EXPLORING THE VALUE OF DESIGN MANAGEMENT

A thesis submitted in fulfilment of the requirements for the Degree of
Master of Design

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DECLARATION

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

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Taisia Zatsepin
18 August 2010
After almost five years of excitement, frustration and discovery, I allowed myself to pick up a work of fiction. Thousands of pages of fantasy offered an escape to a world of imagination, danger and victory. Quietly in the back of my mind grew the desire to analyse characters’ creative tendencies. Of more concern was the link I began to make between the fantasy and my research: the key ingredients of danger, the need for rescue, and the rescuer were present in both. There were fair maidens – the ‘truth’ I was seeking or allowing to come into fruition (depending on the epistemological stance at the time), dangerous dragons – missing definitions, lost meanings and confusing concepts, and courageous knights – the people who helped me discover the truth, and who came to my rescue with knowledge, support and encouragement. To you all I owe the success of my research, and gratitude for making this a rewarding and fulfilling experience.

This has been nothing if not an adventure.
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In particular, I am grateful to my senior supervisor Ms Deanne Koelmeyer and second supervisor Mr Malte Wagonfeld, of RMIT University, for their support and guidance; Marcus Powe for providing invaluable feedback during the earliest stages, Associate Professor Di Fleming for her friendship and counsel during my research years, and inspiration during my school years; the researchers and professionals who shared with me valuable insight into the world of design management: Richard Henderson (Melbourne), Michael Sparrow (Sydney), Lit Ho and Jeffrey Kiat (Singapore), Brigitte Borja de Mozota, Pradeep Sharma, Bill Hollins, Alan Topalian, John Bound, Naomi Sadowska, Les Wynn and Nico Macdonald (London); David Hands, Bob Jerrard, David Heap, David Croston and Nick Barnes (middle England).

I thank my family and friends, who have supported me with dinners and design discussions: YuXin Bei, a fashion designer, and Simon Strong, a graphic artist and photographer, for sparking and sustaining my fascination with design and enlightening me with true designer perspectives; Charles Ngu for helping shape my initial efforts using management consultant frameworks; Parikshiti Mhaispurkar for encouraging me to pursue ‘creativity’ in any profession; the management and staff of the firm referenced in Chapter 3 for having been great to work with and open to further explorations of design management concepts; my parents Svetlana and Alex for teaching me courage and persistence through example, my grandmother Roza for perfecting the cooking of “blinchiki” lest I go hungry whilst studying, and my closest friend and younger sister Nadia, herself near completion of a PhD in physics, for wisdom beyond her years, creative input and research advice; and finally Donald Permezel, my partner, for challenging my ideas, helping me find the essence in complex concepts, and most importantly pushing and pulling me to complete the last mile of this marathon when I was all but ready to give up.

Last but not least, I am deeply indebted to my grandfather, Professor Veniamin Zatsepin, for his wisdom, courage and help. Dedushka, this work is dedicated to you.
For my grandfather

Veniamin Zatsepin
ABSTRACT

It has been shown by a multitude of studies into design and design management that both of these concepts are exceptionally complex and multifaceted, and relate to a wide range of aspects of life both at individual and society levels. Effects on an organisation from design-related interventions can be manifest in both tangible and intangible forms, creating value by improving the financial health of the organisation and its psychological health: the morale, involvement and job satisfaction of the staff. The primary value of this work and the main input into the research of this topic is, in the opinion of the author, in highlighting the psychological effects of implementing design management into an organization. The awakening of a ‘creator’ in each and every worker, and the creation of individual satisfaction with the job and the working environment not only raises the productivity and quality of output, but also improves the psychological climate within the organization and raises the feelings of self-worth and quality of life of its employees.
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SUMMARY

In this thesis, the value of design management is explored through its related themes of design, design thinking, design management, innovation, creativity and value; some of the conclusions reached through the literature review are further supported by the researcher’s professional experiences and action research within a small engineering firm.

The first chapter introduces the topic of design management, describes why the value of design management warrants exploration, and provides a list of key terms and definitions. The second chapter is a review of the literature on the subject of design management and its related concepts. Specifically the concept of design thinking is explored and a link made to innovation and creativity.

The section on value is an attempt to demonstrate that one of the most important, yet often overlooked, benefits of design management is indeed intangible. In this sense, design management transforms into design leadership, whereby the administration of the design aspects of a specific plan is replaced with an unplanned approach to leading staff. In the preceding section on creativity, this concept is explored in greater detail, and the idea offered that design management is ideally positioned to facilitate a more design-savvy and ultimately innovative organisation through individual and group creativity. The creativity section essentially introduces and links design management to psychological issues, and is used in support of the contention that the greatest value of design management is its contribution to people’s creative spirits and self-fulfilment, through design leadership.

Insight is offered in chapter three into a real example of design intervention. It reviews the researcher’s personal experience within a small organisation, and presents discussions held with management and staff over a period of time, in response to the possibility of housing an Industrial Designer. The chapter highlights the potential of design intervention in exciting, inspiring and eliciting creativity within staff, and serves as a springboard from which staff can come up with ideas and implement them, regardless of their position within the organisation. The chapter reflects on the company’s journey from an industrial engineering business to one open to, and reliant upon, design.

The conclusion in the fourth chapter summarises and presents again the overall contention of the thesis, and proposes a list of opportunities for further research. References used in this research project are described in chapter five, while the sixth chapter is an appendix of journal entries and notes taken by the researcher of her interaction with professionals and academics in Australia, Singapore, Paris and London.
1. Introduction

1.1 Design Management – a fascinating proposition

The topic of this thesis, exploring the value of design management, was suggested to the researcher by her senior supervisor, Deanne Koelmeyer. The researcher found the topic interesting firstly on a personal level because of its psychological aspect and intellectual mystery. How can the human mind harmonize two such opposing concepts as the freedom-loving ‘design’ and control-loving ‘management’? Secondly, the researcher was curious as to how this seeming misalliance could be demonstrated in a corporate management environment, and how it could affect an organization in real life.

The discipline of design management remains as puzzling as it is attractive. At first glance, the mysterious proposition that combines the ‘ordered’ process of management with the ‘chaotic’ process of design hints at something greater than the sum of its parts. Like Shakespeare’s play, The Taming of the Shrew, design management seems to concentrate on the integration of the incompatible. Design, like any creative activity, tends to imply wildness, spontaneity, unrestraint and intuition. Management, by contrast, is often associated with order, rigorous consideration, control, restraint and formality – at least in theory. Rather than any form of inconsistency, however, the implied contradiction in terms is more a reflection of the multifaceted nature of design management.

An exploration of the value of design management cannot be meaningfully attempted without understanding the topic’s key terms. As the researcher reviewed literature on design, design project management, and the management of creativity and innovation, one of the first and promising references appeared in the form of Peter Gorb’s Design Management: Papers from the London Business School, written in 1990 and comprised of carefully laid out ideas which resulted in Gorb being christened the father (or grandfather) of design management. In response a common dinner table question, “what is Design Management?” the researcher often referred to Gorb’s model of design management as a combination of three components: product design, communication design and environment design. Corporate identity design, in a sense a fourth component, would ideally sit above and govern the other three components. It is fair to say that design management has retained this convenient definition in theory, however it has also adopted other adventurous definitions, purposes and applications: from the restricted scope of product design to the ambitious scope as the main driver of corporate strategy.
Indeed, familiarity with design management-related literature demonstrated the existence of many viewpoints on design and design management. Each of these viewpoints is worthy of attention, since it highlights a particular important and interest aspect of the whole problem, but the multitude of these viewpoints does not allow the researcher to perform a detailed analysis of each one within the framework of this thesis and timeframe. At the same time, complete disregard of any of these would not only be disrespectful to its originator, but also distort the greater picture. To keep within the context of the research question, the researcher has chosen certain elements to review and discuss for this project, and for this reason many of the viewpoints have been offered in their raw format, with a conclusion provided at the end.

While the subject of the topic, design management, needs to be adequately understood, it is equally important to define what is meant by the object of the topic, value. In this context, value is commonly understood as something pertaining to worth, high quality, utility, importance and, by extension, desirability.

There is an underlying assumption inherent in much design literature and thinking, that investments made by organizations in design management capabilities are worthy and wise. It could be fair to say that, in general, this view is not as widely held outside design disciplines. Many subjects taught in business schools around the globe, referencing the views of respected business and management gurus, set out the existence of more important determinants of, and methods for, improving an organization’s performance.

All of the above makes the topic more complex and attractive. The difficulties concerned in the implementation of design management compelled the researcher to take a close look into the personal aspect of this process: human creativity potential and personal psychology. Familiarity with the body of literature led the researcher to test the offered hypotheses in practice – in the context of one firm. This field experiment affirmed the view that design management can have not only economic but, of equal importance, social-psychological value: it affects not only productivity and quality of production, but the moral-psychological state of each employee and the quality of his life in general.

The researcher hopes that the exploration of design management’s value, presented in this thesis, will be useful not only to organizations (in particular the management of small and medium-sized businesses), but also students researching the alluring topic of design management.
1.2 Definition of key terms

There is much that can be said of design management and its value. The author has selected five elements of the research to review and discuss for this project, namely: design, design management, innovation, creativity and value. Within each element there are key terms that are defined briefly below and explored further in the thesis.

1.2.1 Design

Design Management as a concept originates from within the Design discipline, and although it is suggested in the thesis that its relevance has expanded beyond the discipline of Design, it is important to recognize that the concept of ‘design’ itself has been debated over the years and finds many definitions. For the purpose of the research question, the following definitions have been adopted.

<table>
<thead>
<tr>
<th>Design</th>
<th>A process or an outcome that offers an efficient and attractive solution to a problem</th>
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<tbody>
<tr>
<td>Design Thinking</td>
<td>A unique type of thinking that is inherently creative and complementary to management thinking and various type of problem solving</td>
</tr>
<tr>
<td>Design Knowledge</td>
<td>A type of knowledge that is necessarily gained from doing rather than reading or watching</td>
</tr>
</tbody>
</table>
1.2.2 Design Management

Design Management has been often referred to as the combination of design activities within the organization, however the thesis explores a more flexible version of design management, one that focuses less on the physical components of design management (those that can be found in existing fields of branding, marketing, advertising and product design) and more on the intangible benefits of design management through creative intervention and the encouragement of innovation within the organisation through design leadership.

| Design Management | Often described as the combination of environment, product and communication design, which is governed by corporate identity design, in the context of this research design management is considered from the point of view of design intervention or the tool by which design can enter and become visible and ultimately effective in an organisation |
| Environment Design | The design of features that exist in and affect one’s environment, typically the physical floor space, furniture, retail outlet fit-outs and visual aspects through which the company can communicate its values, attitudes and priorities |
| Product Design | The creation of a product, usually drawing on industrial and engineering design knowledge, that results in a tangible outcome |
| Communication Design | Also information design, the design of collateral and support material for the company’s products or services, as well as internal or external communication tools, including brochures and website, and the organization of information within the organisation |
| Corporate Identity Design | The design of the overall company image or brand, which governs the other three types of design (environment, product and communication design) |
| Design Leadership | The mobilization, organization, development and implementation of the creative potentials of all or at least the majority of the members of the production process (including those involved in the supply of raw materials as well as the consumers of the product itself |
1.2.3 Innovation
One of the more frequently quoted or implied benefits of design management is the facilitation of an innovative culture. The formalization of design processes and methods throughout the organization inadvertently gives rise to creative behaviours, as managers and employees are exposed to (well) designed communication elements and encouraged to contribute to the process improvement and potentially new ideas for products. Because a discussion of design management is incomplete without consideration of what is often mentioned in the same sentence as design and its management, innovation finds its place in this thesis. Its definition, however, is relatively broad and does not imply necessarily the creation of something entirely new and ground-breaking.

| Innovation | The creation and improvement of processes, products and services |

1.2.4 Creativity
Creativity is fundamental to designers and therefore to design management, however in this thesis creativity is seen as a more important factor – one which contributes to not only the financial health of an organization but also the self-fulfilment of individuals through the achievement of one of Abraham Maslow’s higher goals, that concerning self-actualisation through tools such as creativity.

| Creativity | A mental process present in varying degrees in every human being which often but not always results in an output that is new (in one way or another), unusual, unexpected, different and possible logically unrelated; creativity is a component of the highest of Maslow’s hierarchy of needs |

| Intellectual Activeness | A functioning of the mind which can include observation, producing ideas based on knowledge, selection of appropriate propositions and memorization; in the context of the thesis, intellectual activity can be grouped into three categories: reproductive, bounded reproductive and productive |
1.2.5 Value
To explore the value of design it is important to understand what is meant by value. The breaking down of value into its tangible and intangible components allows each type of value to be explored separately. In this way, ‘hard’ effects can be separated from ‘soft’ effects without explicitly disregarding those effects that cannot easily be quantified and measured.

The design profession, not unlike other service professions such as law and management consulting, has come a long way in packaging its tangible and intangible outputs as distinct marketable products. In the process, the concept of design effectiveness has emerged, as a way of distinguishing ‘bad design’ from ‘good design’.

<table>
<thead>
<tr>
<th>Tangible Value</th>
<th>Value that can be objectively observed and measured, whether or not there is a tangible or physical object involved</th>
</tr>
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<tbody>
<tr>
<td>Intangible Value</td>
<td>Value that cannot be objectively observed easily or measured, and lends to interpretation by subjective means</td>
</tr>
<tr>
<td>Design Effectiveness</td>
<td>A process or outcome that is considered valuable</td>
</tr>
</tbody>
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Within this document, value (of design management) is viewed from two perspectives – intrinsic and extrinsic.

- Intrinsic value relates to design effectiveness. If the term ‘design’ can refer to a process or an outcome, and be considered an art and a science, inherent in the concept is the characteristic of quality. In this way ‘good’ design can be distinguished from ‘bad’ design. While the difference may not always be agreed upon or understood, certain features can be deduced to be preferable depending on the circumstances, such as lines, materials and friendliness. These qualities refer to the intrinsic value of design and are explored under the banner of design effectiveness.

- Extrinsic value refers to the potential benefit the action represents to an organisation. In other words, this type of value is situational and derives from its environment and circumstances. Extrinsic value can further be divided into tangible and intangible forms, with tangibility referring to measurability and the ability to be observed.

Each of these elements is integral to the question of design management and its value, and is discussed throughout the thesis.
2. Literature Review

In an effort to explore the value of design management, several key concepts have been identified and are offered in this chapter in the order that seems logical: from defining the core essence of design management, to describing its other forms and areas of interest within the academic and business community.

In particular, design management is introduced with the recognition of the difficulty of defining the term ‘design’ due to its inherent duality of meaning (as act and outcome, art and science). A discussion of design is transformed into one on design thinking, which arises from the notion that design is a ‘special’ activity that draws upon ‘special’ kind of knowledge. This idea is further explored in the section on design management, in which it is admitted that the latter needs to consist of more than merely branding or product design. Design thinking is one of these key elements to the extent that it relates to idea generation and innovation, which leads to the following section on innovation. A link is made to the psychological aspects of design management, which is supported by an exploration of creativity from the psychological and cognitive perspective in the section on creativity. Finally the idea of value is discussed, since this consists of tangible and intangible components, and an argument is made that the intangible is indeed a more interesting outcome of design management.
2.1 Design

In exploring the value of design management, it is helpful to begin with an understanding of design and its history, since the concept of design management originated from within the design discipline, itself relatively new and its value not always appreciated.

2.1.1 Design as act and outcome

The word *design* has historically been used to refer to both an act and an outcome, a fact that has contributed to the confusion surrounding its definition.

In her seminal work, *Design Management – Using design to build brand value and corporate innovation*, Brigitte Borja de Mozota highlights this situation: “One frequent source of confusion is the fact that design can refer to either an activity (the design process) or the outcome of that activity or process (a plan or form.)” (Borja de Mozota 2003:3)

Borja de Mozota suggests that the source of the dual meaning of ‘design’ can be traced to its scholastic roots, whereby “the word ‘design’ derives from the Latin designare, which is translated both as ‘to designate’ and ‘to draw.’ In English, the noun ‘design’ has retained this dual meaning.” (Borja de Mozota 2003:2)

According to Borja de Mozota (2003:2) the word *design*, therefore, is context-dependent and can refer to:

- an act -
  - plan
  - project
  - intention
  - process
- an outcome -
  - sketch
  - model
  - motive
  - décor
  - visual composition
  - style
To further support the dualistic nature of design, the author refers to the history of design as a movement. In her view, the ‘prehistory’ of design began in England during the emergence of the standardization of production, which dissociated the conception of an object from its manufacture, separating form from function. Until this time, in her opinion, the design and manufacturing of an object were embodied in the skill of one person, the craftsman (Borja de Mozota 2003). The stone axe as well as the arrow and the bow did not need and did not have an engineer to be invented and implemented: pure starvation proved a powerful enough incentive. Another contributor to the liberation of form from function and the resultant softening of design constraints was the development of new materials and progress in electronics. The replacement of certain mechanics with electronics allowed design’s focus to evolve from “hard” to “soft”. (Borja de Mozota 2003:30)

Borja de Mozota outlines the rise of design in the world in the early part of the 20th century. In the late 1910’s Great Britain saw the rise of the Arts and Crafts movement, while in Germany was founded the Bauhaus School. By the 1930s the United States promoted design as a profession, as an indirect consequence of the stock market crash in 1929. Jonathan Woodham (quoted in Borja de Mozota 2003:25) suggests that in a way the economic crisis promoted design: “manufacturers quickly became aware of the role product design played in commercial success.” Only from the 1980s did interest in design management begin to grow, when the Financial Times (UK) and the Wall Street Journal (USA) began to publish articles on the role of design in business, while Japan announced the year 1989 as the Year of Design. (Blaich & Blaich, 1993:1)

Proponents of design frequently promote the idea of design as a key competitive differentiator in a commercial environment. Some even predict the future popularity of design. In 2000 the Design Management Journal published Tom Peters’ article called The Design+Identity50, in which Peters quotes Wally Olins’ (1990:9), author of Corporate Identity: “Design, currently the preoccupation of the few, will increasingly be seen by the many as a matchless opportunity for differentiation… Products from the major competing companies around the world [will] become increasingly similar. Inevitably, this means that the whole of the company’s personality, its identity, will become the most significant factor in making a choice between one company and its products and another.” This has become true to the extent that people choose brands that promise greater quality and popularity than others, and it is convenient to package the rather mysterious process of differentiation into the single concept of branding (of which design is an integral component). However the link between commercial leadership and design is rarely made explicit, as management consultants are more often hired to look at cost cutting and revenue increasing than branding and design, and internal strategies
are built around the same concepts with branding responsibility offloaded to the marketing department and innovation a fancy but largely misunderstood generic goal.

Design can hardly be statically or singularly defined, however its wide scope is considered to be an asset by authors such as Robert and Janet Blaich (1993). They agree that the professional colloquy of the definition of ‘design’ is ongoing, but suggest that it has less to do with precision of words and more with “exploring the aspects and scope of design activity and how design can be more effective in its contribution to economic and social goals.” (Blaich & Blaich 1993:7)

In an effort to cover all potential meanings of design, Blaich & Blaich (1993:8) define design simply as “a plan for making a change,” but emphasise that this definition the plan with the tools drawn upon in the development thereof: namely skills, experiences, information and observations. In fact, in Blaich & Blaich’s view (1993) the concept of planning becomes even more encompassing than design. They argue that the definition includes not only the toolbox used to create the ideas, but also:

- the complex process of designing – including the evolving methodology for creating a product, a communication item or an environment;
- the ethical considerations of solving problems and creating something new; and
- change management – including implementation planning.

This may seem like a cumbersome and ambitious definition of design, in line with Blaich & Blaich’s other definitions that tend to be overly ambitious and all-encompassing. However one needs only think of examples of planning or design to realise that the desire to cover everything in its definition need not be viewed as inappropriate, although real life examples vary in their coverage of all parts of the process.

Blaich & Blaich (1993) refer to the above elaboration on “plan for making a change” as “design efforts”, and clarify that the act results in an outcome which is one of:

- an object or a product;
- a form of visual communication; or
- a living or working environment.

In this Blaich & Blaich (1993) draw on Gorb’s (1990) model of design management, namely separating out the areas into product, communication and environment design. In effect, though Blaich & Blaich (1993) use the term design rather than design management, they are inadvertently
progressing the field of design towards design management by highlighting the importance of planning, controlling and managing the design process and its outcomes.

The referral to design as a plan is supported by Faimon and Weigand (2004:9,13,23) who quote Charles Eames’s response to the question, *What is design?* “A plan for arranging elements in such a way as to best accomplish a particular purpose.” Faimond and Weiga (2004:8) themselves support this view and propose that the process of design involves planning, having a purpose, and devising for a specific function or problem, which results in “an underlying scheme that governs functioning, developing or unfolding.” (Faimon & Weigand 2004:8)

So far design has been discussed as referring to both the plan to create something and the tangible output itself. Borja de Mozota further proposes a split in the definition of design by describing it as both an art and a science, and separating design into four types “which describe its possibilities of entry and interface with the different functions within of the firm” (Borja de Mozota 2003:5). According to Borja de Mozota, the four types of design are:

1. Environmental design;
2. Product design;
3. Package design; and
4. Graphic design.

Again this categorization of the function of design echoes Gorb (1990)’s proposed model of design management. Separating design into four types, based on each design type’s interaction with the functions of a firm, further supports the notion that these activities should be formalized and managed, which is one of the key domains of design management and is discussed further in the document.

### 2.1.2 Design as art and science

Up to this point, the discussion of design has been rather theoretical, focusing on its dual reference to both an act and an outcome. The evolution of design has been touched upon to highlight the ‘softening’ of design skills and the liberation of form from function. In fact, the said liberation was seen by some as a *division*, as Borja de Mozota (2003:27) reflects: “Those who felt design is not an art, but functional, rational, and based upon eternal, practical principles came up against those who believed that design influences and is influenced by “transitory aesthetics,” aesthetics that are based on the beliefs and artefacts of the particular era.” Blaich & Blaich (1993:10-11) similarly reflect on
the damaging effect of the division between engineering and industrial design: “The schism between engineering design and industrial design has been one of the most damaging issues in the manufacturing industry imaginable.”

Though the contrast between “soft” and “hard” aspects of design (both the act and the outcome) persists in the shape of the schism that exists between industrial design and engineering design, creativity and control, and design and management, it is by exploring the delicate balance between form and function, art and science, that the practical application of design in a professional context can be better understood and the value of design management better appreciated.

As mentioned earlier, it was the standardization of production dissociated an object’s conception from its manufacture, and the progress in electronics and technology that allowed design to focus more on the ‘softer’ aspects of an object. Still, the design profession’s artistic origins cannot be overlooked. Borja de Mozota (2003:9) ties a design professional’s key areas of expertise to the handicrafts:

- Perception
- Imagination
- Dexterity
- Visualization
- Geometry
- Knowledge of materials
- Sense of touch
- Sense of detail

A design professional’s ‘soft’ skills such as perception and imagination also rank highly on the managers’ list of important design skills. (Borja de Mozota, 2003)

1. Imagination and sense of detail
2. Quality of dialogue
3. Sense of materials
4. Quality of perception
5. Capacity to manage a project
6. Ability to synthesize

While out of the six important design skills, managers seem to regard project management skills as having lower priority than imagination, the link between creativity and management is forged by the
popular concept of innovation. Borja de Mozota (2003:18) highlights that “the creative process is much like the processes used by management in new product development and the innovation process. Often, ‘design’ and ‘innovation’ are interchangeable words to describe two creative activities.” (Borja de Mozota 2003:18)

Most of the above-named design skills are desirable and adequately generic to be beneficial (to varying degrees) beyond the boundaries of a design team. Borja de Mozota (2003:20) supports this notion, stating that “design is a profession that can be practiced across different disciplines.”

When looking for evidence of design in an organization, it would seem intuitive to start with product development. This can lead to a better understanding of design in practice and by extension guide the exploration of design management’s value.

2.1.3 Product development
A core component of the product development cycle is product design or industrial design. As a discipline, Industrial Design is relatively new and has not yet gained footing in the more traditional universities in Australia such as Melbourne University or Monash University, being evident in single subjects within arts and engineering degrees. Like design management, which faces the dichotomy between ‘chaotic’ design and ‘ordered’ management, Industrial Design comes from the two distinct fields of art and engineering. Blaich & Blaich (1993:11) highlight design’s academic engineering roots: “Design in the minds of many people often means engineering design... The problem is a straightforward case of misunderstanding the complementary roles of engineering design and industrial design.” Andrew Lam-Po-Tang (2006) acknowledges the divide by reminding his audience that product design can be viewed as the integration design and engineering design.

Commitment to design tends to be more evident in commercial organizations, while product development tends to be more clearly expressed in the manufacturing sector. Significantly more research has been conducted into companies that develop tangible consumer products than intangible services, though proponents of design management argue that it is as relevant to the financial industry as it is to the consumer product industry. Peter Gorb’s Design Management: Papers from the London Business School (1990) covers a variety of company types and business strategies, however each company deals directly or partially with the general public. In the introduction, Gorb (1990:viii) explains this ‘coincidence’: “the closer an organization is to the consumer the greater is its commitment to design.”
A holistic view of design can be seen as the extension of the fact that the product development cycle tends to encompass an entire end-to-end process, inadvertently ‘cross-fertilizing’ many parts of the organization. In the first part of their book, *Product Design and Corporate Strategy*, Blaich & Blaich (1993:xiii) view design management in the context of manufacturing tangibles, while at the same time highlighting the belief that design is a holistic activity, consisting of not only the purely production aspects, but communication and environment design.

Blaich & Blaich’s (1993:8) broaden the concept of design be defining it as “a plan for making a change”, which effectively relates to any purposeful human activity. At the same time, the authors condense Gorb’s (1990) taxonomy of design management (namely product, communication, environment and corporate strategy design) by dissolving corporate strategy design across the three preceding types of design and claiming that it in the forming of the face or image of the company: “a company’s image is the result of a corporal identity program.” (Blaich & Blaich 1993:8)

When looking for evidence of design in an organization, it would seem intuitive to start with product development. This can lead to a better understanding of design in practice and by extension guide the exploration of design management’s value.

As discussed earlier, product design historically and intuitively contains the greatest evidence of design in an organisation. All types of design flow into product design, argue Blaich & Blaich (1993:10) but it would be naïve to disregard the other types of design, as doing so would affect the effectiveness of design within the organisation. For example, “cleanliness and safety are no longer sufficient work environment goals. Building architecture, showroom design, interior design and layout, furnishing and equipment, signage and visual amenities such as artworks and special landscaping are not just ‘extras’ if the budget allows their inclusion. They are strong elements of corporate identity.” (Blaich & Blaich, 1993:10)

It is widely accepted that integration and communication are crucial to an organization’s effectiveness. Clearly the three types of design must be heavily integrated. To this end, Blaich & Blaich (1993:10-11) propose the role of “General Manager of Design” equal in rank to Senior Marketing and Technical Development executives. This main designer, according to them, “should report directly to the CEO or, as minimum, to the executive vice president.”
Indeed Blaich & Blaich (1993:13) urge that the current state of the world in which the market is saturated with goods requires the incorporation of design management, the main function of which is to direct all design activity such that design can influence the strategy of the firm, from planning and technological development to the production and marketing process, including “budget management, personnel management, and other normal management tasks.”

If this seems rather excessive, it may be viewed as a disproportionate reaction to the belief that the role of design in the management of a business and strategic thinking has traditionally been undervalued. Rather than having a proactive role (direct involvement in the creation of company strategy), the role of design has been largely reactive: design was invited and included only during challenges arising during the manufacturing process (so that design could help make the product more attractive and effective, in other words more marketable.) (Blaich & Blaich, 1993:1)

So far an exploration of the value of design management has been undertaken by virtue of reviewing the value of design and highlighting that a holistic view of design involves not only product design but its integration with communication design and environment design, and ultimately corporate strategy design which drives an organisation’s overall image. Blaich & Blaich’s (1993:1) belief that design should contribute more to business management and strategic thinking highlights another key aspect of design and ultimately design management: design thinking.
2.2 Design thinking

In 2006 the then-government initiative, *lab.3000*, held a Design Management conference, chaired by Associate Professor Di Fleming. At the conference, consultant Andrew Lam-Po-Tang spoke of the notion of ‘design thinking’: the application of designers’ tools and processes to management problems. “Not only does design have a very different risk profile to conventional management thinking,” he argued, “but the process itself is remarkably special.” (Lam-Po-Tang 2006)

2.2.1 Problem solving using design thinking

Before exploring how design thinking and design knowledge is special, it would help to contextualize the current state of ‘design thinking’ usage. Lam-Po-Tang (2006:12) argues that “many enterprises are aware of design but a large proportion of those do not feel comfortable using design as a business tool.” He supports this claim with the below references from a study for the Department of Innovation, Industry and Regional Development (DIIRD) conducted by Booz Allen Hamilton and Dandolopartners in 2003:

- In Victoria only 8% of the firms studied use design or employ designers, and mainly firms with over 200 employees
- In Britain, where design has been consistently promoted by the government for over 60 years, only 33% of the companies studied use design, and mainly medium to large sized enterprises

In particular, Lam-Po-Tang’s (2006) concern is that smaller enterprises are missing out on design as a business tool, and the main reason for this is “the difference between design thinking and management thinking.”

Every design process begins with a user and a problem and the tangible process output distinguishes the design process from the more abstract spreadsheet and slide pack outputs of the management process. According to Lam-Po-Tang (2006), the design process can also be used as a kind of ‘innovation process’ to stimulate thinking and generate outputs other than designs. In such a way, the design process becomes a tool in a business for non-traditional approaches to problem solving, provided that design thinking is different to other types of thinking such as management thinking.

In 2003, Ian Wilson published *The subtle art of strategy: Organizational planning in uncertain times*, in which he distinguishes between strategic *thinking* and strategic *planning*. As strategic planning is reliant upon methodologies, they are deficient in their application to the development of innovative
strategies. “Methodologies, in and of themselves, have definite but limited utility. They are needed to provide structure and focus for our thinking, but it is the thinking itself, the creative impulse of the human mind, that provides the ideas and drive for strategy.” He promotes that rather than “creating new and improved methodologies, we need to develop in our corporations and other organizations a culture that encourages and requires creative thinking in a blending of strategy and tactics, vision and action, and the future and the present.” (Wilson 2003:4)

Bryan Lawson (2004:3), author of the seminal work *What Designers Know*, emphasises that “design is a creative process by its very nature,” and agrees that the design process is different to other business processes, and an effort to simulate the design process creates leads to interesting findings:

“We can try to simulate the design process. There are signs that cognitive scientists are beginning to invent software which can make design-like decisions. Interestingly it turns out that modelling design-like thinking challenges cognitive science in ways that many other kinds of cognition do not.” (Lawson, 2004:5)

Key to the appreciation of how ‘design thinking’ is unique is the understanding of *design knowledge*. Though sketching skills can be learnt in a classroom, much of what designers know “has to be acquired in a special kind of way,” according to Bryan Lawson (2004:7), author of the seminal work *What Designers Know*.

YuXin Bei, an entrepreneur with her own fashion design label, and an alumni of RMIT, was asked, in casual conversation with the researcher, to reflect upon the way design thinking is taught in the classroom. She highlighted that while one can learn the technical skills, it is through the process of self exploration that true design knowing develops. In a design course, the inner journey becomes even more critical than the external teachings. The student is prompted to think about the underlying motivations behind chosen elements – when reviewing a student’s portfolio, the teacher will often ask *Why? Why is a certain element in a particular placement? Why is the composition in this format?* Through these answers the often unintentional, abstract matters call for rational arguments supporting their choice.

Lawson (2004:7) documents an extensive study speaking with and observing designers at work. He concludes that design knowledge is “hard to attain in any way other than by actually designing,” due to the fact that the nature of design knowledge is tacit. For this reason a review of what *tacit*
knowledge needs to precede a review of design knowledge, which in turn is necessary in order to appreciate design thinking.

2.2.2 Tacit knowledge

By its nature, design knowledge is tacit knowledge. As Lawson (2004) points out, the creative process of design is often poorly understood by the designers themselves, being largely intuitive and subjective.

Tacit knowledge is not unique to the design field. While Lawson’s work was not repeated by many, tacit knowledge is perhaps better understood in the context of a workplace. Philippe Baumard explores the concept in his book, *Tacit Knowledge in Organizations* (1999), in which he tries to understand and capture what tacit knowledge exists in an organization.

Interestingly, despite Baumard’s (1999:229) claim that the main point of the book is to “resist prescriptions which force tacit knowledge into destructive explications,” the book effectively analyses the pluses and minuses of two opposite styles of management: autocracy and democracy. He does this, however, in a non-traditional way: rather than by referring to social psychology, Baumard uses cognitive psychology and philosophy. He adopts Michael Polanyi’s notion of ‘tacit knowledge’ and through this prism tries to analyse case studies of four different firms: Qantas, Indigo, Indosuez and Pechiney.

