being that it is fundamentally altruistic or prosocial in nature. This distinguishes it from, say, consultants wishing to innovate or advance a technology, for example, and was key in considering the consultant’s design behaviour, as discussed in Chapter Six. It also suggests that overall, responsible design is fundamentally dependent on individual designers having altruistic tendencies, which raises queries as to how those tendencies are formed and in what way they could be influenced. Unfortunately, deeper enquiry into these points fell outside the scope of this project, but they offer an interesting potential direction for future research.

7.5 > Conclusions - Leverage Points

Reflecting on the outcomes of the research, it is possible to identify a set of avenues and leverage points which may offer opportunities to improve industrial design consultants’ undertaking responsible design. These are compiled and discussed briefly below.

The first direction is to look at increasing the design consultant’s motivation and intention to enact responsible design. One line of approach is to improve their awareness of the topics, however, as discussed in section 6.3.1, this alone is insufficient and it is the designer’s overall sense of responsibility which is more crucial. It is thought this will be dependent on personality traits and their altruistic tendencies; and as discussed, understanding better how these can be influenced is an area which would benefit from further investigation.

The designer’s motivation to act is also affected by their sense of enablement; their past experiences; and the social norms and incentives that inform them (see Section 6.3). One key point for influence is the general recognition the goals receive, and more importantly the value assigned to them in comparison to other design objectives. Aiming to improve a designer’s sense of enablement could also pay dividends. This could possibly be done by recording and circulating examples of
success, or by feeding the designer’s knowledge of appropriate actions and aiding their recognition of the opportunities that exist in different situations. Similarly, the relevance of past experiences presents a potential opportunity, which could be targeted by demonstrating ways to address the goals, or more so by getting designers to enact efforts through workshops and simulations. The past experiences of others is also relevant, and as such, finding means to share this information would again be beneficial. More importantly, responsible design could be better enabled by encouraging designers not just to enact what is required of them by their clients, but to demonstrate leadership, particularly towards the goals. This is evidently a complex area in itself, but one which warrants further attention.

Another main avenue of approach is to help increase the demand for responsible design, both from the consumer, and the client. This begins with disseminating knowledge, and with marking existing consumer interests more clearly. It should also include finding better ways to communicate in business terms what is to be gained from responsible design; and as such, would be assisted by finding suitable metrics and measures. Another direction which links to this, consists of improving the designer’s potential to influence their clients. This involves empowering designers to argue the case for responsible design more effectively by making case studies and other forms of proof more readily available. Progress towards industrial design’s professional status would also improve the designer’s credibility, and by effect, their potential to influence (see also section 4.6.2). In addition, identifying more clearly the impacts of design’s efforts so it is apparent that designers can have effect would lend badly needed support and encouragement, and would also contribute to directing designers towards the areas where they can be more effective.

7.5.1 > Additional Concluding Thoughts

Returning to the notion of reasonable expectations (see section 7.4.1) as a medium to summarise the outcomes of the research investigation, it can be expressed, that given the current circumstances and the factors affecting the consultant, it may not be reasonable to expect that consultant industrial designers will address the greater
needs of society within their commercial work. It is, however, reasonable to expect that they could. The difference between these two perspectives is determined by sufficient understanding and guidance of how to address the goals, as well as facilitating conditions to allow it. It is also critically dependent on individual consultants’ awareness and motivation to take on the topics; particularly their assertion of responsibility towards the larger consequences of their design work; and their abilities to recognise and avail of the opportunities that do exist.
Chapter Eight:

8.0 CONCLUSIONS

This final chapter draws together the conclusions and findings presented in the previous content to reflect on the significance, and contribution to knowledge, of the main thesis. It evaluates how the research aim and objectives are met, and summarises the main conclusions drawn from the research. From this, it discusses the limitations of the project in addition to offering suggestions for future work leading from the findings.
8.1 > Fulfilling the Research Aim and Objectives

This section describes how the aim and objectives set out in Chapter One were met by the research activities. The overall aim of the research was to provide an understanding of what currently affects industrial design consultants undertaking responsible design goals within their commercial role. The main intention was to generate an accurate description of the problem, by providing a detailed and representative portrayal of the consultant designer’s circumstances. To achieve this, three main objectives were identified, each of which set out to contribute a level of understanding which would build towards the overall aim.

The first two objectives centred on describing the range of factors affecting the industrial design consultant and their work; and what determines the possibility for the consultant to achieve responsible design goals within their commercial remit. The investigation of the literature revealed an initial set of factors, and also provided a general background to inform and direct the primary research studies. From this, an explorative workshop was carried out to investigate the core of the research topic, and to identify a broader set of factors potentially affecting the consultant. The combined findings from the workshop study, and the literature, generated a preliminary theory of the factors potentially affecting designers (see Appendix C). This was then used to construct the lines of enquiry for the main study interviews.

From the analysis of the interview and workshop data, and the initial theory, two groups of findings were derived to fulfil the first two objectives. These are presented in Chapters Four and Five. The first set of findings (Chapter Four) presents a description of the circumstances surrounding the consultant and their design work. It includes the pertinent characteristics of the elements involved and concludes with an illustrated model outlining the product design context for the consultant (see figure 4.3). Building from this, the second set of findings (Chapter Five) is structured around six key areas identified from the analysis, and describes the main determinants, and critical factors, affecting the consultant’s possibility to achieve responsible design goals within their commercial remit.
The third research objective focused on the individual consultant and what shapes their design behaviour. This was addressed through the development of theory presented in Chapter Six. By combining the findings from the primary research with existing theory on design activities and the antecedents to pro-social behaviour, the influences acting on the designer’s actions were explored; culminating in a model detailing the theoretical formation of responsible design behaviour by a consultant industrial designer (see figure 6.11).

The three layers of findings and theory presented in the thesis combine to form a thorough and representative portrayal of what currently affects industrial design consultants enacting responsible design within their commercial roles. Figure 8.1 (repeated from section 3.5) illustrates the iterative research process which backs the findings and the fulfilment of the research aim.

![Figure 8.1: The iterative research process supporting the research findings](image)

8.2 > Conclusions from the Thesis

The three chapters of findings and theory development presented in the thesis (Chapters Four, Five and Six, accompanied by their discussion in Chapter Seven) contain a rich set of insights and observations regarding the consultant’s circumstances, and their relationship to achieving responsible design. At the end of
each chapter; and for each constituent section; detailed conclusions of the findings are presented culminating in a model or illustration depicting the overall findings for that chapter. The following summary collates and highlights the main conclusions identified.

- Every situation is different for a design consultant; each client varies greatly and no two projects are the same.
- The design work a consultant can undertake is predominately determined by the clients their consultancy attracts; which rests on the services, competencies and specialities it offers, as well as its overall profile and success.
- Clients engage industrial design firms for varying purposes, and they differ in their appreciation of design; their responsiveness to the consultant; and the remit they extend them. Clients also abide to their own organisational culture, ethos and business strategies, and their response to new ideas or change; coupled with their treatment of risk and decision-making; impacts what the consultant can achieve.
- Each project presents a distinct set of characteristics, priorities and challenges, which are not always apparent. These are heavily dependent on the business objectives for the product, and are typically dominated by concerns relating to viability and market-related goals.
- The majority of design projects are directed towards incremental change and often only a minor portion facilitate substantial innovation or opportunity for significant advance.
- The ‘user/customer’ incorporates a set of different user groups, and is often effectively based on the perceptions of the client, as well as those of the retailer, and sales teams. In addition, consumer pressure will likely only have real effect if it is recognised as a potential impact on sales.
- Consultants feel that there is not adequate or suitable guidance; which they can have confidence in; on how to direct their efforts and effectively tackle responsible design goals. There was also a discernible need for evidence that their endeavours would, in fact, make a difference.
- There were strong sentiments from consultants that many responsible design topics require top-down influence and depend on factors far outside their role and remit. They also stressed that overall they are heavily restricted in what they can achieve, and that while they can have a lot of influence, they are not the final decision makers.
- The consultant’s central motivation is to satisfy the requirements of their clients, and this tends to take precedence, potentially overshadowing other objectives. Consultant’s are also cautious about pushing clients too far, and compromises are often made for the sake of growing or strengthening business relationships.
• The consultant’s willingness to challenge or push boundaries, coupled with their ability to gauge what is appropriate for each instance, are subtle but significant impacts on what they can achieve.

• The consultant designer’s ability to be persuasive and to lead clients in a suitable (responsible) direction without compromising their service to them, is the crux of their effectiveness.

• Consultants feel confident they have the capabilities to tackle responsible design goals, and typically they offer competencies which support this prospect; such as distinct creativity, flexibility, and communication skills; along with a capacity to envision and represent alternatives; resolve multiple requirements; and think holistically.

• The consultant’s opportunities to enact responsible design depend on the details of the commission, and in particular the attitudes of the client decision makers. Dealing directly with the higher levels of a client organisation was recognised as a key means to enable greater effect.

• Consultants will be restricted by the underlying economics of their firms, and often hard realities trump good intentions.

• Clients have to agree with what is proposed and believe it is the right step to take, or it will not go forward. This is heavily dependent on the confidence the consultant can build in the client; which involves aspects such as their relationship, the client’s perception of the designer’s involvement, and more importantly, the consultant’s ability to persuade and offer strong backing for their (responsible) design proposals.

• Numerous other parties and factors impact on the final product outcome, many of which exist outside the consultant’s involvement, and as such, the consultant’s (responsible) design intentions are often at the mercy of those involved in bringing it to production.

• The possibility for an industrial design consultant to achieve responsible design within their commercial remit is determined by six key areas and their corresponding critical factors:

  A: Knowledge and understanding: whether the consultant can identify and understand how to effectively address the goals.

  B: The consultant’s motivations: how important the goals are to the consultant, and how empowered and responsible they feel to address them.

  C: The consultant’s capabilities: the consultant’s ability to give responsible design a compelling form and incorporate it within the designs they propose.

  D: The opportunity available: the importance the client assigns to responsible design goals; the characteristics of the commission; and the consultant’s ability to recognise and avail themselves of opportunities within them.
E: The level of influence the consultant has: the consultant gaining the client decision makers’ confidence that a more responsible design proposal is a better option.

F: What is implemented: what is finally produced, and whether the consultant’s intentions remain intact despite the impact of the other parties involved in implementation.

Each of these areas needs to be appeased, and the extent of the consultant’s effect relies on the combination of how all six resolve.

- The crux of effective industrial design can be regarded as identifying the priorities and factors of greatest importance for a product, and combining them in a compelling form, despite the restrictions. For responsible design goals to be achieved more widely, those goals need to be recognised among the factors of importance for a project and also need to be made sufficiently relevant to the client, the user, and the product’s sales potential.

- Design possibilities and visions will be mitigated by what is acceptable; and to have success, (responsible) design proposals have to fall within the expectations of the client and market, or what they are willing to take on.

- A set of key abilities or skills compose the core of the consultant’s activities; these are: formulating the design situation; identifying the importance of the requirements; combining the elements; gauging what will be appropriate and acceptable; and generating compelling (and supported) proposals.

- To enact design activities, designers employ a number of mechanisms and tactics, such as primary generators; framing, guiding principles, precedents, schemata and gambits. These cognitive tools are based on knowledge, references, and experience they acquire, and rely on their ability to recognise parallels or similarities with situations from other contexts. Responsible design behaviour requires the consultant to form cognitive tools and mechanisms appropriate to addressing those goals; and is therefore dependent on a foundation of relevant knowledge, references, and experience.

- The consultant’s remit is predominately set by the client; however, what the consultant perceives or interprets as their remit; coupled with what they can successfully impart to the client; will have a significant effect on the form of their behaviour.

