An Analysis of Intelligent Failure within Corporate Entrepreneurship

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I certify that all material in this thesis that is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other university.

Signature:……

Abstract

Intelligent failure occurs when an entrepreneurial initiative falls short of its anticipated performance. It provides valuable new knowledge to the organisation and is recognised as an important factor in long-term corporate entrepreneurial success.

This thesis is located within the domain of corporate entrepreneurship and entrepreneurial failure, and explores the various processes of intelligent failure. *The specific aim of this thesis is to learn how organisations manage intelligent failure*.

Research takes an inductive approach with the predominant use of a qualitative methodology and, as part of a multiple case study strategy, research is carried out in six organisations operating in differing sectors within the UK.

Findings indicate that the organisations often fail to manage intelligent failure. There is little evidence of a strategic approach to learning from failure and, where learning occurs, it is predominantly unstructured. This is significant because literature consistently argues that a structured process is required to manage learning from failure successfully. This research recognises that structured processes may be more effective than unstructured processes when looked at in isolation. However, this thesis argues that unstructured mechanisms do have inherent value.

Therefore, when organisations develop failure management processes, a dual path may be considered, which might extract value from both systems as is contextually appropriate. This may enable organisations to maximise their ability to learn from failure.

This thesis adds to existing management theory in the corporate entrepreneurship domain. In specifically focusing on the structured and unstructured forms within the process of intelligent failure, this thesis addresses a gap in current literature. It also adds to existing literature that centres on the practical management of the learning from failure process.

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Chapter 1 Introduction

Research suggests that failure rates of entrepreneurial initiatives are significant ranging from 35% to 45% (Boulding et al., 1997, Griffin, 1997, Corbett et al., 2007). In a four year study of Nokia from 1998 to 2002, McGrath et al (2006) discovered that 70% of corporate investments were discontinued or divested. In considering the volume of failures, it is argued that the lessons from such failure episodes, as an organisational resource, are far too expensive to waste (Corbett et al., 2007). “Managers are often curious about what other companies have done and how their ventures have performed, but overlook the most relevant learning of all – the learning that can be extracted from their own venture experience. Such experience has been achieved at great expense to the organisation, and to ignore or discard it is to squander an irreplaceable asset” (Block and MacMillan, 1993 p.312). Mistakes are the inevitable consequence of innovation and should be viewed as valuable (Birkinshaw and Haas, 2016). When operating in uncertainty, it is expected that much of the time individuals will be wrong and this is fundamental to the process and completely acceptable (Furr and Dyer, 2014). Indeed, lessons from failure are viewed as an essential component of success. IBM’s Tom Hunter argues, “if you want to succeed, double your failure rate” and he is supported by the mantra of IDEO, “fail often to succeed sooner” (Lafley and Charan, 2008). Learning from failure is the hallmark of a truly innovative organisation which recognises failure as a necessary by-product of experimentation and therefore promotes experimentation to increase learning (Cannon and Edmondson, 2005).

Yet despite this recognition of the importance of learning from failure, it would appear to be more common in management exhortation than in practice (Cannon and Edmondson, 2001). “The idea that people and organisations in which they work should learn from failure has considerable popular support – even seems obvious – yet organisations that systematically learn from failure are rare” (Cannon and Edmondson, 2005 p.299). Research suggests that organisations are generally unable to manage failure, finding it difficult to create a systematic process to analyse failures and document the lessons learned (Manimala et al., 2006). Whether large or small, most organisations

are poor at managing entrepreneurial failures in a way that maximises the value of lessons learned. Even organisations which invest significant money, time and effort into becoming ‘learning organisations’ struggle to engage on a daily basis with the appropriate mindset and processes of learning from failure (Cannon and Edmondson, 2005). In consideration of the phenomenon of learning from entrepreneurial failure, this thesis centres on the final stage of the entrepreneurial process, the after action review and, specifically, when the outcome is one of failure: ‘intelligent failure’.

1.1 Failure and intelligent failure

Research offers differing perspectives on the nature of entrepreneurial failure. Shepherd et al (2009) suggest that entrepreneurial failure occurs when a project is terminated on the basis that it becomes apparent its performance is unacceptably low (as operationally defined by the main resource providers of the project). However, to understand the concept of entrepreneurial failure further, Cannon and Edmondson (2005) put forward a definition suggesting that it is “the deviation from expected and desired results”. They argue for this broader definition that includes avoidable and unavoidable negative outcomes, whether the failures are large or small and whether they are technical or interpersonal in nature. The proposition is that there are opportunities for learning in both minor and major mishaps. In a similar view, McGrath (1999) argues that intelligent failure occurs when an entrepreneurial initiative is terminated because it has, or is likely to, fall short of its anticipated performance. Often this is due to circumstances which are out of the control of those involved (McGrath and MacMillan, 2000). Edmondson (2011) suggests that failures fall into three broad categories; a) preventable in predictable operations, which is due to deviation from prescribed processes or practices (bad failure); b) unavoidable in complex systems due to the inherent uncertainty of operations and exogenous factors; and c) intelligent as they provide valuable new knowledge for the organisation (good failure). She argues that exceptional organisations purposively generate intelligent failure for the specific purpose of learning and innovating.

Lafley and Charan (2008) argue that “there is such a thing as a smart failure, or a failure that works” (p. 203). Perhaps this was built on the views of Williams (1998) who described ‘smart mistakes’ as being “made within the confines of a high quality decision process or for the purpose of expanding the organisation’s decision set” (p. 72). In essence, smart mistakes increase organisational knowledge enabling the creation of new capabilities (Danneels, 2008). In a similar vein, Kriegesmann et al (2005) consider ‘creative errors’ (that occur due to bad luck, coincidence or residual risk, ‘system errors’, and environmental dynamics or changing circumstance) as representing ‘successful failure’. They argue that the creative errors represent “an innovative initiative that is conducted with calculated risk” (p.59). This is separate from deliberate errors, failure concealment, carelessness, overestimating own ability, omissions, repeat errors, or a mismatch between capabilities and responsibilities. However, Sitkin (1992) argues that “not all failures are equally adept at facilitating learning” (p.554). He suggests that those failures that are most effective at fostering learning are, what he terms, “intelligent failures” and they have five characteristics;

- They are the result of well-designed, planned and executed actions.
- They have uncertain outcomes (in order to provide new information to learn from).
- They are of modest scale (a balance between being large enough to attract attention and small enough to avoid negative reaction).
- They form part of speedy action cycles whereby action and feedback happens fast enough so that information can be generated quickly for evaluation.
- They take place in domains that are familiar enough to permit effective learning.

The strategical resonance of this determination of entrepreneurial failure in this seminal article is generally adopted and often referred to by researchers in this domain. However, Masden and Desai (2010) put forward an alternative argument suggesting that learning may not derive from such small failures as, due to their size, they may be redefined a successes, or they may be ignored due to the self-enhancing nature of individuals and the organisation.