Baumard (1999:22) contends that tacit knowledge is different to other types of knowledge. His comparison between three distinct ways of knowing is summarized in the table below.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type of knowledge</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Episteme</td>
<td>Scientific, explicit, universal</td>
<td>Can be recorded, verified, protected</td>
</tr>
<tr>
<td>Techne</td>
<td>Know-how to accomplish what others cannot</td>
<td>Can be protected</td>
</tr>
<tr>
<td>Tacit</td>
<td>Ephemerally perceptible</td>
<td>Cannot be easily acquired, preserved or used</td>
</tr>
</tbody>
</table>

Table 1 – Types of knowledge

The above table highlights Baumard’s contention that, while a firm can own and protect knowledge of the *episteme* and *techne* types, it is difficult for a firm to acquire, preserve or use to a competitive
advantage knowledge that is of the *tacit* or barely perceptible variety. If design knowledge is tacit, a problem arises as to how to identify, gain and utilize such tacit knowledge purposefully.

Tacit knowledge, according to Baumard (1999) is a reservoir of the corporation’s wisdom, which the firm strives either to articulate or to maintain in order to avoid imitation.

Baumard (1999:24-25) recommends that knowledge can be transformed in three ways:

- **Explicit to explicit (combination)**
  - One form of explicit knowledge can transform into another by way of *combination*.

- **Explicit to tacit (internalization)**
  - A process called *internalization* is the means by which a firm absorbs rules and systems, and effectively converts the explicit to the tacit, creating “a web of collective interpretations” or internal regulations.

- **Tacit to explicit (articulation)**
  - The *vice versa* of the *internalization* effect is labelled as *articulation* and is “the conversion of tacit knowledge into explicit knowledge;” in this case common knowledge transforms into explicit knowledge just as ‘tacit’ rumours can become facts by virtue of their persistence.

Baumard (1999:26) draws upon the example of a group of professionals in a meeting, in order to highlight internalization: colleagues communicate a message of success or failure through facial expressions without the use of words, in such a way internalizing the explicit knowledge from the meeting before the results are verbally expressed. The passing on of tacit knowledge from one person to another, maintains Baumard (1999:221), can happen without turning to the explicit, and tacit knowledge can be acted upon without it having to be verbalized. Observation, imitation and practice are the tools by which artisans learn from their masters, rather than through language alone. Designers draw on “knowledge which has never been externalized or articulated,” as “highly valued or successful design begins with very little external information and yet creates highly influential outputs and ideas.” (Lawson 2004:3-4).

According to Baumard (1999:212), tacit knowledge is ‘live’ in the sense that “it would not survive outside the human system through which its dynamics [are] sustained.” In his view, tacit knowledge “proves unable to adapt to different places, other conditions, other cultural and social contexts.”
has various implications to design knowledge and thinking (and ultimately design management), namely that although it is hard to capture in traditional ways, it can be passed on through doing and showing, and is applicable to many contexts within and certainly outside of the design industry.

The author openly backs the democratic side of management. This is not surprising, since the autocratic management style has little space for tacit knowledge, as the authoritarian personality dislikes ambiguity. Baumard (1999:197) says of the autocratic managers that they “uselessly multiply measures and procedures” while neglecting conjectural and local knowledge. “They are strongly hierarchic, even ‘mechanistic’,” while in the democratically managed firms, “dynamics of knowledge depart from the tacit dimensions to surface in the explicit.” (Baumard, 1999:197)

An advocate of the intelligent use of tacit knowledge, Baumard writes that it may be the skilful management of tacit knowledge that makes democratic managers successful (Baumard, 1999:217). He describes a particular manager whose approach is admirable. “He continually questioned his role, his approach, which he deliberately made open and mutable... [He] refused to fossilize his knowledge into extensive archives. He preferred a dynamic fog to a reassuring cemetery.” (Baumard, 1999:225-228)

Nonetheless, the book creates an impression that Baumard overestimates the rational aspect of a human being at work and underestimates the emotional aspect. Knowledge is often interwoven with emotions and feelings, and cognition with intuition. The psychological atmosphere in a collective, or psychological climate in a firm, or a person’s refusal to do what he deems as inappropriate, are not only cognitive matters. How can we describe the body’s knowledge such as unconditional reflexes: the hand’s sharp jerking motion when it touches a hot pan or the pancreas’ injection of insulin into the bloodstream after a meal? The body as an organism is wiser than all of the modern medical stars combined, but who can say that the organs and glands ‘know’ what they are doing? A swarm of termites can create miracles of architecture, but can their actions be classified as being grounded in knowledge?

While the intimate characteristics of tacit knowledge allow for an interesting debate, at this stage it is more important to understand simply that in order to think in a ‘designerly way’, one needs at least a modest command of what can be termed as ‘design knowledge’, which is tacit by nature and in this way cannot be picked up through reading but through doing.
2.2.3 Design knowledge

Finding that design courses warrant special treatment in universities across the world, Lawson (2004:6-7) concludes that “all these institutions seem to have understood and appreciated something that has driven them to organize their departments and courses in certain similar ways,” such that the design courses, including architecture, product design, interior and landscape design, look “different to much else of what goes on in universities around the world…The nature of design knowledge [is] different from many other kinds of knowledge…”

The contention that design knowledge can only be gained from doing has many supporters. “There are many ways of ‘knowing’. There is certainly what has been recognized by ‘knowledge in action’,” suggests Lawson (2004:3,7). “I believe design only counts when you do get involved,” adds Rodney Mylius (quoted in Newell & Sorrell 1995:61). “Design knowledge has to be acquired in a special kind of way,” continues Lawson (2004:7) and cites Nigel Cross as stating that design knowledge refers to “a designerly way of thinking.” (Lawson 2004:1). The use of the term ‘knowledge’ is problematic, in Lawson’s (2004:3) view, as knowledge retention necessitates the “articulation of facts,” which is not only difficult but largely unhelpful.

While design knowledge is tacit and does not lend well to articulation and recording, its existence and value are hard to dispute. Lawson (2004:8-10) insists that one needs to witness a designer solving a problem to appreciate this fact.

- “It is surely apparent that designers bring a great deal into the situation that was not in the original problem, however that might be expressed.”
- “Design as opposed to mere problem solving requires the application of a body of knowledge not stated or necessarily even referred to in the brief.”
- “Unlike problems of science there is no one commonly shared theoretical body of knowledge which can be applied to generate a solution. Goel and Pirolli (1992) make even more wide sweeping and dramatic claims: ‘The kinds of knowledge that may enter into a design solution are practically limitless.’” (Lawson, 2004:10)

It follows from the above arguments that design thinking is discernable from traditional problem solving, and is valuable by virtue of its uniqueness and benefits.

So far it has been discussed that design knowledge (and thinking) is responsible for differentiating a design output. However this alone does not guarantee quality. Lawson (2004:9) quotes Austrian-
British philosopher Ludwig Wittgenstein, asserting that “architecture is a gesture. Not every purposive movement of the human body is a gesture. And no more is every building designed for a purpose architecture.” Similarly, design in organizations should be proper, purposeful, artistic and expressive. Not everything deserves to be labelled as design: design must be a gesture, to adopt Wittgenstein’s terminology.

The uniqueness of design knowledge may imply that only educated and practicing designers have the capacity to become design managers, however this is not necessarily so. Design knowledge may not be easily accessible to the wide public, but design appreciation is available to many, and this may be the key tool available to non-designers.

Qualities that make objects beautiful are applicable to all things. Such principles can be identified and taught. Peg Faimon and John Weigand (2004) suggest that one can appreciate design initially through its visual aspects. In their book, *The Nature of Design* (Faimon & Weigand 2004), they aim to “present a framework for a better understanding of our visual world – and design.” They reassure that people can “learn to more clearly see the world around [them].” To the authors, design is a skilful combination of the right ingredients or elements.

Faimon and Weigand’s (2004) approach to design knowledge and its attainability is more liberal than that offered by Lawson (2004), whose view is slightly biased toward its elite nature, which results in the distinction between ‘architecture and mere building’: non-designers need “access to a similar greater body of knowledge,” (Lawson 2004:10). Still, non-designers have a chance, since design ultimately is a form of self expression.

“Design is at once everyday and yet special. We all design to some extent every day. We assemble our place of work, our home, and even the way we look… We express ourselves to others through these decisions… Professional designers, however, do all these things for other people rather than just for themselves.” (Lawson, 2004:7)

While the preceding sections may suggest that the complexity and specialness of design knowledge puts problem solving using design thinking out of reach of most people, it may be refreshing to know that design managers are well placed to be educators on design thinking and **ideation**, according to Borja de Mozota (2003:228-229). “Designers are educated in creativity techniques. Therefore, the
design manager should investigate ‘ideation’ management.” In order to improve key factors of creativity within various departments, there are a few actions that design managers can take:

- Encourage innovation within the company, systematize the idea generation process, and help establish a ‘burning’ motivation within co-workers to seek ways to improve existing processes and outputs;
- Capture worthwhile ideas, “systematically transform design’s ‘cross-fertilization’ creative system into a management process;
- Improve communication by “embedding ideas into objects that people can look at and bring to brainstorming meetings”;
- Imagine new applications for old ideas by using analogical thinking; and
- Promote attitudes of curiosity, openness, confidence and humility, while creating a collaborative culture and a reward system that supports these behaviours.

The meaning of design and the acquirement of design knowledge have been explored in this section, showing that design can refer to both an act and an output and categorized as both art and science, while design knowledge is tacit in nature and therefore difficult to express verbally or pick up from a book, but can be learnt through the act of design, and its appreciation augmented through visual awareness and self exploration. The special nature of design thinking makes it valuable not only to design problems, but also to strategic planning by virtue of its creative nature, as traditional methodologies are inadequate for the development of innovative strategies.
2.3 Design Management
The thesis has so far discussed the origins and meaning of design, and the applicability of design thinking to non-traditional contexts, specifically problem solving, strategic planning and business management. This can be done with varying degrees of intention: where it is inappropriate to formalise design processes, an organisation can still be innovative by encouraging a culture that fosters creative thinking. It is unfair to expect a standard prescription of design management in the way that an organisation has an accounting or technology department, due to the fact that design management’s definition is itself fluid and evolving. However this does not make the exploration of design management fruitless, as the benefits and tools that arise out of this can be evident in organisations in both tacit and explicit forms, whether or not they are under the banner of design management or have no formal names. Still, for all that design management promises, its key advantage is the formalisation of design and, by extension, design thinking, as a business tool.

2.3.1 Ambitious definitions and the evolution of Design Management
In literature, design management is often explicitly or implicitly referred to as a design program. Design management is often said to have been pioneered by Peter Gorb, lifetime fellow of the Design Management Institute (DMI) in Boston and named “(grand)father of Design Management” by the organisation’s president. His book, Design Management: Papers from the London Business School (1990), is one of the first and promises references in this field, in which he offers the following definition:

“Design management is the effective deployment by line managers of the design resources available to an organization in the pursuance of its corporate objectives. It is therefore directly concerned with the organizational place of design, with the identification of specific design disciplines which are relevant to the resolution of key management issues, and with the training of managers to use design effectively.” (Gorb 1990:2)

In practice, design management can be compartmentalized into its natural categories of Product Design, Communication Design and Environment Design. A fourth component, Corporate Identity Design, governs the aforementioned three components. (Gorb 1990:vii-1)

Three years later, Blaich & Blaich (1993) offer a slightly different, somewhat more ambitious view of design management.
“Design management is the implementation of design as a formal program of activity within a corporation by communicating the relevance of design to long-term corporate goals and coordinating design resources at all levels of corporate activity to achieve the objectives of the corporation.” (Blaich & Blaich 1993:13)

Blaich & Blaich (1993:14-15) suggest that there are four functions of design management:

1. Contributing to corporate strategic goals
2. Managing design resources
3. Managing design process
4. Cultivating an information and idea network

This means that a design manager is needed in both a strategic capacity and for day-to-day operational tasks alongside relevant floor managers. So in addition to all other traits, this design manager must have highly developed, flexible communication skills.

All designers, according to Blaich & Blaich (1993), must be extraelectrifying beings.

“They need to be knowledgeable about the world economy and business and market trends on a macroeconomic basis. They need to have access to demographic and social trends and analyses. They should be aware of new business practices and theories. Social and ethical issues are part of their purview. And they should visit major art exhibitions, new architecture, and urban planning sites.” (Blaich & Blaich 1993:16)

But all this requires strong leadership and a team of highly capable and creative designers, whether these are internal staff members or external consultants. “Designers have been described as jacks-of-all-trade and specialists in one.” (Blaich & Blaich, 1993:16)

The authors tend to share a maximalist view, desiring that design management should encompass all tasks, be everything to everybody. They practically require all power in a given firm to be handed over into the hands of the designers, while designers must be (or seem to be) somewhat almighty, superhuman, omnipotent. In any case, this is a rather extreme view of design management and the roles of subordinate, growing designers. Complete harmony in the interrelations between co-workers of a firm is difficult to create and a very rare phenomenon.
Blaich & Blaich’s book gives off the impression that this fair and beautiful idea belongs more to the sphere of dreaming and fantasy than real life (at least as far as the first part of the book is concerned.)

A brief overview of design-related world events from the middle of the 20th century to the beginning of the 21st century highlights the case that design management has gained support throughout its fifty years but not to the degree anticipated.

1966 Royal Society of Arts launches its first Design Management awards (Gorb 1990)

1975 The Design Management Journal is started with a matching grant from the National Endowment for the Arts and is published by the Design Management Institute

1976 Design Management teaching begins at London Business School (Gorb 1990)

1982 London Business School makes an official commitment to Design Management Unit (Gorb 1990)

1985 Discussions on design’s role in business, focusing on product design management in specific companies, feature in the Financial Times (Blaich & Blaich, 1993:2)

1980s Wall Street Journal features articles about design and business, while Time Magazine produces regular design articles and adds a design department to its editorial staff (Blaich & Blaich 1993:2)

1987 Industrial Design Society of America (IDSA) and Business Week cosponsor an annual design award program for businesses, while the magazine also introduces regular design editorials predicting that design would be to the 1990s what finance was to the 1980s and marketing was to the 1970s (Blaich & Blaich 1993:2)

c.1989 Designers move “beyond talking only to themselves in their own publications to the more influential domain of business media” (Blaich & Blaich 1993:2)

1989 Japanese government declares 1989 the Year of Design (Blaich & Blaich 1993:3)
1991 RMIT University offers a Design Management course, the only one of its kind in Australia

1995 RMIT University abandons its Design Management course for lack of interest as many people choose to pursue a Master of Administration in favour of this course

1998 Design Management Journal publishes the article, “18 Views on the Definition of Design Management”

2002 New Zealand Institute of Economic Research is commissioned by Industry New Zealand to investigate the economic impact of design (Lam-Po-Tang, 2006:4)

2006 “Ministers of Industry and of Trade in Indonesia announced a 4 year export development program based on greater use of design” (Lam-Po-Tang, 2006:6)

There are currently few organizations that are concerned with exploring the value of design, with the Design Management Institute (DMI) in Boston and Design Management Association in London being amongst the more prominent. An overview of the objectives of the DMI, as an example, provides insight into the meaning and purpose of design management today.

Design Management Institute
Vision: “Improve organizations worldwide through effective management of design for economic growth.” (Borja de Mozota 2003:69)

Ethos: Forums, articles and case studies exploring how design - its products, communication, and environments - is an essential resource, a component of every organization that can be effectively managed to make important contribution to the bottom line and to long-term success (Editorial Philosophy of Design Management Journal)

Beginning: 1975, leading non-profit organization dedicated to the advancement of DM

Main output: Publication of the Design Management Journal targeting the business community, started with a matching grant from the National Endowment for the Arts (Walton, 2000:5)
Today the definitions put forth by Gorb (1990) and Blaich & Blaich (1993) seem less than practical or realistic. Job postings on websites such as www.RitaSue.com and www.DMI.org (accessed by the researcher throughout 2006-2009) suggest that the market is not ready for the supreme Design Manager proposed by Blaich & Blaich (1993), and instead the term ‘design manager’ continues to refer to roles at various levels and areas within the organisation, almost none of them reporting directly to the CEO or having the level of influence over corporate strategy that Blaich & Blaich once advocated.

### 2.3.2 Newness, purpose and issues

In spite of Gorb’s (1990:vii) claim that “as an idea, [design management] has been around for over a quarter of a century,” and indeed half a century now, the subject remains relatively young and poorly known. Literature on the coined term is comparatively rare. Western influences in this field generally originate from the United Kingdom (British Design Council, Design Management Unit at London Business School, Royal Society of Arts) and North America (Design Management Journal).

Literature on design, design project management, and the management of creativity and innovation seems to avoid the term ‘design management’ but the relatively few pieces of literature that describe design management, multifaceted as it may be, resonate within other fields, such as industrial design, experience design, architecture, design project management, organizational management, leadership, creativity and innovation.

In an effort to understand what ‘design management’ means today, one can begin at an obvious point of reference: the Design Management Institute. The DMI, briefly described in the previous chapter, is one of the few organizations of its kind in the world that explicitly uses the term ‘design management’. Its European and Australasian counterparts, although concerned with the subject of ‘design value’, are named differently which, perhaps, highlights the fact that Americans are more comfortable with the term ‘design management’ than their European, Australian or Asian counterparts.

In 2004 the DMI presented their highest award, ‘DMI Life Fellow’, to Brigitte Borja de Mozota, for her influential work in the design management field largely focusing on bridging the gap between design and business and the value that design management brings to it.

Borja de Mozota (2003:70) outlines what she believes to be design management’s two objectives:
1. Training – to familiarize “managers with design and designers with management”

2. Integration – “to develop methods of integrating design into the corporate environment”

She quotes Dr Jurgen Hauser of Interbrand Koln, 1998, highlighting that design management’s purpose was, indeed, to bring together seemingly disparate fields of business and design: “in essence, design management challenges the most popular misperception of design management – that it is basically a contradiction in terms,” (Borja de Mozota 2003:70). This view is supported by Donald E. Paterson, former Ford CEO: “the key issue in managing the design process is creating the right relationship between design and all other areas of the corporation.” (Borja de Mozota 2003:71)

A decade later, Borja de Mozota (2003:70) recalls Peter Gorb’s definition of design management (as “the effective deployment by line managers of the design resources available to a company in order to help the company achieve its objectives” (Peter Gorb 1990)) but highlights that it “underscores the point that design is at once an end (putting design in the service of corporate objectives) and a means (contributing to solving management problems).” She proposes her own definition of design management that better encapsulates the purpose and value that it brings to an organization.

“Design management is the implementation of design as a formal program of activity within a corporation by communicating the relevance of design to long-term corporate goals and coordinating design resources at all levels of corporate activity to achieve the objectives of the corporation.” (Borja de Mozota 2003:71)

In her view, design can be viewed in the context of the quality management movement, which has evolved from being a posteriori (inspecting the final output, “meeting specifications and reducing defects”) to being an active principle [whereby] its goal is to make individuals aware of their responsibility in achieving a common objective: to develop a product or service that the customer will perceive as superior,” (Borja de Mozota 2003:76). In this way design is a facilitator for product differentiation and market dominance in product quality. Ivor Owen, who directed the British Design Council in 1990, makes the point that “well-designed, innovative products of good quality can only be made in factories and offices which also reach high standards.” (Gorb 1990:41).

Positioning design in the field of quality management offers the ability to evaluate the importance of design in the value chain, by considering “the impact of design on quality measurement objectives,” since these have been already been developed as a consequence of the quality management
movement. Such objectives include “zero defect, zero inventory, and zero delay” as well as the “choice of partners and the selection of suppliers.” (Borja de Mozota 2003:77)

The key to the success of quality improvement techniques is employee participation, argues Borja de Mozota (2003:77), however a designer’s training does not currently cover the study of motivation, psycho-sociology, group dynamics and organizational sociology, despite the fact that the knowledge “yielded by these disciplines is fast becoming essential for the design manager who wants to produce results.” These disciplines are more commonly found in management or business administration training, and in the absence of specialized design management education, it follows that a design management role would need to draw upon training in both design and management.

On the other hand, design can already contribute to business functions and help cultivate an improvement-focused culture, since “quality depends on the will to improve products, as well as the company itself, on a continuous basis,” according to Borja de Mozota (2003:78). Product optimization is driven by design concepts, “but designers can also become active partners in optimizing strategic functions, such as internal communications and human resource management (personnel training and motivation.) It could be argued that although these departments represent important elements of the corporation (namely communication and culture) and facilitate the acceptance and implementation of a strategy, they are not necessarily seen as strong driving forces to which end designers need suddenly be redeployed. The key here seems to be that a creative personality can find means by which to communicate a strategy in the most effective way, and how to promote a culture that facilitates the organisation’s valued behaviours (such as innovation), but whether that creative personality needs to be embodied in a professional designer is a matter of debate.

Many design practitioners, academics and supporters of design argue for its benefit to humanity; most books on the topic begin with an argument for the need of design within society and, therefore, the absolute urgency for design and its management within organizations.

Blaich & Blaich (1993) suggest that globalization is a major driver of design. According to the authors, growing interest in design as a strategic competitive factor has come about as a result of tumultuous economic, social and political changes. The authors refer to Japan as an example, where design management has gained significant appreciation and support as a key competitiveness tool. In their opinion, this demonstrates that it is past time other countries ‘wake up’ to the value of design.
However this may imply that Japan is the world leader in product design, and while that may be true of some products, one need only think of BMW, Apple and IKEA to realize that Japan is by far not the only country ‘awake’ to the value of design. Still, the authors maintain that (at least at the time of writing) the British Design Council faces significant challenges to incorporating design ethos into the country and improve its economic system over the long term. The council intended to do this by encouraging better product quality, increasing the number of ‘quality’ manufacturing companies and raising design awareness and education. In light of globalization and its effects, other countries such as New Zealand are also growing in their appreciation of design as one of the few ways in which companies may be able to compete. According to Blaich & Blaich (1993:21) the rise of globalisation forces companies into fiercer competition, since one of the ways in which companies can compete is by product differentiation and as such, the ‘soft’ element of design may even be the only way to truly distinguish a product (in which sense ‘design’ encompasses such things as reduction in complexity as well as pride of ownership through the expression of high quality in the product’s form, materials and function.)

Interestingly, by 2009 the Global Financial Crisis (lovingly termed the GFC and blamed for most undesirable situations) has seen design drop on an organisation’s list of strategic priorities. The world-renowned design management firm, IDEO, closed its applications across the world and significantly reduced its employee base in Singapore. Design has not dissolved entirely, though, but transformed into a different expression thereof: one executive from IDEO, for example, found himself working on an innovation agenda at a large banking corporation.

Within this chapter, the bridge between design and business has been discussed, in terms of:

- Applying design thinking to problem solving;
- Contributing to the communication and culture within an organization in order to support the implementation of specific strategies; and
- Aiding the differentiation of products.

The definition of design management continues to evolve over decades with various contributors compacting, augmenting and, in their own ways, perfecting the definition to cover more business functions. The common theme is clear: design has its benefits and needs to be managed, but how?
**2.3.3 Managing design**

In his work, *Design Management: Papers from the London Business School*, Peter Gorb (1990) reflects on the way industrialists thought of design: in terms of products made and sold, the environment in which they worked, and the information systems that supported their work. This classification allows problems to be identifiable and requires “design management…to resolve them.” (Gorb 1990:3)

If design management is ultimately required to support corporate strategy, as it has been suggested in preceding chapters, it would be helpful for all design activities to be spread across multiple departments with the ability to impact non-traditional departments. Product design should begin with an understanding of the customer, which traditionally comes out of the marketing field (or communication design). Environmental design does not end with redesigning the environment to include corporate identity design components, such as logos and posters, but should be closely related to product design in reflecting the values of the products, such as quality in form, materials and usability. To strengthen the link between design activities and other departments, Gorb (1990) and Blaich & Blaich (1993) recommend that the three design areas do not necessarily require their own representation, but can appear as functions of existing teams:

- Product design is commonly either a function of product development and manufacturing or marketing;
- Communication or information design is commonly a function of marketing; and
- Environment design is commonly managed under a facilities department.

Thomas Walton, editor of Design Management Journal, wrote that “…suffusing design is a complex topic, with applications that vary from company to company,” (Walton 2000:6-9). Not only is design management context-specific, but there does not seem to exist a generic implementation plan for a design program and, furthermore, such a design program may not even be applicable to all organizations. There may be instances in which investing into design management is harmful, unsuitable to the company’s industry or culture, or leads to waste of other resources (such as time and money) or throw the company into disarray where structure and ‘creative destruction’ are not the answer to survival. And if design (and its management) can move a company from a position of follower to one of leader, there may be contexts in which this is irrelevant, unnecessary or even detrimental to the organization. For the purpose of this thesis, however, such cases are considered out of scope and for this reason further consideration is afforded to a design program (with the assumption that this is indeed desirable) and other expressions of design management in firms.
Though a ‘design program’, as Blaich & Blaich (1993) often refer to it, is very company-specific, the authors insist that fundamentally design management focuses on the ‘synergy’ between various design activities, and this can be made possible through the formalizing and making visible of the design process and resources within a company. Groups focusing on product, communication and environment design should have a high degree of communication amongst them, with outputs preferably “grouped together as the portfolio responsibility of top-level executive,” (Blaich & Blaich 1993:10).

Blaich & Blaich (1993:10) go on to say that “few corporations have appreciated the positive results that synergy between these areas of activity could generate,” and suggest that, by extension, design management can even positively impact interaction between various other departments. (How exactly this would come about is not clear, however one may assume that design’s role in internal communication and improvement of the culture overall may indeed impact many other functions of an organization in a positive way, but not necessarily more than the hiring of a new manager, the promotion of a few key individuals, or Christmas bonuses that may well raise the morale in the office.)

Gorb’s (1990) ideas are in line with those of Blaich & Blaich (1993), and he proposes that, “if they are to be accountable,” the three kinds of design management excluding the overlooking identity management should “be organized in ways which relate closely to how the rest of the corporation is managed. Any large corporation is likely to manage its design activities in a number of ways and at different places in the organization with differing reporting responsibilities.” (Gorb, 1990:8)

Since the “three-way classification is now generally accepted [but] often misunderstood or distorted in use,” (Gorb 1990:3) it seems appropriate to describe each one in further detail.

2.3.3.1 Environment design

“The design of major investments is invariably done by outside consultants,” informs Gorb (1990:6-7), but “the maintenance of such investments is often in the hands of facilities managers, a fast-growing profession of design-trained people. Line managers are much less likely to be involved managing environmental design.” For this reason, accounting for environment design in financial statements can be done by linking it to the management of fixed assets, which is reflected on the balance sheet. Gorb (1990:4-5) reminds that “the most important ratio used in organizations to
measure their performance is return on capital employed,” and that by virtue of mathematics this ratio can be improved by increasing the numerator or decreasing the denominator: increasing the profitability return on a given employment of capital or decreasing the employment of capital for a given level of profitability. Design can help decrease capital employed by “helping determine how and in what the business invests its assets and manages them thereafter,” (Gorb 1990:4-5). Interestingly Gorb’s definition of fixed includes not only buildings, factories, offices and shops, but equipment, machinery, furnishings, communication tools, transport, as well as artefacts in which the corporate invests to help perform tasks: from an oil pipeline to a pencil sharpener. Gorb (1990) excludes from this list intangible assets or stock, but points out that design is indirectly concerned with the investment value of intangibles through impact on the nature of the stock.

2.3.3.2 Product design
The accounting figure chosen by Gorb to represent the value added to a product through better product design is gross margin performance “through its influence on a range of management issues that eventually determine product characteristics and gross margin profits,” review Blaich & Blaich (1993:9). “Thus, according to Gorb, design is a pervasive determinate of the profitability performance throughout the chain of activities carried out to produce and sell a product.” This is explained in more detail by Gorb. “Product design has traditionally been held to be the concern of manufacturing industry… Manufacturing industry may be at the centre of this process; but the design of its products is influenced by many other considerations and activities. What all these influences have in common is the extent to which (by affecting its design) they add value to the product, and so contribute to its gross margin performance,” (Gorb, 1990:3-4). Furthermore, line managers are likely to have deep involvement in the design management of products due to the fact that product design is operational in style and affects company performance. (Gorb 1990:6-7)

2.3.3.3 Information or communication design
Information or communication design appears on the profit and loss statement as an expense, finding place between the gross profit and net profit figures, and is “usually evaluated as a percentage of sales,” claims Gorb (1990:6-7), since this is expressed as “advertising, sales promotion and public relations materials aimed at external audiences” as well as communication to internal audiences such as managers, employees and shareholders. Information design can be closely linked to product design through packaging and advertising, and inadvertently handled by the managers of brand, purchasing, public relations and information systems.
2.3.3.4 Corporate identity design

Gorb does not attempt to find a place for corporate identity design on the balance sheet or profit and loss statement, since “corporate strategy is a difficult area in which to measure success [therefore] little attempt has been made to do more than make qualitative judgments of the benefits of corporate identity programmes,” (Gorb 1990:6). He notes, though, that information or communication design is intimately linked to corporate strategy, since the latter “embraces and shapes all the aspects of [product, environment and communication design].”

“Corporate identity design must always be a central resource… [so as to] comprehensively influence and modulate the various design activities of the business[, each of which] needs to be managed in a way which is relevant to the way in which the business itself is organised. (Gorb 1990:6-7)

Gorb’s design taxonomy is modified by Blaich & Blaich (1993:8) by “distributing corporate identity throughout product, communications, and environment design activities… Corporate identity is the sum of product design, communications design, and environment design, and the management of all these design elements results in how various constituencies view a company, or its corporate image.”

Blaich & Blaich (1993:xi) appreciate that bemusement and scepticism may arise when using terms such as strategic, competitive weapon and value-added advantage when describing design and its management. They reflect that people tend to link design with visual aesthetics and do not put design and its management “on the same ‘hardball league as strategic issues such as price, quality, time-to-market, or technology innovation.”

While Gorb (1990) seems to imply that design management is part of the solution to improving organisational performance, Blaich & Blaich (1993) take an extremist view and suggest that design management is the main solution. They maintain that design management should occur not only at lower levels in the organisation, led by design-trained line managers, but indeed at all levels, led by a design leader at an executive level and with significant contribution to corporate strategy. Blaich & Blaich (1993) seem to have envisioned the ‘perfect’ world in which design has progressed from being seen as an optional decorative element of the 1930s to being the answer to most of the world’s problems. This makes the authors’ definition more idealistic and forward looking, implying greater faith in design, designers, and design managers who transform into world leaders, developing and improving organizations by focusing on raising the ‘quality’ of work at individual organizations and
ultimately the quality of life for its customers. Blaich & Blaich’s (1993:ix) version of design becomes the answer to a company’s competitiveness by virtue of being the key product differentiator: “design… can be a powerful resource for survival.”

It is suggested by a number of authors (including Blaich & Blaich (1993)) that the decades from the 1930s to the 1990s have witnessed great economic, social and environmental changes. Technological growth has been one of the strongest drivers of economic change. Particularly in information and communications technology, companies have found themselves amongst global competition, with similar competitive advantage tools available to all. As a result, organizations around the world face the need to innovate and differentiate their company, product, service and operation, in order to compete on a global scale.

The three-way and four-way taxonomy proposed by Gorb (1990) and adapted by Blaich & Blaich (1993) and later other authors offers an organized approach to the management of design within an organization, in terms of design functions. However there are many ways in which design can be managed, and though authors propose certain boundaries and values that guide the responsibilities of a design manager (which will be further explored in the following chapter), design management processes described in case studies highlight the fact that there is no clear-cut method and expression of design management in organizations. Unlike an accounting or a technology department or function, which can (in most cases) be easily identified, design management has many faces, and its manifestation in one company does not predict the appearance of similar signs or attributes in another. Blaich & Blaich (1993:xii) reflect upon a number of case studies of design projects and the establishment of design programs in major corporations. Though not all projects described by them are successful, each one highlights a different aspect of design management and contains a lesson that benefits “the design management process.” A common thread is difficult to draw between their stories, but rather than deter from the overarching meaning of design management, the authors suggest that the variety of stories benefits the reader in having relevance to a wide range of situations. “In true creative style, readers will adapt the process I describe to fit their own management styles, their own problems, their own companies.” (Blaich & Blaich 1993:xii)
2.3.4 Views on the definition of design management

So far it has been discussed that many authors advocate that design is valuable and should be managed, and that design management can exist in many forms that differ from one instance to another. The line between *design* and *design management* is not always made clear, however, with authors often using the term *design* when speaking of the benefits of *design management*.