- Consultants adopt a variety of roles to enact their remit, which range in terms of the leadership, and autonomy, demonstrated. The role adopted embodies what the consultant considers will be appropriate and effective for serving the client at that moment in time, and is a function of a complex series of factors (originating from the client, the consultancy, the project, and the consultant themselves); which include the designer’s awareness of the client’s reception to the topic at hand; their willingness to push the client; as well as the outcome of similar past experiences.

- The industrial design consultant role directly relates to three elements: clients, a consulting firm, and the industrial design profession; and based on the notion of role morality each of these affords the consultant designer a
potential avenue to abdicate responsibility for the consequences of their actions.

• The consultant’s intention to undertake responsible design behaviour is predicated by: their personal traits, self expectations and aspirations; their sense of responsibility for the outcome; their perceived ability to act and to have an effect; their past experiences; and the social norms and incentives which they acknowledge.

• Consultants’ intentions to act will be mitigated by the particulars of a design situation and will also depend on their remit, and the role they assume.

• A consultant’s likelihood to engage in responsible design behaviour is dependent on their ascription of responsibility; along with their moral integrity, and their strength of conviction. It is conditional on their sense of responsibility (what they feel responsible towards); their sense of enablement (what they feel they can achieve); the role they enact (how they approach their involvement); and the importance and commitment they assign to the topics (and perceive others assign to them).

### 8.3 > Limitations of the Research

The success of this research lies in its ability to identify and portray what affects the consultant industrial designer and their uptake of responsible design. The research has delivered a wide range of interesting observations, insights and findings in this regard; however, there are some limitations which are important to acknowledge, relating to both the implementation of the research, and also what can be claimed by it.

An overarching restriction has been the time constraint of the PhD project, mainly imposed by the three year duration of the funding. This had an impact on the way the research was planned and implemented, and fed through each phase of the project; impacting when to finalise the data collection and analysis, for example. Had more time been available, it would have been desirable to have sought extra interview participants; to have carried out an additional study; or to have undertaken further analysis of the data.

The main subject group for the investigation was industrial design consultants, and this also added restrictions to the research, particularly relating to identifying
potential participants, and gaining their involvement. Consultancy practices are typically very busy and under time constraints, which makes recruitment for research studies more challenging. This aspect had a direct impact on an attempt to run a planned workshop with a design consulting firm, as described in section 3.8.2. The arrangement and scheduling of interviews also needed to respect the professional obligations of the participants, and be kept to an appropriate duration. A related restriction was due to other prior research by colleagues who had also targeted industrial design consultancies. Those firms who were involved, or who had been approached, were omitted from the sample available for consideration to avoid any aggravation and to respect previous preferences for involvement.

It should also be highlighted that the recruitment for the main study (outside of the pilot study) was focussed on senior consultants as it was felt they were easier to identify and approach directly, and that their expertise would provide a more valuable and tested contribution. While effort was made to include representative variation, it is acknowledged that the participant sample is only a small portion of industrial design consultants within the UK and Ireland, and as such, there are limits to the generalizability of the findings. Had the opportunity been available, it would have been preferred to include more industrial design consultants across a wider range of expertise and practices.

With regard to the participants for the workshop study, these were determined by attendance to a seminar, and as such, varied in their background and expertise. Furthermore, those involved had an existing concern for social sustainability, as the seminar was themed around the subject; however, any resulting effect on the data or partiality was considered to be in keeping with the research objectives.

It also should be underlined that the researcher who conducted the project presented in this thesis has background experience as an industrial design consultant. While this added to the understanding of certain aspects of the project; and benefitted discussions in the interviews; it is acknowledged that it has influenced the interpretation and analysis of the data. On the whole, however, it is felt that this bias has been a greater asset, as it provided a relevant and established
knowledge base for evaluations. In addition, the researcher’s design capabilities; such as those relating to wicked problems and abductive thinking; were beneficial to the research process, particularly in the phase of theory generation, as well as in dealing with the novelty and indeterminacy of the research topic.

Presenting a behavioural model as part of the findings is likely to raise questioning related to validation and testing; however, the derived model is intended to serve a heuristic role rather than function as a framework for detailed empirical research. That said, it is acknowledged that a further phase of testing could have strengthened the model and the other findings from the research. Within the time available, however, it was felt that given the richness of the data and understanding gained, expanding theory regarding the consultant’s behaviour was a more valuable addition to the outcomes. This relates to another constraint of the project, which is that of the breadth and novelty of the research field. While these characteristics informed the key rationale for this research, they also factored in setting the scope of the objectives, and the depth appropriate for the analysis; resulting in a wider focus than is typical for a doctoral project. The lack of established research meant a more specific focus seemed less appropriate, and instead, a broader depiction of the consultant’s conditions; spanning from their context to their individual behaviour; was felt to be more fitting. Within the time constraints, however, this was at the expense of further validation for the outcomes. Had a more established research base existed, a more specific focus or greater depth of analysis and validation may have been more apt and more easily facilitated.

8.4 > Contribution to Knowledge

The academic contribution to knowledge of the research presented in this thesis has been to provide a detailed and representative understanding of what currently affects industrial design consultants undertaking responsible design goals within their commercial role. It centres on a novel concept which encompasses a broader set of societal goals; and it is the first research that addresses commercial industrial design consultants’ relationship to that notion.
The research presents original knowledge consisting of three levels which together describe the full range of circumstances affecting the consultant enacting responsible design. The first level formulates a model which depicts the industrial design consultant’s context, incorporating the range of elements influencing their work and the product creation process. Secondly, the research identifies the critical factors determining the possibility for the consultant to achieve responsible design within a commercial role. These have not been explicitly recognised previously in the literature. In the course of achieving this, a framework of six areas key in determining the general possibility for an individual to undertake a goal, is also presented. Thirdly, by applying the insights gained from these first two sets of findings, the research expands existing theory to generate a model depicting the formation of the design consultant’s behaviour and whether it will incorporate responsible design goals. It presents originality in the research and findings, by amalgamating previously unrelated theory from diverse fields; by specifically investigating what motivates design behaviour; and by recognising links between the antecedents to prosocial behaviour and those which predicate designing.

Overall, the research offers a holistic understanding of the complexity and conditions affecting responsible design by consultants, which is unique in its breadth and depth. It provides a foundation to inform further research or efforts aimed at increasing consultant designers’ responsible design actions; and the absence of prior work in this field reinforces the significance of the findings identified. Furthermore, it makes a distinct contribution to advancing the knowledge and understanding of the role, activities and behaviour of consultant industrial designers, which are applicable not only to the goal of responsible design. As such, the findings of the presented research have potential implications for education, design management, policy formation, designers themselves, and the advancement of the profession.
8.5 > Recommendations for Future Work

The novelty and breadth of the topic, coupled with the time available for the project, have meant that fully pursuing many of the research directions which arose during the project was not possible. The findings identified, however, offer a detailed overview of the consultant designer’s situation, and can serve as a strong foundation for further research towards improving the enactment of responsible design. This section offers some recommendations for future work that were recognised in the course of the project.

One area for further development is the refinement of the behavioural theory presented in Chapter Six. This is the first representation of the consultant’s prosocial behaviour, and would benefit from further investigation and validation. It may also be possible to consider simplifying the theory to form a framework more suited to detailed empirical research on the critical aspects identified.

A primary factor affecting the consultant enacting responsible design, is their ascription and sense of responsibility for the consequences of their actions. It is evident from the research that this is a complex matter, and given its importance, it is an area where further research is required to understand how that sense of responsibility is formed, and in what ways the designer may be receptive to input or influence.

In a similar manner, the consultant’s need to form a strong defence and backing for their (responsible) proposals has been highlighted in the findings, along with some of the tactics currently employed (see section 5.6.1). This is also an area whose importance suggests it would benefit from further empirical investigation. The topic could extend to consider how designers’ intuitions and qualitative forms of evidence can function more effectively in business forums frequently driven by quantitative data.

The kernel of a designer’s ability to undertake responsible design is their formation of appropriate frames, precedents, references and schemata. The understanding of these aspects of design, and in particular their formation, is still relatively basic, and
expanding knowledge in this area, would be a particularly worthwhile endeavour, both for responsible design, and design as a whole.

This research focussed specifically on consultant industrial designers, and it was apparent from the findings that the particulars of their situation had a distinct effect on their actions and their relationship to responsible design. In a similar manner, it is anticipated that the particulars of in-house industrial design would have an impact on their uptake of responsible design. It is suggested that equivalent research to examine the overall circumstances of in-house designers would add valuable insight and understanding.

An additional area for development is the dissemination of the knowledge gained from the research both within the academic sphere, and particularly to the design industry. Further development is required to reformat the findings to suit a design audience, and to ensure they are appropriate, useful and can have a positive effect within professional practice. Incorporating a means to extend a dialogue between academia and industry would also be a worthwhile addition. The potential benefits of advancing industrial design as a profession were discussed in section 4.6.3, and contributing to stronger interaction between academia and industry would assist this, while also offering numerous mutual benefits along the way.
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References

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APPENDICES

The following are supplemental documents and information to support the contents of the thesis.
## Appendix A: Details of the workshop participants

(as per date of workshop; November 2010)

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<th>Code:</th>
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<th>Additional Information:</th>
<th>Group:</th>
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<td>MA Programme Leader Author in Sustainability</td>
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**Notes:**
- WPA: Workshop Participant Academic
- WPD: Workshop Participant Designer
- WPO: Workshop Participant Other
Appendix B: Workshop material
This appendix section contains a set of documents relating to the explorative workshop carried out in the second stage of research.

B.1 Workshop description and program

Preliminary Study Workshop - Details and Program:

The workshop was held as a section of the 15th Sustainable Design Network Seminar entitled ‘Social Sustainability’ held in the Open University on the 2nd of November 2010. 19 participants were involved; forming three pre-selected groups.

Workshop Aim:
To identify the factors which determine/influence the possibility for industrial designers to implement responsible design.

Workshop Objectives:
Find out what others in the field think.
Identify factors relating to the research question.
Pilot a research enquiry to help recognise the expected outcomes and how to improve the data obtained.

Workshop Research Question:
What factors have an effect on industrial designers achieving more Responsible Designs?

Workshop Program: (80 minutes)
1: Introduction presentation. 10 mins
2: Task 1: Participants to fill in individual sheet. What factors affect industrial designers achieving more Responsible Designs? 5 mins
3: Task 2: Discussion of industrial design’s role Create a diagram to explain the industrial designer’s role 10 mins
4: Task 3: Main group discussion: What factors affect [name of designer] achieving more responsible design? 30 mins
5: Short presentation from each team (3 x 5 mins): 15 mins
6: Wrap up and closing: 5 mins
(+ Grace period: 5 mins)

Data Collection:
• Individual feedback sheet
• Audio recording of each group
• Rough notes from each team
• Final ‘presentation’ sheets
B.2 Individual feedback sheet used for the first workshop task

1: Personal Details:

Name: 

Occupation / Position: 

E-mail address: 

2: Please provide your individual response to the following question:

What factors have an effect on industrial designers achieving more Responsible Designs?

Response:

(If more space is required, feel free to use the back of the sheet)
B.3 Stakeholder cards provided for the main workshop activity (task three)
B.4 Reproductions of the group presentation sheets from the main workshop activity (task three)

B.4.1 Green group presentation sheet
B.4.2 Red group presentation sheet

What factors have an effect on Andreas achieving more responsible designs?
B.4.3 Blue group presentation sheet
Appendix C: The provisional description of the system of factors

(Derived from the literature review and the workshop study)

The influence of external parties
The influence of parties not directly related to the designer’s activities.

Identifying what is a positive effect on the needs of society
Can designers determine what are the needs of society and how to positively affect them? What information and knowledge available to the designer and their confidence in it.

The reach of the product/service
To what extent are society’s needs within the reach of the product?

1. Category of product - determined by manufacturer’s business model & industry
2. Type of product - primarily determined by the business case
3. Description of the product - determined by the product design & development

The level of influence the designer has
The designer’s role or capacity to influence the product’s features and characteristics. What is the designer’s remit and can they broaden it?