Additionally, it may be difficult to extract meaningful knowledge from smaller failures. They argue that organisations learn more from large failures due to their size and visibility.

There is a clear difference between projects that fail because of bad luck and those that fail from incorrect decision making (McGrath and MacMillan, 2000). Indeed, Marrisa Mayer, CEO of Yahoo, when speaking at an ERC Research Conference is quoted as saying “Don’t worry so much about being right – worry about being wrong intelligently” (Ucbasaran, 2013). This thesis addresses this strategic interpretation of failure centring on the concept of ‘intelligent failure’.

1.2 The benefits of intelligent failure

McGrath (1999) suggests that there is “a tendency in literature to view failure negatively and this causes a pervasive bias in entrepreneurship theory and research” (p.13). Indeed, she argues for the theoretical focus in entrepreneurship to have a more integrated approach between achieving success and avoiding failure, as failure represents an important experiential outcome where learning can take place (Shepherd et al., 2011), and which can prove to be fundamental to both the entrepreneur and the organisation (Cope, 2011). “A company, a team, a leader, or an individual who can accept and learn from failure is going to be more creative – and happier – than an equivocator who avoids risk lest something go wrong because something will always go wrong” (Lafley and Charan, 2008 p. 207). Indeed, this is supported by the Gu et al (2013), whose study of 151 R&D teams in Chinese high-tech companies demonstrates a statistical link between learning from failure, creativity and organisational development. Results shows a reliable and strong correlation between ‘team learning from mistakes’ and ‘team innovation’. “Our results confirmed that LFM (learning from mistakes), a particular form of learning, is especially important for R&D teams to maintain creativity and continuously improve products and services” (p.98).

Sitkin (1992) suggests that intelligent failure has the potential to deliver a number of significant benefits to the organisation. He argues that intelligent failure can draw attention to potential problems that both stimulate potential

solutions and challenges the status quo. It can represent a clear sign that enables the recognition and analysis of otherwise ambiguous outcomes. It may also stimulate search processes, and provide the motivation to adapt, to consider new alternatives, produce a learning readiness to the organisation, and it increases the level of risk tolerance within an organisation. Additionally, it can heighten innovation, which has the positive effect of increasing the versatility in organisational response through a mixture of organisational strategies, processes and outcomes. Indeed, the more varied the internal capabilities of the organisation (in terms of systems, routines, and personnel) the more adaptable the organisation will be when confronting unforeseen difficulties. He also asserts that it may provide the opportunity for the individual and organisation to learn from experimentation. Significantly, he argues that the benefits are more long term compared to the more short-term benefits gain associated with success.

Additionally, literature suggests that learning from failure can:

- Be an early warning sign, which can be instrumental in avoiding potential large failures. In proactively highlighting problems quickly there is a reduced likelihood that these problems will multiply, grow or be incorporated in the wider organisational system (Cannon and Edmondson, 2005).

- Lead to increased resiliency, a sense of self-efficacy and be a motivator (Cardon et al., 2011). Failure motivates action to bridge the gap between aims and outcomes in order to achieve the desired aims (ibid).

- Improve organisational reliability, service quality, adaptability, innovativeness, productivity and a reduced risk of failure (Carmeli and Gittell, 2009).

- Highlight gaps in organisational knowledge and can often show where the gap resides. Failure therefore, may increase individual's willingness to look

for new knowledge and may provide a map of where to look (Madsen and Desai, 2010).

- Enhance the organisational ability to change and adapt, and be more responsive to its environment (Carmeli and Sheaffer, 2008).

- Derive more learning than learning from successful outcomes and, significantly, the lessons are forgotten much more slowly (Madsen and Desai, 2010).

- Experience higher levels of performance within R & D teams. Organisations that carry out an increased level of experimentation with the intention of creating an opportunity to learn, experience a higher level of performance (Cannon and Edmondson, 2005).

Within the innovation process, learning from failure is argued as being an important component of the new product learning cycle (Maidique and Zirger, 1985). Whether 'learning by using' within the market context, or 'learning by doing' within the context of the internal production processes of manufacturing or marketing, learning from failure in these spaces result in new development of concepts, technologies and market approaches. Product failure informs the organisation as to what new effort might be successful in the future, providing the "ultimate market study" (ibid, p.306). Organisational failure offers an ability to identify weak links and install systems to prevent failure reoccurrence. Further, Maidique and Zirger (1985) put forward a model of new product success and failure that suggest that there is a flow from success to failure and back to success again. This recurrent cycle can come in the form of a number of successes followed by changes in product design, the market, technology, or organisation change, which can lead to a number of new product failures before new learning delivers successful products. Failure is an intrinsic part of the learning process that ultimately leads to success. "In the simplest terms, failure is the ultimate teacher" (p. 309).

The benefits of learning from failure are significant and substantial. Yet despite the general recognition by organisations of the importance of learning from failure, the numerous benefits remain elusive to most organisations as the process of learning from failure is difficult (Carmeli and Gittell, 2009). It is in consideration of the difficulty that organisations experience in trying to manage the process of learning from failure that this thesis centres its attention.

1.3 Aims of the research

This thesis explores the domain of corporate entrepreneurship and entrepreneurial failure within the field of entrepreneurship, specifically addressing the key constructs relating to the process of intelligent failure.

Recognising the significance of entrepreneurial failure in the field of entrepreneurship, and recognising how organisations find the process of learning from failure difficult, this thesis explores the learning from failure domain. It explores:

- The processes that organisations use to learn from failure.
- The importance of a process for managing intelligent failure to the organisation.
- How failures are recognised and how they are analysed
- How individuals and organisations learn from failure.
- How lessons learned are disseminated across the organisation.
- The nature of the outcomes of the process of learning from failure.
- How environments can support learning from failure.

- Why organisations do not learn from failure.

In exploring these areas of interest, this research aims to answer the fundamental and overriding research question of this thesis:

How do organisations manage the process of intelligent failure?

1.4 Intended contribution to theory

By exploring the domain of entrepreneurial failure, this thesis will add to existent literature on learning from failure, which is a domain that lacks significant exploration within the field of entrepreneurship (Baumard and Starbuck, 2005). In specifically centring on the process of intelligent failure and on the learning processes of failure episodes, this thesis addresses a gap in current literature (Cope, 2011).

Principally, the thesis will add to literature addressing three areas of interest:

1. The value of formal mechanisms in the process of learning from failure and their significance, Senge 1990, Wilkinson and Mellahi (2005), (Liker 2005), Ellis et al (2006), and Platzek et al (2014).

2. The value of informal mechanisms in the learning from failure process and their significance by centring on each stage individually:

    - Recognising failure, Cannon and Edmondson (2005), Reason (1990), Liker (2005), Barkai and Harrison (2012), Syed (2015) Limoncelli et al (2016).