“It may seem obvious that design and management are not the same thing, but the question is ‘how are they different?’ And what effect do those differences have on the business managers who are the actual or potential users of design?” (Lam-Po-Tang 2006:13)

A review of what a design manager’s role looks like, how it differs from the role of a professional in-house or external designer, and what design management means to professionals of various organizations may help clarify the distinction between design and its management, thus helping identify a unique value proposition for design management as opposed to (simply) design and designers.

At a Design Management Symposium presented by the London College of Communications in September 2007 nearly eighty professionals and academics offered their views on what design management means *today*. Later chapters describe the symposium in more detail, however the point is made here that as many definitions were proposed as there were participants, and this is a recurring theme in the field. Definitions are countless and cover as narrow a scope as the design tasks themselves, and as wide a span as the single most important driver of corporate strategy.

Over a decade ago, the Design Management Journal published an article titled *18 views on the definition of Design Management* (Walton 1998): a collection of opinions from eighteen executives from various enterprises, from the postal services to industrial design firms, on the many facets of design management. The conclusion that may be drawn from the article is that, though a common understanding does not naturally flow out of the diversity of viewpoints presented, design management takes on many forms and expresses itself in different ways.

“It is obvious that suffusing design is a complex topic, with applications that vary from company to company.” (Walton 2000:6-9)
The views can, however, be categorized broadly as fitting into one of four visions of design management:

1. Design management as the management of design;
2. Design management as the facilitator of a healthy psychological climate;
3. Design management as the function that is responsible for ‘everything’ in the organization; and
4. Design management as leadership.

In terms of scope, the first category is the narrowest: seeing design management as restricted to the *design activity itself* or as merely the *management of design* limits design management’s influence to the small team occupied with design within the organization. At this level design management is most visible and tangible with respect to a dedicated team of designers, and is uncommon outside of consumer-oriented businesses.

A vision of *design as the facilitator of a healthy psychological climate* is more broad but less tangible than the first category, since rather than a design team it is a department such as marketing, corporate communications or even human resources that orchestrates the creation of a positive psychological environment through branding, corporate identity development and internal communications.

The third category is the broadest of all, most ambitious and least realistic. *Design management is seen as the function responsible for almost everything* within an organization, covering operations and strategy. In a way Gorb’s (1990) three-way taxonomy of environment, product and communication design belongs to this category, as well as the viewpoint that design management is the deployment of resources to meet corporate objectives – a broad enough definition that makes design management applicable to all activities provided they are in line with the corporate strategy (which, as some suggest, is driven by design management itself.)

It is the fourth category into which most views can be grouped: *design management, at its core, is most valuable when it is better described as design leadership*, for it is this leadership that creates an engaging and innovation-driven environment and facilitates creative behaviours within its people, whether or not they are professional designers. Framed in such a way, design management (or design leadership) offers a further reaching grasp than that afforded by the religious employment of professional designers: positive attributes of creativity and innovation can arise within existing co-
workers by virtue of these natural-to-humans characteristics being nurtured, and the only way to do this is through design leadership.

Each of the above visions of design management is described in the minor sections below. Since the vision of design management as leadership is the strongest and most supported one, a whole section has been dedicated to it.

2.3.4.1 Design management as the management of design

“Design management determines the quality level of designs by setting product strategy, goals, and expectations, as well as selecting and directing the staff or consultant performing the work,” suggests Gary Van Deursen, Corporate Director of Industrial Design at The Stanley Works (Walton 1998:5). He limits design management to the design field itself, making it crucial for the design manager to be a person “highly skilled in design,” since the manager not only adds his leadership to the team (in selecting and directing staff or consultants) but a professional opinion on design elements.

Recall that Gorb’s proposed model, discussed in the previous chapter, covers the management of product design, environment design and communication design. It is not the individual components or how these design areas are managed independently that is the interesting part, but the single strategic vision that unites their management. Gorb (1990) and Blaich & Blaich (1993) refer to this as corporate identity design.

However the management of each individual component (product, environment and communication design) can be accomplished with relative ease compared to the management of corporate identity, in the sense that more aspects need to be taken in to consideration, be guided by a greater ‘vision’ or strategy, and generally coordinated in order to reap the benefits of such harmony. In practice this may mean the coordination of a few separate teams, bringing together of different personalities of people unfamiliar with each other. In reality large organisations are not lean, and the lack of deep interaction or reuse of resources across different teams of the same department, highlights the difficulty that may be faced by a ‘corporate identity design manager’ in trying to guide and coordinate the three design teams.

The point here is that the management of product design, environment design and communication design may be significantly easier than the management of corporate identity design if the latter’s objective is to guide the other design areas with a single strategic vision. For that reason, the three-
way taxonomy of design management may be seen as fitting into the definition of ‘design management as the management of design’, for at its core it is little more than that, and the adequate management of these three areas far from guarantees successful management of corporate identity design and the reaping of benefits from the harmonisation between the three design areas.

Improved product, environment and communication design are intended to impact company performance by making products and services better for consumers. One Information Technology professional reflects on his experience at Bell-Northern Research (BNR), Nortel’s old Research and Development division. An excerpt from his article has been reproduced here as an entertaining example of first-hand experience with the struggle between design and engineering: if such examples were uncommon, there would be no need for exploring the value of design management.

“I was hired as the first PhD-level psychologist in a group called Design Interpretive (DI). The ‘Design’ referred to industrial design (a creative handful of people then) and ‘Interpretive’ to recognize the importance of behavioural science and consumer research in setting the goals for the design process…”

“There was a constant struggle between designing elegant products that people would actually use, and the priorities set by engineering management which consisted of packing as much functionality as possible into a plain black box – with little consideration of whether anyone would buy the product or care to use it. The prototypes always looked like those refrigerator-sized computers from ’50s sci-fi B-movies.

“Nonetheless, we did have some measure of influence and success. There were about 20 PhD or Masters-level psychologists and ergonomists in DI by the time I left and even more industrial designers. It was always a battle, though, which DI eventually lost, when Nortel axed the group once and for all. Apparently, marketability and usability were no longer burning issues for Nortel, or they’ve somehow managed to outsource those functions… Have you seen any of the consumer-oriented products coming out of HP, Dell, Gateway or IBM? They all look like a dog's breakfast and operate like a nerd's best friend.” (Whaley, 2008)

As mentioned earlier, a vision of design management as the management of design, while being concerned with merely the tangible outputs of design activities, does necessitate that design is explicit and visible in the organization. A formal design program would help “establish the fact that a
company has design as a program instead of design as an informal activity [and make] the existence of design activity visible within the corporate structure,” (Blaich & Blaich 1993:13). This desirable quality is common amongst all visions of design management, although it is easier to accomplish when design tasks are performed by dedicated teams.

A key aspect of design management is the involvement of ‘designers’ in the company and the respect and responsibility that the designers are afforded, which can be achieved (for example) by a reward system that highlights the company’s understanding of the value that design brings. In the 1990s, the United Kingdom significantly lacked appreciation of industrial, graphic and other designers; by comparison, the salaries of German designers of similar calibre were three times higher. (Gorb 1990:42)

The Design Management Journal published a study of Philips, a company often quoted as exemplary in its relationship to design. The article suggests that since design is the primary means of shaping the details of products and services, “it is essential to suffuse design awareness throughout the organization,” (Walton 2000:5). Companies that have obviously benefited from professional design of products promote appreciation of product design beyond what is commonly accepted. Philips encourages love of its products as catalysts for creativity and personal fulfilment. “We have forgotten that objects are ‘creatures produced by our spiritual sensibilities and by our practical abilities... We could create new products that are the answer not only to consumers’ needs but also their dreams [and] stimulate their emotions and creativity.” (Walton 2000:23)

Design can also contribute to a better organization of information and in this way transform into information management, according to Newell & Sorrell (1995:22) who claim that “information [about a company’s products must be] reorganized to be more consumer-friendly.” Borja de Mozota (2003:68) extends this notion by proposing that one of the primary roles of a design manager is to manage design work performed for a business or a client, by facilitating the communication between the designers and the business. She refers to Michael Farr, who observed the advent of a new function: the design manager, whose mission was to ensure the smooth execution of projects and to maintain good communications between the design agency and its clients. It is important to note that, though ‘good communication’ and coordination skills are required, they are called upon to perform management tasks but not necessarily leadership in the way it is meant within the thesis. Leadership, in this instance, implies a more people-oriented role that encourages personal creativity and interaction, rather than the straight deployment of a project or carrying out of a plan.
The vision of design management as *design project management* is opposed by Gorb (1990), who seems intent on promoting design management’s *additional value*.

“Design management is not the process of managing a design consultancy or practice, either within or outside a corporation. It is not the education of designers about the importance of the management world; or the reverse: educating managers about design. All these are important activities; indeed they are relevant, preliminary, and necessary to the effective practice of design management. But they are something else. Nor is design management synonymous with product development, or facilities management, or identity management. All these are important aspects of the wider activity, but only aspects of it.” (Gorb 1990:1-2)

Indeed, defining design management as simply the management of design activities makes it difficult to distinguish from the well-established fields of design project management, branding, product design, marketing, interior design and architecture. There needs to be something else that design management can offer, such as the use of design management as a facilitation tool for the establishment of a productive workspace and a healthy psychological climate.

### 2.3.4.2 Design management as the facilitator of a healthy psychological climate

This view is summarised in the Design Management Journal’s *18 views on the definition of design Management* (Walton 1998:4) by Tim Larsen, President of Larsen Design + Interactive:

“[D]esign management is about attitude management. It represents not just a company’s state of affairs, but its state of mind, as well... Warm, friendly, professional, edgy – each evokes an emotion that can be visually portrayed. Good design management understands an organization’s personality and communicates its attributes.”

Gorb’s (1990) design management components, communication and corporate identity design, are the means by which the above is achieved, but the intention behind this is the creation of a positive psychological workplace environment, one that promotes desirable values and positive staff attitude.

Blaich & Blaich (1993:10) discuss environment design as one of the three key aspects of design management, but insinuate that beyond the management of fixed assets, the environment should be
designed in such a way as to encourage desirable behaviours and emotions, which is ultimately defined by the corporate identity.

“The environment in which a company’s employees work not only has a strong motivational impact on the people upon whom the company depends, it also expresses a continuous, subliminal way the value the company places upon its employees and the standard of quality that is acceptable. Cleanliness and safety are no longer sufficient work environment goals. Building architecture, showroom design, interior design and layout, furnishings and equipment, signage and visual amenities such as artworks and special landscaping are not just ‘extras’ if the budget allows for their inclusions. They are strong elements of corporate identity.” (Blaich & Blaich 1993:10)

Borja de Mozota (2003:153) offers a different view of the environment as a cultural tool for the expression of symbols, which are essentially tangible elements through which members of an institution can recognize themselves. These symbols can be verbal, action-oriented or material, and expressed in the following ways:

- Verbal – legends, histories, names, rumours and jokes;
- Action-oriented – gatherings, rituals, meals, breaks and starts to the day; or
- Material – status symbols, company products and logos.

The purpose of environment design becomes the facilitation of positive spaces, workspaces (offices, headquarters and factories) and commercial spaces (exhibition stands, boutiques and retail agencies).

“Environmental design means going beyond only taking into consideration economic efficiency. Interior design helps rationalize a company’s production and technical systems, and communicate a better image. Bringing together a team in the same space encourages causal communication, socialization, and procedural fluidity.” (Borja de Mozota 2003:155-156)

A vision of design management as a facilitator of a healthy psychological climate is an extension of the previously described vision of design management as merely the management of design. Similar elements and actions are performed but with a view not only to improve products or services but to affect the company’s culture, primarily through using environmental elements. The widest and most
ambitious vision of design management is that it is a function that is responsible for *everything* within the organization: ‘design’ is used in its broadest sense to cover all aspects of an organization, from the design of products and production spaces, as well as staff uniforms, logos and office spaces, to the design of the company’s strategic direction. Extreme as this may seem, the view is held by some professionals and academics and is worthy of exploration.

**2.3.4.3 Design management as the function that is responsible for ‘everything’ in the organization**

This vision is summarised by Fennemiek Gommer (MDM, Partner, SCAN Management Consultant), one of the respondents in the Design Management Journal’s *18 views on the definition of design management*:

“Design management is responsible for the design, implementation, maintenance, and constant evaluation of all items that are part of the total brand experience, from the instruction leaflet to the serviceman’s uniform.” (Walton 1998:3)

Previously discussed design elements (product, environment and communication design) are seen from ‘holistic’ perspective, where the whole becomes more valuable than the sum of its parts.

“The design activity is broader in scope than merely product design. All aspects of design must be interactive, supportive, and harmonious in their expressions to present a coherent identity to a company’s various constituents. This orchestration is what design management is all about.” (Blaich & Blaich, 1993:xiii)

Blaich & Blaich’s (1993) definition above both extends and condenses Gorb’s (1990) version, in which design management is seen as a problem solving tool for key management issues, as well as excellent resource management.

“Design management is the effective deployment by line managers of the design resources available to an organization in the pursuance of its corporate objectives. It is therefore directly concerned with the organizational place of design, with the identification of specific design disciplines which are relevant to the resolution of key management issues, and with the training of managers to use design effectively.” (Gorb 1990:2)
Gorb (1990) separates consumer expectations into ‘soft’ and ‘hard’ values, stating that it is a design manager’s responsibility to ensure both are satisfied, which can only be done if the design manager is involved in the entire process that takes a product from design to market. Hard values are bare essentials create the basis for competitive positioning, while soft values create the differentiation that results in competitive advantage. In his definition, the terms are used in the following way:

- Hard values refer to technical competency, cost and serviceability; while
- Soft values refer to environmental friendliness, ease of use and distinctive appearance.

Borja de Mozota (2003:238) draws a parallel between a design manager’s role and that of a strategy consult, by virtue of the fact that at the strategic level of design management, “the design manager must, ultimately, create a relationship between design, strategy, and the identity and culture of the company.”

Earlier it was discussed that the coordination of separate product, environment and communication design activities is what makes design management special, less so the activities themselves. Borja de Mozota (2003:252-253) supports this theory, stating that design must be infused into the decision-making system, and that the role of a design manager is to “create a mind-set that supports design in every department in the company.” She proposes that this can be accomplished by:

- Ensuring that a design department evolves alongside strategy development; and
- Cultivating specific design management skills in accounting, finance, human resources and quality control departments.

Discussed earlier in the thesis was Blaich & Blaich’s (1993) view of a design manager: an individual responsible for both strategy and operations, with highly developed, flexible communication skills. The desirable qualities are summarized by Blaich & Blaich’s quote, which is reproduced below in its entirety since any rewording threatens to diminish the endearing ambitiousness of their view of design managers.

“They need to be knowledgeable about the world economy and business and market trends on a macroeconomic basis. They need to have access to demographic and social trends and analyses. They should be aware of new business practices and theories. Social and ethical
issues are part of their purview. And they should visit major art exhibitions, new architecture, and urban planning sites.” (Blaich & Blaich 1993:16)

While the implication here is that the power of the firm should rest in the hands of an omnipotent design manager, there is no denying that the key characteristic of such an individual is not design skills but leadership skills, supported by a team of highly capable and creative individuals (including designers). It follows that one of the visions of design manager is that of leadership, explored in the following chapter.

2.3.5 Design management as leadership

The vast majority of the respondents published in the 18 views on the definition of Design Management regard design management as leadership. The following quotes are taken from the article and highlight that design management should be, first and foremost, expressed through leadership and its aspects. (Walton 1998)

“Although the word management creates decidedly tactical associations, what most organisations crave is ‘leadership’, which is the necessary complement to management. Leadership is inherently inspirational – defining the vision and pointing in the direction of possibilities.” (Tim Girvin, Principal of Tim Girvin Design, quoted in Walton 1998:3)

“Building and nurturing a team of internal and external contributors who raise each other’s level of performance and enhance the creative experience is the primary obligation of design management” (Martin Gierke, Director of Industrial Design at Black & Decker, quoted in Walton 1998:3)

“[D]esign management is visionary leadership” (Lisbeth Dobbins, Manager of Corporate Branding and Identity at United States Postal Services. Quoted in Walton 1998:2)

“At its best, design management is design leadership. It respects the past while guiding the present with an openness to the future” (Tim Larsen, President of Larsen Design + Interactive, quoted in Walton 1998:4)

The perspectives on design management offered by the professionals quoted above provide a foundation for the subject to be regarded as a tool for increasing employees’ creative attitudes.
towards their jobs and their enterprise by inspiring them with a common vision and hinting at positive personal outcomes to be had from their creativity and congruence. The main mechanism to inspire these beliefs is an environment that nurtures and rewards the development of workers’ creative inclinations.

As per the discussion in previous chapters, design management and design managers can take on a variety of forms, depending on the nature, size and culture of an enterprise and the age, gender and background of the manager. In some cases the design manager can be a gifted designer, in others – a great organiser. In all cases, however, the most important trait seems to be the ability to stimulate and encourage the use of creative tendencies within other staff, and this first and foremost requires leadership skills.

Fundamental to design management is a multidisciplinary approach, but creating a team of contributors from various disciplines and managing or leading them toward a common goal is significantly more complex in real life than the idea suggests. It calls for something beyond a typical operational management environment in which most people are process workers. It may require the coordination of a few creative people, and an approach that is at the same time guiding and hands-off, which would make any unenlightened manager nervous. In other words, what is needed is not traditional management but leadership. It is this leadership that can bring to life Blaich & Blaich’s (1993) vision of harmony between various design functions.

To this effect, a sophisticated interdisciplinary team concept was developed in Japan, whereby product creation teams would include not only designers, engineers and marketers, but also social psychologists, anthropologists and other professional support experts. This gives “designers the freedom to push the boundaries of problem constraints,” according to Donald E. Peterson, former chairman of Ford Motor Company, quoted in Blaich & Blaich (1993:12). He reflects that “in an ideal world, the designer could lead interdisciplinary teams to think about problems in new ways,” but for Western countries progress has not been as considerable, as integration of design activities into the mainstream business is done successfully only in the wishful presentations at conferences, while in reality design activities are isolated and hold “low-status positions” within corporations. For this, the design process needs good management and better leadership. “Someone or some process must be in place to orchestrate” the efforts of designers and the various activities involved in product creation. Not surprisingly, the key to such coordination is the creation of the right relationships between design and other areas of the corporation.
At this point, it would be informative to review the topic of management and leadership. One source to support this discussion is the pioneering work of Margaret Wheatley (1997). In her book, *Leadership and the New Science*, Wheatley draws on the then-recent scientific developments in order to propose a novel way of management thinking, with a goal to challenge the understanding of world processes, by using science as a metaphor for *social science* or human relations.

Wheatley (1997) discusses two propositions: that order and chaos are interconnected, and that the whole is greater than the sum of its parts. Her views are summarized below.

1. Order and chaos are interconnected. Seemingly unpredictable events are inherently orderly. All systems self-organise in order to attain equilibrium, at which point no change is possible and the system can no longer develop but heads towards its death. Disruptions ‘reawaken’ the system, forcing it to reorganize again and continue developing and growing.

2. The whole is greater than the sum of its parts. The traditional Newtonian view of the world as a constituent of solid particles is set aside in favour of an approach driven by quantum physics, which states that the world consists of mostly space which is filled with energy and forces.

Wheatley (1997) links the first point with the advice that change is integral to nature and therefore should be harnessed by organizations, not resisted or feared. The second point she links with the conclusion that relationships, not individual components, belong in the ‘new quantum physics worldview’ and in the same way, organizations must realize that the ‘spirit’ or character of the whole organization is different to and greater than the sum of the relationships between the working individuals.

Since the time of the book’s publishing over a decade ago, the topic of quantum physics rose in popularity amongst physicists and dreamers alike, as did the volume of sub-theories and extrapolations by non-physicists. As the fundamentally complex concept was philosophized upon by the unenlightened public, this has not helped the works of such writers as Wheatley in becoming vital management resources. However if nothing else, then Wheatley’s contribution is unquestionable: management theories are in much need of review.
This need is summarized well by Borja de Mozota (2003:69) who points out that amongst the Design Management Institute’s objectives of research, knowledge collation, education and public promotion of design, its first objective is to “assist design managers in becoming leaders in their profession.”

Borja de Mozota (2003:223) dedicates a chapter (titled The Leadership Style of the Design Department) to the discussion of leadership as a necessary component of design management. According to her, leadership is required in order to:

- Develop competency in creativity, user interface and technology;
- Bring together a team of specialists with different personalities and competencies to cover all aspects from advanced design to redesign; and
- Establish congruence between goals, tasks and time.

She furthers her point by extending design leadership to a contributor to cultural change:

“Leadership plays a central role in all cultural change and in the creation of a positive culture. Leaders’ actions, and their new visions, entail a new cultural model of appropriation of their ideas. Graphic symbols are in direct contact with processes of influence, negotiation, and the power game.” (Borja de Mozota 2003:121)

Borja de Mozota (2003) proposes that because design managers deal with creative teams, more than other managers they must utilize the soft skills that are associated with a transformation leadership style (TLS).

“TLS leaders achieve a level of transformation among their team members by enhancing their awareness of the significance and value of their projects, getting them to transcend their self-interest for the good of the group and the project, inspiring them toward self-fulfilment, achieving their potential, and motivating them to do more than originally planned.” (Borja de Mozota 2003:223)

What are the core skills of a transformational leader? Borja de Mozota (2003:223) offers that these are: charisma, inspiration, intellectual stimulation and personal attention.”
Attractive qualities indeed, but couple these with the technical skill-set and attributes require of a design manager and the ideal role calls for a reality check. It is not difficult to argue the benefits a ‘good’ design manager can offer, bringing to a ‘cold’, closed business environment the ‘warm’ skills of creativity, customer-empathy, leadership, motivation, forward-looking, innovation, a chance for self-fulfilment. The problem lies not in the argument for the necessity of such skills within an organisation but the fantastical nature of such a person. Where can such skills be learnt, and how many people are gifted at all these aspects? Furthermore, the individual that is essentially a good salesman and charismatic leader, while being design-savvy and self-motivated, is more likely to land a role at a top company executive rather than a design manager.

Still, the qualities promoted by the transformational leadership style are appealing and deserve further attention.

“Design managers identify themselves as using a highly transformational leadership style, and those who score high in TLS think the quality of the effectiveness and creativity of their teams is higher.” (Borja de Mozota 2003:223)

For their contribution to creativity within a team, the desirable qualities of the transformational leadership style (namely charisma, inspiration, intellectual stimulation and personal attention) are discussed further in the Creativity chapter.

Borja de Mozota (2003) takes an interesting approach to introducing the need for design leadership, by initially drawing comparisons between the fields of design and management, and consequently highlighting the inadequacies of traditional management models to deal with the needs of design and its ‘management’.

In the chapter, The Convergence of Design and Management, Borja de Mozota (2003) identifies the common traits between the two fields, but first acknowledges that the juxtaposition of the words ‘design’ and ‘management’ can cause discomfort to designers in particular, who tend not to see “beyond the rational and financial dimensions of management,” (Borja de Mozota 2003:73). Similarities between design and management are explored by way of examining an idealistic career path of a designer within an organization: as the designer progresses higher along the ‘corporate ladder’, his responsibilities transform from those of design into those of management.
Exploring the Value of Design Management

<table>
<thead>
<tr>
<th>Role/Job Title</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designer</td>
<td>Developing creative solutions to design problems</td>
</tr>
<tr>
<td>Associate</td>
<td></td>
</tr>
<tr>
<td>Assistant</td>
<td></td>
</tr>
<tr>
<td>Design Project Manager</td>
<td>Coordinating resources in order to deliver a design within a predetermined schedule and budget</td>
</tr>
<tr>
<td>Senior Designer</td>
<td></td>
</tr>
<tr>
<td>Project Manager</td>
<td></td>
</tr>
<tr>
<td>Associate Design Director</td>
<td></td>
</tr>
<tr>
<td>Design Staff Manager</td>
<td>Managing design staff, transferring design strategy into creative briefs, and assembling design teams to meet project needs</td>
</tr>
<tr>
<td>Creative Director</td>
<td></td>
</tr>
<tr>
<td>Studio Leader</td>
<td></td>
</tr>
<tr>
<td>Design Organization Manager</td>
<td>Making operational and general management decisions that drive the development of a design group or organization</td>
</tr>
<tr>
<td>Design Principal</td>
<td></td>
</tr>
<tr>
<td>Strategic Design Manager</td>
<td>Developing the organization’s strategic business objective, along with the related design strategies that help meet the goals</td>
</tr>
<tr>
<td>Chief Design Officer</td>
<td></td>
</tr>
<tr>
<td>Chief Executive Officer</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 – Responsibilities of a designer at various stages in his career

Commonalities between the two concepts exist in spite of the “cognitive differences between design and management”, which Borja de Mozota (2003) attributes to the mutual distrust and conflict between ‘creative design’ and ‘conservative management’. Indeed there are more similarities than there are differences between the fundamental characteristic and concepts of design and management, and that “some firms have succeeded in bridging the two worlds,” Borja de Mozota (2003:73).

Still, design involves a quest for originality, novelty, creativity and innovation, which conflicts with classical management styles and the conservative attitudes that resist organizational change. “To be successful,” claims Sohrab Vossoughi, President of ZIBA Design in 1998, “a design manager must maintain control without limiting creativity.” Clearly something more than design management is needed: a greater and more intuitive skill set that is more appropriately termed as leadership.

“Design management is rooted in the shift from a hierarchical, Taylor model of management to a flat and flexible organizational model, which encourages individual initiative, independence, and risk taking.” (Borja de Mozota 2003:67)
It is in leadership, not traditional management, where the necessary skills of a ‘design manager’ can be found, according to Vossoughi, who advocates that “the greater the penetration of design, the stronger the company.” (Borja de Mozota 2003:78-79)

Vossoughi, quoted by Borja de Mozota (2003:78-79), brings examples of design-led companies Nike and Microsoft, and highlights that while design certainly factors in the visual aspects, design’s greatest contribution are actually to:

- Facilitate the organization to focus on the “human side of business”;
- Promote a passion for “getting details right”; and
- Communicate an inspiring “vision of the future”.

As a designer collects artefacts (videos, photos, problem identification, and models) to aid in the design process, he invariably represents the ‘voice of the user’, something which is not always carried out to the full potential by marketing teams. Furthermore, the designer becomes a counsellor in times of uncertainty, able to prospect design trends if not advise on areas for potential innovation. (Borja de Mozota 2003:233, 254)

A designer’s world-view is not limited to consumer research. A large number of people are involved in the creation of the company’s offering and it is through design that the company can “structure its environment and make it understandable,” suggests Borja de Mozota (2003:258).

“Design helps the company structure its environment and make it understandable. It is a way of thinking and a ‘process’ that ‘imagines’ the relationship between the company and its environment. This structuring mechanism develops a worldview among company employees. The employee is no longer only a problem solver; his role is to represent, to ‘shape,’ his own environment.” (Borja de Mozota 2003:258)

Another benefit that a design manager can offer is the minimization of consumers’ resistance to change due to “perceived and cognitive” risks, by communicating with consumers to manage perceived social or psychological risk, and “altering the innovation in the conceptual stage to make it more acceptable” to manage cognitive risk. (Borja de Mozota 2003:233)
In her conclusion, Borja de Mozota (2003:259) proposes a summary of a three-part design management model. This model differs significantly from the earlier models of Gorb (1990) and Blaich & Blaich (1993), as it breaks down the concept of design into three levels of *action, function* and *vision* rather than the three areas discussed earlier (product, environment and communication design.) The model is “defined by Patrick Hetzel in the fashion industry in 1993 and validated in [Borja de Mozota’s] study of the ‘33’,” and can be applied to any business, according to Borja de Mozota (2003). It is reproduced below.

<table>
<thead>
<tr>
<th>Design ACTION</th>
<th>Design FUNCTION</th>
<th>Design VISION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The differentiating value of design</td>
<td>The coordinating value of design</td>
<td>The transforming value of design</td>
</tr>
<tr>
<td>Design is an economic competency that changes the primary activities in the value chain.</td>
<td>Design is a management competency that changes in the support activities in the value chain.</td>
<td>Design is a core competency that changes the value chain of the sector and the vision of the industry.</td>
</tr>
<tr>
<td><strong>“3”</strong> Brand marketing Production Communication</td>
<td><strong>“3”</strong> Structure Technology management Innovation management</td>
<td><strong>“3”</strong> Strategy Knowledge management Networking management</td>
</tr>
<tr>
<td><strong>Operational design management</strong></td>
<td><strong>Functional design management</strong></td>
<td><strong>Strategic design management</strong></td>
</tr>
</tbody>
</table>

Table 3 – Three levels of design management

The above table categorises design management into three levels, and implies a progression in maturity. The levels echo the visions of design management described earlier in this chapter, which can be loosely partnered in the following way:

- Design action – a view of design management as the management of design;
- Design function – a view of design management as the creation of a good psychological climate; and
- Design vision – a view of design management as the function responsible for ‘everything’.
This third level (design vision) proposed by Borja de Mozota (2003) in the above table summarises well the idea that, at its highest and most ambitious level, design management has the capacity to be a key contributor to corporate strategy.

“To manage design at a strategic level is to manage the contribution of design to the strategy formulation process: to define the responsibility and leadership assigned to design and its contribution to the organizational culture, search for opportunities for design innovations, and multiply demonstrations of identity through design. This…level of design management establishes links between design, corporate communications, and top management.” (Borja de Mozota 2003:142)

The point is expressed more realistically here, with acknowledgement of design management’s potential contribution to knowledge management and strategy by virtue of being well acquainted with ‘the voice of the customer’ and well positioned to identify possible areas of innovation. Yet even this view of design concerns itself more with the mechanical design aspects and less with the creative qualities that can be inspired by a design leader, and that is the contention of this thesis.

This chapter has shown that many authors regard design management as a means by which product quality and marketability can be increased, while other professionals and academics look to design management as an enhancer of the work environment: the office interior, the culture on the production floor, and a means by which to refine the company strategy, (Borja de Mozota 2003; Blaich & Blaich 1993). However the key function of design management, in the researcher’s view, appears to be leadership, interpreted as the mobilization, organization, development and implementation of the creative potentials of all or at least the majority of the members of the production process (including those involved in the supply of raw materials as well as the consumers of the product itself.) The leadership aspect of ‘design management’ warrants a review of the psychological aspects of human creative abilities and activities, and this is discussed in the chapter on Creativity.
2.4 Innovation

The connection between design management and innovation has been made by many proponents of design, and one that seems logical. Borja de Mozota (2003:259) is forthright on this point: “Design will create value in the company’s support departments, and, in particular, in innovation and technology management.” Since design management, through the components of design thinking and ideation, can bring about innovation, the subject merits a discussion within the context of design management’s value. Over the last decade, management writing and company websites seem to have taken to using the ‘buzz’ word innovation, which promises to be the key to ‘true’ competitiveness. Design management is valuable, therefore, if it results in the creation of an innovative process, product or strategy.

2.4.1 What is innovation?

Innovation seems to be one of the most frequently used and misunderstood terms in organisations. Like design, it is difficult to define. Some apply a strict classification to innovation as something necessarily novel, unique and groundbreaking. Others share a softer view, and allow new approaches to be considered as innovation; in this instance, some forms of process improvement can be labelled as innovations.

Whether a narrow or relaxed definition is applied to ‘innovation’, there is little argument as to its place in society. The Australian federal government supports innovation through various means, one of which is through the Department of Innovation, Industry, Science and Research (DIISR). Innovation and design share many similarities, one of which is the multitude of definitions that surround the terms.

Innovation is often promoted as the creation of something new. Lam-Po-Tang (2006) offers the following definitions of innovation from three sources.

- Innovation is the creation a new idea, method or device (Merriam-Webster online dictionary)
- Innovation is the successful exploitation of new ideas (Department of Trade and Industry, United Kingdom)
- Innovation is the change that takes performance to a new dimension (Peter Drucker)

While the above definitions focus solely on newness, a more inclusive definition might seem more practical: by contrast to the above, the Australian Bureau of Statistics (ABS) uses a different approach to innovation when surveying Australian business for their innovation capacity.
In the view of the ABS, innovation is the creation of a new (to the firm) or significantly improved product, service, process, marketing method or organisational method. (DIISR 2010)

Though to the extremist, innovation must necessarily involve something novel and new to the world, it is comforting to heed the above definition, which does not require a world-renowned inventor to be the source of innovation: significant improvement will suffice. This means that all business, large and small, have the capability of being innovative, so the question remains – how?

The DIISR insists that innovation is one of the key drivers of economic growth. It is a process, not a destination, and needs to be integrated into all business operations, including management, leadership, planning, customer service, research training, design, finance and marketing.

Innovation can be ground breaking or incremental, as it highlighted by the different types of innovation classified by the DIISR (2008, 2010).