The opportunity for influence within the project constraints
The practical constraints associated with a design project and the opportunity afforded to the consultant by those involved on the project.

The capabilities of the designer
The designer’s ability to implement the design solutions which could affect a positive change.
Appendix D: Card sorting activities incorporated into the pilot interviews

Two of the card sorting activities designed for the original workshop were adapted and incorporated into the pilot study interviews. Reproductions of the materials used, are included here.

### D.1 Topic cards used for ‘Card Sorting Task A’

<table>
<thead>
<tr>
<th>Energy Conservation</th>
<th>Education</th>
<th>Consumerism and Consumption</th>
<th>Ageing Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrasing Quality of Life and Well-Being</td>
<td>Water Conservation</td>
<td>Fair Trade, Working Conditions and Workers’ Rights</td>
<td>Descrimination and Social Inequalities</td>
</tr>
<tr>
<td>Erosion of Cultures and Traditions</td>
<td>Health</td>
<td>Diminishing Resources</td>
<td>Poverty</td>
</tr>
<tr>
<td>Environmental Deterioration</td>
<td>Pollution</td>
<td>Disabilities</td>
<td>Crime</td>
</tr>
<tr>
<td>Waste</td>
<td>Decreasing Sense of Community and Social Interaction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Gender Equality
### D.2 Objective cards used for ‘Card Sorting Task B’

<table>
<thead>
<tr>
<th>Objective</th>
<th>Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivered within budget and schedule</td>
<td>The product solution will be...</td>
</tr>
<tr>
<td>Meet the client’s requirements</td>
<td>The product solution will...</td>
</tr>
<tr>
<td>Express me as a designer</td>
<td>The product solution will be...</td>
</tr>
<tr>
<td>Innovative, new, or novel</td>
<td>The product solution will be...</td>
</tr>
<tr>
<td>Visually appealing and link with emotions</td>
<td>The product solution will be...</td>
</tr>
<tr>
<td>Strengthen the clients brand</td>
<td>The product solution will be...</td>
</tr>
<tr>
<td>Sustainable and responsible</td>
<td>The product solution will be...</td>
</tr>
<tr>
<td>Easy to use</td>
<td>The product solution will be...</td>
</tr>
<tr>
<td>Easy to manufacture</td>
<td>The product solution will be...</td>
</tr>
<tr>
<td>Sell well</td>
<td>The product solution will be...</td>
</tr>
</tbody>
</table>
### Appendix E: Details of the interview participants

(as per date of interviews; January - April 2011)

<table>
<thead>
<tr>
<th>Code</th>
<th>Position Held:</th>
<th>Size of Firm:</th>
<th>Professional Experience:</th>
<th>Additional Information:</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDC:01</td>
<td>Junior Ind. Design Consultant</td>
<td>21 - 25</td>
<td>0 - 5 years</td>
<td>MA, Design</td>
</tr>
<tr>
<td>IDC:02</td>
<td>Junior Ind. Design Consultant</td>
<td>21 - 25</td>
<td>0 - 5 years</td>
<td></td>
</tr>
<tr>
<td>IDC:03</td>
<td>Mid-Level Ind. Design Consultant</td>
<td>21 - 25</td>
<td>5 - 10 years</td>
<td></td>
</tr>
<tr>
<td>IDC:04</td>
<td>Senior Ind. Design Consultant / Associate Director</td>
<td>21 - 25</td>
<td>15 - 20 years</td>
<td>MA Tutor in Medical Device Design</td>
</tr>
<tr>
<td>IDC:05</td>
<td>Senior Ind. Design Consultant</td>
<td>21 - 25</td>
<td>5 - 10 years</td>
<td></td>
</tr>
<tr>
<td>IDC:06</td>
<td>Design Director / Partner</td>
<td>21 - 25</td>
<td>20 - 25 years</td>
<td></td>
</tr>
<tr>
<td>IDC:07</td>
<td>Co-Founder and CEO</td>
<td>21 - 25</td>
<td>30 - 35 years</td>
<td></td>
</tr>
<tr>
<td>IDC:08</td>
<td>Technical Director / Partner</td>
<td>21 - 25</td>
<td>20 - 25 years</td>
<td></td>
</tr>
<tr>
<td>IDC:09</td>
<td>Managing Director</td>
<td>1 - 5</td>
<td>20 - 25 years</td>
<td>MA, Interaction Design</td>
</tr>
<tr>
<td>IDC:10</td>
<td>Managing Director</td>
<td>6 - 10</td>
<td>20 - 25 years</td>
<td>Director, BDI</td>
</tr>
<tr>
<td>IDC:11</td>
<td>Creative Director</td>
<td>(26 - 50)</td>
<td>20 - 25 years</td>
<td></td>
</tr>
<tr>
<td>IDC:12</td>
<td>Co-Founder / Managing Director</td>
<td>6 - 10</td>
<td>40 +</td>
<td>UK Design Council Associate; Director, BDI</td>
</tr>
<tr>
<td>IDC:13</td>
<td>Founding Partner / Director</td>
<td>6 - 10</td>
<td>35 - 40 years</td>
<td>Director, BDI</td>
</tr>
<tr>
<td>IDC:14</td>
<td>Owner / Managing Director / Professor</td>
<td>(101 +)</td>
<td>25 - 30 years</td>
<td></td>
</tr>
<tr>
<td>IDC:15</td>
<td>Chairman / Founder</td>
<td>16 - 20</td>
<td>25 - 30 years</td>
<td>National Chairman, BDI</td>
</tr>
<tr>
<td>IDC:16</td>
<td>Head of FMCG Design</td>
<td>101 +</td>
<td>25 - 30 years</td>
<td></td>
</tr>
<tr>
<td>IDC:17</td>
<td>Creative Director</td>
<td>26 - 50</td>
<td>10 - 15 years</td>
<td></td>
</tr>
<tr>
<td>Code:</td>
<td>Position Held:</td>
<td>Size of Firm:</td>
<td>Professional Experience:</td>
<td>Additional Information:</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------</td>
<td>--------------</td>
<td>--------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>IDC:18</td>
<td>Owner / Director</td>
<td>26 - 50</td>
<td>25 - 30 years</td>
<td></td>
</tr>
<tr>
<td>IDC:19</td>
<td>Director</td>
<td>101 +</td>
<td>15 - 20 years</td>
<td></td>
</tr>
<tr>
<td>IDC:20</td>
<td>Sector Manager - Medical</td>
<td>101 +</td>
<td>5 - 10 years</td>
<td></td>
</tr>
<tr>
<td>IDC:21</td>
<td>Sector Manager - Consumer</td>
<td>101 +</td>
<td>10 - 15 years</td>
<td></td>
</tr>
<tr>
<td>IDC:22</td>
<td>Owner / Director</td>
<td>6 - 10</td>
<td>25 - 30 years</td>
<td></td>
</tr>
<tr>
<td>DCO:01</td>
<td>Director</td>
<td>1 - 5</td>
<td>5 - 10 years</td>
<td></td>
</tr>
<tr>
<td>DCO:02</td>
<td>Owner / Director</td>
<td>1 - 5</td>
<td>10 - 15 years</td>
<td></td>
</tr>
<tr>
<td>DCO:03</td>
<td>Co-Founder / Director</td>
<td>1 - 5</td>
<td>5 - 10 years</td>
<td>PhD, Social Anthropology</td>
</tr>
<tr>
<td>DCO:04</td>
<td>Snr. Human Factors Specialist / Design Strategist</td>
<td>1 - 5</td>
<td>0 - 5 years</td>
<td>PhD, Design and Emotions. Previously worked as an ID consultant.</td>
</tr>
<tr>
<td>DCO:05</td>
<td>Director of Semiotics</td>
<td>(26 - 50)</td>
<td>0 - 5 years</td>
<td>PhD, Communications Studies</td>
</tr>
<tr>
<td>ACD:01</td>
<td>Professor / Associate Dean</td>
<td>-</td>
<td>-</td>
<td>PhD, Design Methods and Processes</td>
</tr>
<tr>
<td>ACD:02</td>
<td>Professor / Co-Director</td>
<td>-</td>
<td>-</td>
<td>PhD</td>
</tr>
<tr>
<td>ACD:03</td>
<td>Professor / Chair</td>
<td>-</td>
<td>-</td>
<td>PhD</td>
</tr>
<tr>
<td>ACD:04</td>
<td>Teaching Fellow / Author</td>
<td>-</td>
<td>-</td>
<td>PhD</td>
</tr>
</tbody>
</table>

**Notes:**

IDC: Industrial Design Consultant  
DCO: Design Consultant, Other  
ACD: Academic
Appendix F: Documentation from the interview study

Included below are a set of documents related to the main research study interviews.

F.1 Participant information sheet

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**PARTICIPANT INFORMATION SHEET**

**Explorative Study of Industrial Design Consultancies**

**Investigator:** Norman Stevenson, Loughborough Design School, Matthew Arnold Building, Loughborough University, Leicestershire, LE11 3TU, UK. N.Stevenson@lboro.ac.uk

**Main Supervisor:** Dr. Vicky Lofthouse, Loughborough Design School, Matthew Arnold Building, Loughborough University, Leicestershire, LE11 3TU, UK. V.A.Lofthouse@lboro.ac.uk

**What is the purpose of the study?**

The purpose of the study is to identify and explore the factors which may affect the possibility for industrial design consultants to address the goals of sustainable and responsible design within their role for commercial clients.

**Who is doing this research and why?**

This study is part of a PhD research project at Loughborough University, supervised by Dr. Vicky Lofthouse (Loughborough Design School) and Dr. Alistair Cheyne (Loughborough School of Business). The project is funded by the EPSRC (Engineering and the Physical Sciences Research Council).

**What are the selection criteria?**

The study is exploring the activities and practices of design consultancies in the UK and Ireland who are involved in the design of consumer products.

**Once I take part, can I change my mind?**

Yes. If at any time, before, during or after the sessions you wish to withdraw from the study please just contact the investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

**What is my involvement in the study?**

Your participation in the study will be in the form of a 'one-on-one' interview. This will involve answering and discussing a set of enquiries related to the research topic with the investigator.

**How long will it take?**

The interview will take approximately 45 minutes. A small amount of additional time should also be allowed for meet-and-greet, and setting up.

**Is there anything I need to do before the sessions? Is there anything I need to bring with me?**

No. No special preparation is required.
(Participant information sheet continued)

**How will the information from this study be used?**

The information gained from the interviews will be used to contribute to research theories which will be investigated further in a later study.

All information from your interview will be treated anonymously. Where any reference is made in writing to contents from an interview, this will only be used as a coded reference with no identifiable link to the firm or participant. The study is an exploration, aiming to offer representation of the circumstances surrounding the research topic, and is in no way an assessment of the actual participant firms.

**Is there an opportunity for further involvement in the research, if I was interested?**

Yes. Your input and opinions would be very welcome as part of the ongoing research project. Further involvement could take one of three forms:

i: We would be happy to review the findings from this study with you in a follow up conversation or e-mail.

ii: The research theories formed from this study will be evaluated as case studies with design consultancies; if you would be willing to consider this kind of involvement, we would love to discuss it with you.

iii: Any other thoughts or opinions you have related to the research topic are always welcome. Feel free to contact us by e-mail if you have something further you’d like to share.

**Will the information from this study be kept confidential?**

All the information you provide will be treated in strict confidence and will be kept confidential to the researchers. The storage of all data, including audio recordings, will comply with the Data Protection Act 1998 and will not be released for use by third parties.

**I have some more questions who should I contact?**

Please feel free to contact the investigator directly with any questions you have.