    - Analysing and conceptualising failure, McGrath and MacMillan (2000), Lafley and Charan (2008), Kuratko et al (2011), Gino and Pisano (2011), and Birkinshaw and Haas (2016).

- Communication lessons learned, McGrath and MacMillan (2000), Lafley and Charan (2008), Kuratko et al (2011), Gino and Pisano (2011), and Birkinshaw and Haas (2016).

3. By exploring formal and informal mechanisms of learning from failure as individual constructs, and as a combined construct, this thesis intends to add to important literature relating to the process of intelligent failure, Sitkin (1992) Cannon and Edmondson (2001, 2005), Baumard and Starbuck (2005), Ellis et al (2006), Madsen and Desai (2010), and Muehlfeld et al (2012).

Separately, this thesis will also add to literature on the practical management of the learning from failure process, and how organisations may improve their ability to convert failure into individual and organisational knowledge.

1.5 Thesis structure

The thesis consists of six chapters. Following the introduction (Chapter 1), a literature review (Chapter 2) explores literature in the entrepreneurship domain and the sub domain of corporate entrepreneurship, and specifically the area of organisational entrepreneurial failure. With the aim of creating a conceptual framework that might illuminate the process of managing intelligent failure, the review investigates the nature of corporate entrepreneurship and the entrepreneurial process. It considers entrepreneurial capability and learning from failure. Specifically, the chapter explores the cognitive and organisational processes that influence or are influenced by the learning from failure process. In Chapter 3, the research methodology is addressed and the discussion centres on the philosophical approach, focusing on the research philosophy, ontology, and epistemology. Justification for a multiple case study strategy using mixed methods is put forward, before illuminating the details of the project design. Chapter 4 details the findings from the empirical research and is structured to reflect the conceptual framework, centring on the organisational entrepreneur, the entrepreneurial environment, and the process

of learning from failure. In the discussion (Chapter 5), the empirical evidence and the important theoretical constructs from entrepreneurial failure literature are examined. The chapter explores the significance of structured and unstructured processes of learning from failure, managing negative emotions, and managing an environment that supports learning from failure. Chapter 6, the conclusion, summarises the thesis and the outcomes before highlighting the contributions the thesis makes to theory and practice, also putting forward opportunities for further research.

Chapter 2 Literature Review

2.1 Introduction

The purpose of this chapter is to review existing literature with the aim of gaining an understanding as to how organisations learn from failure. Exploring literature, this review investigates the nature of corporate entrepreneurship and the entrepreneurial process. The chapter is divided into three main sections, Corporate Entrepreneurship, Intelligent Failure, and a Conceptual Framework. Within the section on Corporate Entrepreneurship, and as a means to provide a theoretical base on which the thesis may rest, the review starts by focusing on Corporate Entrepreneurship and the overarching theory of entrepreneurship and important constructs thereof. The review then seeks to understand the setting for entrepreneurial failures, focusing on the characteristics of the corporate entrepreneur and the characteristics of an entrepreneurial environment that significantly influence the level of entrepreneurial capability within the organisation.

By exploring the entrepreneurial capability, the nature of an entrepreneurial organisation is developed and offers an understanding of the setting of intelligent failure episodes, which allows a full exploration of the learning from failure domain. The review explores the cognitive and organisational processes that influence or are influenced by the learning from failure process, and how they may be managed. Finally, the review offers a conceptual model that draws together the central constructs to provide a holistic perspective of how organisations can manage intelligent failure, and affect the entrepreneurial capability of the organisation. In the first instance, this section establishes the strategy process for the review of literature.

2.1.1 Literature review strategy

At the outset, the review of literature explores the entrepreneurship domain in its wider context before centring on the corporate entrepreneurship construct and then, specifically, on the theory surrounding the failure of entrepreneurial

ventures (intelligent failure) within organisations and start-ups. From this initial exploration into literature, enquiry starts to centre on the way organisations manage entrepreneurial failure. In seeking to explore this area, the review then focuses on theory relating to the entrepreneurial organisation and learning from failure. As a consequence of this approach, a theoretical framework emerges around these constructs (as illustrated in Figure 2.1). This framework was used to explore potential answers to the research question of this thesis: "How do organisations manage intelligent failure?"

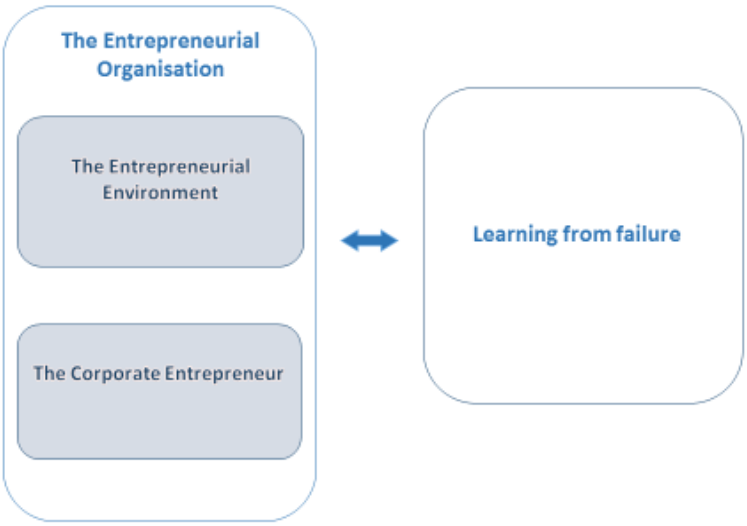


Figure 2.1. A Theoretical Framework of the Literature Review

In carrying out the initial review of theory in the entrepreneurship domain, and then the subsequent constructs within the theoretical framework, searches were carried out in the Business Source Complete database hosted by EBSCO. All searches focused on 'scholarly' (peer reviewed) journals. In the initial search within the entrepreneurship domain, the 'wildcard' character was used with the search word 'Entrepreneur' to include the various possible word endings and produce a wider set of results. Searches using key words 'Entrepreneurial Environment', 'Corporate Entrepreneur', and 'Learning from failure' illuminated significant current literature that was used as a means to start a 'snowballing' process of literature review. This enabled an exploratory

approach whereby reading current articles and reviewing references highlighted important and/or relevant papers (and books) from within the respective domains. In following this approach, the search continued identifying additional articles until no more relevant articles could be found and it was considered that the necessary depth and breadth of literature had been sourced. In a similar fashion, snowballing searches were carried out from a small number of article and book references offered by professors with expertise in this research area.

2.2 Corporate entrepreneurship

Corporate entrepreneurship centres on the phenomenon of entrepreneurship within the context of established business (Nielsen et al., 2012). With the aim of gaining a definition of corporate entrepreneurship, and as a back drop to the exploration of the domain, this review of literature starts by centring on wider theory central to the entrepreneurship domain which seeks to define its meaning.