2.4.1.1 Product innovation
This is the introduction of new (or significantly improved) characteristics or uses of goods or services. For goods this may include functional characteristics such as technical specifications, components, materials, embedded software and user friendliness; while for services this may include enhancements such as the extension of warranty, introduction of e-commerce or automated voice-response systems. Product innovation is one of the more risky, expensive and least common forms of innovation.

2.4.1.2 Process innovation
This involves the implementation of new (or significantly improved) methods of production or delivery, including techniques, equipment and software. Training staff to offer new or different consulting services and automating product development may fall into this category. Improving old ways or creating new ways of producing or delivery goods and services is a type of innovation that is popular and offers high benefits to the business.
2.4.1.3 Organisational innovation
This entails the application of different organisational methods across business practices, workplace organisation or public relations, and involves incremental changes to the business that are low-cost and often not based on technology, with a purpose to engage and make the most of staff, customers and suppliers.

2.4.1.4 Marketing innovation
Though this has been identified as a separate category, it is related to product innovation, and includes changes in the aesthetic design of products, packaging, advertising, product placement and even pricing.

The growth of innovation articles and sites on the Internet has helped ‘spread the message’ and perhaps resulted in increased usage of the term within organisations, however as Deanne Koelmeyer put it, “Let’s be frank; talking about innovation is so much more satisfying than encouraging the ‘nuances of the process’. The concept that significant improvement is as innovative as a new product does not seem to be widely accepted, and as a consequence some forms of innovation masquerade in organisations as process improvements.

With four types of innovation (to use DIISR’s definition) available, there are many functions within an organisations from which innovation can arise. This is somewhat similar to the idea that ‘everyone can be a designer’ or at least offer creativity, but in order to turn an ad-hoc process into one more predictable, innovation can be nurtured similarly to the way in which design benefits can be promoted by ‘design management’.

2.4.2 Managing for innovation
The DIISR (2008) offers three ways in which innovation can be encouraged within an organization: through leadership, the environment and resources.

2.4.2.1 Promoting innovative practices through leadership
Innovation within an organization must begin with a decision at the executive level to embed innovation into the corporate strategy and to dedicate resources toward this goal. At the management level, the company’s potential for innovation can be assessed by determining what areas of the business can be improved, prioritizing ideas and improvements that are likely to have the most impact, evaluating probably returns from innovation, predicting how the new or improved goods or
services will affect sales volumes and profit margins, and considering the duration or life cycle of the innovation.

People management and leadership are also essential to the successful implementation of innovative practices through change management. Appreciating the dynamics of human resource management and organizational change may help in choosing the right techniques to achieve productive outcomes. Small businesses may not have dedicated a human resource department, and may find it more fruitful to hire and retain new staff, rather than employ contractors and casuals that, while being easier and cheaper for small businesses, are less likely to develop team spirit, loyalty and motivation.

A great source of innovative ideas can come from customer facing staff, such as customer relationship managers. It would be helpful, therefore, to hold regular forums in which ideas and issues can be shared not only amongst other customer relationship managers, but operational staff also.

The DIISR (2008) suggests that innovation must be managed so that it is ‘under control’. While creativity cannot be forced, management can ensure that creative activity is encouraged by providing resources to the improvement of processes.

Interestingly, though the DIISR (2008) insists that innovation should be managed, this is difficult to apply in practice. Again it brings to mind the discord between the organized processes involved in management and the chaotic way in which ideas can be born. The researcher’s professional experience as an analyst in a large banking corporation suggests that one of the best ways in which managers can encourage innovation is by not stifling it.

In the researcher’s personal experience, innovation was announced as one of many strategic priorities and supported, in principle, by an executive manager. The idea behind this was that innovation would come ‘from the floor’ like vapour, however in practice as the idea of innovation as a strategic directive filtered down from the executive to the floor management, it lost its momentum. At the ground level, the staff that operated the back office of the banking corporation was involved heavily in processing. Role descriptions and explicit incentive systems scarcely promoted innovation-focused behaviours and daily process work was seen to be of highest importance, with practically no time allocated to the improvement of processes.
The few individuals that had ‘broken out of the mould’ did so by aggressively focusing on process improvement (often working overtime or on weekends) to deliver solutions which then replaced the less efficient methods. It was through personal negotiation with managers that these individuals were promoted to positions worthy of an ‘innovation manager’ title. This highlights that innovation is easier to recognize retrospectively than it is to encourage at the earliest stages. In this case, managing for innovation makes sense as it involves the encouragement of baby ideas, the first signs of staff involvement in something that may potentially result in what was earlier classified as innovation. Short of embedding formal systems to recognize and encourage these spurts of something new, at the most basic level, management can encourage innovation by not discouraging it.

On this, the DIISR (2008) seems to agree: one of the best ways in which innovation can be promoted is with high profile or influential managers leading by example by taking an interest in day-to-day innovative activities. DIISR (2008) refer to business innovation expert Peter Drucker, who advises that in order to have effective innovation, it needs to be simple and focused (in order not to confuse staff, customers and suppliers) as well as start small and build up.

2.4.2.2 Embedding innovation into the environment

Deanne Koelmeyer once said, “Let’s be frank; talking about innovation is so much more satisfying than encouraging the ‘nuances of the process’.” The unfortunate truth about innovation is that it is difficult to define and even more difficult to embed into an organisation.

The DIISR (2008) encourages companies to create environments in which ideas can flourish, and a culture that does not fear taking risks, promotes experimentation and rewards enterprise. This is more difficult to except from a bank where risk is considered a dirty word. The DIISD (2008) go so far as to suggest that the workplace needs to be enjoyable and stimulating, led by the principle that “if you are not enjoying work, you are doing something wrong.” A reward system is also helpful, flexible to handle both public and private acknowledgements.

An interest component in the cultivation of an innovative culture is the sharing of ideas between different teams. Having a flexible structure that provides opportunities for people to work across boundaries and functions allows them to share current practices, and the ability to build diverse teams: groups of employees with varied skills and personalities. This is helped by having opportunities for people to work across boundaries and functions so they can share current practices and ideas that arise as part of their daily jobs. However this is easier on paper than in reality, since
such a group may be a fertile breeding ground not only for ideas (potentially) but for arguments, and would ideally be led by a facilitator.

Another interesting suggestion by the DIISR (2008) is to have a flatter management structure. Hierarchy, the organization argues, can weaken communication between channels, as well as shield good ideas from reaching the top management capable of enabling these to be implemented.

### 2.4.2.3 Supporting innovation with resources

A formal plan can help ensure resources, such as time, funds and expertise, are utilized to fuller capacity. This may be difficult for small business, as daily challenges often withhold management from developing formal business plans. Still, the DIISR (2008) suggests that the creation of workspaces where employees can meet casually and discuss opportunities for improvements may encourage ideation. Similarly, knowledge or intellectual property can often be used in more intelligent and strategic ways, as is discussed in the chapter on *Tacit Knowledge*. The DIISR (2008) recommends the use of ‘idea boxes’, feedback surveys and innovation forums.

It can be seen that promoting, embedding and supporting innovation requires visionary leadership, a cultural shift and the smart utilization of resources. The same commitments and systems help design to be better harnessed by an organization. Clearly the distinction between design and innovation is mostly academic – the promise of both of these creative concepts is the creation of better products, services and processes.

### 2.4.3 Design and innovation

In the recent years, the urgent need for innovation and creativity within organizations has made explicit from academic literature to popular media. According to Thompson and Choi (2006:xv), “the business climate has never been so keen on creativity [and innovation].” Innovation and ‘design’ in organisations have been linked by many. For instance, Thompson and Choi (2006:xv-xvii) write that “creativity in the world of work is a joint outcome of three interdependent forces - individual thinking, group processes, and organizational environment.” Design management attempts to address this by formalising the process of design and making use of design resources across the company in a formal manner.

It would seem that Blaich & Blaich’s rather ambitious hope for design is more congruent with the urgent need for innovation, if by nothing else then the sheer size and importance the authors place on
design within an organisation. If innovation is what the world needs, then it is fundamental that organisations learn to encourage innovative thinking. A design management program can be seen as the tool with which such an environment can be created.

Despite definitions offered by Blaich & Blaich (1993) and Gorb (1990), it seems that today ‘design management’ as defined the aforementioned authors exists in very few companies, if at all. The interest in ‘design management’ has fluctuated over the years, while the term innovation has grown in popularity. Often it is used by companies in place of design management, and could be easily replaced without changing the context. This comes in spite of the fact that progressive companies and even more so progressive literature has almost grown tired of the use and abuse of the term ‘innovation’. Like design and design management, innovation finds itself defined in various ways by its advocates, while many more proponents of the term use it without a proper understanding of its meaning, intent and true value. In some ways, companies that traditionally are not seen as innovators (such as large banking corporations) have turned to ‘innovation’ as the next wave and secret solution (at least on paper) that promises to yield financial benefits. Innovation can indeed be seen as words on posters and heard as words in management discussions, but struggles to formally filter through to the floor staff by virtue of its misunderstood nature and the psychological changes that are required for innovation to be embedded in the ethos. Though it inevitably sprouts by accident or when led by headstrong and farsighted individuals, the frequent yet unsupported reference to innovation can be seen comically, somewhat resembling a scenario of a well-meaning busy professional, who swallows a sausage roll hastily at his desk while thinking, “I should be eating healthy.”

Borja de Mozota (2003) further promotes the link between design and innovation.

“Design relates to key innovation management issues and new product development (NPD) success, in phase with important factors that are critical to innovation success: competitive advantage, the understanding of user needs, and the synergy between innovation and the company’s technological strengths… ‘Innovate to survive’ is our world’s motto. Design is innovation that can add value, giving a company a profitable edge in the quest to influence consumer preferences.” (Carpenter & Nakamoto, 1990 as referenced in Borja de Mozota 2003:116)

Borja de Mozota further adds that “an innovative design process can help create a superior product,” and suggests that a designer is essentially an innovator who researches the environment for
prospective opportunities. He does this by watching, inquiring and listening to “the world that surrounds him, which means the first value of design is the development of ideas that then become concepts.” (Borja de Mozota 2003:116)

Furthermore, Borja de Mozota (2003) highlights the role that design can play in creating a more customer-oriented business.

“Design management is responsible for improving customer management in the company and helping to make sure the company is customer-oriented. The integration of design into the innovation process changes the management of customer processes.” (Borja de Mozota 2003:229)

Though there are some technical and definition-based differences between design and innovation, some promote a more direct link between the two concepts to make the point that one cannot exist without the other.


It must be said that design is not the only way to induce innovation, nor is it often the sole factor. However if design does not strictly equal innovation, it can certainly act as a significant driver of innovation as it is well placed to bring about the desired outcomes spoke of earlier in this chapter.

Some authors view the design of the current product as the key to its potential further development and evolution, in this way equating design with innovation, which leads to the question of design effectiveness and the measurement thereof (Newell & Sorrell 1995), and is discussed in further detail in the chapter on Value. This also raises the issue of the role of design in the development of the company’s strategy (Gorb 1990; Blaich & Blaich 1993; Borja de Mozota 2003). The question of design contributing or even driving the corporate strategy leads to the consideration of the necessity of design management.
“Design is a management tool that creates differentiation in the internal capabilities of the company. Design is no longer seen as the output of design-form, but as a creative and management process that can be integrated into other organization processes, such as idea management, innovation management, and research and development management, and that modifies the traditional structure of process management in a company.” (Borja de Mozota 2003:114)

Design management can be a scary, misunderstood and even increasingly irrelevant term. There is design, and there is innovation. Some authors promote the convenient equation that ‘design = innovation = creativity’, but this is an inaccurate understanding. Design can enable innovation, and can be used to encourage innovative and creative behaviour and culture. But the fundamental purpose of design management, it is argued in this thesis, is design leadership; and leadership is all about empowering rather than managing. Nor does leadership need to replace management – rather enhance it or extend it. In the case of design management, though, if the goal is to make the company more innovative and design is the tool adopted for such purpose, the focus should not be on some mysterious design management program, of which little evidence exists, but in fact design intervention. Design intervention is a form of leadership.

Within the thesis the concept of creativity has been mentioned in the context of ideation and innovation. The key to design leadership, however, is the enablement of creativity in the leader’s followers. This may indeed be the highest value that ‘design management’ can bring. While Borja de Mozota’s (2003) book seems to focus on the practical aspects of design in an organizational context, it seems to only lightly touch the leadership aspect of design management and its psychological impact on the people in the enterprise. The contribution that a design leader can make to the creativity, productivity, innovation and overall positive culture of the organization is significant, and of the greatest values of design management in the researcher’s discovery. A section has therefore been dedicated to the discussion of creativity and psychological aspects of design leadership.
2.5 Creativity

Borja de Mozota (2003) proposes that because design managers deal with creative teams, more than other types of managers they must utilize the soft skills that are associated with a transformation leadership style (TLS).

“TLS leaders achieve a level of transformation among their team members by enhancing their awareness of the significance and value of their projects, getting them to transcend their self-interest for the good of the group and the project, inspiring them toward self-fulfilment, achieving their potential, and motivating them to do more than originally planned.” (Borja de Mozota 2003:223)

What are the core skills of a transformational leader? Borja de Mozota (2003:223) offers that these are: charisma, inspiration, intellectual stimulation and personal attention.”

“Design managers identify themselves as using a highly transformational leadership style, and those who score high in TLS think the quality of the effectiveness and creativity of their teams is higher. Design managers who use a transformational style of leadership perceive a positive influence on the outcomes of their efforts in terms of creativity, productivity, and efficiency.” (Borja de Mozota 2003:223)

It seems appropriate to look at the personality aspects of a design manager with a view to exploring how human creativity potential can be fulfilled.

2.5.1 Personal aspect of design management: human creativity potential

Creativity not unique to a handful of individuals: creation is a human right and innate ability.

“Every animal leaves traces of what it was; man alone leaves traces of what he has created.”

(Jacob Bronowski quoted in Faimon & Weigand 2004:25)

A creative act can be seen as the rearrangement of existing patterns in new ways, something which also comes naturally to humans as part of the normal growth process.
“What the creative act means is the unfolding of the human psyche in the sudden realization that one has taken a lot of disconnected pieces and found... a way of putting them together.”

(George Nelson quoted in Faimon & Weigand 2004:37)

If innovation is essential for a company’s survival, and creativity is the underlying support of innovation, who should be involved in the creative process? Is creative thinking something that is natural only to those with a ‘creative personality’, or can creative thinking be encouraged and nurtured in non-creative people? And indeed, what is a creative personality?

At a conference titled *Creativity and Innovation in Groups and Organizations*, held at the Kellogg School of Management in June 2003, behavioural scientists from psychology and organizational behaviour presented “the latest, newest ideas and investigations.” (Thompson & Choi 2006:xv)

Thompson and Choi (2006) identified (at least) “three definable *camps* of scholarship on creativity and innovation that may not be aware of each other. These camps represent research on group brainstorming, research on cognitive processes underlying creative thinking, and organizational processes and structures that facilitate or debilitate creativity and innovation.” (Thompson & Choi 2006:xvii)

“The business climate has never been so keen on creativity. With over 30 books on creativity released in 2003 alone, companies and organizations are crying out for knowledge about how to build a better mousetrap.” (Thompson & Choi 2006:xvii)

Thomson and Choi’s (2006:xviii-xx) state that their book “is divided into three major parts”, respectively focusing on:

- Individual-level cognitive processes – “basic cognitive mechanisms that underlie creative thinking”;
- Teams and group dynamics – “understanding how groups and teams in organizational settings produce creative ideas and implement innovations”; and
- Organizational, macrolevel processes – “the role of social, organizational context in which creative endeavours take place.”
Three “interdependent forces” contribute to creativity, namely individual thought, group processes and the environment, according to Thompson & Choi (2006).

“Creativity in the world of work is a joint outcome of three interdependent forces - individual thinking, group processes, and organizational environment.” (Thompson & Choi, 2006:xviii)

Brian Clegg’s *Creativity and Innovation for Managers* (1990) is promisingly prefaced with the following: “[This book] will show how organized business creativity has originated, how it works and, most importantly, how it can be managed effectively for the benefit of the business.” Clegg (1990) refers to ‘managed creativity’, as a variation on the theme of design management and design leadership.

Arthur Koetler (quoted in Clegg 1999:2) divides the process of creativity into three personas: the artist, the sage and the jester:

- Artist – the most traditional picture of creativity (music composition, writing, visual arts);
- Sage – traditionally the “scientific and philosophical thinker, the picture of creativity which has most influenced business, typified by the sudden explosion of a new idea”; and
- Jester – “an aspect of creativity with which neither art nor business are truly comfortable.”

Creativity is further mentioned in the context of ‘systematic creativity’: the fantasy of turning an *ad hoc* creative process into a predictable one. “One of the prime benefits of systematic creativity is moving from good ideas as an occasional random occurrence to good ideas as the outcome of a simple, predictable process.” (Clegg 1992:3)

Clegg (1992) suggests that managed creativity is not only beneficial in terms of finance but also for employee satisfaction. He believes that making oneself more creative enhances one’s career prospects and potential for enjoyment of the tasks at hand. Like other advocates of creativity and innovation, he believes the latter (and, by association, the former) are no longer optional.

It has been highlighted that creativity is available to all humans, however while everyone ‘creates’ something on a daily basis, some individuals are more prone to being ‘creative’ than others. The following chapter provides a history of the study of creative behaviour, which serves as a background
to this complex topic and introduces delicately the subject of creative personality types, within the context of design management.

2.5.2 A historical overview of the study of creative behaviour

At this current stage in history, research into creativity appears to have ‘curved’. This agrees with the methodological conceptions of Vigotsky (1984), who proposed that in psychology, which intends to study phenomena in their complexity, the approach of dividing a subject into its elementary components should be replaced with methods that single out essential non-elementary units, and should make obvious the logic of understanding creative abilities, as the subject developed historically in the 19th century and the 20th century.

Bogoyavlenskaya (2002) generalizes that there are two common approaches to understanding creativity. The first approach considers creative ability as the maximum level of intellectual development. This approach was dominant during the first century of the growth of the science of psychology, and was supported by mechanistic tradition which recognizes only quantitative differences. In time, however, it was proven that the creative output of a person does not necessarily correlate to his level of intellectual ability. The approach was inadequate in fulfilling the social mandate of identifying people with high creative potential, which arouse at the beginning of the post-industrial societal development. The appearance of this crisis (in the field of research into creativity) was logical, according to Vigotsky who claimed that “by equating the whole with its elements, the problems is not solved, but instead evaded.” (Vigotsky 1984:12)

It was natural, then, that in the fifties a desire emerged to single out a certain specific ability for creativity beyond intellect. This tendency found consistent implementation in the methodological approach of Guilford. In addition, understanding creativity switched from direct identification with intellect to direct contraposition of creativity to intellect. According to this new approach, factors of creativity exist independently from and parallel to other intelligence factors, having their own localization (factors of divergent thinking). Guilford’s definition of the creativity index ‘Cr’, as distinct from the intelligence index ‘IQ’, illustrates a tendency for component-wise analysis described by Vigotsky, whereby a “purely external mechanical connection” between ‘Cr’ and ‘IQ’ is sought, as if the two were very distinct processes. (Vigotsky 1984, quoted in Bogoyavlenskaya 2002)

Guildford’s true goal was a more complete construction of the multi-factorial structure of intellect that would not be reduced to the factors that represent learning activity, and which, according to him,
are assessable by IQ tests. Specifically, creativity factors would be added. After considering all the known factors that logically exist within the system, such as the abilities of fluency, flexibility, originality and sensitivity to problems, Guildford came up with a system or model called the “structure of intellect” (Guildford, 1988). This new model included creativity factors as part of the unified structure of intellect. The set of all factors cannot be interpreted as a set of all components of the structure. In his structure, all factors are independent abilities. This creates the possibility to objectively consider the factors and their corresponding indices, assessed by ‘intelligence’ tests and special ‘creativity’ tests and resulting in distinct factor ratings. This is demonstrated by numerous comparative studies of creativity and intelligence in the second half of the 20th century. Together with the ability to learn (which is extremely valid in intelligence and creativity tests), these three factors have formed the foundation of aptitude classification as independent criteria for the three separate kinds of aptitude: academic, intellectual and creative. (Bogoyavlenskaya 2002)

Guildford’s model considers fluency, flexibility and sensitivity to problems as creative factors. These factors are defined as follows:

- Sensitivity to problems – this is the first ability singled out by Guilford and is defined by the score of tests that assess the ability to see defects, needs and deficiencies.
- Fluency and flexibility – these factors provide the necessary momentum which assures the inevitable turnover of ‘trial and error’ within this paradigm.

As a criterion for his empirical study, Guilford used ‘originality’, which he referred to as “one of the most important aspects of creative thinking,” (Guilford, Wilson & Christensen 1952:326, 13). However Guilford could not use the true definition of originality as the ‘creation of a novel product’. While one should judge the output of a scientist precisely according to this latter criterion, this is not a viable approach for testing, for the feature should be represented repeatedly. In an attempt to measure originality, three tests for verifying the approaches to measurement were designed (Bogoyavlenskaya 2006):

1. Answers – Unusual answers, measured by the weight of the test subject’s answer in comparison with the answer’s statistical infrequency in the group of test subjects as a whole;
2. Associations - Remote, unusual or unconventional associations in specially prepared association tests; and
3. Cleverness – Actual cleverness of the answers.
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Guildford reflects on a well known example of semantic originality, concerning a student who had to measure the height of a building using a barometer. He tried to lower the barometer to the ground on a rope, then measure the length of the rope. Then he tried to compare the length of the shadow of the building with that of the barometer, time the barometer’s downfall, and finally decided to ask the housekeeper. The example shows that divergent thinking does not advance our knowledge; on the contrary, information previously gained by humankind can be lost. The test subject did not employ any specific qualities of the barometer, but simply used it as an object that had weight. (Guilford, 1952)

Later Guilford confessed that that originality was regarded as something “uncommon”, “remote” or “clever”. “It was felt that these three definitions [of originality] included significant aspects of what is commonly meant by the term original,” (Wilson, Guilford & Christensen 1953:363). The methods then available did not allow Guilford to incorporate originality as the true quality which appears in real life creativity, so he used a substitute: “We have tentatively named this factor originality,” (Wilson, Guilford & Christensen 1953:363). Along with the statement that “we are accustomed to think of originality as the core of creativity,” (Guilford 1988:55) Guilford earnestly points out the relativity and certain arbitrariness of the given factor (according to the way it is being measured) as a criterion of creativity. In speaking about the indicators of singularity and distant associations, he deliberately refers to H. Hargreaves.

Although the study of creativity is often associated with Guilford, in fact his main contribution was to empirically continue an existing tradition founded by C. Spearman. While solving the problem of how to measure intelligence, and having singled out its quantitative and qualitative parameters, in the 1920s Spearman moved on to the study of creative thinking. To this purpose, he assigned to his PhD student, Hargreaves, the development of criteria for evaluating the quantitative and qualitative productivity of creativity.

Naturally, the quantitative part is amenable to assessment and easily realized via fluency indicators. The issue of qualitative measurement was less obvious. Without doubt, this is a very difficult problem for modern psychologists. However Hargreaves relied upon an already existent development, the ‘banality’ coefficients, that had been developed by testologists at the beginning of the 20th century. He applied them to quality assessment by using the contradiction principle. The ‘banality’ coefficients themselves can be traced back to the works of T. Ziehen, one of the most famous associationists, who had been working on judgment within the framework of ‘logic’. Convinced that ‘judgment’ is but an
ordinary association, Ziehen resolved the problem of truthfulness of judgment by claiming that this should be the closest association: ‘everybody knows the truth, therefore the truth is a banality.’ Therefore, the farther one moves from truth and the more distant the association, the farther one is from banality and the higher it is evaluated as an uncommon, non-standard concept, (Bogoyavlenskaya 2005). This is the source of the main creativity criterion and the true content of the criterion most characteristic to creativity: originality, and an explanation of why its definition is usually based on the ability to produce uncommon, non-standard ideas. The use of this criterion in the above interpretation brings us back to the 19th century.

As a result of the necessity to unify the factors of flexibility and originality into a joint criterion, the principal of multiple answers emerged. Therefore Guilford’s combination of these factors into a group of divergent thinking appears logical. However, the scheme of this principal coincides with the scheme of divergence as a mechanism of evolutionary development only in form. Nevertheless, precisely Guilford’s term, which does not coincide with the initial notion of ‘divergence’ (in this case a bifurcation is replaced with the mechanism of remote association), became a synonym for creative thinking. In this way it can be seen that the criteria for evaluating creativity are not adequate to the very phenomenon of creativity. In other words the search around, or at best in breadth, does not provide new knowledge, but at most a possibility for it, or more precisely a probability for it.

At the same time, within the paradigm of process-activity, it was S. L. Rubinstein’s understanding of thinking as a process, which enabled its determinants to be singled out. It turned out that faith in the process is determined by whether a person considers solving a problem as a means for realizing goals external to cognition, or whether he perceives cognition, itself, as the goal. In the first case, the process stops as soon as the problem is solved. When cognition itself becomes a goal, the process continues and develops. Here can be observed the phenomenon of self-motion of an activity that results in a move beyond the boundaries of the original problem. This act of moving beyond the given, or this ability to continue cognition beyond the framework of the requirements of a predetermined situation, in other words, the externally non-stimulated productive activity, holds the clue to the highest form of creativity, the ability to “see something new in a subject, something that others do not see.” (Bogoyavlenskaya 2002)

The diagnosed ability to pursue activity on one’s own initiative (i.e., intellectual activity or intellectual self-action) cannot be explained only through the features of intellect. It has been proven experimentally that this is a feature of personality as a whole, that it reflects the cooperation of the
cognitive and affective spheres in their integrity (a separation of one of the sides is not possible here),
and finally that this feature appears as a unit in the analysis of creativity. In this way, having singled
out a unit for the analysis of creativity allows, for the first time, the study of creative ability not via its
product or indirect indicators, but directly. This is due to the fact that one has singled out the
psychological mechanism of the very phenomenon of creativity which determines its occurrence in
reality. This feature is represented not on the basis of ‘more-less’, but on the basis of ‘there is-there is
not.” (Bogoyavlenskaya 2002)

2.5.3 Intellectual activeness

Russian psychologist, Professor Diana Borisovna Bogoyavlenskaya, spent nearly 40 years researching
the creative abilities and intellectual activeness of people. The object of her longitudinal
study and the proof of the validity of her study were 7,500 adults and children, both from ordinary schools and
schools for the gifted (from grade 1 to 11, in excess of 5,000 people), students, musicians (351 people)
and artists (more than 150 people), barristers, pilots, engineers, rationalisers and innovators in
manufacturing, scientists (physicists, mathematicians, biologists, psychologists, historians and
philologists, including members of the Academy of Science. (Bogoyavlenskaya 2002:139-140, 150,
153, 160-161, 166, 174, 184, 199-200, 209-226)

The process of creation was viewed by Bogoyavlenskaya as a spontaneous phenomenon, i.e., she did
not view it as a process of creating something new (not the material side of creativity nor the
productive function thereof) but rather the psychological, subjective aspect of this phenomenon.
(Bogoyavlenskaya 2002:1994)

Bogoyavlenskaya pioneered a method of experimentation she called a ‘Creative Field’, which was
characterised by the denial (putting aside, discarding) of both external stimuli (for creation) and
internal judgemental (evaluative) stimulation (such as egocentricity, the chase for prestige, cognitive
interest. For this reason Bogoyavlenskaya tried to free the subject from the necessity of finding a
solution to the given problem, from innovation, from the need to try to create something, “break his
head” in the process of solving a given problem. Besides this, she tried to completely disregard his
previous experience, which could give rise to stimuli not controlled by the experiment.
(Bogoyavlenskaya 2002:95)

“In this way, the requirement to solve a problem serves as a stimulus for intellectual activity
until the subject finds no reliable and optimal algorithm for solving the problem. Further
analysis of material, which is not dictated by the ‘utilitarian’ need to perform that, which is required (i.e., solve the problem), we refer to, figuratively speaking, as the second phase. Since the transition to this phase happens after the requisite effort to solve the problem at the initiative of the subject, in such, and only in such, sense can one talk of the absence of the external stimulus for this activity... (in other words only the absence of external requirements and the appearance, in a particular situation at a given level of development, of cognitive activity.” (Bogoyavlenskaya 2002:95-96)

In Bogoyavlenskaya’s opinion, “creativity in a narrow sense of the word begins at the point where it ceases to be only the answer, only the solution of a previously given problem. Herewith it remains both a solution and an answer, but at the same time it contains something ‘extra’, which is what determines its creative status.” (Bogoyavlenskaya 2002:129)

Her method, ‘Creative Field’, significantly differs from the tests of creativity of Guilford, Torrance and others (see Guilford J.P. Creativity. American Psychology. N-Y, 1950. Torrance E.P. Some products of twenty five years of creativity research// Educational perspectives, 1984, V. 22, Number 3.) In contrast to their tests, Bogoyavlenskaya uses a very long (longitudinal) experimentation technique. During the experiment, the subject has time to familiarise with the activity and then to show initiative. The period of time this takes varies from person to person. In addition, the activity in question is relatively simple but varied, so that the experiment becomes length in time, permanent and adequately heterogenous across its different stages or phases. This is related to the fact that her approach requires the creation (setup) of certain conditions for the study of the activity that happens not as a result of a stimulus. (Bogoyavlenskaya 2002:96-97, 99)

A key concept in Bogoyavlenskaya’s research is one of intellectual activeness. Activeness, according to the researcher, is not the synonym of vital activity (life activity). A measure of intellectual activeness and the adequate expression thereof is “intellectual initiative, the continuation of mental activity beyond the given situation, conditional neither upon practical needs nor external or internal negative appraisal of one’s work.” (Bogoyavlenskaya 2002:104)

Intellectual initiative is not simply initiative in the intellectual field (sphere); nor is it initiative of choice making when, for example, mental work is preferred to other types of work. It is also not the desire to over-perform, when the subject asks to be given additional tasks. (A similar request can be an expression of not intellectual initiative, but of self-affirmation in the face of emotional reinforcement.)
Furthermore, intellectual initiative can be expressed not only in the field of mental work. (Bogoyavlenskaya 2002:104)

Plato spoke of knowledge beginning with curiosity. When something appears that is strange and unexpected, the situation itself stimulates human intellect. But some people find curious that, which the majority of others finds ordinary and habitual. This is what distinguishes inquisitive people, innovators and geniuses.

Intellectual activeness is not the external stimulation of continuation of thinking. As synonyms for intellectual activeness, Bogoyavlenskaya uses such terms as “spiritual activeness”, “situationally unstimulated productive activeness”, “continuation of thinking beyond the given situation or problem”, and “cognitive performance”. Each of these synonyms highlights a different side or aspect of the subject. (Bogoyavlenskaya 2002:107)

She believes that the foundation of intellectual activeness are the mental abilities of a person, although this is expressed not directly but in a form “bent” (affected, squeezed) by the structure of the person’s personality.

Intellectual activeness is related to emotional state or emotional disposition, which it is said that a sailor “cannot live without the sea”, a pilot “cannot not fly”, a poet cannot not write poetry, and a scientist cannot not think. It is not a matter of loving the sea for the sea itself, but in the need for certain emotional experiences, which have become embedded into the character of the person. For this reason, the feeling of mental activity can also create emotional experiences, an involvement in life, life’s fullness and happiness, equal to the ecstasy of dancing. From this stems the thirst for one’s work and the need for it. This also helps explain why depression can come from the absence of this kind of work, rather than the mere absence of ‘results’. Furthermore, it seems to be commonly agreed that the process of creativity is not regulated by the goal set. This observation may be due to the rise of an ongoing ‘desire’ or need in the work of those, who we call ‘creative’, which effectively becomes the goal of the activity rather than the originally stated ‘short-term’ goal. This would explain to some degree the stability of intellectual activeness and its non-situational nature. (Bogoyavlenskaya 2002:121)
2.5.4 Structure of creative abilities
Bogoyavlenskaya showed experimentally (through parallel and longitudinal studies) that creative abilities are not connected directly with the level of general and special abilities. The latter are of course a means for the successful completion of an activity, but they do not solely determine the creative potential of a person. Their contribution is being refracted through the motivational structure of the individual, through his system of spiritual values. Although testologists generally notice the influence of personality in tests of divergent thinking, their instrument is insensitive to the qualitative characteristics of the relationship between the intellectual and personal domains. The method ‘Creative field’ allows to simultaneously untangle the two main components of the creative process (intellectual and motivational-personality) and accurately reveals their roles. Two types of motivation were singled out that determine qualitative differences in the cognitive process. The domination of cognitive motivation, the interest in the matter itself and not just in personal success, secures a high level of cognitive self-action. “The purpose of creativity is self-giving, but not glamour, not success,” (Pasternak 1965). If the dominating motivation is external with respect to cognition, then the cognitive potential of a person suffers. The famous physicist A. Migdal noticed with great regret that many talents are lost for science because of their unrestrained desires for self-affirmation and showy results (Prishvin 1969). Thus the second type of motivation appears to be an obstruction for cognitive self-action. In summary, the first type of motivation stimulates the realization of intellectual potential, and the second type provides an obstacle. This explains why an individual with very high mental capacities may not exhibit cognitive self-action, and why individuals of equivalent levels of mental capacity differ in their creative potentials. (Bogoyavlenskaya 2002)

Bogoyavlenskaya differentiates between three levels of intellectual activeness, namely “stimulus-productive”, “heuristic” and “creative”.