**What if I am not happy with how the research was conducted?**

If, for any reason you are not satisfied with how the research was conducted, you can contact the investigator directly. If, however, this is not appropriate due to the nature of your concern, you may contact the main supervisor who will provide further direction regarding your concern. Further information regarding Loughborough University’s policy relating to Research Misconduct and Whistle Blowing is available online at [http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing21.htm](http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing21.htm)

**Thank you!**

We would like to thank you for your willingness to participate. Your contribution is valued and greatly appreciated.
F.2 Informed consent form

INFORMED CONSENT FORM
(to be completed after Participant Information Sheet has been read)

The purpose and details of this study have been explained to me. I understand that this study is designed to further scientific knowledge and that all procedures have been approved by the Loughborough University Ethical Advisory Committee.

I have read and understood the information sheet and this consent form.

I have had an opportunity to ask questions about my participation.

I understand that I am under no obligation to take part in the study.

I understand that I have the right to withdraw from this study at any stage for any reason, and that I will not be required to explain my reasons for withdrawing.

I understand that all the information I provide will be treated in strict confidence and will be kept anonymous and confidential to the researchers unless (under the statutory obligations of the agencies which the researchers are working with), it is judged that confidentiality will have to be breached for the safety of the participant or others.

I agree to participate in this study.

Your name

Your signature

Signature of investigator

Date
Below, are copies of the interview sheets used for the semi-structured interviews.

### F.3 Interview sheet for industrial design consultants

<table>
<thead>
<tr>
<th>Firm's Work</th>
<th>Role</th>
<th>Your offer</th>
<th>Affecting Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>What kind of work is done here</td>
<td><strong>Explain your role as a design consultant?</strong> Design + Consultant / Lead or serve</td>
<td><strong>What is the key thing you offer your clients?</strong></td>
<td>What factors affect your ability to achieve a good result?</td>
</tr>
<tr>
<td><strong>Example of typical work</strong></td>
<td>How is the role changing?</td>
<td>How do you measure success?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What do clients want?</td>
<td>Why do companies need you?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Solutions</th>
<th>Level of Influence</th>
<th>Topics</th>
<th>Influencing factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>How are product solutions determined?</td>
<td><strong>What level of influence does a designer have on the final product?</strong> WHY? Who else is involved?</td>
<td><strong>How do these topics enter into your work?</strong> Examples: How was that different? Was it a success? Why?</td>
<td>Is it realistic to expect consultancies to deal with these issues?</td>
</tr>
<tr>
<td>What are designers responsible for? more responsible?</td>
<td></td>
<td></td>
<td>What affect's their ability to address these topics?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Value of Design</th>
<th>Sustainable Design</th>
<th>Change</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What role can design play in addressing these issues?</strong></td>
<td><strong>In your opinion, what has to happen in order for more sustainable design to occur?</strong></td>
<td><strong>What can a designer do to gain greater influence?</strong></td>
<td><strong>What relevance does the design community have for you?</strong> Membership to an org?</td>
</tr>
<tr>
<td><strong>What main value can design add?</strong></td>
<td></td>
<td>What would need to happen for you to be more effective?</td>
<td></td>
</tr>
</tbody>
</table>

*A product can be considered good design *only* if it contributes in a positive way to the needs of society*
**F.4 Interview sheet for academics**

<table>
<thead>
<tr>
<th>Your Research</th>
<th>Role</th>
<th>Design’s influence</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of your main research interests are</td>
<td>What do you regard the role of an industrial designer to be?</td>
<td>What level of influence do you feel a designer has on the final outcome?</td>
<td>Is it realistic to expect commercial designers to address these goals?</td>
</tr>
<tr>
<td>(Other research areas)</td>
<td>Is there anything additional in the role of a consultant?</td>
<td><strong>What factors affect it?</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Should they have more?</td>
<td></td>
</tr>
</tbody>
</table>

**Example**

Offer an example of a commercial product which is sustainable or responsible

Is it successful?

**More**

Why aren’t there more examples?

Why is it not more wide-spread?

**Influencing factors**

What factors affect the designer’s ability to address these topics?

**Commercial**

How does Responsible / Sustainable design relate to the commercial setting?

**Sustainable Design**

In your opinion, **what has to happen** in order for more SR / sustainable design to occur?

**Role / Value**

What’s the main role for designers in S & RD?

What value can design add?

**Role / Value**

What’s the main role for academia?

What value can they add?

**Community**

What relevance does the design community have on this goal?

Membership of org’s?

---

“A product can be considered good design only if it contributes in a positive way to the needs of society”
F.5 Interview sheet for design-related strategic consultants

<table>
<thead>
<tr>
<th>Name:</th>
<th>Company / Venue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current position:</td>
<td>How long with company?</td>
</tr>
<tr>
<td>Career background:</td>
<td>years</td>
</tr>
</tbody>
</table>

Date:  
Start Time:  / End time:

What factors influence the possibility for consultant designers to implement responsible design?

<table>
<thead>
<tr>
<th>Firm’s Work</th>
<th>Role</th>
<th>What you do</th>
<th>Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain what kind of work is done here</td>
<td>How do you see your <strong>role</strong> for your client?</td>
<td><strong>What’s special</strong> about what you do?</td>
<td>Why do companies need you?</td>
</tr>
<tr>
<td>(Example of typical work)</td>
<td></td>
<td></td>
<td>What do you do that they can’t?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Designer’s gap</th>
<th>Designer’s gap</th>
<th>Factors Effecting</th>
<th>Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do you do that designers can’t?</td>
<td>Why don’t designers do it?</td>
<td><strong>What factors</strong> affect your ability to achieve a good result?</td>
<td><strong>What level of influence</strong> do you have?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>What affects</strong> your level of influence?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>More Effective</th>
<th>Motivation</th>
<th>Motivation</th>
<th>Sustainable</th>
</tr>
</thead>
<tbody>
<tr>
<td>What would need to happen for you to be <strong>more effective</strong>?</td>
<td>What are your main <strong>motivations</strong> and <strong>drivers</strong>?</td>
<td>How important are these in achieving results?</td>
<td>What has to happen in order for Sustainable design to occur?</td>
</tr>
</tbody>
</table>

“*A product can be considered good design only if it contributes in a positive way to the needs of society*”
F.6 Flash cards used for interviews

Green Design / Eco Design
Universal Design / Inclusive Design
CSR (Corporate Social Responsibility)
Sustainable Design
Responsible Design

A product can be considered good design **only** if it contributes in a positive way to the needs of society
Appendix G: Sample interview transcript

Below is a sample transcript from the semi-structured interviews undertaken in phase two. For confidentiality, certain details have been omitted or hidden. The interviewer’s questions and comments are shown bold.


<table>
<thead>
<tr>
<th>Entry</th>
<th>Timestamp</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0:00.0 - 2:29.4</td>
<td>[Background omitted for confidentiality] You’re the owner of <strong><strong>? Yeah, owner and founder ... [</strong></strong>] How many people are working here roughly? There's ten. Ten - around about that size. Just to get an idea. And what would be typical products, or a typical project that you work on? Well we -. Anything that's three dimensional really. We do an awful lot of domestic consumer goods. Eh, we do lots of work for **** in the States, but also we do a lot of aircraft and transportation work, so we design motorbikes; we do car work and we do a lot of airline work, so interiors and seating and things like that. And they range from just the detail to basically the entire interior of an aircraft. So, they're very varied in their scope. But we also do a lot of work for independent and start-ups, you know, who we think have got something worth investing in and looking at, if appropriate, and we feel it's sort of a valuable bit of work for us, really. Is there any particular area that maybe dominates your work, in the sense that it dominates the way that you work, or -? I think airline work does, em increasingly, because we're doing more of it, but product work and, you know, consumer good work takes as long as an aircraft interior so there's an awful lot of time and effort spent doing that, so yeah, they're kind of ;- they're pretty much evenly balanced at the moment, but I can see the trend moving a little bit more towards the transportation side in the next few years, hopefully.</td>
</tr>
<tr>
<td>2</td>
<td>2:29.5 - 2:37.1</td>
<td>If I were to ask you explain what you felt the role of a design consultant was, how would you answer?</td>
</tr>
<tr>
<td>3</td>
<td>2:37.1 - 4:27.6</td>
<td>Well, as a design consultant, primarily your role is to represent the consumer. Em, that's a funny statement, but when you're asked by a company to design something, the first thing you have to have in mind is who the end user is going to be and how they are going to interact / relate to the thing that you're designing, so we have to champion that cause. Obviously, we want it to be commercially successful; we want it to</td>
</tr>
</tbody>
</table>
be made on time, if possible to be made more cheaply, depending on the sort of thing we’re working on; but ultimately, we represent the consumer in the equation, and when we’re designing, we have two customers. When we’re designing we have, kind of, two people – one is our immediate client but also, it’s what we’re trying to do with the product when it goes into market, so we have to put forward what we think is, you know, the right solution that will benefit the user and the consumer most, but also corresponds and reflects what our clients want out of it as well. And our role is keeping them thinking about what comes out at the end so when they’re saying ‘well, can we make it smaller’, we say ‘no you can’t do that, because if you do that, it won’t be as usable or it won’t be as good’. And our role is to keep that process right from the start when we’re doing concepts, right through to working with the Chinese or whatever manufacturer who wants to change things for different reasons. So we are the champion of our client and ultimately the consumer.

4 4:27.6 - 6:10.6 OK. Do you find you’re able to keep in contact with the product all the way to final production with most clients? Yes, Yeah

Is that something that's particular to the way you work?
No, I think -. OK, I’m -. I’m going to put my flag up the pole here. We’re proper product designers, we’re proper industrial designers; we design things that can be made and we design things that look good and we know can be manufactured and respond to a brief, and consequently, we feel that one of the most important roles we have is to protect that ideal through to production, so we do get involved with the manufacturers and sit with them and say ‘you can’t do this and you can't do that’. There are a lot of designers who will do a little sketch and a wafty thing and then everybody else has to sort it out for them. I'd love to do that, but that's not what I've been brought up to do; we’re designers, and we design with a practical head on. So, I think it is very important for us to be in the loop and even if we’re not day to day involved, we need to be updated regularly on things that are being done in our names so that we can say that's not right, or change that. So yeah, ultimately, you have a reputation to defend as much as anything. ....

5 6:10.5 - 6:17.3 Is there anything that’s your key offer to your client, is there anything that distinguishes you?

6 6:17.4 - 7:34.4 One of the very key things we have is that we have a very broad range of experience and we have designed motorcycles, trains, aeroplanes and we’ve also designed medical devices and surgical equipment. And, very often you’ll find that broad experience gives you a much better perspective on how you approach a project. ... cross fertilisation. The other thing is ... **** and I remain involved in all the creative stuff - we set it up because we wanted to design. And so, if a client comes to use, they know we will be involved - the directors will be involved in the designing, and there will be other companies where the director might pick up a brief and then it gets handed down to the team and then the
director presents it. But we still sketch, draw, do the whole lot, so we are designers.

Is that (the direct involvement of the directors) something that you think is of value to the client? Or has the client reciprocated that?

I do. I think it's valuable to the client because when we go along and talk the talk, if we’re going along to try and win a job, they know actually that the things we're saying are the things that will happen when we get back I think that is important and I think clients value it, and I think they like the fact that I've gone along and will be involved .... I also think the whole notion of design is about fully understanding and some companies, not so much now maybe, used to go in and go ... do it like this ... Companies are sophisticated things, you've got to go in and understand what they're doing, why they need to do it, where they've been, what their market is going to be like in the future, so that you can understand and advice them how you think they can do things and so, you actually have to work very collaboratively, but in a distance way ... so you can challenge them, but in a positive way, because you're challenging them from a position of understanding, not just going in and having an arty strop, you actually are completely getting under their skin, and then from that moving them forward.

Are most clients happy with involving an external party to that level?