The significance of the opportunity to the field of entrepreneurship is assertively argued - whether it is sought through innovation (Schumpeter, 1934) or perception and exploitation (Kirzner, 1979). Literature repeatedly suggests a strong relationship between the opportunity and the entrepreneur (Knight, 2012 (1921), Timmons and Spinelli, 2004, Shane, 2012), and there is much debate regarding resources, (Casson, 2003 (1982), Say et al., 1843, Penrose, 2011 (1959), Ireland et al., 2003).

Pulling together recognised central arguments within literature on the definition of entrepreneurship, it may be useful to consider the definition of entrepreneurship by Venkataraman and Shane (2000), offered in their seminal paper (“The promise of entrepreneurship as a field of research”):

“We define the field of entrepreneurship as the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited. Consequently, the field involves the study of sources of opportunities; the processes of discovery,

evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate and exploit them."

Whilst it may be argued that this definition may be the closest literature can provide us in terms of a unified understanding of entrepreneurship, it does not offer a definitive understanding that is fully accepted. Whilst academics may know what it is, can see it occurring and can see its affects, they are unable to define conclusively what entrepreneurship is. It may be argued that academics may have to settle for a collage of perspectives that shape our understanding of the nature of entrepreneurship and its core concepts. Whilst this situation may not be ideal, literature suggests somewhat reassuringly that even when very established fields of research have difficulties in defining central concepts, researchers have learnt to live and prosper within the respective field (Gartner et al., 1992).

Stevenson and Jarillo (1990) argue for a need "to establish clear links between the fields of entrepreneurship and corporate management, if the large body of research in the former is to benefit the latter" (p.17). They argue that focusing on economic functions as being 'entrepreneurial', or that the construct of an entrepreneur is based upon particular personality traits, does not provide a useful basis for understanding entrepreneurship. They argue that the perception of opportunities differ among individuals and among individuals over time, because individuals have different desires, and they perceive themselves with different capabilities. In other words, the level of entrepreneurship varies during the life of an individual, or across the activities of an individual at any specific moment in time. It is this behavioural, situational definition, which fits with common definitions of entrepreneurship. In this way, by focusing on understanding the 'entrepreneurial process' (by focusing on entrepreneurial behaviour), it is possible to utilise previous research on entrepreneurship to consolidate the field of corporate entrepreneurship. They argue that, "entrepreneurship is a process by which individuals – either on their own or inside organizations – pursue opportunities without regard to the resources they currently control" (p.23). The pursuit of opportunities constitutes the core of entrepreneurship, inclusive of individuals within a start-up context or a corporate context. They assert that the definition offers a link between the fields of entrepreneurship and corporate entrepreneurship.

Kuratko et al (2011) argue that the definition of corporate entrepreneurship, also termed “intrapreneurship”, “corporate venturing”, and “organisational entrepreneurship”, has been evolving for over 30 years. Early on in the development of this domain of literature Burgelman (1983) argues that corporate entrepreneurship is a process whereby firms diversify through the internal development of resource combinations (in a manner suggested by Schumpeter (1934)), extending the firms activities to new areas of opportunity. Put another way, it is the creation of new businesses within existing organisations which occurs through innovation (Guth and Ginsberg, 1990) whether it be product or process (Zahra, 1991). Indeed, “innovation is a key ingredient of corporate entrepreneurship where one can take an idea or invention and create something new of value” (Finkle, 2012).

Since innovation is a core entrepreneurial activity (Phan et al., 2009), innovation literature adds to the discussion on corporate entrepreneurship. Of particular relevance is the ‘Stage-Gate’ process for new products identified in innovation literature, where a stage-gate process offers a conceptual and operational map showing the journey of a new product from idea to launch (Cooper, 2000). The Product Development & Management Association (PDMA) suggest that 68% of U.S product developers use a stage-gate process (Griffin, 1997) and indeed a formal process of New Product Development (NPD) is now the norm (the number of U.S product developers using a stage-gate process became 78% in 2003), (Barczak et al., 2009). Perhaps significantly only 40 % of service firms use the stage gate process (40% of firms use informal process for NPD, 20% use no NPD process).

Cooper (2000) puts forward a stage-gate system which he argues is made of six stages and five ‘gates’, or decision points, before the finality of a post launch review. He presents the construct in a simplified manner to illustrate the nature of the process:

- Discovery stage followed by gate 1: idea screening
- Stage 1: preliminary investigation, followed by gate 2: the second screening
- Stage 2: detailed investigation, followed by gate 3: the decision to develop
- Stage 3: development, before gate 4: decision to test
- Stage 4: testing & validation, followed by gate 5: decision to launch

- Stage 5: launch which is then followed by a post launch review.

Perhaps summarising the NPD process Trott (2008) offers a generic linear 8 stage NPD model that he argues represents the majority of text books on this subject:

Idea generation – Idea screening – Concept testing – Business analysis – Product development – Test marketing – Commercialisation – Monitoring and evaluation.

Building on this generic model Lean Startup theory (Reis, 2011) argues that entrepreneurship is a process of constant and iterative experimentation at the lowest level of cost possible. This is achieved through the development of 'minimal viable products' that enable testing but are achieved through a minimum of effort and development time (as opposed to fully developed products). Through testing assumptions (termed as 'leaps of faith') directly with consumers, early and affordable learning is gained as a means to move the initiative forward. The iterative process eventually leads to the development of a business model. This argument offers a faster iterative approach compared to previous NPD theory. Furr and Dyer (2014) build on this theory offering "The Innovators Method" that suggests an entrepreneurial process whereby entrepreneurs go through five stages:

1. Gaining 'Insights' through searching widely for insights (questioning, observing, networking, and experimenting).

2. Discovering 'Problems' by exploring customer needs or problems worthy of solving.

3. 'Solution' finding through Lean Startup – iterative experimentation of minimal viable prototypes towards a potential 'Business Model'.

4. The creation of a developed 'Business Model' by testing each component of the model individually with customers seeking 'validity'.

5. The model is then ready for scaling.

The essence of the theory lies within experimentation of assumptions at every stage to deliver the entrepreneurial outcome.