“If in the process of performing the most honest, heartfelt and energetic work, the subject, nevertheless, remains within the framework of the assigned or initially obtained method of operation, we ascribe his intellectual activity to the stimulus-productive (passive) level.” (‘Passive’ in this case indicates not the absence of mental activity in general, nor the tendency to avoid mental stress of any kind, but the fact that this activity, in each instance, is determined by the effects of some external stimulus. (Bogoyavlenskaya 2002:121-122)

The purpose, which drives these people, lies outside the cognitive activity itself; for example, activity is directed only toward self assertion: “it actually prevents the development strictly of cognitive
activity; therefore, even those with high abilities remain within the framework of the assigned activity”. Beyond the discovery of the algorithm for solving the problem, action is transformed into operation, and no greater difficulties are presented. The curtailment of thinking after solution of the problems presented obtained becomes the highest psychological barrier for continuing the analysis of the situation at hand. This occurs not when there is fulfilment of cognitive activity, but there is found a solution to the problem at the level of cognitive activity, when the subject is concerned, first and foremost, with the successful completion of the assignment and the attainment of a specific result,” (Bogoyavlenskaya 2002:125). We can notice in this case an absence of intellectual initiative, cognitive interest and an internal driver for the continuation of thought. The contemporary concept, ‘general endowment’ of man, or the absence of specific strong and efficient interest in any given topic, intellectual or practical activity, characterizes precisely this level of intellectual activity.

“The second level of creative activity is heuristic. Subjects of this level are distinguished by non-responsiveness to the stimulation by external factors, as well as lack of subjective evaluation of dissatisfaction with the results of an activity. Having discovered a sufficiently reliable method of solving the problem, the subject continues to analyse the composition and structure of his activity, and compare separate tasks, which leads to his discovery of new, original, outwardly more ingenious methods of the solution. Each newly discovered regularity or pattern is evaluated and experienced by the heuristic person as a small discovery, a creative finding. At the same time it is evaluated only as new, ‘personal’ method, which allows him to solve the tasks assigned to him. This places a limit on the intellectual activity of the heuristic type of personality.” (Bogoyavlenskaya 2002:122)

The heuristic quality is differentiated from the stimulus-productive one by the presence of intellectual initiative. Furthermore, while at the stimulus-productive level cognitive activity serves as a means of realization of unknown motives, at the heuristic level the result of thinking (i.e., new regularities formed) are experienced as a creative discovery and as an event (Bogoyavlenskaya 2002:125-126). According to her observations, scientists and the majority of the gifted students of special schools tend to belong to the heuristic group.

“For ‘heurists’, comparative analysis is their main instrument of learning. Therefore it frequently bears an empirical nature. The logic of thinking of an empiricist-heurist is ‘this is so, because that is so.’ The empirical aspect of thinking presents a rigid ceiling to the cognitive process, and the scientist-heurist is little different from an heurist of any other profession. The scientist-heurist is the personification of observation, multiplied by wide inquisitiveness, but
divided by the empirical style of thinking. A theoretical comprehension of these phenomena belongs to other scientists” (Bogoyavlenskaya 2002:151)

“The upper qualitative boundary of the heuristic level is determined by the fact that the new regularity or connection is evaluated by the person also from the practical point of view of a supplement to achieving the previous goal.” (Bogoyavlenskaya 2002:126)

“The highest level of intellectual activity is the creative one. Here the discovered empirical regularity becomes, for the subject, not a formality but an independent problem, for which the subject is ready to stop the current task… The new, unforeseen problem is considered, by the subject, as a happy, unexpected contingency, an event… Cognitive interest becomes not only the leading, but the prevailing motive, that suppresses all side-line motives… Moving into the depths of the experimental material, the subject attempts to understand, comprehends the reasons that generate this regularity. Such is the new goal of the subject; he set before himself a new problem, albeit small, but his own, theoretical problem, and he must solve it.” (Bogoyavlenskaya 2002:122-123, 126)

Intellectual activity in this case is qualitatively different to the one at the heuristic level; it is personified in cognitive goal setting, the setting of a new problem, towards the solution of which is, from this point onwards, directed the entire cognitive activity of the subject. (Bogoyavlenskaya 2002)

“We do not have any foundations for failing to acknowledge the creativity of an heuristic person. At the same time, comparing the heuristic and creative levels, it becomes clear that there are two principally different levels of creativity, that corresponds to two qualitatively distinct levels of intellectual activity, to which, in turn, correspond two types of thinking: empirical and theoretical. As they solve the series of problems, the subjects of our experiment perceive formal laws that govern the solution of the entire system of tasks. In this case there occurs a comparison of positions, as a result of which appears the generalization of ‘heuristic’, that is ‘empirical generalization’. In this case the subject is presented with both the fear of error, as a result of retreating from an already-obtained reliable algorithm, and the seduction of ‘brilliance’. Intellectual activity removes the barriers that prevent the continuation of thinking beyond the concrete requirements, and leads to the establishment of new regularities. (While the cognitive motive, in this case, does not exclude the pursuit of secondary motives (such as
self-assertion, prestige and reward), it does become the leading motive. Specifically, it determines the level of the intellectual activity of this subject.” (Bogoyavlenskaya 2002:123)

“Differentiating between the heuristic and the creative levels of intellectual activity is considerably more complex, than differentiating between the heuristic and the stimulus-productive levels. And the reason for this is not only due to the fact that the latter two levels relate to creative thinking (as intellectual activity appears at both the heuristic and creative levels, while it does not appear at the stimulus-productive level.) ... A creative subject begins at where the heurist stops: with the setting, to one degree of another, of a theoretical question, ‘why?’” (Bogoyavlenskaya, 2002:152)

“Scientific heuristic and creative levels are united by the ability to discover and to create something new. However, while the heurist discovers regularity, comparing in this case several uniform phenomena, the scientist of the creative level builds general regularity and principles, relying on the deep analysis of a single fact.”

This is similar to the case of Newton with his legendary apple.

“At the creative level of intellectual activity, the process of deep analysis can be observed, which does not require the comparison of a number of situations; the subject limits himself to the solving of only a single problem. After finding proof of the phenomenon, he becomes confident in its regularity, since he understands its reason and content. This is unquestionably the characteristic feature of theoretical thinking: the ability to reveal what is essential via the analysis of a single object.” (Bogoyavlenskaya 2002:123, 153)

“The subjects of a single level of intellectual activity can considerably differ from each other in their general mental abilities.”

For example, amongst students of the low level of intellectual activity there proved to be a subject with very high mental abilities. The thing is that, according to her teachers, she did everything for her transcript. The pursuit of praise was her life’s purpose. Always and in everything she must be first! “A girl with the large claims, self-love and jealousy. Everything is done from vanity,” (Bogoyavlenskaya, 2002:239-240). Thus, precisely these personality features proved to be the insurmountable barrier in the expression and manifestation of her mental abilities.
Bogoyavlenskaya compares her identified three levels of intellectual activity with the types of creativity defined by Oswald, Louis de Broglie, Poincare and others. Oswald (1910), for example, subdivided people on the criterion of the rate of mental processes into ‘romantics’ and ‘classics’. (‘The Romantic creates quickly and much. The Classic creates little but ripe.’) Louis de Broglie separated ‘theorists’ from the ‘experimenters’; in this case, the theorists were subdivided further into ‘intuitionists’ and ‘logisticians’. Poincare, by analogy with the types of intuitionists and logisticians separates ‘analysts’ from the ‘geometricians’. All these classifications emphasize that the type of thinking is innate to a person.

In the middle of the 20th century, Howe and Woodworth offered a more popular classification (Howe & Woodworth 1960).

1. Fanatic – one absorbed by science to the degree of forgetting oneself, untiring, inquisitive, demanding, often not getting along with other scientists;
2. Pioneer – initiative-taking, supporter of new creative ideas, willingly sharing ideas with others, good at organizing and teaching, ambitious, operational;
3. Diagnostic – good and clever at critiquing, capable of revealing strong and weak sides of scientific work or assumed program of works;
4. Scholar – one with a splendid memory, capable of orienting oneself in different fields of knowledge, by nature not creative, adaptable to other, more initiative-taking scientists;
5. Technician – one who knows how to give completeness to unfamiliar work, average at logic and style, often getting on well with associates;
6. Aesthetic – one fascinated by elegant solutions, intellectual, with a somewhat disdainful view of the less ‘fine’ workers;
7. Methodologist – absorbed by methodology, loves to present and teach others how work should be done, even though his own achievements are not always significant;
8. Independent – individualist, intolerant of administrative work, absorbed by his ideas but does not love to present them publicly and does not display determination in bringing these ideas to life, obstinate, self-confident, characterized by sharp observation skills, an active mind; most of all values the possibility of working quietly, without external interference.
Bogoyavlenskaya, however, considers the classification of Howe and Woodworth barren in the scientific sense. In her opinion, the main index of creativity in the description of these types takes backstage or is simply falsified under the action of external, secondary factors. The first two types, the fanatic and the pioneer, she believes, are rather distinguished by the degree of neurasthenia than creativity (so long as fanatic does not refer to a person absorbed entirely by one idea, and pioneer does not refer to a person grasping at everything as an amateur).

There are a few offered classifications of personality types. “In spite of the enormous amount of data collected by researchers all over the world, there has not been a successful and comprehensive description of the creative personality type. One of the reasons for this is the empirical approach to the problem, or an attempt to solve the problem from a logical point of view. The absence of some theoretical principles in the tools used to determine the characteristics of a personality type leads to the arbitrariness in the definition of the fundamental concepts,” and the confusion and misunderstanding surrounding the creative personality type. (Bogoyavlenskaya 2002:136-137)

Bogoyavlenskaya believes that the identification of the level of intellectual activity (IA) solves this problem. People of the stimulus-productive level of intellectual activity can make hypotheses and original solutions, but only within the narrow boundaries of an already-defined problem. People of the heuristic level of intellectual activity make discoveries and new links between concepts, using an empirical approach. People the creative level of intellectual activity make theoretical discoveries. Based on their own discoveries or other factual pieces of information and patterns, they create a theory that unifies and explains these findings, and pose new problems.

Popper (mentioned by Bogoyavlenskaya) said that the cycle of scientific discovery begins with a posed problem, goes through the process of hypothesis and testing, and ends with the posing of a new problem. The three personality types above encompass this cycle. (Bogoyavlenskaya 2002:137-138)

Richard Foster and Sarah Kaplan also offer their description of creative personality types. “What are creative people - those who do excel in the creative processes like? They tend to have high aspirations. They are impatient. They are open to new experiences, emotions, and risk taking - to the point of being risk seekers. They are willing to risk a great deal because of happiness and deep satisfaction the creative experience brings to them,” (Foster & Kaplan 2001:122). As Csikszentmihalyi said, creative people come equipped with a ‘sunny pessimism,’ or the ability to have an optimistic sense while looking into the teeth of negative outlook.
Creative people are willing to face short-term risk to win long-term rewards. Teresa Amabile says, “While many would be dissuaded by the risk of failure, the creative individual does not see the possibility of failure so much as the possibility of success.” Moreover, the risk of failure may actually motivate the creative person. Economist George Steiger noted, “In innovation, you have to play less of the safe game if it’s going to be interesting. It’s not predictable that it’ll go well…”

In short, creative people are different from traditional operating people. “They are comfortable with ambiguity, and they are open to new experiences and thoughts.” (Foster & Kaplan 2001:122)

If there is a creative person in the company (i.e., a designer), his unique style of doing work must be encouraged. His solutions to new theoretical problems can lead to the discovery of radically new ways that can change whole industries. But it is important not to remove the creative person’s sense of ownership and confidence in that he is solving ‘his own’ problem. This is because the feeling of doing something against his will slows down the creative person’s creative potential, his work becomes mundane, and his psychic energy fades away until he stumbles upon another interesting problem to solve. Creative people are the gold bullions of humanity, and should be treated accordingly.

With constant and prolonged contact with a designer, it is sufficiently easy to determine to which of the three types, proposed by Bogoyavlenskaya, the designer belongs, especially if one considers that, according to the researcher, truly creative types comprises only 3 to 5 per cent of the population, and no more than a fifth of the population if considered together with the heuristic types of intellectual activity. The overwhelming majority of people (the remaining 80 per cent) relate to the stimulus-productive type of intellectual activity. Only in some special schools for the gifted did the percentage of children that make up the creative and heuristic personality types reach up to 57 per cent of the group. (Bogoyavlenskaya 2002:248)

The management of people belonging to the stimulus-productive type of intellectual activity is, perhaps, comparatively simpler. It is necessary only to define clear objectives, to determine stimuli and to establish timeframes for task completion. In other words, it is sufficient to convince these types of people that the solution to the given problem is prestigious, profitable to them personally, and that the competition has already begun working on the same problem. Furthermore, it is necessary to provide models of solutions to similar problems obtained from other firms (i.e., adjust or shape the
algorithm or approach to the problem). It is also essential to offer control and stimulation at the entry into solution mode and at the various stages thereof.

“Quite a bit of evidence shows that whereas people feel best when what they do is voluntary, they do not feel worst when what they do is obligatory. Psychic entropy is highest instead when persons feel that what they do is motivated by not having anything else to do. Thus both intrinsic motivation (想要 to do it) and extrinsic motivation (having to do it) are preferable to the state where one acts by default, without having any kind of goal to focus attention. The large part of life many people experience as being thus unmotivated leaves a great deal of room for improvement.” (Csikszentmihalyi 1997:122)

However, as concerns the spontaneously-creative minority (i.e., representatives of the heuristic and creative types of intellectual activity), it is important, first and foremost, for these people to internalise or absorb the stated problem, to feel that the specific objectives laid before them are ‘their own’, emanated by them for themselves, captivating for them personally, possibly having no analogous solution, and, of course, prestigious. It is important to these types of people to be alight or obsessed with the problem.

Furthermore, management of such personality types should consist of periodically lent direct and indirect support, organizing for them the possibility of the exchange of information with the representatives of the creative elite, where this ‘elite’ can be most diverse.

If for a representative of the stimulus-productive type of intellectual activity, a viewing of Kazimir Malevich’s famous painting, *Black Square*, at an art gallery would be simply an annoying waste of time, the same situation may present for the heurist not only a source of inspiration, but also the key to the solution of some problem. With his ability to mentally penetrate a creative laboratory of another creator and the skill to adapt others’ ideas and methods to contribute to his own solution, an heurist can also find, in a randomly spoken child’s remark on a beach, the answer to a long tormenting question.

Therefore as part of their normal working regime, it is desirable to provide representatives of the heuristic type of intellectual activity with exposure to innovative works – from an exhibition on nanotechnology to artwork by autistic children.
As for the creative type, if such a person appears in the organization at all, it is apparently best to tolerate his style of work, even if it is sometimes a diversion from solving the given problem. His tendency towards the development of solutions to new theoretical problems can transform into the discovery of radical new ways, perhaps even contributing to the growth of the entire industry. But he cannot be deprived of the feeling of confidence that he solves precisely ‘his own’ problem, because the sensation of the associated lack of freedom displaces his creative potential, work becomes dull as a result, and his energy runs low, until he randomly comes unto another interesting riddle. “Creatives are a goldmine for humanity, and should be treated as such.” (Bogoyavlenskaya 2002)


“Like it or not, the age of continuity is forever gone,” insist Foster and Kaplan. That is why “companies unwilling or unable to play the game of creative destruction will inevitably be replaced,” and there will be a transition from the state of continuity to a state of discontinuity they call “the current apocalypse.” In their view, over two thirds of today’s major corporations will disappear by the year 2020. These corporations “will die or be bought out and absorbed because they are too damn slow to keep pace with change in the market.” (Foster & Kaplan 2001:14, 16, 296)

According to Foster and Kaplan, the reason for this is “cultural lock-in”, i.e., managers’ inability to change the corporate culture even in the face of clear market threats. “Cultural lock-in results from the gradual stiffening of the invisible architecture of the corporation, and the ossification of its decision-making abilities, control systems, and mental models. It dampens a company’s ability to innovate or to shed operations with a less-exciting future… [This] manifests in three general fears – the fear of cannibalisation of an important product line, the fear of channel conflict with important customers, and the fear of earnings dilution that might result from a strategic acquisition.” (Foster & Kaplan 2001:16-17)

Each company, argue Foster and Kaplan, designs its own control system “to ensure predictable goal achievement, whether it be coat control, the control of capital expenditures, or the control of the deployment of key personnel.”
This control system, unfortunately, “can also create ‘defensive routines’ in organizations, including the failure to challenge the status quo, the failure to encourage a diversity of opinions, failure to disagree with superiors (thereby displeasing them), communicating in ambiguous and inconsistent ways, and making these failures, even when known, ‘undiscussable’. Change becomes impossible.” (Foster and Kaplan 2001:18)

The control system within organizations encourages convergent thinking that “focuses on clear problems and provides well-known solutions quickly,” whereas discontinuity demands divergent thinking. “Divergent thinking thrives as much on the broad search as on interpretation of the facts. It focuses as much on the skills of reflection (which requires time away from the problem) as on the skills of swift decision making (which seek to avoid delay).” So the conventional corporate control system directly or indirectly kills divergent thinking. (Foster & Kaplan 2001:19)

“We believe that corporations must be redesigned from top to bottom based on the assumption of discontinuity. Management must stimulate the rate of creative destruction thought the generation or acquisition of new firms and the elimination of marginal performers – without losing control of operations.” (Foster & Kaplan 2001:22)

“Destruction, of course, is a negative and frightening word, conjuring up images of chaos and disorder. Perhaps… we would have tried to find a different word to describe the process. But we would have had to have found some word like it – because it is what happens in the market. Companies are born ant they die or are subsumed… Destruction does not mean ‘death’ in the Judeo-Christian traditions, but rather ‘transformation’ in the Hindu tradition. In this sense, destroy really means something much closer to ‘trade’ than to obliterate… The new will drive out of the old.” (Foster & Kaplan 2001:138-139)

“Destruction, like innovation, can be incremental, substantial, or transformational. In the case of innovation, we characterize the process by the newness of each innovation and the amount of wealth created. In the case of destruction, the level of change depends on the extent of destruction and the amount of wealth at risk if destruction is not carried out… Virtually all companies go through some form of incremental internal destruction each year. Procedures are changed, individual posts or branch offices closed, and so on… This kind of incremental destruction can be successfully carried out by front line of the organization, just as incremental innovations is; it goes on day in and day out in a thousand, often unnoticed,
ways… *Substantial* destruction – the decision to lay off 10% or more of the workforce, terminate a joint venture, kill an area of research or the development of new product line – is not a decision that can be taken by the front line alone.” (Foster & Kaplan 2001:141)

“*Transformational* destruction irreversibly changes the course of the corporation. Closing down a heritage product line, …putting the company into play, and declaring bankruptcy are all examples of transformational destruction.” (Foster & Kaplan 2001:142)

The general most reliable way to success, in their view, is to “act like the market”. This “means that corporations must strive to change themselves at the pace and scale of the market.” (Foster & Kaplan 2001:161)

In *Finding Flow. The Psychology of Engagement with Everyday Life* (1997), Michaly Csikszentmihalyi explores of creativity as a fundamental aspect of a fulfilling and engaging life experience. He devoted 30 years to the research of how creative people live and work, in an effort to understand the mysterious process by which they come up with new ideas and new things. He found that creative individuals are remarkable for their ability to adapt to almost any situation and to make do with whatever is at hand to reach their goals. He believes that complexity is what makes creative personalities different from others because they show tendencies of thought and action that in most people are segregated. They contain contradictory extremes; instead of being an ‘individual’, each of them is a ‘multitude’.

Creativity is a central source of meaning in the lives of many people. Most of the things that are interesting, important, and human are the result of creativity. What makes humans different from apes – the human language, values, artistic expression, scientific understanding, and technology – is the result of individual ingenuity that was recognized, rewarded, and transmitted through learning. When one is creative, Csikszentmihalyi argues, he feels that he is living ‘more fully’ than at other points in his life. The excitement of the artist at the easel or the scientist in the lab comes close to the ideal fulfilment all people hope to get from life, and so rarely do. Perhaps only sex, sports, and music, even when these experiences remain fleeting and leave no trace, provide a profound sense of being part of an entity greater than the self. But creativity also leaves an outcome that adds to the richness and complexity of the future.
Csikszentmihalyi describes the ten antithetical traits often present in creative people that are integrated with each other in a dialectical tension, as follows (extracted from *The Creative Personality*, Psychology Today, July/August 1996, last reviewed 14 October 2008, Article ID 1095):

1. Creative people have a great deal of physical energy, but they’re also often quiet and at rest. They work long hours, with great concentration, while projecting an aura of freshness and enthusiasm. This suggests a superior physical endowment, a genetic advantage. But, surprisingly, the same people who in their seventies and eighties exude energy and health were plagued by illnesses in their childhoods. It looks like their energy is internally generated by their creativity, due more to their focused minds than to the superiority of their genes.

This does not mean that creative people are hyperactive, always "on." In fact, they rest often and sleep a lot. The important thing is that they control their energy; it’s not ruled by the calendar, the dock, an external schedule. When necessary, they can focus it like a laser beam; when not, creative types immediately recharge their batteries. They consider the rhythm of activity followed by idleness or reflection very important for the success of their work. This is not a bio-rhythm inherited with their genes; it was learned by trial and error as a strategy for achieving their goals.

One manifestation of energy is sexuality. Creative people are paradoxical in this respect also. They seem to have quite a strong dose of eros, or generalized libidinal energy, which some express directly into sexuality. At the same time, a certain Spartan celibacy is also a part of their makeup; continence tends to accompany superior achievement. Without eros, it would be difficult to take life on with vigour; without restraint, the energy could easily dissipate.

2. Creative people tend to be smart yet naive at the same time. How smart they actually are is open to question. It is probably true that what psychologists call a core of general intelligence, the "g factor," is high among people who make important creative contributions.

The earliest longitudinal study of superior mental abilities, initiated at Stanford University by the psychologist Lewis Terman in 1921, shows rather conclusively that
children with very high IQs do well in life. At the same time, after a certain point IQ does not seem to be correlated any longer with superior performance in real life. Later studies suggest that the cut-off point is around 120; it might be difficult to do creative work with a lower IQ, but an IQ beyond 120 does not necessarily imply higher creativity.

Another way of expressing this contradiction is the contrasting poles of wisdom and childishness. As Howard Gardner remarked in his study of the major creative geniuses of the 20th century, a certain immaturity, both emotional and mental, can go hand in hand with deepest insights. (Mozart comes immediately to mind, as well as Einstein with his tongue out.)

Furthermore, people who bring about an acceptable novelty in a domain seem able to use well both the convergent and the divergent ways of thinking. Convergent thinking is measured by IQ tests, and it involves solving well-defined, rational problems that have one correct answer. Divergent thinking leads to no agreed-upon solution. Divergent thinking is not much use without the ability to tell a good idea from a bad one, and this selectivity involves convergent thinking. These are the dimensions of thinking that most creativity tests measure and that most workshops try to enhance.

It involves fluency, or the ability to generate a great quantity of ideas; flexibility, or the ability to switch from one perspective to another; and originality in picking unusual associations of ideas. Yet there remains the nagging suspicion that at the highest levels of creative achievement the generation of novelty is not the main issue. People often claimed to have had only two or three good ideas in their entire career, but each idea was so generative that it kept them busy for a lifetime of testing, filling out, elaborating, and applying.

3. Creative people combine playfulness and discipline, or responsibility and irresponsibility. There is no question that a playfully light attitude is typical of creative individuals. But this playfulness doesn't go very far without its antithesis, a quality of doggedness, endurance, perseverance. Despite the carefree air that many creative people affect, most of them work late into the night and persist when less driven individuals would not.
4. Creative people alternate between imagination and fantasy, and a rooted sense of reality. Great art and great science involve a leap of imagination into a world that is different from the present. At the same time, this ‘escape’ is not into a never-never land. What makes a novel idea creative is that once we see it, sooner or later we recognize that, strange as it is, it is true.

5. Creative people tend to be both extroverted and introverted. We're usually one or the other, either preferring to be in the thick of crowds or sitting on the sidelines and observing the passing show. In fact, in psychological research, extroversion and introversion are considered the most stable personality traits that differentiate people from each other and that can be reliably measured. Creative individuals, on the other hand, seem to exhibit both traits simultaneously.

6. Their next complexity or ‘contradictority’ is that they are humble and proud at the same time. It is remarkable to meet a famous person who you expect to be arrogant or supercilious, only to encounter self-deprecation and shyness instead. (It is perhaps because they are well aware that they stand "on the shoulders of giants." Their respect for the area in which they work makes them aware of the long line of previous contributions to it, putting their own in perspective. They're also aware of the role that luck played in their own achievements. And they're usually so focused on future projects and current challenges that past accomplishments, no matter how outstanding, are no longer very interesting to them. At the same time, they know that in comparison with others, they have accomplished a great deal. And this knowledge provides a sense of security, even pride.)

Creative people, to an extent, escape rigid gender role stereotyping. They are more likely to have not only the strengths of their own gender but those of the other one, too. They are able to be at the same time aggressive and nurturing, sensitive and rigid, dominant and submissive. This allows them effectively double their repertoire of responses.

7. Creative people are both rebellious and conservative. It is impossible to be creative without having first internalized an area of culture. So it's difficult to see how a person can be creative without being both traditional and conservative and at the same time rebellious and iconoclastic.
8. Most creative people are very passionate about their work, yet they can be extremely objective about it as well. Without the passion, we soon lose interest in a difficult task. Yet without being objective about it, our work is not very good and lacks credibility.

9. Creative people's openness and sensitivity often exposes them to suffering and pain, yet also to a great deal of enjoyment. It is natural, because being alone at the forefront of a discipline leaves a person exposed and vulnerable. Eminence invites criticism and often vicious attacks. When an artist has invested years in making a sculpture, or a scientist in developing a theory, it is devastating if nobody cares.

Deep interest and involvement in obscure subjects often goes unrewarded, or even brings on ridicule. Divergent thinking is often perceived as deviant by the majority, and so the creative person may feel isolated and misunderstood.

Perhaps the most difficult thing for creative individuals to bear is the sense of loss and emptiness they experience when, for some reason, they cannot work. This is especially painful when a person feels his or her creativity drying out.

10. Yet when a person is working in the area of his or her expertise, worries and cares fall away, replaced by a sense of bliss. Perhaps the most important quality, the one that is most consistently present in all creative individuals, is the ability to enjoy the process of creation for its own sake.

“Whereas people feel best when what they do is voluntary, they do not feel worst when what they do is obligatory. Psychic entropy is highest instead when persons feel that what they do is motivated by not having anything else to do. Thus both intrinsic motivation (wanting to do it) and extrinsic motivation (having to do it) are preferable to the state where one acts by default, without having any kind of goal to focus attention.” (Csikszentmichalyi 1997:23)

To live, Csikszentmichalyi suggests, does not “refer to simply to biological survival. It must mean to live in fullness, without waste of time and potential, expressing one’s uniqueness, yet participating intimately in the complexity of the cosmos.” (Csikszentmichalyi 1997:2)
By contrast to today’s Western culture that seems to be predominantly individualistic and ‘personalized’, “traditional Hindu persons were not considered to be separate individuals as we think of them, but rather nodes in an extended social network. One’s identity was determined not so much by one’s unique thoughts and actions, but rather by whose child, sibling, cousin, parent one was.” (Csikszentmihalyi 1997:13)

“Billionaires in America are only infinitesimally happier than those with average incomes. And while personal income in the US more than doubled between 1960 and 1990s in constant dollars, the proportion of people saying they are very happy remained a steady 30 percent.” (Csikszentmihalyi 1997:20)

“The metaphor of ‘flow’ is one that many people have used to describe the sense of effortless action they feel in moments that stand out as the best in their life. Athletes refer to it as ‘being in the zone’, religious mystics as being in ‘ecstasy’, artists and musicians as aesthetic rapture.” (Csikszentmihalyi 1997:29)

“In contrast to normal life, flow activities allow a person to focus on goals that are clear and compatible… Flow tends to occur when a person’s skills are fully involved in overcoming a challenge that is just about manageable…” (Csikszentmihalyi 1997:30)

“When we are in flow, we are not happy, because to experience happiness we must focus on our inner states, and that would take away attention from the task at hand… Only after the task is completed… we are flooded with gratitude for the excellence of that experience – then, in retrospect, we are happy.” (Csikszentmihalyi 1997:32)

“Flow is generally reported when a person is doing his or her favourite activity,” in which case there occurs the blending of work and hobby, toil and pleasure. (Csikszentmihalyi 1997:33, 61, 77)

“Ancient philosophers had much good to say in favour of idleness, but what they had in mind was the idleness of a landowner with many serfs and slaves.” (Csikszentmihalyi 1997:58)

Csikszentmihalyi introduces the concept of an ‘autotelic’ personality (Csikszentmihalyi 1997:113), describing a person who is occupied with the solution of his own problems (i.e., poses his own
problems for himself). Therefore the work itself and the very process of solving the problem become interesting for him. He works for the sake of work itself, for pleasure and not simply for pay.

An autotelic person needs few material possessions and little entertainment, comfort, power, or fame because so much of what he or she does is already rewarding. Because such persons experience flow in work, in family life, when interacting with people, when eating, and when alone with nothing to do, they are less dependent on the external rewards that keep others motivated to go on with a life composed of dull and meaningless routines.” (Csikszentmihalyi 1997:117)

Creative individuals are usually autotelic as well, and they often achieve their breakthroughs because they have surplus psychic energy to invest in apparently trivial subjects. (Csikszentmihalyi 1997:124)

This chapter explores the various approaches that have been taken to investigate the phenomena of creativity. Works of various psychologists are reviewed, with focus on the research of Professor Diana Bogoyavlenskaya, who proposes an alternative view of creativity that is based on ‘intellectual activeness’ or ‘intellectual self-action’, which refers to one’s ability to pursue mental activity on one’s own initiative. In developing her theories, Bogoyavlenskaya draws upon a newly developed diagnostic technique called the Creative Field, which distinguishes motivational processes from intellectual ones. She describes various aspects of intellectual activeness as spiritual activeness, situationally unstimulated productive activeness, and the ability to think beyond the given situation or problem.

Bogoyavlenskaya analyses creative tendencies on a spectrum from least to most ‘creative’. At one extreme end of the scale is the stimulus-productive type of intellectual activeness, which relies on external stimulation. The middle ground is taken by a heuristic type of intellectual activeness which is characterized by non-responsiveness to external stimulation and the presence of intellectual initiative. The opposite end of the creativity spectrum is reserved by the creative type of intellectual activity, whereby cognitive interest serves as the prevailing motivator. It is more difficult to distinguish between heuristic and creative types, however there are differences. Heuristic intellectual activity is concerned with empirical thinking and empirical generalization, while the creative intellectual activity relies on theoretical thinking and the establishment of new regularities and patterns. The existence of three main types of creative tendencies implies the need for a customized management approach in order to make the best of those belonging to different camps of creative potential. A
design leader, it is argued, is best placed to identify the creative tendencies of his people and to facilitate the most effective deployment of people to their best potential. This is probably one of the greatest contributions that design management can make to an organization. The following chapter discusses the different types of value of design management and explores this concept further.
2.6 Value

The value of design management can be explored from an intrinsic and extrinsic perspective. Design management’s intrinsic value is related to what is termed design effectiveness. Its extrinsic value is the potential benefit it represents to an organisation, which can be divided into ‘hard value’ or the bottom line and ‘soft value’ or that, which concerns customer and employee satisfaction. Extrinsic value can take both tangible and intangible forms. Of course, the distinction between ‘tangible’ and ‘intangible’ can be arbitrary; tangibility generally implies measurability; while intangibility is supported by common sense, intuition and anecdotal evidence. Positive psychological impact may be considered as an intangible benefit today, but as the fields of behavioural science, social science and organisational performance mature, and psychological testing approaches become more widely accepted within the business community, the same intangible benefits may one day be considered tangible and measurable. Another way to look at the question of value is from the perspectives of forecast and retrospection: considering the theoretical impact on an organisation that design management can have through interventions, and valuing its business impact after sales figures have been analysed and customer surveys conducted.