Yeah, funny enough, they don’t realise, some of them -. Well, ‘the client’ over the years has become much more sophisticated cause there's designers and design managers and all sorts of tiers of design which is another issue altogether, but they still occasionally don't understand just what value and breadth of input a designer going in to design a range of products can have on their general demeanour, almost. We've done work in the past with the Design Council were we actually go in and advice them on how to incorporate design into a company, and that could be the fact that I walk into your reception and it's shit, or not. And we’re like classic mechanics here ... the mechanic with the broken down car, probably.

What’s that they say about a good tradesman? -?

Yeah.

So, and I think our role has changed a lot over the years, and it's become broader and it’s become less about designing a plastic thing ... to going in and saying that’s a great idea, have you thought about it in the context of, and where does it go, and how can you do that, and why are your teams doing this and are parallel developing things over here, so it’s a broader picture, and we try and work at that level if we can, because it makes a bigger difference to them.

So it sounds like you’re moving more into what others would call strategy?

Yes, and it's one of those off-touted words ... Product designers have been doing that for a long time. The smart ones noticed and charged extra for it. ... Whereas historically that's always been part of what we've done, ... I think the industry has matured enough now that people will
listen to us ... but I suppose with the benefit of experience in the industry, people start to listen to what you're saying. And that's why I think experience and the fact that the directors remain involved is a good thing, because you can probably talk at a higher level with members of the board that you might be talking to in the company so you can actually have a say in how they might do things, whereas a junior might not recognise the opportunity or feel the confidence to do it. ...

You mention earlier about advising - I think the two words you used were advising and challenging the client - can you talk to me a bit more about that?

... It's the remit of the designer to go in there and take the brief. In the old days we would say we'll give you everything you want, but we'll also make you think differently and that's our role. Our role is to go in there and understand where they're going with the product and then just push that little bit further - 'have you thought about this', 'what about this new material' at that level, or it might be, 'why are you selling into that market, could you not be selling into this market?'. So, we're always trying to answer what the client is expecting of us, but then push them, make them think about things a bit differently, and that could be anything, .... but it's also about making them think about how they might be doing something, selling it ... And we always use this really nice statement, which is, you're allowed to have naivety, you can ask the stupid question. You can go in and say 'why are we doing it like that, again?' ... 'Why', whereas some people in the company can't necessarily do that because they might get shot down. We can ask the naive question and it's an intelligent naive questioning because actually sometimes questioning a key thing that they're doing ... And I suppose with the distance you have as a consultant; not being involved in the everyday day-to-day stuff, which tends to get their heads down, you can spot these things quite quickly. Happens to us to ...... It's good for any company to have that external

So you're talking about being an external and allowed to ask those wild questions and be naive - are there other things that would enable you to be more effective for the client? Or other barriers?

I think the way you can be most effective really is that you have to be talking to people within the organisation at the right level that can make change, and one of the things that has happened over the last few years is that there are more layers of management within the design process so you might present to a product manager, who will then present to a da-da-da-da. So, the higher we can get involved within a company, the quicker we can help to make a difference, and if you get a director who buys into what you're doing, then things move very quickly. You can have equally head-to-heads with a director like that, but at least you're making him think. And I think they value it either way; whether you challenge them and they disagree with you, or they agree, they're actually being challenged and made to think, and that's a bit about what we have to do.
So how do you challenge - you obviously can't just go in and say 'it's my opinion' that you should do this, or do you?

We usually just thump them! (laugh) ... No, as I say, you have to do it (challenge them) from a basic understanding, so you have to -; if we're given a brief to do something, you're going to look at that brief and then you might go away and completely understand it and get it and think actually that's quite good, you then might add on a bit at the end of a presentation to say 'have you thought about this?' Or you might fundamentally look at it and think, that is not what they should be doing; and then you can be brave and put all your cards on the table and say 'this is the brief you gave us, and this would have given you something like this as a solution, but we think that's completely wrong, so this is what we think you should be doing based on all the information you've given us. So, you have to analyse and take it on and you can do that formally around a table, or you can do that over a pint in the bar; it depends on your relationship with the client, and as you make a difference, or you talk to people at a higher level and get their confidence, then you find that you can make those changes more quickly. And that ultimately makes our lives easier going forward. You have to win your spurs though; you have to be able to go in there and prove that you can do just the designing stuff and then hopefully that you can build that relationship - it's not an instant thing, it's a building of a relationship and that's how you do it. Then of course somebody in that company that you've been building a relationship moves, and you have to either go 'oh shit, we're in trouble' or you start again with whoever's there, or you have a strong enough relationship that you can ride it out. And, ultimately, if that person values you, they go somewhere else and you work for them at another company, hopefully.

You touched on a point there about proof, you have to prove it to them, is it only based on past achievements, or how do you go about -?

You're only really as good as your last job all the time, unfortunately, that's very much the case. But if -, any designer worth his salt actually, every job I do, I'm thinking I got to do my best on this; you know, every job you do is got to be the best that you can do on that job, so that's just how we do it, that's how we work, in that everything that comes in, we put our absolute all into, cause you A, don't want to look like a twat if they don't like it, but you also want to do well, you want to prove to them that no matter what they throw at you, you can handle it. I think the difference is that once you get beyond a certain point, then that still goes on, you still have to kind of prove it, but you have been able to introduce yourself to the group of people who are influential and then you can start to influence it from a different point of view.

... One of the good examples is a company might be doing a lot of market research and you don't agree with the way that they're doing their market research on particular things, so you start off with a few projects and then it (the project) market researches and you get these results, ... and you say to them 'you only got those market results because you did this, if you did this, you could do something different, so why don't you invest more money here and do that there'. And they then start to listen to you, and that sounds like a little thing, but that's actually a kind of key
influencer when they're spending maybe half a million to a million pounds on market research, and actually getting results that don't reflect what they as product people want to get out of it. You know, with the best will in the world, the consumer will be very happy with the things they've got but they're not very good at looking at things in the future. ..... But that's the reality, they can't see something until they've got it in their hand, and so if you show them something, they will immediately default back. So, that's the kinds of things we try and move and influence and change. And ... then, you just build that relationship.

I know business, or certainly marketing, tends to be lead on statistics and market research and those sorts of things, and I know often designers feel that they can represent the client in a different way, and there can sometimes be conflict between those two things - if for example the marketing team figured out they wanted to do this thing for this reason because they had the research and you felt that -.

...Here speaks the designer who's had that experience ...

How would you deal with it, how would you go about -?
... If there was a conflict of opinions, how would you deal with it?
I think you just have to keep to your ideals, you have to stick to what you believe. And, em, sometimes you win, and sometimes you don't, and if you don't win then you try and create the thing as close to how you want it that they want ... Market research is a very useful tool and I think it's great for endorsing things, but I don't think it's a creative process at all and who's to say that designers that have been designing for a long time don't have a much greater insight into the consumers mind than the consumer who looks at the current stuff. So, you find work-arounds ... some you win, some you lose, and if the thing goes out and it's successful, then everyone's happy and ultimately, dare I say it, market research is just about covering your arse. It's about 'well, we did the market research and everyone said they liked this one, but I don't know why it hasn't sold, because look at the market research results, it was the favourite'. So nobody can be blamed because they went through due diligence and process and ultimately stifled creativity with it, and that, I guess is the bug-bearer of designers. The designers always think they're right, that's our nature, we think we know best, and of course we don't always know best, however, we have a pretty good idea, and if there's five people involved in a project, you've virtually got sometimes as many people designing as involved in the groups, so there's quite a broad spread of input anyway, so ...

Is there a way to be more persuasive? ...
... As I say, it's about talking at a different level. The Japanese have a very good way of enabling no argument on the subject almost, because they're historically, not very good at snap stuff, so they like process, so if I was able to go in and say 'the reason why we did this design was because this, this, this and this, and there's a story and here's a design at the end of it' - that's one way of doing it. The other way of doing it is that you have been bullish before and it's done well so they think we'll listen to him now, because he was right that time. So, there's various different methods and you just have to -. You know, each relationship with a client is different and you have to adapt to it. You know, when we're working
with a big airline, they have so many pulls in so many different directions on what the thing is going to be that it's very difficult to find out ... who the key people are or where you want to be. Ultimately, it rests with the man at the top of the organisation, and he will lay down the edict, and so something like working on that area is very different from working with a middle-sized manufacturing company that have a limited group of people involved. So, you have to adapt your relationship to the client and to indeed the personnel that you're dealing with. Each relationship is very individual and, you know, I might like a particular person within a company and some of the other guys here might not like them, so I end up working with them. It's very much about relationships.

You're talking about relationships and you're talking about the consultancy part of the role - how does it divide up? Is being creative and actually designing and being a consultant and having relationships, how do those two things (?) your time?

For me, they're all part of the same thing; I'm designing and I'm dealing with the client and I'm getting new business. You know, we're a small consultancy, you can't divide yourself off into a role here. One thing I never want to have, is a project manager, I know that, or an account person, an account manager. I want my designers and people that work on projects to have a relationship with the client and I want them to understand the client and I don't want their work to be presented or represented by somebody who doesn't understand the process and why you get to a particular point. So, we expect the people who work here to be good designers, but also, part of your role is to understand the client, so that's ...

...}

You spoke about, for example in the situation with airlines, that there's a lot of different factors pulling them in the different directions as to what they want to achieve. What happens when you throw in another requirement, such as sustainability or you talk about responsible products or -, what happens?

It is in our role to do that. We have a guy here, who probably you should have been talking to, rather than me, ****, who's actually our sustainability champion. He's always looking at alternative materials, he spends at least a day a week looking at issues and looking at how we can move forward. We're pretty near carbon neutral as a company as a result of him, so we've really taking it on board.

It's one of those tricky things. I sit on the board at the RCA with the Helen Hamlyn Centre, so Inclusive design is one of the things that I'm on to, and there are any number of things that you can introduce to a client, so are you using sustainable materials, are you using inclusive design, are you doing this? And some companies would just see that as a phuh, I'm not bothered, and it depends on their attitudes from the top down. We're always pushing those things and we're always trying to introduce them; so for instance on airline work, we've introduced them to carpet manufacturers who make from recycled carpets and to recyclable materials for all the in-flight food and how you can get things like that. Ultimately in an airline they're burning hundreds of thousands of gallons of fuel, that's the bottom line, and you can't get around that. We're probably doing a horrible job there. But, we've worked on purely
sustainable products for a plastics manufacturer, we've been involved in how you can develop new materials using brick dust and all the kind of waste materials to try and establish new standards within that industry. Introducing them to clients is always a gentle introduction. You have to kind of introduce it and then keep doing it, because there's a certain amount of corporate amnesia goes on, when they go 'do you remember when we told you about that material', 'No, I don't remember that', 'no, we did, - the presentation; anyway, here it is again' and then a month or two ... and eventually it seeps in and you're finding now that a lot of the companies will have a sustainability champion, and so there's a bit of pull coming now. It always used to be push, but there is a bit of pull coming now, and I don't claim that we're the best pushers of it. We design products for **** and they're all plastic and you sit there going 'fuck, you know, how about using some different materials guys?' and all they're worried about is how they can get a half a cent out of the manufacturing cost, so sometimes you will meet a brick wall, and we will try and show them 'Ok, if you can't do that, what's the major bit, well it's cable, why don't you do the cabling differently?' So, we're always just nibbling away, and we actually do little projects ourselves and say, 'there you go, there's a solution to what you're talking about'. So you just have to be gently proactive, and I hesitate to say it, but if you're militantly proactive, they will just shut the door and then you've lost any influence you had, so you've got to introduce them and make them think it was their idea, and actually, 'it looks really good, doesn't it, this thing you've come up with'. And that's the way really to do it, is just to win them over onto your side.