Ostrom et al (2010) highlight research from the PDMA which suggests that service firms lag behind manufacturing with only 40% using formal innovation processes. This may be explained by Nijissen et al (2006) who suggest that whereas product firms have a necessity for R&D departments and formal processes this is not the same for service firms; indeed most service firms are not characterised by significant R&D departments. Further they argue that service innovation is about the development of new procedures and concepts rather than core technology (Preissl, 2000). Bessant (2011) puts forward six differences between manufacturing and service operations;

1. Services are mostly intangible
2. Perceptions of performance and quality are more important in the service sector
3. Simultaneity of production and consumption (of the service)
4. Services cannot be stored
5. Customer contact is high in service operations
6. The importance of location to service operators

Sundbo (1997) also argues that the nature of the service firm is different from the manufacturing or technical firm. He suggests that innovation in service firms can be quite fragmented as it is usual for top managers to set strategy and then corporate entrepreneurs (from within staff and management) initiate and execute the process. He sees it as a broad organisational process involving many individuals and departments where innovation is on the basis of quick ideas rather than scientific results. Subsequent development is in ad hoc organisations rather than in permanent R&D departments. Indeed, entrepreneurship (in the classic sense whereby the entrepreneur is responsible for the whole innovation process) is possible but rare. Generally, when employees come up with ideas the company manages them through to fruition (ibid). Irrespective of the extent to which a firm is innovative, innovation itself is an important way in which the firm can extend its reach in areas where it is highly competent (Covin and Slevin, 1991) by exploiting market developments (Zahra, 1991). In this way, it is argued that corporate entrepreneurship is the creation of a new business by redefining products and/or services (by innovation activity, acquisition or by joint ventures) or by developing markets (placing existing product in new markets (ibid). Further, an

organisation can "renew themselves and their markets by pioneering, innovation, and risk taking" (Covin and Slevin, 1991 p.7).

Perhaps pulling these strands of literature together Wolcott and Lippotz (2007) define corporate entrepreneurship, “as the process by which teams within an established company conceive, foster, launch and manage a new business that is distinct from the parent company but leverages the parent’s assets, market position, capabilities or other resources.” (p.75). Thereby “corporate entrepreneurship centers on re-energizing and enhancing the ability of the firm to acquire innovative skills and capabilities” (Hornsby et al., 2002 p.255), giving the firm the ability to gain competitive advantage (Burns, 2013).

However, corporate entrepreneurship is also referred to in a general and subsequently more inclusive manner. Zahra (1991) defines corporate entrepreneurship as “the activities that enhance a corporation’s ability to innovate, take risk, and seize opportunities in its markets” (p.259), arguing that it “takes place at the corporate, division (business) or project levels in a company” (p.261). Birkinshaw (2003) asserts that corporate entrepreneurship is “the development of new business ideas and opportunities within large and established corporations” (p.46). It is also described as “a term used to describe entrepreneurial behaviour inside established mid-sized and large organisations” (Kuratko et al., 2011 p.11).

Damanpour (1991) views corporate entrepreneurship as concerning the creation, development and implementation of ideas which may lead to new: markets, businesses, products, services, processes, administrative systems, employee programs. Antoncic and Hisrich (2001) also puts forward an inclusive perspective arguing that intrapreneurship has four distinct dimensions which form the building blocks of entrepreneurship:

1. New business venturing where the organisation pursues new businesses that are closely related to existing products or markets.
2. Innovation that refers to the creation of new products, services, and technologies.
3. Self-renewal that relates to strategy reformulation, reorganisation, and organisational change.

4. Proactiveness that reflects the orientation of top management towards pursuing increased competitiveness through risk taking, and competitive aggressiveness.

It is argued that these broad and inclusive definitions are supportive of the exploratory nature of this thesis as the broader definition is likely to be accepted by most scholars and therefore more resilient (Sharma and Chrisman, 1999). This research therefore utilises the inclusive definition of corporate entrepreneurship.

Importantly, Zahra (1991) argues that corporate entrepreneurship and performance are positively concurrently related. Subsequently building on his original work with Covin (Zahra and Covin, 1995) he finds a positive association with company financial performance and corporate entrepreneurship, a relationship which strengthens with time, particularly for organisations in hostile environments (also Dyduch (2008) and Kuratko et al (2011)). Indeed, in a world being driven by accelerating change, corporate entrepreneurship is argued as being important as organisations are recognising that to survive and achieve competitive success entrepreneurial activity is essential (Shepherd et al., 2009).

Hornsby et al (1993), in a review of literature on corporate entrepreneurship, put forward “an interactive model of corporate entrepreneurship” which seeks to explain the process of corporate entrepreneurship. They argue that entrepreneurial behaviour is preceded by the combination of a number of organisational characteristics and characteristics of the corporate entrepreneur that interconnect with events that will ultimately trigger corporate entrepreneurship. In seeking to explore the nature of an entrepreneurial organisation this thesis utilises these two constructs, starting with a discussion that centres on the characteristics of a corporate entrepreneur.

2.2.1 Entrepreneurial capability

Intelligent failure relates to negative outcomes derived from initiatives developed and pursued by individuals within an organisation. This section seeks to illuminate the setting for intelligent failure by looking at the nature of

the (corporate) entrepreneur and the nature of the organisation that enables entrepreneurship, which combines to shape the entrepreneurial capability of the organisation. Entrepreneurial capability is defined as the "firm's overall capacity to sense, select, shape, and synchronize internal and external resources for the exploration (recognition, discovery, and creation) and exploitation of opportunities" (Abdelgawad et al., 2013 p.396). An understanding of the entrepreneurial capability of an organisation affords an understanding as to the situation within which intelligent failure occurs. In the first instance this section looks to explain the nature of the domain of this thesis, a sub domain in the field of entrepreneurship, that being corporate entrepreneurship.

2.2.1.1 The characteristics of the corporate entrepreneur

Within the field of entrepreneurship, empirical research relating to the personal characteristics of entrepreneurs surpasses any other topic (Churchill and Lewis, 1986). The level of interest reflects the desire to explain why entrepreneurs often seem like special people who achieve things that most cannot. It may be easy to assume that these entrepreneurial achievements are the product of an inner personal quality (Gartner, 1988). Collins et al (2004) suggest that understanding the motivational traits of entrepreneurs gives us the opportunity to identify potential entrepreneurs of the future and understand why some are more successful than others. Indeed, they argue that it is important to identify the motivational characteristics that spur people on to become entrepreneurs. The implications and relevance to potential entrepreneurs, investors, government agencies and career counsellors are considerable. As Baum et al (2001) note, investors should seek to ensure identified entrepreneurial traits are present in the personality of entrepreneurs with whom they may potentially invest.

This section aims to elucidate the arguments that have arisen across the years to help highlight these potential characteristics. Within the literature on the psychology of the entrepreneur, exploration centres on a number of constructs that form dominant areas of discourse, and these areas form the scope of this review. The constructs are risk-taking propensity, the need for achievement,

self-efficacy, and locus of control, tolerance of ambiguity, passion, and tenacity. The review starts with a focus on the Five Factor Model and the traits of the entrepreneur.

2.2.2.1.1 The Five Factor Model

With a view to ascertaining the broad personality characteristics of the entrepreneur, Zhao et al (2010) carry out a meta-analysis of some 60 previous studies with a sample size of over 15,000 individuals. They combine these responses with the Five Factor Model (FFM) with the aim of establishing a relationship between personality and the intention to become an entrepreneur. The analysis also integrates the previous studies and the FFM to establish potential relationships between entrepreneurial personality and new venture performance. Zhao et al (2010) identify and describe the FFM factors as:

- Conscientiousness: An individual's level of achievement, work motivation, organization and planning, self-control and acceptance of traditional norms, and virtue and responsibility towards others.