2.6.1 Design effectiveness – an intrinsic perspective

In some ways, all humans are designers (Walton 2000:17; Borja de Mozota 2003:2). “All that we do, almost all the time, is design, for design is basic to all human activity,” (Victor Papanek, quoted in Borja de Mozota 2003:2). However “few of us realise it. Or even try to act the part,” (Tom Peters, quoted in Walton 2000:17). The suggestion that all men are designers and are surrounded by design has been made frequently, so it follows that there is something special that differentiates one expression of design from another; a quality that makes one piece of design more ‘successful’ than another, regardless of how such success is measured. In literature, successful design is referred to as ‘good design’ and more commonly as ‘effective design’ or ‘design effectiveness’.

A discovery of design effectiveness begins with an understanding of the concept of effectiveness. To approach this subject, one may turn to Stephen Covey’s bestseller, Seven Habits of Highly Effective People, in which he suggests that the “very essence of effectiveness” is the maintenance of the “P/PC Balance, the balance between the golden egg (production) and the health and welfare of the goose (production capability),” (Covey 1989:46-62). One may also approach the subject of effectiveness from an opposite angle: ineffectiveness. The two concepts, it appears, are not direct opposites and the reduction in one does not necessarily bring about an increase in the other. (Harrison 2005)
“[Effectiveness and ineffectiveness] are not strictly comparable. For example, reducing a specific form of ineffectiveness (e.g., production errors) may or may not contribute much to improving a particular measure of effectiveness, such as productivity.” (Harrison 2005:26)

As discussed in the earlier chapters, literature on the subject of design suggests that there is no consistent definition, and this extends to related concepts including ‘design effectiveness.’ Furthermore, although there is a distinction between design and design effectiveness, in literature the term ‘design’ is often assumed to be effective design. While it is usually an arbitrary and subject task to qualify something as effective or non-effective, ‘good’ or ‘bad’, in the context of this discussion, design that is considered to be of high quality and value is necessarily assumed to be effective design.

In literature, there is a common theme to refer to design as both an art and a science, and either the result of a plan and the planning process itself. To further distinguish between design output and input, terms such as design thinking and creative thinking have been used. These refer to a special kind of brain activity that is distinct from logical thinking, management thinking, and so on.

“In a dictionary... you will find not only definitions like ‘a preliminary sketch or a work of art’ and ‘artistic idea as executed’ but also ‘a plan or scheme conceived in the mind of something to be done’. Design is about thinking…Design is an analytical as well as a creative process.” (Simon Jones, quoted in Newell & Sorrell 1995:12)

Like beauty and taste, although there are many who are willing to justify subjective appeal using objective concepts, effective design remains an equivocal concept. There may be some consensus amongst the public that effective design is more evident in Apple products than most other consumer electronics brands. However, while many people may agree on their choice of a well designed product over a poorly designed one, the reasons for these kinds of judgments are more difficult to gage and specify.

It may be that the secret ingredient that makes design effective is indeed a magical ingredient called love:

“There is no doubt that enthusiasm can contribute an enormous amount to design effectiveness. If you not only understand but also love the… product, you really are able to add value. The best design shines with the emotion and commitment that have been poured into it.” (John Simmons, quoted in Newell & Sorrell 1995:27)
Faimon & Weigand (2004) explore various aspects that make design ‘good’ or ‘bad’, such as basic design elements, guiding principles, unity-variety balance, grouping, rhythm and pattern, connection, contrast, context and scale, balance, placement, proportion and meaning. The authors suggest that prior to exploring tools that link design to financial and behavioural benefits, one would do well to develop a fundamental appreciation of one’s surroundings through the use of the aforementioned principles (Faimon & Weigand 2004). There is no question that effectively designed products and services affect humans on more levels than merely the visual, however this is a good starting point for the development of design appreciation, since visual aspects tend to be more easily readily observed.

In an environment where metrics are both treasured and misunderstood, such elusive concepts as design and its effectiveness, which are only intuitively understood by the design community itself, are difficult to express and measure in traditional quantitative ways, and therefore are hard to justify to the business community endowed in complex unquantifiable structures but recognising only that, which can be, however arbitrarily, measured. To meet this demand, various attempts have been made at measuring or ascribing some form of metrics to design and design effectiveness, and yet Newell & Sorrell’s (1995) observation seems to remain true fifteen years later: effective design is “one of the best kept commercial secrets.” (Newell & Sorrell 1995:5-7)

“Too few organisations know the true value of effective design, and the facts and figures are not often revealed. Yet effective design can achieve an extraordinary range of business objectives.” (Newell & Sorrell 1995:5-7)

### 2.6.2 Tangible and intangible value – an extrinsic perspective

As mentioned earlier, a program or concept may contain both intrinsic and extrinsic value: what the concept itself represents and what it is worth to an entity. An organization may consider something as valuable if it contributes to the attainment of the organisation’s goals, which in the case of a commercial organization most often concerns the increase of financial value of the organisation’s equity to its shareholders. (The thesis is concerned with commercial organizations only, with no intention to cover government or non-profit organizations. However the concepts of management, leadership, design, creativity and innovation are relevant to all types of organizations since at their core, they are governed by principles common to all humans.)
2.6.2.1 Affecting organisational performance through intervention

The previous chapter alludes to the impact of effective design on organisational performance. While the subject of organisational performance is expansive and outside of the scope of the research, it is worthwhile to review the intervention techniques that can be used within organizations, since possibly the greatest impact design management can make is through design interventions within the company.

Harrison (2005) offers insight into this topic by describing intervention techniques that have been developed by traditional organisational development consultants. These techniques are based on the assumption that the democratic management style is more effective in organizations than the autocratic management style. Accordingly, organisational development consultants focus on fostering “reductions in power and status differences, open communication, participative decision making, cooperation, solidarity, and [the] development of their members’ human potential,” (Strauss 1976 referenced in Harrison 2005:6). Harrison (2005) summarises the interventions developed by organisational development consultants (Burke 1993, Cummings & Worley 2001, Porras & Robertson 1987 referenced in Harrison 2005:6) and groups them by the part of the organization which is targeted in each case:

- Human resources – promoting skills, attitudes and values through training, recruitment, counselling, placement and stress management programs;
- Behaviour and processes – improving communication, decision making and leadership through training, team building, consultation, third party-facilitated conflict resolution, review of survey data for self-diagnosis and action planning;
- Organisational structures and technologies – creating new and changing existing jobs, redesigning administrative procedures and reward mechanisms, reconsidering division of labour, operational management and work procedures; and
- Organisational goals, strategies and culture – encouraging clearer goals and strategies through workshops, exercises, facilitation of stronger cooperation between organizations, and challenging corporate values, norms and beliefs.

Some of the intervention methods summarized above have been alluded to in this thesis: since these are the techniques drawn upon by design managers to suffuse design throughout the organization.
2.6.2.2 Tangible value

During the year 2007 the researcher met with design management practitioners and world-renowned academics from Australia, Asia, Europe and America. In September 2007, the London College of Communication housed a Design Management Symposium, to which eighty experts were invited and the researcher was fortunate to have been offered to attend on behalf of a renowned academic from Staffordshire University, based in the city of Stoke-on-Trent in the United Kingdom. It was an unparalleled opportunity to discuss with academics and industry professionals views on the current state of design management.

The discussion was led by Brigitte Borja de Mozota of Université Paris X Nanterre and ESSEC Business school, France. As one of today’s most prominent authorities on the topic and the author of many articles and books, she was well placed to lead the discussion on the value of design management. Borja de Mozota invited every attendant to propose his or her definition of design management and it came as no surprise that a common understanding of such definition did not exist; indeed, there were as many opinions as there were people in the room. Having collected various ideas from the participants, Borja de Mozota commented on the lack of reference to value. She proceeded to explore how design management could actually ‘add value’ to an organization and contended that the community should frame the definition of design management in terms of its contribution and not merely a description of activities and intent. It is for this reason her book, Design Management – Using design to build brand value and corporate innovations (Borja de Mozota 2003), referred to by Earl N. Powell, President of the Design Management Institute, as “the first book to bring together the theory and practice of design management,” is referenced heavily in this thesis.

A discussion about value is incomplete without the subject of measurement. This is a long standing problem. For design to be effective, it needs to be integrated with other areas such as advertising, public relations and technology. Yet herein lies the dichotomy: in order to measure the role and effectiveness of design it must be isolated from these adjacent disciplines (Newell & Sorrell 1995:8). The difficulty of measuring design effectiveness under laboratory conditions gives rise to anecdotal evidence as the more frequently referenced argument for design. Newell & Sorrell (1995) draw on examples of companies in which design was successfully utilized. Although the thesis focuses more on the humanistic and psychological benefits of design management within all types of organizations with perhaps a skew toward the services industry, valuable insights can be gained from the below examples of mostly British retail stores. Visual aspects have been referenced to describe design’s impact, however this need not imply design’s triviality.
• **Berol** made ordinary pencils but later created a high-end range with an innovative pencil design and improved packaging, which sold for twice the price.

• **The Body Shop** went into America, printed order catalogues with design aspects similar to the company’s values, pushing their values of no animal testing and being green into all of their marketing.

• **UK Baby Food Company** invested into better quality photos of babies and foods for their packaging, as well as aerial photography indicating ‘organic’ harvest, to help customers associate the company with organic, healthy living. Their product naming was also emotive for mothers, playing on values such as freshness, care and nurturing, such as ‘First Harvest’ and ‘Mother’s Recipe’.

• **Routledge** was the result of a merger of a few publishing companies that struggled to come together as a group until a new brand and identity was created: all published books then carried an engraved spiral image on the spine, implying a sort of 'eliteness'. The unified and aspired-to identity helped the companies unite with a common language and purpose.

• **Niceday**, like Routledge, was the result of a merger of a few office supply businesses. To create a feeling of oneness they used design to inject humour and humanity into the company by inviting a famous cartoonist to infiltrate their stores with cartoons.

• **InterCity British Rail** was operating at a loss (being government funded) but then differentiated itself and attracted people by offering food, comfort, and bags on which advertisers could buy space. This allowed the British Rail to become one of the only intercity rails that operated at a profit.

• **Bloomsbury Publishing** was a small company of a few people with a ‘good attitude’. While other companies were merging, this was a group of creative publishers from many companies, forming a creative little publishing house that would challenge the way books had been traditionally published. They printed their publishing name on the front cover as opposed to the spine, and used different pictures, looks and book design. The design promoted fun, creativity and separation from the giants.
- **Royal Mail** wanted to encourage children (future customers) to write letters. (Despite electronic means being accessible, Royal Mail believed that people still wrote letters from time to time). So Royal Mail ran a competition year to year, making every entrant a winner (providing them with a special gift). The gift was a booklet, printed on very nice paper, containing information. One year it was a series about endangered animals, another year about something else. In this way kids could collect these booklets over the years and grow into the habit of writing, while also learning about the environment and other topical issues and developing their concerns for the world.

It is widely accepted that commercial organizations are primarily concerned with hard measures that impact the ‘bottom line’. For this reason, it is no wonder the design community finds itself hard-pressed to provide linkages between design and direct business value. Indeed efforts have been made to tie in design with accounting, since the latter is the language of management. Though this link is not often debated, by its very nature design is subjective and the fact that it influences a product does not mean that there are individuals working for the company with the right combination of entrepreneurial spirit, willingness to attempt something beyond day-to-day activities, and resources to do so. Often this is outsourced to internal (or even external) marketing departments and further creativity is not visibly deployed or required from operational staff.

Nonetheless, hard measures or proxies for design success, proposed by Gorb (1990) may still hold relevance today. His is an attempt to link design-dependent results with accounting figure, in particular the definition of gross margin, which is the difference between sales revenue and the cost of sales after adjusting for the cost of stock.

“It is the critical and key performance measure of all business which deal with products, whether they convert them, make them or trade them… [In fact] product design might be best described as ‘designing for gross margin by the extractive manufacturing, distribution and retailing industries’… Design affects gross margin performance through its contribution to a range of critical management issues which determine the nature and so the profitability of the product…” (Gorb, 1990:4)
Gross margin is invariably affected by design in three ways, according to Gorb (1990:4):

1. Product innovation – through determining the level of innovation and the ‘rate of flow’ of related innovative processes throughout the business;
2. Quality – through controlling the materials and methods at the early stage of product development rather than at the later stage, where it becomes costly and inflexible to make changes; and
3. Product range development – through coordinating, simplifying and promoting a product range.

“I would estimate that design, as an isolated factor, has led to a 20% increase in sales.” (Nigel Newton, Managing Director of Bloomsbury Publishing, quoted in Newell & Sorrell 1995:67)

Product design is not the only design aspect relevant to management: Gorb (1990:5) highlights that environmental design also has a place in the accountant’s books, since it is “described as the ‘design of the investment in fixed assets’ [and] as such it has a high value in the eyes of management.”

At a Design in Business conference (Melbourne, 2006), Andrew Lam-Po-Tang drew on examples of a few countries where design and competitiveness were agreeably aligned. Some of the countries that use design, he claimed, include the United Kingdom, Ireland, Denmark, Finland, Singapore, South Korea, New Zealand, and Canada. “What is interesting to note is that all of these countries are at the top of the economic competitiveness ranking… They are not resting on their laurels, they are all furiously developing what they believe to be the engines of the next wave of competitiveness.” (Lam-Po-Tang 2006:6)

Over a decade ago, the Japanese government initiated a range of “design programs throughout virtually every facet of Japanese industry and society… Almost overnight [an infrastructure was created] for promoting and supporting design in industry.” According to Blaich & Blaich (1993:x) this is the biggest commitment of any other nation ‘to date’. Other Asian countries followed suit by “investing millions to bring effective design into their industries.”

These days, “the media is splashing about the value of design and innovation… [But] should we be interpreting this exposure as evidence that everyone already ‘gets’ the value of design?” (Lam-Po-Tang 2006:10)
Today the mechanisms for measuring design effectiveness remain in their infancy. Like many other resources upon which managers draw, design cannot be quantified in terms of the exact financial value that it brings. However, the difficulty in measuring the contribution of design to the effectiveness of a business strategy or project should be viewed as a sign that there is still work to be done in this area, rather than a deterrent to using and acknowledging the benefits of design, (Newell & Sorrell 1995:7; Lam-Po-Tang 2006). It is ironic that small businesses are more apprehensive about the value of design in business, when it is one of the few areas in which a small business can almost as easily compete with a large business. (Lam-Po-Tang 2006)

“Too few organisations know the true value of effective design, and the facts and figures are not often revealed.” (Newell & Sorrell 1995:5)

However, there are some measures that can be linked with design, thus giving it more ‘hardness’ than is afforded to it by the traditional view of design as a subjective and ‘soft’ activity, linked with the creative and the unquantifiable. (Gorb 1990:2)

“Very few business managers in the past gave much consideration to the activity of design in the conduct of their business... The effects of design have always been taught, analysed, and strategically planned for in other terms. Business managers, academicians, and economic analysts express those as profit, trade balances, quality, production efficiencies, consumer demand, added value, customer satisfaction, and so on.” (Blaich & Blaich 1993:2)

2.6.2.3 Intangible value
While tangible results or impacts tend to be more readily recognized, an argument for design effectiveness, according to Newell & Sorrell (1995:5-7) is incomplete without the recognition that “the bottom line and the high ground are spokes of the same wheel.”

“They are linked in the same way that companies with a tangible competitive edge can create wealth for their staff and investors... In this process, design plays an important role because it makes ideas accessible. It is only when people inside an organisation start using design effectively that the future becomes visible.” (Newell & Sorell 1995:5-7)
Proponents of design tend to agree that design offers a variety of benefits, with effects on human emotions and behaviour, as well as the financial health of an organisation. Whatever form design takes or however it is expressed, “design should make a difference – to the way people feel, to the way they behave, to the bottom line and to the high ground.” (Newell & Sorrell 1995:9, 12)

To further this point, Newell & Sorrell (1995:12) offer the story of a soap retailer, The Body Shop, which expanded from two retail outlets in 1989 to two hundred in 1995. The Body Shop chain owes its success in America to the clear message expressed through its environment design (retail store), communication design (marketing) and product design (packaging). A profile in People magazine of Anita Roddick, one of the founders of The Body Shop, created significant public interest in the Body Shop’s mail order scheme. Venturing beyond its physical products, the Body Shop used design to express the company’s values, affording the company and its products a more ‘humane’ image than is otherwise associated with beauty products. “Effective design will come from enabling [the company’s] vision to shine out and be seen by different audiences,” states Frances Newell (Newell & Sorrell 1995:12). From Anita’s profile in the magazine and the layout of its retail stores, to the eclectic colours used in its mail order catalogues and the packaging of its soaps and creams, the company used design elements to express its corporate ethos: a passionate concern for the environment, such as ozone depletion, commercial exploitation of animals and the destruction of rain forests. When people buy its products, they are not only buying sweet-smelling soap and shampoo, they are buying into the values for which the company stands. The strength of this brand image holds strong and remains a key consideration for its customers. The following excerpt from the New York times summarises this concept well.

“When the Body Shop, a cosmetics company known for its natural products and its emphasis on ethical business practices, was sold in 2006 to the international corporation L’Oréal, green consumers had their doubts. The following year, when the company’s founder, Anita Roddick, a passionate social activist, died, many were certain the company’s philanthropic spirit would wither. But with its new campaign, ‘Stop Sex Trafficking of Children and Young People,’ highlighted last week at the Clinton Global Initiative in New York, the company seems to be sticking to its humanitarian roots.” (Howard 2009)

Perhaps because the value of effective design is not always well appreciated by the business community, design consultancies seem to find it necessary to justify their existence and substantiate
the seriousness of their business by promoting stronger similarities between their consultancy and ‘big businesses’.

“Design consultancies can be as hard-nosed, practical and commercial as any other business resource… A sharp focus on a vision is a fundamental requirement for a successful company. Effective design will come from enabling such a vision to shine out and be seen by different audiences.” (Simon Jones, quoted in Newell & Sorrell 1995:12)

Newell & Sorrell (1995:79-82) define effective design as “design that makes a difference,” which may include enhancing organisational performance, adding value to products and services, providing a competitive edge, creating wealth and prosperity and improving the quality of life.

This requires that the effectiveness of design is judged retrospectively, that is after it can be considered to have had hard or soft impact (sales volumes or client satisfaction.) Anecdotal evidence makes it difficult to reject design consultancies’ claims that “design effectiveness influences the bottom line for any company.” In fact the benefits, like most things, are both tangible and intangible. “Increases in turnover, sales, profits and market share are tangible benefits which result from effective design investment. But effective design also enables organisations to occupy the high ground in terms of forging an ethical and socially responsible relationship with staff and customers, and in suffusing all transactions with quality,” (Newell & Sorrell 1995:5-7). Here reference is made to the inspirational side-effect of design and its symbolism, as the highest of Abraham Maslow’s well-known hierarchy of needs: the desire for self-fulfilment and self-actualisation, which incidentally also includes creativity.

“Design effectiveness has a dual meaning. It certainly means making more money, but also much more besides. It represents an investment in broadening knowledge and in the future.” (Newell & Sorrell 1995:5-7)

This chapter describes the value of design management from intrinsic and extrinsic perspectives. Its intrinsic value lies in the features that make it effective design. But while some of these qualities can be defined using basic visual design elements such as contrast and balance, and therefore drive design effectiveness during the initial design stages, it is mostly in retrospect that design is considered as having been effective: through increased sales volumes and profits, and positive customer and employee feedback. Design’s extrinsic value relates to how an organization views design, which
stems from how design (management) actually contributes to the organization. This can be enhanced by supportive systems and processes, and be expressed in both tangible and intangible ways, based on whether or not the effect lends itself to quantitative measurement. Performance measurement within organizations is a complex science, since it requires many inputs that themselves can scarcely be measured. Performance measurement is outside of the scope of the thesis, but this does not preclude an exploration of design management from both tangible and intangible perspectives. Certain design management aspects can be manipulated to be measured by traditional quantitative tools such as financial results, or qualitative tools such as customer or employee satisfaction surveys. Yet design and its management can impact an organization in intangible ways, by positively affecting its culture and cultivating innovation. It is the last benefit – the intangible value of design management – that contains the most potential. While on the surface many aspects of design management can be present as functions of existing business units (such as marketing, corporate communications, fixed asset management and product design), the unique and greatest contribution that design management can make to an organization is indeed intangible: it is in the form of cultivating creativity, innovative behaviour and personal satisfaction through self-fulfilment.
3. An exploration of design intervention in a small business

The following section describes the researcher’s experience in a small firm in its transition from being primarily focused on industrial engineering to its appreciation of design concepts and its potential contribution to the business. The researcher was employed in the firm for a couple of years, travelled to Europe where she continued her research and met with design management professionals and academics, before returning to Australia to engage once again with the firm’s staff and management.

The researcher’s bias from having had personal involvement in the firm was partially diluted by the extended period of absence and reduced by mindful efforts to use open-ended question and encourage free discussion without answers or certainty, however her experiences have enriched the understanding of the situation and the people. The researcher was also aware of the changes that had taken place in the company over the year, and endeavoured to analyse how her previous role had created the design intervention that was inevitably playing out. (Her earlier design intervention was expressed in the engagement of a professional graphic designer to create a new website and branded material to communicate information to a new audience. Paying for professional design services provided a sense of seriousness and commitment to design as a business tool, and for this reason has been viewed as a type of design intervention.) The interviews and discussions that the researcher undertook with management and staff upon her return to Australia served as design intervention also, resulting in informative responses from all participants.

Not all ideas uncovered in the literature review have been touched upon in these discussions, but they do support some of this project’s key ideas. In this way, the research conducted with the management and staff at the engineering firm serves as an exploration of the main contention of the thesis in practice: the idea that design management’s contribution is maximized when it is expressed through design leadership and focuses on the encouragement of individual and group creativity and an innovative mindset, even if creative tendencies have been quietened by the nature of daily work.
3.1 Methodology

Initially, case study methodology was considered for this project for its focus on the study of phenomena in their natural settings (Creswell 2003), with a subtle bias toward scientific research. Models were devised, hypotheses were developed and maps were drawn (an example of one such map can be found in Appendix 6.2 Mind Maps.) When the current approach proved impractical within the given time and resource constraints, new models were devised and more hypotheses developed. Numerous reiterations of approaches, theories and questions inadvertently redirected the research’s focus. It became clear that traditional, rather ‘rigid’ scientific-driven approaches such as the case study methodology were inadequate and superficial in this context. Rather than dismissing the fluid nature of the research question and the researcher’s subjective experiences, action research methodology, by contrast, promised to accept and encourage both.

In the literature, discussion on action research often originates in the context of schools as an approach by which a teacher can improve his or her style; however it is relevant beyond the context of children’s education. According to the North Central Regional Educational Laboratory, action research promotes “focused efforts to improve the quality of an organization and its performance. It…is designed and conducted by practitioners who analyse the data to improve their own practice,” (NCREL 2010). The three relationships that may be explored by action research give rise to a kind of tension between first, second and third person perspectives: ‘research on my own actions for personal change’, ‘research on our group for its benefit’, and ‘general research for theoretical contribution’. At the core of action research, a form of experimental research, lies action-oriented engagement of the researcher with his participatory community, and the monitoring and evaluating of the effects of the researcher’s actions or interventions, (Dick 2002). Bob Dick insists that “most aspects of research design are open to choice,” and whilst action research is “not necessarily participative, qualitative or published,” it pursues the “dual outcomes of action and research.” (Dick 2000)

Action research has roots in social psychology, a welcome fact given the nature of this research paper. Furthermore, the three relationships that are considered by participator action research (relationships between individuals within a community, relationships between different communities, and relationships between people and their physical environment) are similar to the three areas of influence traditionally assigned to design management (product, communication and environment design and the interrelationships between them.) Finally the iterative, emergent and participatory model of action research is well aligned with the nature of design management itself, in particular the
need for a design leader, a facilitator that develops the program in response to feedback rather than a manager who ‘imparts’ his instructions on ‘passive’ subordinates.

One of the key aspects of action research is its inherent flexibility and responsiveness to the situation. In this regard, action research challenges traditional social science, as the research moves toward theorisation ‘on the spot’, inquiry and data collection in a context of an emergent structure. *Chapter 3.3 Discussions* reflects this intention; each conversation begins with a set of standard questions which evolve into a dynamic discussion, to which both the researcher and the second party contribute, uncovering and creating ‘knowledge’ and demonstrating the weight of subjectivity, intervention and influence.

For this project, the researcher’s journal notes have been written from first-person, including both observations and explorations of hidden meanings, emotional responses to situations and new findings. The third-person perspective has been used throughout the thesis, however action research is often documented from the perspective of the researcher to highlight his personal participation. The remainder of this chapter has been written in the first-person as a tribute to this trait.

### 3.1.1 Reflection on research from first-person perspective

The previous chapter describes why I chose action research as the appropriate methodology, however it is action research that insisted itself upon my thesis; its techniques have been a part of my research before I came to know such a methodology exists. Its fundamental epistemology, both positivist and constructivist, is also in line with my worldview.

Much like design management itself, action research is an emergent field, and it is experiencing similar teething issues. Defenders of action researchers claim that it does research with the people instead of on the people – a more ethical approach. The spiral nature of action research helps provide the rigour that is also criticised as lacking, in contrast to traditional experimental approaches in which the researcher avoids participating or unduly influencing the subjects. My bias for a scientific research approach, perhaps owing to a background in information technology, was expressed through efforts to squeeze design research into mathematical models to subject it to statistical analysis. Perhaps this is something I will yet look into. However as I dwelled on the creative nature of the people I spoke with, and my own experiences in the engineering company as well as later in a bank, the realisations called for a more philosophical exploration than that afforded by the quantitative frameworks initially considered.
To make my research more rigorous I have tried to triangulate, however possible, ideas and conclusions. The result is a combination of discussions had with the company’s employees and management, reflections on my own experiences while working for the company in a self-titled design management role, and statements from industry professionals and conclusions drawn based on various viewpoints.

In most cases, and especially so in the case of action research, the research ‘act’ has intrinsically political implications; through participation (and even observation) the researcher affects his community’s local power dynamics. Peter Reason (1998) acknowledges that participation empowers people to contribute to decisions that concern them. My experiences with the employees of the company support this point; design management is disruptive, and in discussing this I witnessed a range of reactions including excitement, charge to take action, and fear of change (as in the case of the process worker who feared that an industrial designer may design her out of her job.)

An interesting perspective on power is offered by Stephen Lukes in his 1974 work, *Power: a Radical View*, referenced by Reason (1998). According to Lukes, there are at least three dimensions to power:

1. One-dimensional power – capacity to directly influence events;
2. Two-dimensional power – ability to influence possibilities to be addressed, or prevent certain perspectives from being considered; and
3. Three-dimensional power – control of the frameworks through which the world is interpreted.

The third is the most fundamental exercise of power and, according to this theory, affects how we make sense of the world. We may then take for granted what does not seem to have an alternative. If this theory is allowed to be applied in its extreme form within the context of an organisation, traditional management can be seen to exercise this level of power. Design management’s role then is to challenge this paradigm by acknowledging people as choice-making, creative individuals, capable of making their own decisions and contributing to their organisation beyond their explicit job descriptions. This sounds suspiciously like leadership, and it is; an argument can be made that management is authoritarian while leadership is democratic. One of the contentions of my thesis is that a design manager should sooner be a design leader, and design management itself is the ‘leadership’ tool that can help an organisation transform into one that acknowledges and encourages individual contribution, creativity and ultimately innovation (not to mention personal satisfaction, pride and involvement.)
In my position as an analyst in a bank I have had firsthand experience with the difference that certain creative freedom can make to productivity, innovation and satisfaction. For eighteen months my work was process-based. Hired for creative capability and academic excellence, analysts in my team soon found themselves involved merely in daily processing of numbers, mindless clicking of buttons and a dozen sign-offs per day. I found this type of work repetitive, predictable and often boring, but my design research became richer as I the reasons for my reactions, the causes of work dissatisfaction that I could glimpse in my colleagues and myself, and the creative inclinations and needs of people. In an effort to shift my circumstances I revisited Visual Basic programming skills, and with my partner’s support worked in my own time to develop LifeRaft, an Excel-based application for the automation and enhancement of work processes. The self-driven project gave me a sense of direction and a creative outlet beyond daily process requirements, and taught me the true meaning of innovation. Increase in management support for the project afforded me limited immunity against whip-bearers and resulted in a massive shift in work satisfaction. Clearly, creative and self-owned work had made for a less robotic and more rewarding experience for me at the bank. The question of why some people can tolerate process work, uniformity and predictability, and others cannot, influenced my research methodology and focus.

Reason (1998) suggests that the ability to inquire into and make sense of the world is a fundamental human capacity. This forms part of Reason’s reason for promoting action research, however I think this has further implications, as it highlights the basic human need for personal involvement and self development. Reason (1998) refers to the ideas of Paulo Freire’s Pedagogy of the Oppressed (1970) and John Heron’s Feeling and Personhood: psychology in another key (1992); the capacity to inquire develops naturally with maturity, but needs nurturing (“through wise, loving and liberating education”) in order to evolve. Neglect and oppression can stunt this growth and force it into the domain of the tacit (at a personal and even at a community level.) Development of the ‘inquiring mind’ requires disciplined self-development (which is poorly supported in Western societies.) At this point the person realises that all paradigms and frameworks, including his own, are relative. This allows him to reframe his viewpoint and consciously seek new frames of reference. There is a spiritual element to this level, as the person recognises that other persons’ perspectives are equally significant. The result is ‘truly participative’ behaviour, a sincerely democratic attitude and the tendency to lead others in the field of participative forms of human relationships. (Reason 1998)
Reason follows with a paragraph further describing the politics of participation. Too well phrased to re-word, I include it here in its entirety, although I have reformatted it with bullet points, bold lettering and carriage returns to better highlight individual points. I quote Peter Reason in the context of my research’s methodology; however it applies to the wider context of authoritarianism and democracy, management and leadership, oppression and personal fulfilment (in this case through creativity.) Here lies the message that allowing creativity and individual voice to creep into an organisation does not imply complete abandonment of policies, rules and daily tasks. All that is called for is a balance.

“As John Heron and I have argued, communities and organizations need to enhance human association by an appropriate balance of the principles of hierarchy, collaboration, and autonomy: deciding for others, with others, and for oneself (Heron 1989, 1993).

- **Authentic hierarchy** provides appropriate direction by those with greater vision, skill and experience – and is always concerned with transforming relationships so that those in relatively subordinate positions move toward greater skills in collaborative and autonomous action (Torbert 1991).

- **Collaboration** roots the individual within a community of peers, offering basic support and the creative and corrective feedback of other views and possibilities (Randall and Southgate 1980).

- **Autonomy** expresses the self-creating and self-transfiguring potential of the person (Heron 1992).

“The shadow face of authority is authoritarianism; that of collaboration peer pressure and conformity; that of autonomy narcissism, wilfulness and isolation. The challenge is to design institutions which manifest valid forms of these principles; and to find ways in which they can be maintained in self-correcting and creative tension (Heron 1989; 1993).” (Reason 1998:147-167)

The above quote summarises the intentions and assumptions of action research, and the truth that I am seeking. Under the banner of design management research, I am really looking at how creativity (driven by design management intervention) can bring traditionally authoritarian and process-focused organisations toward a more utopian vision of democratic leadership.
3.2 Background
While the well-informed business community may be open to the idea of design, creativity and innovation, at least in principle, the majority of businesses in Australia are small businesses that may not have had the same exposure to the promotion of design as a business tool. For this reason, research was carried out within a small company that was faced with the possibility of working with an Industrial Designer for the first time.

3.2.1 Background of the small company involved in the study
The small company was started by a husband and wife team in 1995 as a contract manufacturer of small electronic circuit boards for a then-popular real life adventure game. By 2000 the company had increased its manufacturing throughput and offered electronic circuitry design in addition to straight manufacturing. In an effort to respond to increasingly complex client problems for new product designs, as well as pressure from the manufacturing industry to lower costs, the now formal R&D team was required to be across the latest developments and products in the electronics industry, especially semiconductors.

One of the headline acts in the semiconductor industry was the development of Light Emitting Diodes (LEDs) and their growth in popularity from computer and car signal lights to real sources of light and wider use. The engineers saw these brighter-than-before LEDs of various colours as beautiful building blocks that needed a new aesthetic approach. Prior to this, no other products within this company had required attention to the aesthetic part of the product, since the circuitry previously created was well hidden from view. A family of small LED products was born. These were initially expensive to manufacture and contained exposed circuitry (which the engineers deemed to be beautiful), however over a year the product range transformed. A look at the many versions of the products within the product family is an interesting representation of the evolution of design within this predominantly industrial engineering company.