20 31:59.2 - 33:08.9  **Why do you push so much? Why are you committed to it?**

*I admire your honesty.*

We have over the years designed a lot of plastic, and we know that some of the things are on 2 year life cycles, and you think 'Why, why are they on 2 year life cycles?' Because they want to keep selling new markets and so ... Good design lasts. If you've got a Kenwood Chef from 1960 ... it still works and Dualit toasters ... They sit in a more expensive sector of the market, and there are still lots of people who are very happy to buy a kettle, a toaster and a sandwich maker for 14.99 from Argos. There's that market as well, and it's always going to be tricky. I think the reality is though, that products, probably 2 / 3 years ago were as cheap as they'll ever be; I don't think we'll ever have products as cheap again.

21 33:08.9 - 35:26.5  **What makes you say that?**

Costs of fuel, obviously raw materials, metals, but also wage structures in China and India, they're all changing. You know, we hear of these interesting things about the southern Chinese factories saying 'quah, these Northern Chinese factories, just making cheap products, not as good as quality as -'. It's like us and Hong Kong 30 years ago. So, wages are going to have an effect. The costs as yet, are only just starting to be passed on, but I think we'll see just a gentle rise in product costs. Then actually, it makes more commercial sense for them to be more sustainable, and that's just taking the hard-nose view. That's what
companies will start thinking of - maybe it's a four year product cycle instead of a two, and ... then you can start to talk about different techniques of manufacture, blah, blah, blah. So, it's so intertwined; the economies and the cost of manufacture to how sustainable they want to appear to be.

The other reason we are committed to it is that we've always felt that it's the right thing to do. We want to go that way, and I came from an older generation of designers who didn't grow up with the issues, so for people like me, it's taking it onboard and working with it, whereas we've got younger employees who are much more aware and devoted to it as an issue, because they've grown up with it in a different time, and I think there's a certain amount of that within the design industry where there's a re-adjustment and a re-alignment, and that's where we are. We've re-adjusted and we're trying to realign and where we can we push our clients to come along with us.

So do you think it's realistic that designers can deal with these kind of topics?

I think, oh yeah, I think it's incumbent on us to do it. Whether ultimately we have a whole lot of effect, I question. I think what we do is create exemplars that set trends in all fields, and if we set a trend of sustainable and reusable design or inclusive design, or any kind of ecological approach, then it brings publicity to it. Ultimately, it's got to be a legislative thing; I think it's got to be a government, top-down thing. And as long as we keep pushing up, and companies we work for get the message and push as well, then I think it'll come, but if you were to just say to somebody -- I digress ... (tour of brewery - bringing back glass bottles) You just look at things like that and think if the government said you can't do PET bottle anymore, it's got to be a recyclable glass bottle, and that's the law, there'd be an outcry, but it would happen. That's the only way that I can see that ultimately you're going to get the change.

You've some conviction to that thought that legislation is the thing that's required

Yeah, yeah. ... As I say, we can continue to push, nudge, do exemplars, but I think ultimately it will come down to 'the government says' or ... Cost will also come into it, you know, there will come a point when it doesn't become sustainable for a company to keep buying new raw material and they'll have to go for recycled.

I heard a lovely story the other day about a pen company who sell a pen made from recycled material. It's very difficult to get clear plastics recycled, so what they were doing was running it through their factory twice - so they'd get clear material, mould something from it; chuck it all up at the other end and then say' actually, we're using recycled material'. And you think, that's the reality of how--; companies are desperate to be seen as on the green bandwagon, for want of a better description and yet actually have no ethical underpinning to it at all, so you find there's a certain amount of cynicism as well.
Is it just the lack of ethical underpinning, or are there other barriers to that? I mean, if a company goes to that extent, to want to appear to be, but aren't willing to do it at a real level, there must be something obstructing it?

... Cost is one that always comes up, obviously. I think the other issue is and it's to do with where things are made. We designed a range of products to be made from recycled material for a plastics manufacturer and it was going to be the eco range of products, and they were going to do them in large volumes, and they have done them in large volumes, and they could only find companies in China to make it, who could cope with the volumes, and there's not enough recycled material in order to do it. So there's actually physical deterrents, real manufacturing issues with trying to get recycled material in the right quantity, which is extraordinary, I wouldn't have thought there'd be a problem with that. Obviously, so manufacturing and finding the right manufacturer who does what you want to do is very difficult. Then the bottom line in the consumer market, a global consumer market, is if I can put six feet of cable on something and it costs me $6 and I can put four feet of cable and it costs me $4, I'll put four feet of cable on it. So cost comes into it an enormous amount. And nobody within companies, unless they're really brave, within a big global group, if they're a product manager, unless they've been tasked with it, or a particularly strong individual, will want to say that we can make this out of recycled material but it will cost another 2p a unit and that's 500,000 units so -, and that's the reality, so I think there's -; at the supply side you've got to find the right people who can cope with numbers and then there's the corporate 'I'm going to put my head above the parapet' and then you've got to have someone with the personality to do it

You also mentioned inclusive design which is another aspect of what I'm interested in. Does it differ from sustainability in proposing it to clients or how they'll receive it, ...?

Eh, I think there's more of an open door to sustainability, because they, dare I say it, see a commercial opportunity out of it a lot of the time, if they can make something sustainable - it's a rather cynical view. But also I think there's a broader and more general understanding of 'if we make it out of recycled material' - on a very base level - I know that's a very base way of describing sustainable products, but there's more press about it. Inclusive design is to me what a designer should ultimately be aiming for any way, it's about ... designing for the consumer. And so, it's easier to get something like that in ... because part of your design process is to make it more inclusive. Then if you start talking about specific areas and you say packaging is terrible for people with arthritis to open the bacon pack, that's a very specific solution and you can see the value of it. I did a project recently which is very interesting, involving street equipment and we did a session at the royal college with people with visual impairment and ..., a very broad range, and the client was amazed at how they interacted with some of the things that were there and how insightful it was into endorsing what we were doing as a product, that
it ... became so entrenched in how they wanted to go forward that they'd say 'we better do another session with that, because we don't want it to be' ... because they were finally dealing with real people in a real situation and they weren't just statistics, that was a very strong thing. So having introduced them to it, the inclusive design became what we have to do in order to design everything within the company and that was their final check through, which is great ... Again, it can be a bit draconian, because some things you don't need to -, some of them are common sense. So I think sustainability is easier to sell in ... is more acceptable because it's got broader press coverage, whereas inclusive design I think is incumbent upon us as designers to naturally do. You could argue that sustainable is as well but in designing you're trying to think about the user all the time, whereas anything sustainable, whether it be completely closed loop and -; there's a whole lot more involved in how they structure it within a company, how they deal with their packaging, how they get their raw materials, you know; it's a big thing. It's big.

And what about, for example the other social implications of the product or production, you know the other social responsibilities; work place standards, impacts on community, all those other -.

What, from a sustainability point of view, or from -?

Yeah. Do they fall within the remit of a designer?

Ultimately, they do. There's only so far you can go -. Putting it in crude terms, if somebody came along to me and said 'we want you to design a new razor' and I go 'ok, have you thought about using recycled material?' 'Oh, that's a good idea'. 'And we're designing it so it's inclusive'. 'Yeah, that's good'. '... Are you going to get the products back at the end of life?' 'Oh, that's a nice idea' 'Are you going to offer an exchange program?' -.

You can offer all those things and you can influence that, but how far they're prepared to take it is a tricky one to push. On airlines - ... Some of them, you can make a small change to a product to make a huge difference down the line, whether it be 'don't put seven batteries in - put three in and use a different thing.' A very crude idea. Whereas, you might say on an airline, why don't you reduce the cups from five per serving to three per serving and that's ... So you have a huge effect with just a very small change. And sometimes you don't know what the effect's going to be. ... And I'm, I guess, slightly coming from a very commercial point of view in response to your question, I -

Do you feel you have to?

From where I sit at the moment, I do, yeah, because ultimately, I'm trying to run a business and have commercial effect with my client. So, yeah, I do. I'd like to think I had the time to do more altruistic stuff, but it's more about pushing them within our remit and a little bit further, like I said right at the start.
If you were to have ... a magic wand that you could change one or two aspects of the current system as it is at the moment, what would you target, in order to be able to -.

What do you mean by the current system? ... The way we work, the way the clients work, -?

How you're involved, yeah, all of those things, the system as a whole, in order to be able to achieve a more positive impact.

Well, I know I've rambled a lot, but number one would be: talking at a higher level within companies, so at director level all the time, would make a huge difference. The diminution (act of diminishing) within the process of the reliance on market research; I think that would make a big difference, because you would get less spurious products out at the end of it. And I think in terms of the specifics of a sustainable thing, that, they have to be pushed from a legal point of view, because everything at the moment within (?) is a voluntary thing to do, so -; and it's voluntarily done at the moment largely how it's perceived by people in the market as a view of the ethics of your company ... So there's a little bit of (?) so I think legislation might help; that you have to make a new thing a certain percentage of recycled material or thing, and I think it's going to have to come, you know ultimately, It's probably already started in certain things. You probably know a lot more about it.

**** knows a lot about it and he's on ... in the total loop thing ...

It was the green procurement code for the mayor's thing, London thing, but also Cradle to Cradle, we got involved with them a bit. And the other thing is, and it's an important issue, everything we get involved with like that, costs us quite a lot of money and you know, we're not a big company and some of th -; you could become a member of everything and you can't afford it. So, some support going towards that would be a useful thing.

Do you think that's something that the design community as a whole could provide? Is there value in that?

Em, financial support?

Or just support in terms of knowledge and pushing it along, you know, it's quite a weak profession in terms of actual professionalism, you know, is that something that you see as a -?

It i- ... I don't know. It's a funny world, the design community, and I don’t know that it exists anywhere else, they don't kinda like being told what to do. I remember going along a few years ago, when the government or Design Council wanted to bring in certification for design consultancies, ISO 9000 / 9001. Oh my God, the outcry; 'we're creative people, we can’t have regulations and -', you know. They don’t like being told what to do, so if you say to someone, ... we want you to be sustainable, even if they
believed it they'd probably say we don't want to do it because they want to do it their own way. I think there are a lot of people and a lot of knowledge and there are a lot of disparate groups of people pushing sustainability and inclusivity and they all talk at different things and they all talk about the same things, and probably don't talk enough to each other, as well. I think there's an awful lot of that goes on. And ultimately, dare I say it, ... it's about making a difference and doing things properly, but also, some people are specialists in it; there are consultancies that will just do sustainable products and I would see them as a commercial competitor, so, you know, there's also a bit of a closed shop side of things. Although we're pretty good at discussing things, we're all a bit, you know (gestures) hold it in. So, I think the design community can probably do something if we can get ourselves together as a group. We're not very good at that, as is witnessed by the fact that we don't have a professional body. We're all 'prima donnas' ultimately. (laughing)

35 53:29.3 - 54:40.5

Do you think that's a consequence of it, as opposed to a cause of it, if you know what I mean?

I think it's both. I think it's a bit of both actually. We're not very good at that stuff. We're not very good at getting a group of people together to devote to an issue. I'm probably talking out of my arse there, but it just feels like that to me.

Mmm, that's what I'm interested in.
It feels like that it would be another thing to do and designers are quite often trying to push another thing, you know, it feels like there's always a lot of agendas and so what we try and do is within our consultancy push our clients to do it, and I think, if all the consultancies are at least doing that ... I think we should come together and talk about it and how we can make a difference, and there are forums that do, I just haven't been to one. ****'s been to quite a few of them and ... he then comes back armed with how to push us around when he comes back, so we get it.

36 54:40.5 - 55:20.4

Great. I'm conscious of your time ... 

... I may well follow up with **** at a later stage. I'd say at this stage what I'll do is I'll collate what I have ... and possibly get his input to that at a higher level.

I'll just briefly introduce you.
Thank you

...
Appendix H: The full set of variables influencing the consultant

The table below collates the findings from Chapter Four and presents the full set of identified variables affecting the consultant and their work, arranged according to the rudimentary elements of the product creation context.