- Openness to experience: Someone who is intellectually curious, imaginative, and creative; someone who seeks out new ideas and alternative values and aesthetic standards.

- Emotional stability: People who are emotionally stable are described as calm, stable, even-tempered, and hardy.

- Extraversion: People high on extraversion are gregarious, outgoing, warm, and friendly; they are energetic, active, assertive, and dominant in social situations; they experience more positive emotions and are optimistic; and they seek excitement and stimulation.

- Agreeableness: People high on agreeableness are characterised as trusting, altruistic, cooperative, and modest. They show sympathy and concern for the needs of others and tend to defer to others in the face of conflict.

Results from the study suggest that the strongest of these personality effects is ‘openness to experience’, having a particularly strong relationship with the intention to become an entrepreneur. ‘Conscientiousness’ follows and is another highly important factor .The factors of ‘emotional stability’ and ‘extraversion’ follow and are significant but show weaker relationships with entrepreneurial intentions, however, the relationship with ‘agreeableness’ is not established. Importantly, the study infers that people with personalities that are very positively linked with ‘openness to experience’, ‘conscientiousness,’ ‘emotional stability’, and ‘extraversion’ are more likely to be drawn to entrepreneurship and more likely to succeed should they become an entrepreneur (Zhao et al., 2010). In an attempt to understand which specific traits may belong to the entrepreneur, discussion moves to examine those traits that form dominant areas of discourse within literature, starting with ‘risk taking propensity’.

2.2.2.1.2 Risk taking Propensity

“The propensity for risk taking is defined as the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation” (Brockhaus, 1980 p.513). Although a propensity for risk-taking is frequently identified in literature as a characteristic of an entrepreneur, Schumpeter (1934) suggests otherwise, arguing that risk taking rests with ownership rather than the entrepreneur (Carland et al., 1984). However, contemporary research puts forward an alternative perspective. Liles (1974) argues that in becoming an entrepreneur, an individual takes on significant risk including their own financial wellbeing, career opportunities, family relations and emotional wellbeing. The decision to progress the new venture is therefore an important one and depends on the potential entrepreneurs perception of the risk involved (ibid). According to McClelland (1961) risk-taking is the domain of the entrepreneur. He posits that risk-taking is an entrepreneurial trait and that entrepreneurs are known as

being high risk-takers, however, he also argues that entrepreneurs are in fact moderate risk-takers. The entrepreneur effectively manages risk (ibid).

2.2.2..1.3 The Need for achievement

McClelland (1961) in his seminal book, “The Achieving Society” focuses on achievement motivation (nAch) and the psychology of the entrepreneur. He argues that the entrepreneur has a higher need to achieve than the non-entrepreneur. Additionally, he argues that a need for achievement is an important factor that leads individuals to become entrepreneurs. Indeed, the study finds that countries with higher mean levels of nAch have higher levels of entrepreneurial activity and faster economic development. As Begley and Boyd (1988) put it, “High achievers set challenging goals and value feedback as a means of assessing goal accomplishment. They compete with their own standards of excellence and continuously seek to improve their performance” (p.81). They also identify from their research that the need for achievement differentiates entrepreneurs from non-entrepreneurs which is also supported by Singh and Ray (1980) and Babb and Babb (1992) (founders and non-founders) to name but two other supporting studies.

Furthermore the meta-analysis of 41 studies of entrepreneurial characteristics within literature by Collins et al (2004) concluded that achievement motivation is closely related to both the choice of an entrepreneurial career and entrepreneurial performance. Thus, they suggest that through identification of successful groups of entrepreneurs the identification of levels of achievement motivation will be particularly helpful. “Achievement motivation may be particularly useful for selecting entrepreneurs that may be more likely to successfully take advantage of entrepreneurial financing and other supporting activities” (Collins et al., 2004 p.111). There is a strong link between the entrepreneur and achievement motivation within existing literature.

2.2.2.1.4 Self-efficacy

Self-efficacy is defined as an individual's cognitive belief in their own capability to perform a task (Gist, 1987). Bandura (1977) posits that self-efficacy has three dimensions concerning:

1. Magnitude, which relates to the level of difficulty of the task
2. Strength, which relates to the strength of the individual's conviction of the magnitude
3. Generality, which relates to how the task may become generalised to another task

Boyd and Vozikis (1994) argue that sources of self-efficacy are mainly derived from the four areas of,

- mastery experiences (gained from experience and through previous accomplishments),
- observational learning (observing role models),
- social persuasion (in the form of positive feedback, encouragement and persuasive discussions), and
- perceptions of physiological wellbeing (the perception of the individual as to their ability to cope with stress, anxiety and be in a good physical and mental condition).

Indeed, self-efficacy is an important factor in determining the level of entrepreneurial intent and is a prerequisite for potential entrepreneurs (Boyd and Vozikis, 1994, Krueger, 1993). Chen et al (1998) argue that entrepreneurial self-efficacy will distinguish entrepreneurs from managers. Specifically, they identify that self-efficacy of innovation, and risk-taking distinguishes entrepreneurs from managers. As entrepreneurs have a strong belief in their ability to determine outcomes, they perceive a lower possibility of failure (Brockhaus, 1980). Thus, self-efficacy is an important construct for entrepreneurial action.

The empirical research of Chen et al (1998) suggests that people who carry out entrepreneurial roles and tasks, and who see themselves as efficacious, are more likely to become entrepreneurs. "Self-efficacy influences personal goal setting and goal commitment. People who perceive a high sense of self-

efficacy set challenging goals for themselves and possess a stronger commitment to these goals" (Boyd and Vozikis, 1994 p.72).

2.2.2.1.5 Locus of Control

In defining the term 'locus of control' Mueller and Thomas (2001), reflect heavily on the seminal work of Julian Rotter (1966) that explores the construct. "According to Rotter, an individual perceives the outcome of an event as being either within or beyond his or her personal control and understanding. An "internal" believes that one has influence over outcomes through ability, effort, or skills. On the other hand, "externals" believe that forces outside the control of the individual determine outcomes" (Mueller and Thomas, 2001 p.56). Indeed, whilst both cognitive constructs focus on control (Rotter, 1966), Gist (1987) argues that the difference between locus of control and self-efficacy is that the former covers a variety of situations, and the latter is task specific.

From their study of the personal characteristics of 42 entrepreneurs and 41 middle/senior managers (part time MBA students), Cromie and Johns (1983) found that in terms of locus of control orientation, entrepreneurs have a significantly more internal disposition than managers. Thus, they argue, an internal locus of control is one of the principle characteristics of an entrepreneur. In a similar way, a study by Kroeck (2010) of 448 nascent entrepreneurs and 290 non-entrepreneurs quantifiably found a much stronger internal locus of control in entrepreneurs than non-entrepreneurs. However, too high an internal locus of control (an over estimation of their perceived control) may negatively impact on the quality of decision making, leading to reduced success (Duchesneau and Gartner, 1990).