This new group of ‘beautiful’ LED products did not fit within the company’s existing industrial manufacturing image, and a separate company or rather brand name was created to help market the product range to a different market segment – designers or product specifiers and consumers. As leading LED manufacturers boasted greater results from their laboratories, lighting began to take on more of the centre stage within the company. The use of two company names or brands to differentiate between the ‘old’ and the ‘new’ company created a division between the two sides of the business. While there was an undeniable overlap and staff did not personally differentiate between
doing work for one company and another, they were paid from different companies depending on their role, and the division persisted. Due to the overlaps, it was not a clear division and kept changing. On one day management would suggest that the two companies were differentiated by the market segment they served: industrial market versus the commercial and consumer market. Naturally the consumer and commercial markets were more in need of aesthetics and therefore design, so marketing and branding were concentrated in the ‘new’ company. On another day, the companies were separated by the tasks they performed: the manufacturing side was in charge of the first part of the product development process such as engineering design and manufacturing, while the second company was in charge of only the marketing of these products. It was a struggle to maintain a consistent definition of the distinct roles of the two businesses. It was an unnatural and forced division between the two sides of the same business (which operated under the same roof and with the same staff). The purpose of forcing this division was questionable, but the management and staff’s effort to define this division is a great example of the schism that exists between function and form, engineering design and industrial design, design and management.

By 2007 the company employed 15 people. As an organization that was transforming from an engineering to a design-oriented business, it lent itself well to being reviewed as part of this thesis.

3.2.2 Design Management project preparation

It took nearly a year from the researcher’s initial ‘project planning’ stage in late 2007 to an Industrial Designer from RMIT University identifying himself as an interested participant in August 2008. At first the preparations came along smoothly. The industrial designer was not new to design management, but had in fact been in contact with IDEO and shared with the researcher his article on design management, which was full of ideas but lacked a conclusive ending, which was a normal occurrence in the field of design management overall, since it is an inconclusive field with an elusive definition.

The conversation between the industrial designer and the researcher highlighted that neither party truly understood design management: each insisted on an intimate understanding but were both confused. It seemed that the definition of design management was not only non-existent but also irrelevant but this made it difficult for the researcher to explain to the industrial designer in practical terms what he would be expected to do at the company. The researcher’s initial project plan from late 2007 was reviewed and found to be detailed, logical and unrealistic: without management support it would not be possible for an industrial designer to guide himself along the lines of the project, less for
lack of ability than unforeseen circumstances. An alternative plan was proposed, based on Brigitte de Mozota’s (2003) principles that design management comes into play at three levels within an organization. Using the author’s schema, three levels of influence were identified for the industrial designer:

1. Operational – the design work itself;
2. Functional – design’s contribution to process (such as process redesign); and
3. Strategic – design at the core level of the organisation to guide its strategy.

It was anticipated that the designer would contribute at each level by:

1. Doing some industrial design work (such as resolving existing technical design challenges);
2. Improving a process; and
3. Discussing with management the company’s strategy and identifying if and how he, as a designer, could affect the strategy.

It was intended the industrial designer would interview the staff to gage existing ‘design savviness’, which would consist of open-ended questions beginning with three main concepts.

### 3.2.3 Initial response from the company

Initially there was a slight but undeniable air of nervousness and discomfort within the company at the idea of having to work with a new person and spend time training him. There was uncertainty as to the tasks that the designer would be involved with. Nearly a year had passed since the origination of the design management project (research) idea, and in this period the company took on larger projects and in most part forgot what an industrial designer was all about. The company’s apprehension was not helped by the fact that the industrial designer arrived on the first day dressed informally and making very little effort to introduce himself and his art to the ‘uninformed’ public. To the researcher this looked like an assumption on behalf of the industrial designer that the world was already all too familiar with ‘design’ and that design spoke for itself, therefore did not require the design ‘artist’ to conform to the more proactive and personal sales approach expected from other workers.

The following work day, the designer met with the Technical Director, himself a creative person. The designer reported the Technical Director had “changed his perspective” and spent the remainder of
the day working on a posed problem. Though this resulted in little visible progress, it came as a surprise to the Technical Director that the designer worked intensely and proficiently with design software, but did not use paper. The Technical Director, it became apparent, expected that hand drawings were more appropriate for lateral thinking, brainstorming and solving tricky problems while software packages were expected to be utilized at later stages of the process.

With a small team within the company dedicated to the then-vital new project, it became increasingly difficult to dedicate the time and resource to work on the design management research project so it was unfortunately discontinued, but not without having provided valuable insight into the wider view of design value. What follows is an overview of responses from surveys conducted in anticipation of the project.
3.3 Discussions
A dozen people were interviewed on the topic of Industrial Design and the value that design (and design management) could bring to a company. The questions were open-ended and based around the role that the industrial designer would play in the company, the team or people with which the designer would work, and the meaning of industrial design.

The surveyed dozen made up the majority of the company, with representation at all levels, including the production floor staff (concerned with manual labour, though-hole input of components into printed circuit boards (PCBs), washing, testing and packaging) and surface mount technology (SMT) production staff (concerned with the operation of SMT machinery, programming and overlooking automated soldering processes.)

Interestingly, management felt that the production staff were, both by the nature of the work and by their choice, far removed from company strategy and, therefore, did not need to be questioned about their views on industrial design and the Design Management project. In spite of this, the researcher persevered and discovered some interesting opinions ‘on the floor’, further highlighting that creativity can come from anyone, although in a ‘creative’ person these occurrences tend to be more regular and recognized.

It was challenging speaking with the floor staff because they could not recall having their opinion sought in the area of process improvement and product development. One production staff member responded, “I do not really think about [process improvement]; I just do my production work.” Recently the same woman had spoken with the R&D team about redesigning part of the production process to make it more comfortable for the production staff. This comment above highlights the humility with which the woman would have done so and the denial that creativity and process improvement are the right of any person, including a production staff member.

It is highly likely, though, that process improvement and product development is a rare occurrence in process workers because they are not expected to think in this way. Problems arise when the ‘creative’ people are badly ‘squeezed’ into process-type roles, which happens far too commonly in the corporate world.

When the production worker hesitated to continue, the researcher prompted her by saying that “creativity comes from everyone.” This resonated well and she continued with a flow of ideas, but
what was most surprising was that unlike the other interviewees, whose work deals in a regular basis with strategy and creativity, this conversation inspired the production worker. She later confided to the researcher that on her way home she passed a gaming factory and “realized that we have such amazing brains in the company and the ability to create anything. Why don’t we make some games with our lights?” As the researcher had anticipated from literature review, the woman’s excitement gave way to shyness and she quickly added, “It’s a silly idea, so silly, I know. But for some reason I could not get it out of my head all night.”

The following is an extract from the researcher’s journal during this period.

I tried to comfort her, saying that the best inventions started with the craziest ideas, and this is a really whacky and unexpected idea and she may really be onto something. But I couldn’t think of immediate examples simple enough to understand, so I just smiled a lot and thanked her. I felt my own desire to give her immediate credit to encourage her, but that was difficult. I couldn’t see exactly how we could make games out of LEDs, and neither should I have expected myself to immediately commercialise the idea. I felt the urge to qualify her idea by saying it could be done, even though the concept of failure in the world of idea creation should be entirely different to the normal usage of the word. Even the refereed journal, *Creativity and Innovation Management*, refers to the failure rate of ideas as those ideas that are not used. But what does used mean? Does it mean that the actual idea must be implemented, or that the idea encourages other ideas, which are then implemented? I believe it’s the latter, and therefore it’s almost impossible to put any idea down as a failure. But all this was too much to explain to [the production worker] on the spot, and so I saw on her face the childish excitement subtly giving way to doubt, self control, and a ‘reality check’. She said finally, with a tiny hopeful smile, “but at the end of the day it’s all their decision,” pointing to ‘upstairs’, which has come to mean ‘the management’. (Extract from the researcher’s journal on 29 November 2007)
3.3.1 Expectations of an industrial designer

*Question: What do you expect from an industrial designer coming to work here?*

The table below summarises the responses of management and staff surveyed. The responses have been grouped by the broad area to which they apply, and contributors of these ideas identified at the right, where the following abbreviations have been used:

- MD – Managing Director
- TD – Technical Director
- SA – Sales Engineer
- AC – Accountant
- SE – Software Engineer
- GD – Graphic Designer
- AD – Administrator
- SM – SMT production staff
- PR – Production staff (manual)

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<th>Response</th>
<th>Contributor</th>
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<tr>
<td><strong>Existing products</strong></td>
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<tr>
<td>- Ideas for new products within the existing product range</td>
<td>MD, AC, SE, GD, AD</td>
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<tr>
<td>- Improvements upon existing products such as easier to use</td>
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<tr>
<td>- Redesign of existing products to be cheaper to make, easier to use (user interface design), more attractive and more representative of overall brand</td>
<td></td>
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<tr>
<td>- New uses of existing products</td>
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<tr>
<td><strong>New products</strong></td>
<td></td>
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<tr>
<td>- Design of products outside of the existing product range for different markets, i.e., manufacturing facility to market to other manufacturing companies</td>
<td>MD, TD, GD, SE, AD, SM</td>
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<tr>
<td>- To drive innovation</td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td></td>
</tr>
<tr>
<td>- Consultation to design and manufacturing department on uses and properties of materials</td>
<td>MD, SE</td>
</tr>
<tr>
<td><strong>Branding &amp; Marketing</strong></td>
<td></td>
</tr>
<tr>
<td>- The missing element: the ‘design’ touch, in addition to existing graphic design and website work</td>
<td>AC, SE, AD</td>
</tr>
<tr>
<td>- Visual appeal to clients</td>
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<td>- Image of the company</td>
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</table>
**Change Management**
- Driver of change due to being new to the company and not imbued with old views; not only would it be easier to come up with new ideas but easier to implement them with someone who is new

**Engagement**
- Passion for design

**Process**
- Redesign of production process to make it faster and physically more comfortable to do
- Production process streamlining
- Continuity with respect to a product’s life cycle: from creation and production to sales to repair

**Environment Design**
- Redesign (to make more efficient, personal and personalized) the physical layout of the office or production space

Table 4 – Expectations of an industrial designer

Although the extent and depth of response depends more on the person himself and not necessarily his role, the below exploration of responses are grouped by role.

**Technical Director (Lead Engineer)**
Is engineering a creative field? The interview with the Technical Director certainly showed this to be the case, putting passion for design as the number one priority. According to him, the industrial designer “needs to love design totally. We will not put obligations on him. If when someone in a profession like engineering or industrial design is not burning with desire to do that kind of work, he is not worth considering for anything at all.” These words may sound harsh at first glance but are merely a product of intense passion and the expectation that everyone should have passion for his or her work, especially the creative person. Passion for work is a product of many things, including attitude and luck. The Technical Director continued with the all-or-nothing approach. “[Industrial design] is borderline art and therefore one can only [do it] by the will of one’s heart… Desire is the most important thing.” As the conversation progressed there was a sense of purpose that the company represented for this creative type. “A small company is the expression of an individual trying to make some sense of his life.” If this was not an indication of the Technical Director’s strong slant towards the ‘creative personality type’ described earlier, he added for clarity: “Anything could happen. We
expect a high level of creativity. That is the main thing. We do not know [exactly] what [that would look like]."

Sales Engineer

Of high importance to the Sales Engineer was the industrial designer’s ability to be self-sufficient in obtaining background knowledge and producing solutions to posed problems. The Sales Engineer assumed that the industrial designer was educated in technology and physics, but there was no further understanding as to what other attributes industrial design could bring. “I am really excited about [the prospect of working with an industrial designer.] But I want to know what industrial design is; it is a vague concept. I believe the designer should have half engineering knowledge also. I expect him to understand me when we talk. The difference between *industrial design* and *design* is in-depth knowledge [of mechanisms and technical feasibility].” The Sales Engineer had had a few experiences in the past dealing with self-promoted industrial designers, which left him with the impression that these so-called industrial designers were unable to think about function, only form. In addition to self-sufficiency in researching the problem, the Sales Engineer believed that the industrial designer should be proactive also: to call suppliers to check costs of materials and provide general consultancy on the properties of materials. In the Sales Engineer’s opinion, the designer should be able to justify why a certain material was chosen for the product. He should also be able to learn from competitors rather than “reinventing the bicycle… This is one of the downfalls of [our current design process] – when we create, we do not look at other products that are out there. We go through a long creation process and the end come to a point where we see [the product] already exists: you look around and realize it is already done! The competitor may not have the same level of technology but had we looked to them to begin with, we would have been farther ahead. The Technical Director and I disagree on this point.” The ability to know competitors’ products is a most desirable quality in the industrial designer, according to the Sales Engineer.

The Sales Engineer had previously considered hiring an industrial designer but did not feel the time was right or that the decision would have received management support.

Another desired but rarely mentioned quality was proposed by the Sales Engineer: cost awareness. It would be a creative person’s dream to run amuck in an environment with no cost boundaries, but this is not common. “The biggest challenge is that all funky things cost a lot of money in mouldings and samples. The challenge is, therefore, to make use of ready-made things.”
Furthermore, since an industrial designer should have a developed eye for fashion and closeness to customer wants and needs, it was suggested that the industrial designer be involved in the marketing aspect of the company. “He should be able to research the market before creating a new product to understand where the product would fit in the market and how much would [people be prepared to] pay for it.”

Though it is commonly accepted that consumers choose products based on a range of qualities in addition to price (such as visual appeal, manufacturing quality, warranty, advertising and so on) in a business-to-business organization this is not taken for granted, since the product created is often not the ‘final product’. For example, there are many types of light sources such as incandescent, halogen and florescent lighting. Some form of electronics is required to operate these light sources, but the electronics can afford to be hidden. It is rare that a consumer accesses the inside of a lamp, and if this does occur, the electronics inside is often found to be visually unappealing, mounted on brown or green plastic ‘circuit boards’ and generally unattractive. By contrast, the more advanced LEDs are ‘surface mounted’ which requires them to be soldered onto a printed circuit board. In this way LEDs are both electronic components and lighting sources, which raises a new issue: since the electronics now are a part of the LED itself, and the electronics become visible to the consumer, does the traditionally industrial and hidden away electronic circuitry need to be more beautiful? Short of redesigning the circuit board to hide the electronics on one side and mount the LED on the other, the previously irrelevant (as concerns design) printed circuit board had to be redesigned to be visually appealing. This needed a balance between technical requirements (the placement of electronic components in appropriate locations) and design requirements (laying them out in an aesthetically pleasing arrangement.) The green printed circuit board was exchanged for a black or white one and where possible, big chunky components were soldered on the underside of the visible PCB. Again, the balance between design aspirations and technical constraints is typical of (industrial) design projects; this example is described merely to highlight the turning point within the company where engineering came, unavoidably, face to face with design.

Furthermore, some forward looking designers were selling lamps as artwork; this is where design meets art: no longer is it solely about function, but increasingly about the art itself. All of this was influential on the company staff and was seen to transform the business more and more towards a holistic appreciation of design, its value and its far reaching power. As the company’s administrator and head of process improvement stated, “our electronics outputs are artworks themselves, no [other company] has that. It needs to be packaged in a way that people can appreciate it.”
Software Engineer (Junior)
The junior Software Engineer drew on her experience of industrial engineering in order to comprehend industrial design. “I used to think that Industrial Engineers study…basic electrical engineering, then dive into the industrial part…” Their knowledge would not be in-depth but cover a general understanding of the many facets of product design, which would allow them to understand structure and layout, and give them the foundation to think of ideas more quickly. They would be better placed to respond to someone who says “I want to do X…” with “you could set it out like Y…” In this way the industrial designer would be concerned first and foremost with idea generation, brainstorming and more visual aspects. When asked whether the Software Engineer believed there was a distinction between industrial design and industrial engineering, she affirmed that there was and added that the company needed more engineers, not designers. “Industrial design can relate to the design of food cans, chairs and furniture. But I refer to this person as an industrial engineer because this is an engineering firm. If we take on someone, should it not be an engineer? We do not need people designing furniture for us. If we do [only] get an industrial designer then perhaps [he could concern himself with] changing the layout or our physical environment.” But would there be a purpose? “Not sure, I really like the layout here already.” This is an example of the schism that, some experts argue, exists between engineering and design.

However liking the layout is not necessarily the only goal of a layout or physical office (or production floor) space. Considering this, the Software Engineer added that another purpose of redesigning the layout would be to make it “more efficient. This could mean closing off an open space for the person who prefers not to be distracted: creating more personal and personalized [functional] spaces.” Affecting the physical space would be interruptive. Would the industrial designer struggle to ‘make a difference’ because it would upset the existing environment too much? “Perhaps: it comes down to financing. A great idea [is] not [necessarily followed with great] implementation.”

Accountant (Administrative Assistant)
No organizational discussion is complete without consideration of cost. The accountant’s first response highlighted this fact: “I do not know why we would particularly need a [product] designer. So I am [merely] suggesting areas of the company that could be improved by someone like an industrial designer.”
Exploring the Value of Design Management

Taisia Zatsepin

It should be noted that the accountant was in the process of becoming a chartered accountant and was well versed with modern management ideas at least to the extent taught by the accreditation program. In her view the best use of industrial design was in marketing: contribution to the range of presentable materials from website and marketing collateral to client sight presentations and the structure thereof, as well as the selection of products that would show the company’s profile in the best light.

The accountant believed that industrial design belongs in a big company and has no place in a small one. In her view the industrial designer is someone who works “in a huge company with a lot of different products or even different industries… [at] the top of the production chain (that is before manufacturing, perhaps within R&D) and tries to design something new to surprise and amaze customers.” “Something new’ clearly needed defining. “It should be a product with distinctive features, distinguishable amongst its competitors.” Since distinctive features were implicitly appealing features, there was a question of taste. The industrial designer, therefore, “should research customers first, then target the proper group of customers.”

Why did she believe that design only belonged in a large corporation? “Because the industrial designer…should be properly paid and a small company could not pay them [enough].” The alternative? “The small company should use a special consulting company [to do design work] in short contracts, not on a permanent basis. Only because of cost do I make such a distinction.” She pointed out that industrial design, imperfect as it may be, already existed within the company in the shape of small contributions from each person, which did not justify the hiring of an additional full time industrial designer. If money was not an issue, however, the accountant was still of the opinion that industrial design should be used on a temporary or ad-hoc basis with a few consultations and product evaluations. The greater need in this company, she argued, was for a sales person.

Administrator (Support)

The administrator pointed out that having a full time multimedia graduate in the capacity of graphic design had helped the company significantly, not so much in product design but in marketing collateral and visual tools such as presentation material. “We have intelligence and skills but our customers do not care about that. They want to know what [our intelligence and skills] can do for them. They respond better to [what is] visually appealing.” One of the most important tools for this small company became the enhanced website. Originally in a very basic form with much text, the website was redesigned (by a professional hired graphic designer and consequently the multimedia-become-graphic-designer) to be more beautiful, friendlier and easier to use. Initially this was seen as a
‘nice to have’ addition to the company’s existing hands-on approach (i.e., client referrals were the main form of new customer and new project generation.) As the website developed, it became the first point of contact and its importance grew in the eyes of the directors. While this in and of itself does not highlight the value of design, the website did serve as a great breaking point for inviting design mindedness into the company.

**SMT Production Staff**

Concerned with having cost and growth boundaries set by the ‘middle man’ due to only manufacturing on client demand and the associated high competition, the SMT production lead was adamant that the company had no choice but to innovate and create new products in order to manufacture larger quantities of a unique product and therefore rise above existing competition. It was his view that the industrial designer’s role would be entirely to produce a new product for this purpose.

**Production Staff**

One of the production staff members focused on how the industrial designer could improve her line of work by making the production process “more comfortable.” Another production worker felt that there were “too many chiefs and not enough Indians,” which, while not disregarding such opinion, may have been due to the fact that she could put value to only process work that involved tangible inputs and outputs and not the more intangible sales, processing and customer relations roles. She also felt that an industrial designer could hold the key to the company’s strategy. While she was the only person to explicitly express the need for the industrial designer’s involvement with strategy, she gave off the impression that she was fearful of losing her job to automation and that this was the first step. “You cannot turn around and kick out [production] because that is not our line. [The ID] should [accept that this is our business but suggest that] other companies like [us] are benefiting from X and Y, and [we] should implement that.” Of importance to her was the concept of ‘flow’ which sounded like streamlining a process. She insisted that the industrial designer should be able to see a process and immediately suggest improvements upon it; that he would be different from other types of consultants in being able to help the company ‘flow’ better. “He would be a process expert and help us ‘flow’ from the moment we come into the building to the moment we step out.” At the end, she said, “I don’t know what factor in the company he is supposed to improve. Production? The whole running of [the company]? Packaging and handling? He could say ‘roll this stuff out and put in a machine to replace people.’”
3.3.2 Industrial designer’s team

Question: Who do you envisage the designer would work with, or in which area?

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<th><strong>Response</strong></th>
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<td></td>
<td>Managing Director</td>
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<td></td>
<td>Graphic Designer</td>
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<tr>
<td>- R&amp;D – the core of the company</td>
<td>Administrator</td>
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<td></td>
<td>Technical Director</td>
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<td>Sales Engineer</td>
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<td>Production floor staff</td>
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<td>- Graphic Designer</td>
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<td>Sales Engineer</td>
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<tr>
<td>- Management – to create products in line with company strategy and management’s vision</td>
<td>Graphic Designer</td>
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<td>SMT Production staff</td>
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<td></td>
<td>Software Engineer</td>
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Table 5 – Industrial designer’s team

For ease of discussion, let it be assumed that Part A (one part of the company) performs contract manufacturing, while Part B (the remaining part) sells its own product either in the form of naked electronics (to be housed by another company’s fixture) or a complete package. These parts invariably overlapped, i.e., nobody could be said to be working entirely for Part A or Part B, although accounting requirements forced such distinction.
**Managing Director**

Interestingly, the suggestion that the industrial designer should interact with the Graphic Designer came only as an afterthought to the Managing Director. This would indicate that in this particular company design was only beginning to be understood and links between various design fields were not yet apparent. With the exception of designing manufacturing equipment itself (and entering an entirely new market: other manufacturing companies, i.e., competitors), the Managing Director did not believe it was necessary for the industrial designer to be involved with the manufacturing side of the business, only the market and consumer product side, because the manufacturing business did not “produce the final product.” In other words industrial design was not seen to be a contributor at the very beginning of the design process and the manufacturing process, but as an ‘add on’ at the end.

“When a client comes to us with a complex concept or a [design problem], such as a weather-sensitive blinds controller, it is not created instantly. It is [the lead R&D engineer] who considers the many parts of this problem and offers solutions. When the engineer creates the circuitry for operating the controller in question, it is the industrial designer’s role to then choose the buttons from a buttons catalogue according to the client’s needs and add it to the control panel designed by the engineer.”

**Technical Director (Lead Engineer)**

The Technical Director believed that, provided that a clear understanding exists with respect to what is being designed, the design output can take any form: it can be in the format of a drawing on a whiteboard, a computer, a piece of paper, or a complex computer-generated model. “If [the design] is interesting and poses a technical challenge, we would say, ‘this is attractive and we can do it.’ We would brainstorm whether or not it is technically feasible.”

Two clarifications were necessary: who are ‘we’ and what is ‘attractive’? By ‘we’ the Technical Director was referring to himself and the sales engineer, though it was not the technical acumen which united them but their exposure to clients, client problems and working on a solution. The term ‘attractive’ was not as easily defined. What makes you think it is attractive? “Experience. Gut feeling. I cannot define this.” Upon further thought, the Technical Director offered that attractiveness would imply something with a purpose, something ‘interesting’ that can be commercialized directly (right away) or indirectly (in the future or by way of incorporation into another product.) “It has to make you say ‘wow’.” Through his passion, open-mindedness and skill, the industrial designer would “make a lot of brains work faster. That would be his influence. What else [could we want from him]? This is the best [thing anyone could do].”
The above example suggests the Technical Director’s implicit view that one of the best functions of a Design Manager is to be a leader: to inspire others. This could be done largely through his own work, in which case the design manager needs to be passionate for design, if not actually skilful. Design and innovation are tools that, aside from their traditional sense and purpose, can be used to drive change and inspire people in ways previously unknown especially in a large corporation which is basically a money making machine and rarely offers what can fulfil the human experience.

In the opinion of the Technical Director, Parts A and B of the company are distinct. Part A is concerned with R&D and manufacturing, while Part B is concerned with LED lighting. A product belonging to Part B can be designed by Part A but the intellectual property would belong to Part B, he argued. In this way Part B subcontracts part A’s R&D department. This sounds confusing and it is, symbolizing the confused and forced division between function and form, engineering and design, manufacturing and sales, an unnecessary dualism applied to complex interrelationships. Interestingly the Technical Director did not believe that the industrial designer need be separate from Part A, the manufacturing side of the larger organisation. “Industrial design can influence [part A] easily. When there is a concept, the industrial designer’s idea must be converted into something that is then manufactured. The conversion is done by R&D (which is Part A). This is the extent of the influence because it dictates the [nature] of the task.” Furthermore, there was no expectation upon the industrial designer to design at all. “[One should say,] if he designs, not when.”

**Sales Engineer**

Working closely with the R&D team (of Part A) the Sales Engineer shared their opinion that Part A “is not about industrial design at all. It is only contract manufacturing; there is nothing to design. It is the customer [that provides us with specifications] that should have the industrial designer [on board], not us. [Part A] is just about [electronic components assembly.] This is our problem and we should fix that. Part B is the company that designs things.”

Though all people interviewed saw made a distinction between Part A and Part B (due to varying reasons), and in most instances the industrial designer was pushed toward the marketing side and away from the manufacturing side (or the beginning of the product development process), the Sales Engineer did suggest that it would be “worthwhile for [the industrial designer] to spend a week in [the production team] to see how things are made. It helps, when you are designing something, to see how it can be assembled.”
**Graphic Designer**

The same view was held by the Graphic Designer. “[The manufacturing side of the business] does not require industrial design, as it is about electronics manufacturing and most of the design required is at the technical level, dealing with printed circuit boards and electronics. There is no need for [these items to be] aesthetically pleasing.”

The Graphic Designer suggested that it was the industrial designer’s role to work closely with the technical staff (the engineers in the R&D department) to ensure that what the engineers were designing was actually possible to make. This is an example of the schism that exists between engineering and industrial design. However, this divide is viewed differently by different people. Whereby some believe that industrial designers should only be involved at the end of the product design process (i.e., they have little input into the initial product design phase where the question of manufacturing is dealt with), others have the opposite view. For the Graphic Designer, the engineers were like mad scientists with amazing ideas that needed a well informed industrial designer to approve their realistic manufacturing ability.

When asked whether industrial design can play a leading role in the company strategy, the Graphic Designer’s view was negative. “Not sure if that would be good for business,” he said. “There are other aspects of the business to take into account such as cost, marketability and profitability. Would an industrial designer know how to [contribute]? It is such a collaborative process running a business. Not everyone needs to be involved, and while there needs to be a head or director, [it] is probably not the industrial designer’s responsibility.” Moreover, idea creation should not be limited to the designers. “Anyone in the company could come up with ideas that they could share with each other. It does not need to be the management’s idea.”

While the designer need not necessarily act as the manager of the business, is there a benefit to expanding the knowledge of the designer to understand the business? Again the Graphic Designer believed it was not so; designers need not be involved in day-to-day business or business strategy. “[Understanding the business] certainly would not hinder my design process, but the business side is not my specialty.”

The graphic designer seemed content to focus entirely on the design of brochures, and felt incompetent in relation to what he called ‘the business side’, as if this business side was not directly relevant or did not have an immediate impact on the quality of his output. Furthermore, his self-
perceived ignorance did not concern him. He was naturally interested and inquisitive but very
disciplined when it came to doing his immediate work. His offered ideas were limited to particular
design aspects of his work, but he did not push his creative/designer knowledge outside his immediate
job. I was advised later that he was not a big communicator with other staff, and was used to
receiving instructions. His desk was located open plan with engineers and sales staff, which left him
often on his own due to the others’ absence, to listen to music and focus solely on his work.

It was also peculiar that he did not see himself as a likely candidate for working with the industrial
designer. The graphic designer seemed to think that industrial design did not relate to graphic design,
as it was directed at the aesthetic and functional aspects of products being designed, not information
design. He did not show enthusiasm for the project in the way that others did.

**Software Engineer (Junior)**
The Software Engineer believed that despite industrial design’s limited impact and influence, it
should be situated with management “because [the Managing Director] has the head for ideas and
structure, and she can take the idea further. You can give her an idea and she will think ten steps
ahead. So she can quite quickly [distinguish] a good idea from a bad one.” Since the R&D engineers
were more concerned with detail and knowledge, a broader but shallower understanding, as is
expected of an industrial designer, would be more suited to working with the management that was
also more concerned with broad business concepts than technical details. The Software Engineer did
not believe she and the industrial designer would have anything to offer each other in the professional
sense. The Software Engineer was, at the time, working with the production staff, and also suggested
that production process improvement would be a good focus area for the industrial designer or
industrial engineer in terms of physical space reorganization. Furthermore the industrial designer,
using design thinking, could design a more logical organization of boxes and components for easier
searching.

In the Software Engineer’s opinion, an industrial design professional would contribute to the
environment (physical layout), which contributes to a positive mood. The environment is not
everything, of course, but it is a good starting point for making people feel comfortable. “[People]
need to be able to get along. It’s about communication and chemistry. Being able to relate to others
makes us more confident. [Though] this is nothing that industrial design can help with (since some
people are more social than others), the social environment and the physical environment go hand in
hand. There needs to be no mental or physical awkwardness. The physical environment and
interaction environment both help.” As a creative person, the Software Engineer echoed the Technical Director’s belief: “For me, enjoying what one does is linked to one’s output... Speaking from experience, doing the same thing over and over again [can make] some people disinterested and bored. If the task is [posed] as a challenge [it could help] people feel good about what they do, even if the task is [repetitive]. [People] need to feel that what they are doing is not low, but it is important and [this is how it contributes to our delivery.]” The Software Engineer was a big supporter of positive (and never negative) reinforcement in the creation of a happier and more productive work environment.

The above suggests that the Software Engineer is a representative of the personality type that Bogoyavlenskaya (2002) defined as heuristic, if not creative. This was further supported by the girl’s overly conscientious approach to remuneration: she seemed to regard the work as her primary objective and spent much of her own time at home exploring further problems, refusing to be paid for work that did was not directly required of her.

**Accountant (Administrative Assistant)**

With exposure to accounting books and treating Part A and Part B as separate reporting entities but for all other purposes the same entity with a forced paper-based separation, the accountant did not recognize any division within the company and referred to it as a whole.

**Administrator (Support)**

The Administrator was also of the view that an industrial designer would have limited interaction with the ‘manufacturing’ side of the business “because the things we do,” which is act upon direct instruction from customers and therefore contribute nothing to the physical design of the final product. Furthermore unless the industrial designer has influence over the final product (attributed to the marketing and sale side of the company, the side that creates its own products and does not rely on customer instructions), the designer would have limited impact on the product at all due to physical limitations of final product specifications.

**SMT Production (Lead)**

The SMT Product Lead believed that the industrial designer’s place would be in the field of marketing, since “product development and marketing [are] the same thing: you find out what people need, talk to technical staff or management, whichever [occurs] first, management provides the [funding] and hires staff for development.”
Production Staff

It may seem peculiar that the staff that most ‘obviously’ belonged to Part A themselves did not see recognize such distinction between Parts A and B of the company. However the reason for this holistic view spanned less from grand vision and more from the denial of the unseen: they were not involved directly with Part B and because Part B produced intangibles (marketing, website and communication) only Part A was recognized. This highlighted an understanding of design that was more ‘basic’ and fundamental: production only mattered, and while management direction was important, it was intangible and therefore difficult to justify, while a production process invariably resulted in a physical output.

3.3.3 Meaning of Industrial Design

Question: We have been using the term Industrial Design; what does Industrial Design mean to you?

There is an element of fantasy when it comes to defining design. Because design is such a creative (and far from unanimously defined) term, the user seems to take the opportunity to apply that fantasy which cannot be applied to other fields, which are more traditional and better understood, such as accounting. Design becomes the tool by which one can, finally and truly, know what ‘everyone wants’! A real designer, and only a ‘real’ designer, should be able to do that, which most people desire so much but can never attain: in Roosevelt’s words, “please all people all of the time” or have absolute popularity.