<table>
<thead>
<tr>
<th>Element:</th>
<th>Variable factors:</th>
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</thead>
<tbody>
<tr>
<td>Consultancy firm</td>
<td>• The consultancy’s size and capacities</td>
</tr>
<tr>
<td></td>
<td>• The competencies and services they offer</td>
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<td></td>
<td>• Their knowledge base</td>
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<td></td>
<td>• Their design approaches, strengths and specialties</td>
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<tr>
<td></td>
<td>• The clients they attract and those which dominate their work</td>
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<tr>
<td></td>
<td>• The quality of the relationships they construct and maintain with their clients</td>
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<td></td>
<td>• How they adapt their services to the needs of the client</td>
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<td></td>
<td>• The firm’s culture, including its guiding ethos, agendas and values</td>
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<td></td>
<td>• Their business approaches and business performance</td>
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<tr>
<td></td>
<td>• The constraints and demands associated with consultancy work</td>
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<td></td>
<td>• Their regard for responsible design goals</td>
</tr>
<tr>
<td>Client organisation</td>
<td>• The client’s commercial concerns</td>
</tr>
<tr>
<td></td>
<td>• The business sector they operate in</td>
</tr>
<tr>
<td></td>
<td>• The client organisation’s size and structure</td>
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<td></td>
<td>• Their resources and incumbent skills</td>
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<td>• Their approach to manufacturing and retail</td>
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<td></td>
<td>• Their brand and brand values</td>
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<td></td>
<td>• How and why the client organisation involves the design consultancy</td>
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<td></td>
<td>• Their treatment of risk, responsibility and decision-making</td>
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<td></td>
<td>• The culture and ethos of the client organisation</td>
</tr>
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<td></td>
<td>• Their business strategies and objectives</td>
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<td></td>
<td>• The client’s perception and appreciation of design</td>
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<td></td>
<td>• Their expectations and what is acceptable to them</td>
</tr>
<tr>
<td></td>
<td>• The traits of the main point of contact and project team; such as which discipline they are from, and how empowered or enabled they are</td>
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<tr>
<td></td>
<td>• The client organisation’s reception to responsible design topics</td>
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<tr>
<td>Product and project</td>
<td>• The purpose of the design project and its priorities</td>
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<tr>
<td></td>
<td>• The product’s business sector and the type of product involved</td>
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<td></td>
<td>• The product’s price point</td>
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<td></td>
<td>• The business objectives for the product</td>
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<td></td>
<td>• The brief and specification for the product</td>
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<td></td>
<td>• The level of incremental or leap-change design being undertaken</td>
</tr>
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<td></td>
<td>• The resources and constraints associated with the project; such as budgets and schedules</td>
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<tr>
<td></td>
<td>• The frequency of redesign, and the details of previous iterations</td>
</tr>
<tr>
<td></td>
<td>• Regulations which apply to the outcome</td>
</tr>
<tr>
<td>Element</td>
<td>Variable factors</td>
</tr>
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</tbody>
</table>
| Users and customers          | • The level and quality of knowledge regarding the intended market; and the interpretation and importance given to it by those involved with the product creation  
                                 • The users’ and customers’ expectations  
                                 • Their motivations and purchasing behaviour  
                                 • Their priorities, requirements and concerns  
                                 • Their engagement with brands  
                                 • How informed they are; particularly their awareness of, and regard for, responsible design topics |
| External factors             | • Characteristics of the political and socio-cultural setting  
                                 • Macro and micro trends; such as increasing gas prices  
                                 • The economic circumstances  
                                 • Government intervention and legislative requirements  
                                 • Research and academia’s contribution to knowledge  
                                 • Technological advances  
                                 • Media influence  
                                 • The industrial design community and profession |
Appendix I: The relationship of the six determining areas to the overall effect achieved

Six areas were identified in the second level of analysis (see Chapter Five) as a framework to account for, and present, the series of determining factors affecting the industrial design consultant achieve responsible design. These were:

- **A:** The knowledge and understanding of how to address responsible design goals
- **B:** The consultant’s motivations
- **C:** The consultant’s capabilities
- **D:** The opportunity available
- **E:** The level of influence the consultant has
- **F:** What is implemented

An important aspect of these six areas is that they will collectively determine what the design consultant will achieve. They each need to be appeased if the consultant is to have effect, and the extent of that overall effect will relate to the accumulative outcome of their resolve. This relationship between the six individual areas and what is achieved in total could be expressed theoretically as a mathematical product:

\[
\text{The level of intentional success} = A \times B \times C \times D \times E \times F
\]

where the value of each area (A,B,C,D,E and F) would range from 0 to 1\(^1\) (0 representing a complete lack of that element, and 1 representing a full resolve of that element\(^2\)). From this, it is evident that a low value for any individual area decreases the overall outcome (as it will be multiplied across the other factors) and as such, each area has a limiting effect on the overall value attainable; i.e. the overall result can not be greater than the value for an individual area.

\[\text{Footnotes:}\]

\(^1\) Theoretically, some of the areas could have a negative value; for example if the consultant was deliberately motivated to act against the goal, resulting in an outcome which had a harmful effect; however, the equation aims to represent the level of success, and therefore, zero values suffice and also avoid disrupting the integrity of the equation (caused if two negative numbers are multiplied).

\(^2\) The value for each area would more accurately relate to a non-linear graph with steep decline and incline at the extremes (representing a deceleration in rate of change of the values as they approach the limits of 0 and 1).
It is felt that these characteristics are reflected in the six determinant areas; that is, the overall outcome (in terms of responsible design goals) may be mitigated by any of the six areas. For example, if the opportunity available to the consultant on a particular project is small, the resultant responsible design goals, will be limited by that opportunity, despite the level of the other areas (knowledge, motivations, capabilities, influence and implementation). Similarly, if another area, such as the consultant’s motivations or capabilities, is also minor, the overall result is likely to be further reduced.

It is accepted that it may not be possible to assign any realistic or objective value to the six areas, particularly in the case of opportunity (perhaps, like beauty, opportunity is in the eye of the beholder); and this discussion is included for purely academic purposes to discuss how the six areas relate to the design consultant’s possibility to achieve responsible design.
Appendix J: An expanded description of Lawson’s five sets of designer abilities

Below is an expanded explanation of the five sets of design abilities Lawson (2005) identified.

<table>
<thead>
<tr>
<th>Formulating</th>
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<tbody>
<tr>
<td>• Ways of understanding design problems: Lawson highlights that the sequential model of receiving a brief and analysing the problem before creating solutions does not easily apply to design. Instead, he concludes: “it seems more likely that design is a process in which problem and solution emerge together.” (Lawson, 2005, p.48) Designers, therefore need skills in finding and stating problems along with understanding them and exploring them.</td>
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<tr>
<td>• Identifying: these skills can be described in two forms: reformulating and structuring ‘wicked’ problems (as in the problem-solving view of design) or identifying and developing the elements or characteristics of the design situation (as in the conversational model of design).</td>
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<tr>
<td>• Framing: This is central to creative activities and can be summarised as selective viewing of the design situation to provide an alternative perspective.</td>
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<tr>
<th>Representing</th>
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<tr>
<td>• Ways of representing design situations: this refers to the activities employed by the designer to externalise their thoughts and ideas using drawings, writing, modelling, renderings, visuals, etc.</td>
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<td>• Conversations with representations: Schön (1983) explained that designers interact with their representations in a ‘conversational’ way, and Lawson highlights the importance of these ‘conversational’ abilities in the creative process.</td>
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<tr>
<td>• Working with multiple representations: designers need to be able to choose the most appropriate form of representation to accurately capture and explain their design intent.</td>
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Moving

- Creating solution ideas: generating solutions is central to design and this involves a number of activities based around both new propositions and propositions resulting from, and contributing to, the co-evolving problem-solution.

- Primary generators: These are early ideas about the solution brought to the design situation prior to full understanding of the problem.

- Interpretive and developmental moves: generating ideas is commonly based on reflecting on developing ideas, re-interpreting them, and transforming them into new ideas ('lateral' moves). Ideas are then developed further towards a realisable and definite form ('vertical' moves). Effective design requires combinations of both skills.

Lawson emphasises that in design, the problem and solution are inseparable and co-evolve. The problem does not necessarily precede solutions, and its formulation is typically ongoing throughout the design process. In addition, during certain periods of a task, designers often work by sustaining several parallel lines of thought which are incompatible or apparently irreconcilable.

Evaluating

- Objective and subjective evaluations: designers need to be able to make both objective and subjective evaluations about the relative benefits of options despite incompatible methods of measurement, and the fact that a correct or optimal answer is unlikely.

- Suspending judgement: while evaluation is important, a critical skill of the designer is to be able to suspend judgement in order to be creative and generate ideas.

Reflecting

- Reflection in action: “the designer is more or less continually reflecting on the current understanding of the problem and the validity of the emerging solution or solutions.” (p.299)

- Reflecting on action: a higher level monitoring of the design process to ensure appropriate approaches are taken and suitable avenues are pursued and not missed.

- Guiding principles: these can be seen as the designer’s own intellectual programme, philosophy or set of values, which are developed in two-way relationships with design tasks. As a form of reflection, it is about the designer assessing the implications of the work in the wider domain.

- Collecting precedent or references: rather than analysing situations, designers tend to make use of references and precedents, recognising and connecting sets of ideas with features of other situations. To enable this, designers observe and record (typically in sketchbooks) reference material which forms a knowledge base from which to draw upon.

(compiled from: Lawson, 2005)
Appendix K: Models of prosocial behaviour

Below is a table summarising the behavioural models investigated during the development of theory described in Chapter Six. These are accompanied by a set of corresponding diagrams.