2.2.2.1.6 Tolerance of ambiguity

Norton (1975), suggests that tolerance of ambiguity may be the result of not having "a tendency to perceive or interpret information marked by vague, incomplete, fragmented, multiple, probable, unstructured, uncertain, inconsistent, contrary, contradictory, or unclear meanings as actual or potential

sources of psychological discomfort or threat" (p.608). It is argued that ambiguity may come from such areas as novelty, complexity or insolubility (Wagener et al., 2010).

Begley and Boyd (1988) conclude from their empirical study of business founders and non-founders that founders demonstrate significantly higher tolerance of ambiguity than non-founders. In a similar way, Schere (1982) finds that entrepreneurs have a greater tolerance of ambiguity than both top and middle managers. Tajeddini and Muller (2009) also put forward a strong link between the entrepreneur and tolerance of ambiguity. Indeed, it is this tolerance of ambiguity that can lead to unnoticed opportunities (Schere, 1982). Research suggests that people with a high tolerance enjoy and deliberately seek out ambiguity, excelling in the performance of ambiguous tasks (Mac Donald Jr, 1970). It also suggests that it is this ability that gives the potential entrepreneur the psychological impetus to believe they can make it on their own (Schere, 1982).

2.2.2.1.7 Passion

Cardon et al (2009) argue that literature generally asserts that passion relates to "any intense emotion that stirs humans with energy and deep longing to make a difference and by nature it involves feelings which are hot, overpowering and suffused with desire" (p.512). When entrepreneurs experience passion, they benefit from a motivational energy (ibid).

Indeed, "Passion is at the heart of entrepreneurship, because it can foster creativity and the recognition of new information patterns critical to the discovery and exploitation of promising opportunities" (Cardon et al., 2013 p.373). Whilst Shane et al (2003) also view passion as an entrepreneurial trait, they perceive a differing dimension. They argue that the ego is the central motive creating a trait of egoistic passion, that is, "a passionate, selfish love of work". It is suggested that entrepreneurial motivation is derived from passion that is driven by their love of the entire process of creating and building a successful organisation.

2.2.2.1.8 Tenacity

There are significant challenges that the entrepreneur has to overcome when creating a new venture. These include, working intensively with uncertainty, isolation, personal and financial liabilities, overcoming the liabilities of newness, smallness and legitimacy, and establishing a market foothold and dealing with retaliatory action from competitors (Markman and Baron, 2003). In such circumstances it is argued that persons with high levels of perseverance perform more proficiently (Bandura, 1997). Therefore, perseverant entrepreneurs are more likely to outperform entrepreneurs who are less perseverant (Markman and Baron, 2003).

Chandler and Jansen (1992) add that success in the entrepreneurial role requires the founder to have the drive to see firm creation through to fruition, particularly as the limited available resources to most new ventures means that considerable personal commitment is a prerequisite (Hofer and Sandberg, 1987). Shane et al (2003) argue that drive is made up of ambition, goals, energy and stamina, viewing persistence or tenacity as a sustained and prolonged goal-directed energy. To sustain effort over longer periods, high self-efficacy is important (ibid).

2.2.2.1.9 The variances of the corporate entrepreneur

The identified themes are not exhaustive and additional characteristics are put forward. For example, ‘need for autonomy’ (Rauch and Frese, 2007, Zgheib and Kowatly, 2011, Thapa, 2015) is referred to regularly, ‘innovativeness’ (Carland et al., 1988, Shane et al., 1991, Rauch and Frese, 2000) and ‘creativeness’ (Hagen and Irwin, 1968, Kao, 1993). Whilst there is some fragmentation to the discussion of entrepreneurial characteristics within existing theory, it is argued that the themes addressed in this section capture the main arguments and emphasis. However, literature does not suggest that every entrepreneur has all of these characteristics. As Mueller and Thomas (2001) put it: “no single trait or characteristic defines the entrepreneur, nor does it allow one to predict entrepreneurial behavior. It is a configuration of

traits that separates the potential entrepreneur from those who are not predisposed or motivated to engage in new venture formation" (p.61). Also relevant, is that whilst significant attention is given to the characteristics of the entrepreneur there may be value in considering other facets which could be important. Indeed Jain (2011) argues that "an entrepreneur is someone (a) who is characterised by certain dispositions and attributes; (b) who is motivated to discover, evaluate and exploit entrepreneurial opportunities; (c) demonstrate creativity; (d) who is able to organize and turn resources to practical use, and accepts risk and failure" (p.136).

Within the corporate entrepreneur domain there is only limited theoretical discussion specifically on the characteristics of corporate entrepreneurs which go beyond the identify characteristics of the entrepreneur as, "studies focus on factors very similar to those analysed in the area of the independent entrepreneur" (Camelo-Ordaz et al., 2012) or as Burns (2013) argues, "intrapreneurs share many of the characteristics of entrepreneurs" (p.244). This may suggest an overriding acceptance that the two are very similar or, that there is as yet a lack of empirical evidence in this theoretical area. There is general support for the argument that corporate entrepreneurs and entrepreneurs have similar characteristics For example, Burns (2013) argues that corporate entrepreneurs have a need for achievement, autonomy, have an internal locus of control, are tolerant of ambiguity, and are risk-taking. However, he also asserts that they are opportunistic, innovative, self-confident, are driven and determined, and are visionary. Ross and Unwalla (1986) suggest that the corporate entrepreneur focuses on results not activity, questions the status quo, is motivated by problem solving and delivering change and innovation, and ambitious and competitive. However, Hisrich and Kearney (2011) put forward a number of characteristics that reflect the common themes in the literary discussion of the entrepreneur. They put forward that, as a creative individual, the corporate entrepreneur is objective and open-minded, recognises and overcomes obstacles, engages in calculated risk-taking, is intrinsically motivated, has an internal locus of control, seeks achievement and recognition, and is driven by growth and development.