Industrial Design is…

…Aesthetics that create positive emotions

“The interior of a car: the experience and the whole concept, from the light and the CD player to the panels and the buttons, the combination of physical objects that give the driver and passengers a good feeling.” (Managing Director)

“The look, feel and appearance of things. All of that comes from…concept generation. Idea generation comes before implementation. Industrial design is [a way of] visually [describing] something, thinking about how it should feel and how it should be laid out.” (Software Engineer)
…Ergonomics

“The environment or the product: ergonomic and attractive. I cannot differentiate between ID and the lack thereof, but subconsciously I feel it. It has to be something industrial. An egg smashed over glass is not industrial and certainly not design, despite the fact that it may excite some artists. A fencing bar is not industrial design either because it does not [exhibit the qualities of] ergonomics, appearance and uniqueness: it is just a metal bar. But…the Olympic torch is industrial design. It has a certain look, a purpose, a unique shape and appearance, symbolism and is heart-warming. An designed product is very easy, very intuitive.” (Technical Director)

…Merger of engineering, creativity and art

“Industrial design is necessarily good design. Like ‘engineering’, it is high word… Industrial design is the [fusion] of engineering, creativity and art. [Anything] below that standard is an attempt of design but is not the design itself. The little thing has to earn its right to become industrial design.” (Technical Director)

…Classic, stylish, lasting appeal

“In 2000, CD players in JB Hifi stores and other shops were very bulky, with old and ugly shapes, with a few LEDs used to make them ‘flashy’. We bought a Pioneer player that was simple and stylish. Seven years later, it still looks good and not outdated. That is industrial design.” (Managing Director)

…Talent

“From youth I have feared touching upon the field of design. I am worried: what if I get it wrong? What if I draw a circle, how will I know that people will like it? Industrial designers must be very, very talented to be able to make something that millions of consumers will love.” (Managing Director)

…Separate from fashion
“The output of an industrial designer must be fashionable, but fashion and product design are very separate things. In fashion there is a person involved: a beautiful person that makes clothing a beautiful item also. Someone once said, ‘there are no ugly garments, only wrong ways for people to wear them.’ A product, on the other hand, is independent. It must speak for itself.” (Managing Director)

…Balance of function and form

“The balance of functionality and aesthetics is central to all types of design, but industrial design is more specific to the real world (i.e., non media). Product and visual designs are equally important: you cannot have one without the other.” (Graphic Designer)

…Marketability

“The design of marketable products. When I think of industrial design, I think of iPods and the fact that people are more willing to spend an extra $200 for an iPod than an equivalent but less trendy MP3 player. [Therefore] it is not only about design but also marketing and what looks good.” (Administrator)

“Industrial design in terms of product design is marketing.” (SMT Production lead)

…New product design

“The design of new products from concept to complete product. That is why an industrial designer should be able to design a product knowing all the challenges, from manufacturing to materials. A good industrial designer will respond to a challenge and revert with a product that [can be manufactured]. (Sales Engineer)

…Environment design
“Sitting on a nice chair or having nice surroundings that makes you feel better. I see it in people. They like to come here, they like to sit down, they like to work here. If you put someone in an unusual place with [poor] lighting, tables and chairs, [the person] would not want to go there. An industrial designer must look after all these things, making people feel more comfortable and happier.” (Software Engineer)

“Getting in touch with people’s emotions. [Designers] know what people want.”

**Managing Director**

After the interview, the Managing Director came to the researcher with a handful of lighting design magazines from China. She told the researcher of her concern about the in-house graphic designer (who was a graphic designer by role but was educated in multimedia and information technology.) “I see his tremendous computer skills but I am beginning to find his designs limited. I keep offering design magazines for him to look at but he shows little interest.” In her opinion, if Chinese designers expanded its expertise by learning from European designers, so should a designer continue expanding his knowledge and influences by seeking other designs.

**Administrator (Support)**

The administrator, whose role included assisting in quality control, was also inspired after the interview, and organized a meeting (before work hours) with the Managing Director to review the types of clients that the company targets and accepts. She suggested a software-based management process for invoicing. The Managing Director brought the idea to the attention of one of the then-production girls, who had a background in software engineering. The girl, being creative by nature, was captivated by the idea and its obvious usefulness in the company, transitioned from her role as production staff to Software Engineer, and proceeded to code such software using a standard Microsoft software development package.

This was a great example of an idea from one corner of the company brought to fruition in another, with the Managing Director acting as facilitator and catalyst. It takes little imagination to consider how many other ideas could similarly benefit the company (and inadvertently the people involved), were there to be a formalized and predictable process by which to brainstorm, share and encourage the manifestation of ideas.
3.4 Reflection

The very process of questioning the staff about creativity and design had itself begun what a writer would like to call the ‘creative revolution’. It became clear to the researcher that that there was no need to wait for the designer to make the intervention since the researcher herself was the intervention, despite not being a professional designer. What could the industrial designer bring to the group? He could bring expertise and extra ideas, but the interventions and ‘design leadership’ had already begun, inadvertently, with the researcher’s interviews. The researcher became effectively the ‘free resource’ in the company with no strings attached. By using the office’s physical space for her design studies, the researcher had set herself up as a detached resource with access to everybody and the ability to intervene to a degree.

After hours the researcher had many discussions with the Managing Director, sharing ideas in response to various company problems. These were not necessarily strictly design-related problems or even solutions but it became clear that both parties had adapted a more creative approach to problem solving.

With the exception of these discussions with the Managing Director, the researcher barely spoke to anyone else about her ideas. Little was shared about the researcher’s design management plans for the company. Her intervention and arguably design leadership was characterized by questioning the staff and cautioning upfront that there were no right answers, opinions were of most importance. Discussions would then flow.

Typically, the people upstairs (the management and office staff) displayed subtle ‘relief’ at having their previously withheld ideas heard. The people downstairs (the floor staff, machine operators and assemblers), on the other hand, showed fear and excused themselves stating that they “knew nothing”. But all people displayed similar behaviour, in that their excitement increased as the discussion progressed, and they discovered that they actually had plenty of ideas to contribute. The people downstairs displayed a greater fluctuation between excitement, empowerment and slight withdrawal at the end of the conversation, saying “but anyway, it is not up to me, I do not know anything, it is all up to the management and our budget.” The people upstairs displayed smaller fluctuations in excitement. Some people became more proactive (in the short term) as a result, such as the administrator who put into practice regular morning meetings with the Managing Director to share ideas, while others showed more restrained responses, such as the engineers, who showed least physical excitement at the conversation, had greater and more rigid expectations from the potential
designer, and what seemed to be more realistic approaches to the proposed program, because the concept of design was not new to them but past experiences had shaded their views.)

As the researcher was interviewing one of the production staff, at one stage the researcher felt that the production woman was hinting at a fear of losing her own job to automation. The researcher feared that perhaps it was not wise to question everybody in the company, but she persisted because it was suggested in literature that every person has something valuable to add, and there are contributions that can only be had from certain people due to the nature of their daily jobs, intimate experience with the tasks, and inadvertent human desire to make things more efficient and simpler. When the researcher surveyed another production staff member, it was a struggle. The researcher rephrased the question time and time again, smiled, laughed, and tried to put the production staff member at ease, however apart from squeezing a few answers the conversation soon ended with shrugs and “I do not know” comments.

However, the following morning the same production staff caught the researcher by chance in the staff kitchen, adorning an unusually excited expression. She said, “remember you mentioned that our designer worked for a cartoon company before? Well, I don’t know why but I kept thinking about our discussion all night, and I had one thought circling around in my head: how can we make games?” She paused, and added, “Are our lights making much money?” The researcher said she did not believe so. “Because it would be better if instead of just waiting for contract work we would have our own product. I passed a games factory the other day, like Gameboy, and realised that we have such amazing brains in our company and the ability to create anything, so why couldn’t we make some games with our lights?” And then happened what is often described in literature: the excitement gave way to shyness. “Oh, it’s a silly idea. So silly, I know. But for some reason I couldn’t get it out of my head all night.”

The researcher tried to comfort and encourage the production staff by saying that the best inventions start with the craziest ideas, and with this whacky and unexpected idea she may actually be onto something. But immediate examples did not come to mind, so the researcher simply smiled and thanked the production woman, acknowledging the desire to give the woman’s idea instant credit, which is not easy to do. The researcher could not see exactly how the company could make games out of LEDs, and neither should she have expected herself to immediately commercialise the idea. There was an undoubtable urge to qualify the woman’s idea by saying it could be done, despite the fact that the concept of failure in the world of idea creation should be entirely different to the normal usage of
the word. Even the refereed journal, *Creativity and Innovation Management*, comments on the failure rate of ideas as those ideas that are not used. What does ‘used’ mean? Does it mean that the actual idea must be implemented, or that the idea encourages other ideas, which are then implemented? It would seem that the latter definition is more appropriate, which would also suggest that ideas cannot be disregarded as failures. All this was too much to explain to the production worker on the spot, and so her face displayed childish excitement subtly giving way to doubt, self control, and a ‘reality check’. She added finally, with a tiny hopeful smile, “but at the end of the day it’s all their decision,” pointing to ‘upstairs’, which has come to mean ‘the management’.

The establishment of ‘rules for creativity’ suddenly became a necessity, specifically so that it would be appreciated that:

- Everybody in the company, downstairs and upstairs, is (equally) able to generate/create ideas, even though management support would ultimately be required for their implementation;
- The value of ideas should be detached from their actual implementation;
- Ideas are children: they must be created and immediately freed;
- The best ideas are combinations or developments of the initial crazy ideas; and
- There is value in crazy ideas, even if they seem totally irrelevant or impossible.

Proposed changes often invite resistance, and this was no exception. The major pushback came from the accountant. She was least excited about the design management research project, and argued that there was simply not enough for work an industrial designer to perform in a small company. “We could not afford to pay him what he is worth, and there is not enough value for them to bring,” she suggested. She insisted that the person should work on a contracting basis (evaluations or hands-on projects only) but not full time or part time. Her language and choice of words resembled closely the management literature that had been reviewed as part of this larger research project and suggested that she, too, had acquainted herself with modern management theory. It became evident that the accountant was the only person in the company who sported a large corporation mentality. Working for a small company was not her ideal situation, but she consoled herself with taking pleasure in some part of her work, being “disinterested to push herself further,” as she described it, and lacking desire to change her *status quo*. Accounting was not her passion, and little diversions for chats, laughs or online chatting programs kept her accounting job from appearing dry. She was content but not ecstatic, and the spark in her eyes different to those in the eyes of the other workers.
Afterword

Situations of all involved parties changed over time, and the proposed project did not eventuate. For this reason the design management research project should be viewed as an experiment in ‘creative intervention’ and the start of a creative revolution within the company. By 2009, the administrator, the accountant and the upcoming production/programmer left the company, and new administrator, accountant and programmer joined. The graphic designer’s role became more defined as he focused on information design for the website, marketing collateral and sales pitch presentation material. The company took a turn from serving lighting designers and specifiers for the architectural market to a more industrial market, where there appeared to be less need for the aesthetic appeal of outputs. However, the design intervention that had started two years earlier made its impact and despite the fact that no official effort was made to progress design, and no design manager was put in place, the design consciousness awakened before and during the interviewing process became inevitably expressed in the company’s physical layout, communications material and ultimately the product itself. This was evident in the language used by management (an increased use of key words such as ‘design’, ‘aesthetics’ and 'branding’), the fact that every piece of informative material was necessarily created or enhanced by the graphic designer, and finally the very products which were created for a less design-savvy public contained more elements of design and attention to physical form and usability than commercial products had in the past.

In the researcher’s view, the experience at the engineering firm also highlights how a person can, for all practical purposes, be classified as having an heuristic type of intellectual activity, but through the traditional arrangement of a work environment creative tendencies can be made dormant or even crushed, if daily work does not require creativity or contribution, and the person is not encouraged externally to advance such inclinations. However being approached by a leader with encouragement, affirmation and support, can reawaken the person’s hidden innovative character, often to the surprise of the person himself. This can have positive effects on the organization as well as the person’s satisfaction with himself and sense of self esteem.
4. Conclusion and further research opportunities

4.1 Final word

In conclusion, logical arguments can be made for the improvement of work-satisfaction of employees, just as for the material development of the organisation. At the beginning of the mass production era (from the end of the 19th century to the beginning of the 20th century), from the use of the conveyer belt in large production houses, Frederick Taylor saw a way to raise the effectiveness of employees in a scientific, production-oriented organisation by optimising the environment and regulating movement and tasks, and so on. To Taylor, a human in such a system was viewed more like a robot than an individual. A person’s physical capability was utilised, his emotional condition and even his intellect and knowledge were ignored in their entirety, while his attitude to the job was successfully controlled by the supervisor. The production process in Taylor’s system allowed for a high level of physical productivity, but at the same time turned the human being working on the conveyer belt into an idiot and, in a sense, a partial-worker.

Elton Mayo’s Hawthorn experiments conducted between 1924 and 1932 showed that an attentive approach to an employee, a warm psychological atmosphere in the team environment, can also have positive effects on productivity. This led to a wide-spread practice called ‘human relations’ in organisations. However even in human relations there remained a ‘paternalistic’ approach to the worker as if to something ‘lower’. In his work, Rural Development: Putting the Last First, Robert Chambers comments on the actions taken by ‘non-rural outsiders’ to affect the situation of the ‘remote and powerless’.

“However much the rhetoric changes to ‘participation,’ ‘participatory research,’ ‘community involvement’ and the like, at the end of the day there is still an outsider seeking to change things… [W]ho the outsider is may change, but the relation is the same. A stronger person wants to change things for a person who is weaker. From this paternal trap there is no complete escape.”

(Quoted from an excerpt titled ‘Whose Priorities?’ in Gumucio-Dagron & Tufte 2006)

The growth of ‘human relations’ in the work place was perhaps less a display of respect to a man’s personality and more an implementation of a farming approach to the workers as ‘stock’: a cattle-breeder feeds and cares about his animals not out of respect to a cow’s personality but for the sake of her milk, meat and offspring.
Design management at the end of the 20th century and the beginning of the 21st century, in the context of modern technology, seems to be making a new step forward: adding to the production process the ‘entire’ human being – his knowledge and skills, his physical abilities, and his emotional and psychological energy. In providing a framework in which the creative needs and abilities of individuals are acknowledged and encouraged, design management can offer a more fulfilling work experience. In this way, it can act as a facilitator in bringing about a sense of ownership within an employee, allowing him to feel that the organisation is ‘his own’, and he is a partner on level footing with the owners of the corporation.

While design management and design intervention can bring about desirable change within the organisation, its intangible value is perhaps more profound than the tangible, and is articulated in the ability to properly recognise and encourage creative tendencies within individuals, giving people opportunities to discover their own talents and abilities, realise themselves and attain ‘happiness’ in the present moment.
4.2 Opportunities for further research

This thesis opens up opportunities for further research. Some of the areas worthy of exploration include:

- The particularities of design management within different kinds of organisations (small, medium and large) with a view to identify and compile basic recommendations with respect to design management for the differently sized business;
- The measurement of ‘value’ in organisations, looking at tangible and intangible aspects; and
- The methods of implementing design management within organisations.
5. Bibliography


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6. Appendices

This section contains a selection of plans, journal entries and notes made during meetings with design-related professionals and academics between 2006 and 2007.

6.1 Design Management Seminar

The following are notes of the Design Management Seminar, held in London on the 18th of September 2007. In the below notes, D has been used as the short-hand for ‘design’ and DM refers to either ‘design management’ or ‘design manager’, depending on the context.

6.1.1 Themes (from previous session)

- Performance and measurement: how do we measure effectiveness and ROI from working with Design Managers? Collaborative contribution? Risk reduction?
- Framework for sharing published information; contextualisation of DM (Bill Sermon) value of journals/publications needs to be clarified
- Being consistent and having a framework that everyone is trying to support
- Flexibility and modularity of DM
- Design infiltration

It is hoped that these sessions will achieve: (non-comprehensive list)

- research opportunities
- momentum to make government especially take design seriously
- gain non-institutionalised insight
- opportunities to be involved in other projects
- access to case study material

6.1.2 What is design management?

Many definitions were offered; common themes were that it was a definition that was transformational. Most practicing DMs didn’t know what the definition was. The term has changed since the original DM definition of the all-encompassing ‘god of companies’. I think DM is necessarily about design leadership or championship at the higher level so that there is support for design.
6.1.2.1 Summary of viewpoints:

- Systemic view: ideally, a set of processes and tools for the management of ‘design’ resources throughout the organisation and the development process, whatever ‘design’ means at various points i.e., problem solving, innovating/ideas, actual design, experience design, but with an overarching branding that unifies the activities with common themes/values
- DM, unlike any other activity in the business, is supposed to encourage creativity from everyone (and innovative thinking and behaviour)
- Academic view – product design/marketing, business view – branding
- DM is relevant, but what is its unique value proposition or UPS (Unique Selling Proposition)? Compare it to IT – is DM unlike anything else, or is it just an extra to various existing business components? Design is unique, but DM is not design, neither is it project management, total quality management or other process improvement methodology

6.1.2.2 Some common themes from discussion participants:

- Environment outside of the company - shareholders, government, people
- DM is not PM, it is more than project management and more than total quality management
- DM is confusing, transformational and evasive as a definition though there were professionals doing DM consultancy who couldn’t define DM although knew their own jobs well
- Alan Topalian said DM role is one thing but a DM title is extra. This was debated (started with the fact that I couldn’t find DMs or practices in Australia, as they were ‘so hidden’)
- DM is: disruption, culture, organisational change
- DM needs to sit “quite high”, boardroom level/strategic
- DM has amorphic nature; hard to define; different from Apple to Fish’n’chip shops
- Communication with internal and external environment
- Design conferences confuse/focus on design – there is a difference between ‘design’ and DM
- Designers have moved to being design managers but failed because of the confusion of what DM is about – it is not equal to design.
- Knowledge management of design issues and practices
- DM converts design activity into profit (people and financial)
- Management (strategic or operational) of intangibles – like facilities management
- Help communicate values across the organisation
- World Economic Forum – could DM be a part of that?
6.1.3 Professional viewpoints

Below are summaries of discussions between the researcher and various professionals and academics in attendance.

<table>
<thead>
<tr>
<th>Brigitte Borja de Mozota (Brunel University)</th>
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<tbody>
<tr>
<td>• She lives in Paris with husband and children, and takes the train into London during the week to work at Brunel.</td>
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<tr>
<td>• About DM definitions offered she said, “I hear the same definitions but nobody mentions value.”</td>
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<tr>
<td>• Unique value proposition of DM is not clear</td>
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<td>• She said, “When I work as a manager with a designer, we work through trust. I am a better manager because the designer works for me; she is a better designer because I am her manager. We are still friends. It is about relationships and trust. Where is the relationship, the glue, the trust, between business and design? There is only fear on both sides.”</td>
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<td>• Research is building frontier of your research as designers.</td>
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<tr>
<td>• (Triangle) Research – Practice – Education.</td>
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<tr>
<td>• <strong>What’s necessary in Research:</strong></td>
</tr>
<tr>
<td>o DM Research forum/group/lab. Where is it?</td>
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<tr>
<td>o DM Research Journal?</td>
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<td>o DM Awards</td>
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<tr>
<td>o First one coming up in Cardiff 2008. European DM awards. Soon we will be discussing the criteria.</td>
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<tr>
<td>o DM Research network (exists here)</td>
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<tr>
<td>• <strong>What’s necessary in Practice:</strong></td>
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<tr>
<td>o Link between academy and professionals</td>
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<tr>
<td>o Boston Consulting Group, McKinsey and others, go to academia, pick a nice model, repackage it with more marketing value and put it into practice.</td>
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<tr>
<td>o We need a BCG of DM. DMI will help with that.</td>
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<tr>
<td>• <strong>What’s necessary in Education:</strong></td>
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<tr>
<td>o …..</td>
</tr>
<tr>
<td>• What is value?</td>
</tr>
<tr>
<td>• What is the new business environment? Old models don’t work anymore. It’s confusing. But design thinking may help instead.</td>
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</table>
• Designers are smugglers

Pradeep Sharma (University of Glamorgan)

• Warm and friendly, encouraging and supportive, well aligned with my beliefs and values.
• Suggestions for further research:
  o Doblin (Chicago) – designers going into MC
  o Booz Allen Hamilton – probably more so than other consultancies (certainly more so than McK) are adding design into their MC services.
  o MIG
  o Domus Academy (Milan) running a “Business Design” course. Like DM but better!
  o Ernest Young
  o Knowledge management – this is where design is hiding now.
  o Interbrand – strategy, less “design” work these days.
  o Lars Fitzgould (ex-McK) runs Vanguard (London and NY) – Strategic branding company.
  o Creative Business magazines to get: “Fast Company Magazine” and “Monacle Magazine”.
  o MBAs…
    o INSEAD. Any course at INSEAD, even a short 3-month one, is going to look great on a resume, “trust me!” Otherwise they have serious courses but they are very expensive (60,000 Euros)
  o Judge Management Institute at Cambridge
  o SAID Oxford
  o Imperial College
  o London Business School
  o LSE (London School of Economics)
  o Copenhagen RBS
  o McK can sponsor you to do a Master at university, without even working for them.

Naomi Gornick

• At Brunel DM course, how is the question of the cost and benefit of DM dealt with?
• You are doing (did) research on graduate careers. What range of careers did you find your
DM graduates ended up in?

- John Bound was part of the Design Management Group, your early DM consulting organisation. Is this where you met?
- Looks like John Bound was part of the Design Management Group (consultancy) but met Naomi at the RCA when she was running or organising the DM course. This course has been discontinued for over 10 years and is a sore point for Naomi.
- Naomi’s courses/interests are in creating design-based professionals with knowledge of business and the innovation process.
- Naomi has published widely in design journals.
- What about publishing in business journals? (Pradeep Sharma later said that it is hard for an academic to publish in both; if they publish in a business journal, their academic root journal may not take them seriously. If they publish in academic journals, the business journal may take them seriously.)

Alan Topalian

- He did an MBA and then went into the design stream (management consulting then design) – why?
- Does design leadership exist at board level or are DMs at middle management only (as David Hands suggested they normally are)?
- If you ask strategy consultancies, design consultancies about the same problem, what differences would there be in their answers?
- Alan consulted to IDEO.
- In considering whether or not DM or D exist in companies, Alan suggests that 3 questions should be asked of the company, and only in this order so as not to phrase leading questions.
  1. How do you product X? Print? Where is design used?
  2. Who pays for it? Where does the budget come from?
  3. Who is in charge?
- Design is: devising effective means to achieve desired ends.
- DM researchers must be DM practitioners. Otherwise their work is useless.
- Design is planning. You need planning. Therefore you need designers.
- DM Practice is the main source of knowledge and experience.
- Research is there to help practitioners structure what they do; understand and do better what
they already do. On its own, research is useless. Researchers help practitioners leverage their knowledge and experience by bringing in external perspectives.

- Education: Make them into practitioners, not just researchers.
- DM work requires a brain that can observe/listen and structure.
- Research divorced from practice is useless. The triangle must be very, very tight.
- Chief Value Officer?
- You cannot have quality and visibility in an organisation without it being designed in.
  (Design is) how you draw (tacit) knowledge out.
- It is about Inspiration, Imagination, and Value.

Bettina von Stamm

- Can design thinking be taught within traditional disciplines?
- Should design processes be offered by management consultancies?
- Did design (architecture), did not enjoy it so turned to a MBA
- Mentioned a good DM course at INSEAD that was written about in Business Journal (or BusinessWeek)

Tom Lockwood (Design Management Institute)

- Head of DMI, likely an ex-student of Naomi
- Did not attend

Tony Kent (London College of Communication)

- Tony was one of the organisers who sent out emails.
- I didn’t have 30 GBP to pay on the day so he said he would email me the invoice.
- Most of the design research deals with design businesses, but how do we work with small (not even large) non-design businesses?
- His background ranged over 3 areas:
  - Manufacturing (shoes) - Lessons for DM: there is a huge boundary between design and manufacturing. There is a huge difference, as they have different interests.
Exploring the Value of Design Management

Taisia Zatsepin

- Retail (fashion) - In retail there was a style of management in which design and management was done throughout the business. But real DM must get away from the bureaucratic way to be useful in a ‘risk-taking’ and creative and innovative way. There was a dichotomy between experience design and commodity design. DM is about experience. Design/DM is not just about the design of the final product. Rather, it flows through and must be inherent throughout the whole customer experience.

- Academia (LCL) - At the LCL, design was monocultural. Though this has since changed, it still influences the way we work (internally rather than engaging with others). Designers are not engaging with outsiders and sharing their knowledge well.

- Tony’s suggested readings: The Tipping Point, In Search of Excellence

Liz Lydiate (Design Business Association)

- Professional Practice Courses are run to what clientele?
- What level are they in the organisation?

Lesley Morris (Design Council, UK)

- Design Learning Manager at Design Council
- What is your current European research project, “Design for Future Needs,” all about?

Bill Sermon (Nokia)

- Last year’s keynote speaker
- You said at the last conference that a common DM framework and ‘design infiltration’ are what are needed most. What do you mean?

Bill Hollins

- Absent
### Gus Desbarats
- How have PC manufacturers failed to grasp the use of design for branding? Are other electronic manufacturers facing the same?

### Sonja Dahl (Design Council, UK)
- Designing Demand replacement of Rachel Harun. Didn’t speak much with her, but she is a good friend of John Bound.

### John Boult
- Heard him talking about Melbourne/Australia links but didn’t talk about this further due to time constraints.
- Cultural change by design. Is your background a design or business one? (Neither). At what level do you consult?
- John mentioned these DM consultancies that were started in France (uncommon) and moved to the USA: DESGRIPPES / GOBÉ

### David Griffiths
- Commercial DM
- What is the nature of the work you do? To what level in the organisation do you consult? How long are your projects?
- About “DM definition” – wanting to be at boardroom level. He said “when I hear this, I hear insecurity. Only the most urgent business people need to be at board level, answering the most urgent business problems. Since most companies do not have DMs at board level, design is not #1 priority or one of the top problem solvers.

### Mark Stafford
- How did you switch from engineering to design, seemingly disparate ends? (Didn’t see him at this conference)
**Tore Kristensen**

- His student, Jesper, turned up instead of him.
- Jesper is doing consumer behaviour research by studying eye movements of shoppers. He can identify what design elements shoppers focus on the most (colour, shape, layout, etc).
- Tore: you said design researchers must publish in business, marketing and economics journals. (Copenhagen business school is considered to be good.)

**Lucy Kimbell**

- Was at conference but I didn’t get the chance to talk with her properly.
- Was taken into SAID Business School to teach students to ‘elicit unarticulated needs’ using design as a tool.

**John Bound**

- Friendly and approachable, good to see him again, supportive of my research and impressed I made it here – more discussion later.

**Martin Wolley**

- Link with RMIT University

**Naomi Sadowska (Regents Business School)**

- Lovely and friendly, her husband plays bass in a band, played in North London on the night of the seminar.
- Naomi runs a small, private business/design school with a maximum of 15 people per class. It is an expensive school, with external accreditation done by the Open University.
- It is an undergraduate management and design course. It is unusual for undergraduate students to take up management studies, but these students are almost exclusively those who will take over their family businesses. Naomi invites professors from various parts of the
One of these was Paul Williams (recommended by Bill Hollins) from Monash University. Paul Williams lectured on design management from an engineering (and theoretical) perspective. At Monash he hides under engineering design. Paul was invited to the UK for 4 months, taught at Naomi’s school and did some classes for Bill Hollins too.

**Tom Inns (Dundee University)**

- Co-organised the event, acted as master of ceremony, ran our workshops
- “The key to cutting edge knowledge is at cutting edge practice.” We then had a discussion workshop around the links between research, teaching/education and practice.
- Brigitte started this discussion and highlighted what things we are already doing for DM in each area, and what the gaps are.

**Sally Brazier (Ceostra)**

- She has beautiful, bright blue eyes, and is a very interesting lady who runs a DM practice but cannot define what design management is.
- Believes that DM is “aligning of design to business strategy.”

**Gill Wildman (Plot Consultancy)**

- Animated, friendly and sociable.
- DM is about politics and reality.
- Loves practice more than the theory.
- “DM is not successful. Apple is about good business, not proof of DM!”

**Les Wynn (Xerox)**

- What is the definition of DM in 2007?
- “In my teenage years, I was quite confused. I had a schizophrenic background of all sorts of courses. Engineering, fine arts, a bit of work. Went back to do a BA on product/industrial...
design, then an MA on user interface design.

- “Became an innovation engineer at Gillette, paid to create patents. Was poached by a Coventry-based manufacturing company who were doing electronic controllers for Rolls Royce but knew it would not last. Finally ended up in Xerox.

- “Like other big organisations, in Xerox we need to ‘sell design’ internally. Xerox already sold off manufacturing to China, Malaysia, South America and Taiwan. In Xerox, traditionally designers and design management is a service/support, similar to in-house consultants. But most services are being outsourced, so what big corporations face is how to repackage design as a core business.

- “Xerox will keep it if design is defined as the experience, service and packaging – the interaction with the user. This can be done by expanding design’s *ad hoc* support function into the crucial design component of the whole user experience.

- “My concerns about DM are not about project management, process or the designing mechanisms, but rather, how can DM change with the changes that are occurring in business? It is an East-West thing. In the East, they are just building design skills. For example, Taiwan offered them ‘we’ll give you these 10 designers, for free! We just learnt these skills…’ This is different to the view in the west, where D/DM is being looked at as the whole user experience design. Design development is at a different stage (different understanding of what design is really about).”

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**Nico Macdonald (Innovation Agenda)**

- He does not have a design background
- His initial work was in working with designers to help them work better.
- Worked with publishing, helping designers integrate computers into their work.
- Guide designers to think more about design challenges, such as using the web. So making designers more ‘worldly’, not just interested in the design, so that they can go into leadership roles, as some of his ‘students/apprentices/clients’ did in USA.
- Worked on innovation projects at BBC’s Innovation Lab
- Now spends much time visiting design seminars and writing up their information, to get the knowledge ‘out there’. Designers are too lazy to do so themselves.
- AIGA – American Institute of Graphic Artists – ran experience/interaction design seminar, with a focus on the relationship between ‘business and design’.
- Worked with Bill Morgridge on ‘Innovation Forum’ and Reading Circles
- His interests/focus are:
  - Usable knowledge: how to share design knowledge. Through
  - Case studies
  - Events
  - Tools
  - Relate DM with the real world
  - How to engage people not interested in design/DM (‘non-believers’)
- “We need forums where non-believers can voice their objections and if we can convince the hardest non-believer, we can convince anyone.”
- Designing for User Experience Conference (Chicago) has a model of using case study as a main knowledge/thinking sharing vehicle.
- ACM - For $100 per year, you get access to a knowledge base. It’s good to get information but no ability to add to it.
- It seems that there are not enough online discussions about DM, or they are not easily found.
- Service design…
- Organisational design – how to make an organisation more design-effective?
- Recommended companies in the UK to check out: EMERGENCE and CMU
- FT and BWeek both host debates about design.
- Innovation? Businesses seem to have a risk aversion and timidity, especially in the UK (or is it a lack of ambition?)
- In the UK, businesses sooner invest in repackaging than huge, real changes.
- What is sustainability? Means different things to different people; for businesses it is about maintaining operations!
- Businesses/we need to emphasise the ‘human’ – the importance of life, ambition and transformation. Design is the main driver of this.

**Brian Smith (Feonics Ltd)**
- Recommended reading – about Carly Fiorina, former CEO of HP
- When he was working for some company, creating some electronic “magneto” thing… “We had a problem where people didn’t believe in design even though it was what would take it out of science into the consumer world.”
• We must own intellectual property and capitalise on that.

6.2 Mind maps

The following are two mind-maps drawn in preparation for the second Graduate Research Conference. These maps were based on the McKinsey and Company’s Mutually Exclusive Collectively Exhaustive (MECE) framework, and intended to breakdown complex concepts in order to identify more ‘graspable’ constituents and their interrelation. As the research topic focuses on design and management, separate maps have been drawn for design and business.

6.2.1 Design focus
6.2.2 Business focus

Organisations with DM at appropriate phase of implementation to facilitate my measurements/analysis. Assuming the following implementation phase, the suggested engagement period is 4-6 months within the highlighted timeframe.

<table>
<thead>
<tr>
<th>6mth</th>
<th>12mth</th>
<th>18mth</th>
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<tbody>
<tr>
<td>Implement</td>
<td></td>
<td>Results</td>
</tr>
</tbody>
</table>

1 SME definition taken from European Commission (EC), to include businesses with <250 staff and a turnover of <50m Euros. SMEs make up 98% of enterprises in EU and >50% in UK

2 Implications of how much control we have and at which phase in product life cycle

3 Implications of complexity (size, time)
6.2.3 Hypothesis

How does the implementation of design management lead to improved organizational performance?

What are the interventions of a design management program? 
\( (x) \)

What business performance indicators are affected by these interventions? 
\( (y) \)

\[ y = f(x) \]