<table>
<thead>
<tr>
<th>Theory</th>
<th>Description</th>
<th>Ref’s</th>
<th>Notes</th>
<th>Fig</th>
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<tr>
<td>Actively Caring Model (Hypothesis)</td>
<td>Geller’s Actively Caring Hypothesis proposes that ‘actively caring’ is a precursor to pro-social behaviour and intervention. Outside of convenience or supportive consequences, actively caring occurs when an individual’s needs for self-esteem, belonging, personal control, self-efficacy and optimism, have been satisfied; promoting a sense of outward interest and concern for others which facilitates altruistic tendency and behaviour (Geller, 1995).</td>
<td>Geller (1995)</td>
<td>The Actively Caring Model presumes that empowerment varies directly with perceptions of personal control, self-efficacy and optimism (Geller, 1995). It is also noted that ‘actively caring’ aligns with the work on self-transcendence and altruism by others such as Frankl (1962), Maslow (1971) and Schultz (1977).</td>
<td>A</td>
</tr>
<tr>
<td>Attitude- Behaviour- Context Theory (ABC)</td>
<td>The ABC theory is based on the notion that behaviour is a function of the organism and its environment. It states that behaviour is an interactive product of personal-sphere attitudinal variables (A) and contextual factors (C). The attitude-behaviour association is strongest when contextual factors are neutral and weakens when contextual forces are strongly enabling or preventative. (Stern, 2000)</td>
<td>Guagnano, Stern, Dietz (1995); Stern (2000)</td>
<td>ABC considers four groups of causal variables: Attitudinal factors, Contextual forces, Personal capabilities, and Habit or Routine. These causal factors interact and differ in importance depending on the particular behaviour (Stern, 2000, p. 416-418)</td>
<td>B</td>
</tr>
<tr>
<td>Comprehensive Action Determination Model (CADM)</td>
<td>CADM integrates the main assumptions of the TPB, NAM, the theoretical concept of habit, and the ipsative theory of behaviour to offer a comprehensive model depicting the intentional, normative, situational, and habitual influences affecting environmentally friendly behaviour (Klöckner &amp; Blöbaum, 2010).</td>
<td>Klöckner &amp; Blöbaum (2010)</td>
<td>The influence of social and personal norms was mediated by habits and intention, while habits moderated the relationship between intention and behaviour.</td>
<td>C</td>
</tr>
<tr>
<td>Theory</td>
<td>Description</td>
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<tr>
<td><strong>Expectancy-Value Models</strong></td>
<td>A broad class of theories (of which rational choice theory is one) based on the idea that behaviour is motivated by the expectations we have about the consequences of our behaviour and the values we attach to those outcomes (Jackson, 2005, p.26).</td>
<td>Fishbein (1973); Ajzen and Fishbein (1980)</td>
<td>Rational Choice Models, and Subjective Expected Utility are theories which fall under the class of Expectancy-Value Models</td>
<td></td>
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<tr>
<td><strong>Field Theory</strong></td>
<td>Influential early social-psychological theory positing that people and their surroundings and conditions depend closely on each other. To understand or to predict behaviour, the person and the environment must be considered as one constellation of interdependent factors; therefore, analysis starts with the situation as a whole. (Lewin, 1951)</td>
<td>Lewin (1951)</td>
<td>The notion of ‘field’ refers to: (a) all aspects of individuals in relationship with their surroundings and conditions; (b) that apparently influence the particular behaviours and developments of concern; (c) at a particular point in time.</td>
<td></td>
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<tr>
<td><strong>Ipsative Theory</strong></td>
<td>Ipsative theory is based on the premise that under many circumstances individuals’ actions are not constrained by objective conditions, but rather by the set of possibilities that they consider relevant for themselves (Frey, 1988).</td>
<td>Frey (1988)</td>
<td>A person will systematically tend to overestimate what is possible in positively valued events and underestimate for negatively valued events (Frey, 1988)</td>
<td></td>
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<tr>
<td><strong>Linear Models of Pro-Environmental Behaviour</strong></td>
<td>Simple models of pro-environmental behaviour from the 1970s based on the idea that environmental knowledge leads to environmental awareness and concern (environmental attitudes), which in turn lead to pro-environmental behaviour (Kollmuss &amp; Agyeman, 2002, p.241).</td>
<td></td>
<td>Rationalist models posing the idea that increased knowledge leads to behaviour change were later proven to be insufficient (Kollmuss &amp; Agyeman, 2002).</td>
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<tr>
<td><strong>Model of Environmental Behaviour</strong></td>
<td>The model proposes that environmental behaviour is a function of four inter-related components: environmental awareness, emotions, personal-philosophical values, and perceived control (Grob, 1995).</td>
<td>Grob (1995)</td>
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<table>
<thead>
<tr>
<th>Theory</th>
<th>Description</th>
<th>Ref’s</th>
<th>Notes</th>
<th>Fig</th>
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<tr>
<td>Model of Pro-Environmental Behaviour</td>
<td>A complex model incorporating factors from prosocial and sociological behaviour models. Environmental knowledge, values and attitudes, together with emotional involvement, make up ‘pro-environmental consciousness’ which is embedded in broader personal values that are shaped by personality traits and other internal and external factors. This is the antecedent to pro-environmental behaviour but must overcome barriers such as existing habits or lack of incentives and possibilities (Kollmuss &amp; Agyeman, 2002).</td>
<td>Kollmuss &amp; Agyeman (2002)</td>
<td>The biggest positive influence on pro-environmental behaviour is achieved when internal and external factors act synergistically.</td>
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<tr>
<td>Model of Responsible Environmental Behaviour (MREB)</td>
<td>MREB views situational factors and intention as direct determinants of pro-environmental behaviour. However, intention requires a person to acknowledge the need to act; possess knowledge and skill for effective action; and have a desire to act, which is based on internal locus of control, attitudes and a sense of obligation. Action is also affected by situational factors such as economic constraints, social pressures and opportunities (Hines et al., 1987).</td>
<td>Hines, Hungerford &amp; Tomera (1987)</td>
<td>MREB is constructed from a meta-analysis of research on determinants of responsible environmental behaviour.</td>
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<tr>
<td>Motivation-Ability-Opportunity Model (MAOM)</td>
<td>This model suggests that at least three classes of determinants: Motivation, Ability, and Opportunity should be used as a framework to study (consumer) behaviour (with respect to the environment). Motivation leads to behaviour only if a person commands the required abilities to perform, and opportunity to carry out the intentions. (Ölander &amp; Thøgersen, 1995)</td>
<td>Ölander &amp; Thøgersen (1995)</td>
<td>Combines internal motivations (based on TRA) and external contextual factors. It views opportunities as objective preconditions for the behaviour, but acknowledges that individuals may recognise different opportunities from a set of conditions.</td>
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<td>Theory</td>
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<tr>
<td>Norm Activation Model (NAM)</td>
<td>NAM assumes that altruistic behaviour is causally influenced by a person’s feelings of moral obligation to act on their personally held norms. This is activated by the perception of a need, which then results in action if the person has an awareness of the consequences of their actions, and an ascription of personal responsibility for those consequences (Schwartz, 1977).</td>
<td>Schwartz (1977)</td>
<td>The effect of personal norms on behaviour is stronger where a person is aware of the consequences of engaging / not engaging in the pro-social behaviour, and where they accept responsibility for these consequences.</td>
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<tr>
<td>Rational Choice Models</td>
<td>Suggest that an individual’s behaviour is motivated by purely rational and calculative deliberations, whereby they anticipate the outcomes of each possible action and choose the alternative that is likely to give them the greatest satisfaction (Scott, 2000). The rational choice model is widespread in economics and structures of modern (Western) society (Jackson, 2005).</td>
<td>Homans 1961; Coleman 1973 (cited in: Scott, 2000)</td>
<td>Rational Choice Models are based on a set of assumptions, including the idea that choice is deliberated and rational; and that it is made in the pursuit of individual self-interest (Jackson, 2005). See Scott (2000) for an overview of rational choice theory and common critiques.</td>
<td></td>
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<tr>
<td>Self-Perception Theory (SPT)</td>
<td>Asserts that people come to know their own attitudes, emotions and other internal states partially by inferring them from observations of their own overt behaviour and the circumstances where it occurs (Bem, 1972). People reason their own behaviours rationally in the same way they attempt to explain others’ behaviours (Bem, 1972).</td>
<td>Bem (1972)</td>
<td>Self-Perception Theory is counterintuitive to the conventional wisdom that attitudes come prior to behaviours.</td>
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<tr>
<td>Theory of Cognitive Dissonance</td>
<td>Cognitive Dissonance Theory proposes that people have an inner drive to hold all their attitudes and beliefs in harmony and avoid dissonance between them. To do this they may alter existing cognitions, reduce their importance, or add new ones, and this can bias decisions and actions (Festinger, 1957).</td>
<td>Festinger (1957)</td>
<td>For example, wanting to smoke and knowing that smoking is unhealthy; a person may try to change their feelings about the odds they will suffer the consequences, or they consider the short term benefits outweigh the long term harm.</td>
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<td>Theory</td>
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<tr>
<td>Theory of Interpersonal Behaviour (TIB) / Subjective Culture Model</td>
<td>TIB states that behaviour is a function partly of what I intend; partly of my habitual responses; and partly of the individual’s ability to perform the act. Intentions are immediate antecedents of behaviour, but behaviour is mediated by habits, and both of these influences are moderated by ‘facilitating conditions’ (Triandis, 1976).</td>
<td>Triandis (1976)</td>
<td>TIB explicitly includes affective factors: intentions are formed from: Attitudes, or the perceived value of the expected consequences; Social factors (norms, roles and self-concept); and Affect, or emotional responses to a decision and its situation. (Jackson, 2005)</td>
<td>J</td>
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<tr>
<td>Theory of Planned Behaviour (TPB)</td>
<td>TPB assumes intention is the immediate antecedent of behaviour. These behavioural intentions are formed from attitudes toward the behaviour, subjective norms and perceived behavioural control (PBC) which are respectively guided by behavioural beliefs, normative beliefs and control beliefs (Ajzen, 2012, p.448).</td>
<td>Ajzen (1991)</td>
<td>The TPB adjusts the TRA to take perceived degree of control (PBC) over the behaviour into account (Ajzen, 1991). PBC is used as a proxy for actual control; and intentions will predict behaviour better when PBC is higher rather than lower (Ajzen, 2012).</td>
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<tr>
<td>Theory of Reasoned Action (TRA)</td>
<td>According to TRA, the intention to perform a particular behaviour is a joint function of (a favourable or unfavourable) attitude toward the behaviour and of a subjective norm that encourages or discourages its performance (Ajzen, 2012, p.445). Beliefs and Evaluations form Attitudes; Attitudes causally affect Intentions; Intentions are the immediate antecedent of Behaviour (Ajzen &amp; Fishbein, 1980).</td>
<td>Ajzen &amp; Fishbein (1980)</td>
<td>TRA is confined to behaviours where people have complete volitional control; and only beliefs that are readily accessible in memory determine attitude (Ajzen, 2012)</td>
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<td>Theory</td>
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<tr>
<td>Theory of Structuration</td>
<td>Giddens suggests that social life is more than random individual acts, and that human agency (how people act) and social structure (traditions, institutions, moral codes, and established ways of doing things) are in a relationship with each other; it is the repetition of acts by individuals which reproduces the structure.</td>
<td>Giddens (1984)</td>
<td>Theory of Structuration relies on a distinction between ‘practical’ and ‘discursive’ consciousness (Jackson, 2005).</td>
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<tr>
<td>Theory of Trying (TT)</td>
<td>This model studies (consumer) behaviour from the perspective of trying to act. The Theory of Trying regards the act of trying as being mediated by the intention to try and moderated by both the frequency and the recency of past trying or past behaviour. The antecedents of intention are similar to TRA, however, TT explicitly distinguishes attitudes about success, attitudes about failure and attitudes about the process of trying itself (Bagozzi &amp; Warshaw, 1990).</td>
<td>Bagozzi &amp; Warshaw (1990)</td>
<td>M</td>
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<td>Value-Belief-Norm Theory (VBN)</td>
<td>The VBN theory accounts for the causes of a general predisposition toward pro-environmental behaviour. The theory links value theory, norm-activation theory (Schwartz) and the New Environmental Paradigm (NEP) perspective through a causal chain of five variables which lead to behaviour: personal values (especially altruistic values); NEP, AC (awareness of adverse consequences) and AR (ascription of responsibility to self) beliefs; and pro-environmental personal norms (Stern, 2000).</td>
<td>Stern et al (1999); Stern (2000)</td>
<td>Personal moral norms are considered the main basis for an individual’s predisposition, and these norms are activated as the theory specifies.</td>
<td>N</td>
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Appendices

Figure A: The Actively Caring Model (Geller, 1995, p.193)

1. I can make valuable differences.
2. We can make a difference.
3. I am a valuable team member.
4. We can make valuable differences.

Figure B: Attitude-Behaviour-Context Theory (ABC) (Guagnano et al., 1995, p.703)
Figure C: Comprehensive Action Determination Model (Klöckner & Blöbaum, 2010, p.576)

Figure D: Linear model of Pro-Environmental Behaviour (Kollmuss & Agyeman, 2002, p.241)

Figure E: Model of Environmental Behaviour (Grob, 1995, p.209)
Figure F: Model of Pro-Environmental Behaviour (Kollmuss & Agyeman, 2002, p.257)

Figure G: The Model of Responsible Environmental Behaviour (Hines et al., 1987, p.7)
Figure H: The Motivation-Ability-Opportunity-Behaviour Model (Ölander & Thøgersen, 1995, p.361)

Figure I: An interpretation of Schwartz’s Norm Activation Theory (Jackson, 2005, p.55)
Figure J: Triandis’ Theory of Interpersonal Behaviour (Jackson, 2005, p.94)

Figure K: Theory of Planned Behaviour (Ajzen, 2006)
Figure L: The Theory of Reasoned Action (Jackson, 2005, p.46)

Figure M: Theory of Trying (Bagozzi & Warshaw, 1990, p.131)

Figure N: Value-Belief-Norm Theory Schematic (Stern, 2000, p.412)
References for Appendices