Whilst the nature of the corporate entrepreneur may sit comfortably within the theory of the entrepreneur, the corporate entrepreneur operates within a

different form of entrepreneurship. Importantly, within corporate entrepreneurship, it is the company, not the individual, that takes the risk and owns the concept. Additionally, there are levels of bureaucracy which can hinder initiative development, but more positively, there is access to significant organisational resources (Kuratko et al., 2011). Thus the corporate entrepreneur needs the ability to be political astute in taking an initiative forward (ibid). Camelo-Ordaz et al (2012) argue that the most significant difference lies within the context in which activities take place: opportunity recognition and innovation for the corporate entrepreneur occurs within the organisation. Neilson et al (2012) summarise the arguments of Morris et al (2010) in table 2.1:

Start-Up Entrepreneurship	*Corporate Entrepreneurship*
Entrepreneur takes the risk	Company assumes the risks, other than career related risk
Entrepreneurs owns the concept or innovative idea	Company owns the concept, and typically the intellectual rights surrounding the concept
Entrepreneur owns all or much of the business	Entrepreneur may not have equity in the company, or a very small percentage
Potential rewards for the entrepreneur are theoretically unlimited	Clear limits are placed on the financial rewards entrepreneurs can receive
One miss-step can mean failure	More room for errors, the company can absorb failure
Vulnerable to outside influence	More insulated from outside influence
Entrepreneur is independent (although successful ones are typically backed by a strong team)	Interdependence of the champion with many others. May have to share credit with an
Speed of decision making	Longer approval cycles
Little security	Job security
No safety net	Dependable benefit package
Few people to talk to	Extensive network for bouncing around ideas
Limited scale and scope initially	Potential for sizeable scale and scope fairly quickly
Severe resource limitations	Access to finances, R&D, production facilities for trial runs, and established sales force, brand, databases, and market research, resources, distribution channels and customer base

Table 2.1 Differences between entrepreneurship and corporate entrepreneurship, Neilson et al (2012)

Understanding the corporate entrepreneur gives us an indication of the nature of the actor in corporate entrepreneurship processes. But what organisational environment will effectively reflect and support the characteristics of the corporate entrepreneur to enable entrepreneurship to thrive? In seeking to answer this question, attention centres on the second area that influences the organisations entrepreneurial capability: the characteristics of the entrepreneurial organisational environment.

2.2.1.2 The characteristics of an entrepreneurial organisational environment

With the aim of illuminating the characteristics of an environment that are supportive of entrepreneurship, this section examines the organisational cultures and climates put forward by literature as supporting mechanisms to the entrepreneur and the entrepreneurial process.

2.2.1.2.1 Organisational culture and climate

Within literature the concepts of culture and climate are sometimes confused (Trice and Beyer, 1993), however, it is generally recognised that they represent two alternative constructs for conceptualising how members of an organisation experience and describe their work environment (Schneider et al., 2013). Culture is a concept with evolved meaning, with its roots collectively held in history, and due to its complexity, it is difficult to manipulate directly. Climate, however, relates to thoughts, feelings and behaviours of the members within an organisation. It is temporal, subjective and is often manipulated by leaders (Denison, 1990). Where climate is observable culture is invisible (Ahmed and Shepherd, 2010), culture is the 'why' of organisational behaviour and climate is the 'what' of organisational behaviour (Ostroff et al., 2003). The "Three levels of Culture" put forward by Schein (2010) argues that the surface level of culture is made up of artefacts which include the structures and processes which can be seen or felt. It is these surface level manifestations that represent the much deeper core values and assumptions that are within

the organisational culture. That is, climate is a manifestation of culture (Baer and Frese, 2003). Specifically and typically, these manifestations appear in the form of, artefacts, ceremonials, training (and/or development) courses, heroes, jokes, language, legends, mottoes, norms (of behaviour), physical layout, rites, sagas, slogans, stories and symbols (Buchanan and Huczynski, 2010).

2.2.1.2.2 The influence of culture and climate on entrepreneurship

A review of literature highlights a number of climates that are put forward as being supportive to corporate entrepreneurship. This section centres on 10 climates that are most visible within literature in this domain, and offers a brief summary of each.

2.2.1.2.3 Ten elements of organisational culture and the manifested climates which are supportive of entrepreneurship

2.2.1.2.4 Openness and trust

In their research into the climates that encourage or discourage creativity within a team environment, Isaksen and Lauers (2002) establish that, of the identified factors, the most significant positive factor is trust and openness. Indeed, building a strong sense of openness and trust across the organisation is a significant climate setting factor for entrepreneurial success (Leavy, 2005). Hoecht and Trott (1999) assert that trust is a personal judgement that carries an emotional and cognitive dimension, and is practiced between individuals. They argue that there are three different levels of trust prevalent to different degrees, dependant on the nature of the organisation. ‘Competence trust’ relates to confidence in colleagues to perform well, ‘contractual trust’ relates to the honouring the agreed rules of the contract, and ‘goodwill trust’ relating to the mutual expectation of open commitment beyond the requirements of an agreed contract. Whereas for introspective technology development strategies, ‘competence’ trust is required, as the strategies become more outward looking then ‘contractual’ trust is required, and in full outward

strategies ‘goodwill’ trust is required. The level of trust put in individuals increases in outward facing strategies that support innovation and “call for a considerable degree of openness” (p.263). Therefore, trust, it is argued, is an important component of an outward facing innovative environment.

Indeed, where cultural values include openness and trust, members create a climate where there is more free, fluent and unrestricted communication (top down, bottom up and across divisions (Burns, 2013)), where open debate is encouraged (Kuratko et al., 2011). It is this free flow of information and ideas across the organisation which increase the likelihood of entrepreneurial ideas; where there is a high level of trust, new ideas surface more easily (Ahmed, 1998). It is a climate which supports the sharing of internal information and knowledge, regardless of organisational position, which encourages entrepreneurship (Burns, 2013, Russell and Russell, 1992). In Isaksen and Lauers' (2002) research a respondent concisely describes the significance of a climate of trust: “the most important factor for the success of the team was the overwhelming trust we had for each other, both personal and work related” (p.84). Schneider et al (1994) argue that trust begins with management behaviour which is not exploitative but trustworthy by nature. As management behaviour is highly linked with the value of fairness, so that fairness generates a sense of trust. Fairness, therefore, is an important value in itself that enhances trust and openness within an organisation. For the corporate entrepreneur it encourages risk taking, proactivity, creativity, and innovativeness (Ahmed, 1998, Jain, 2011). Indeed, Takeuchi and Nonaka (1986) highlight how Fuji-Xerox create an open work environment to enable new product development.

2.2.1.2.5 Autonomy and freedom to act

Values surrounding individual freedom in the work place are conducive to entrepreneurial behaviour. As individuals and teams are given more scope to influence and carry out their work, so they are more likely to experiment and try things. A climate which encourages experimentation supports organisational entrepreneurship (Burns, 2013). As Kuratko et al (2014) put it, “research suggests that entrepreneurial opportunities are often best

recognised by those with discretion over how to perform their work, as well as by those encouraged to engage in experimentation" (P.39). Indeed, when organisations focus on the individual and the style of management, emphasizing autonomy is an essential contributor to the development of radical innovation (Lassen et al., 2006).

Shimizu (2012) suggests that autonomy supports entrepreneurs in middle and operational management roles who tend to be more risk averse than top management (as their future is narrowly dependant on current and ongoing activity). He argues that it is important that senior management encourage autonomous behaviours of middle management to allow idea creation, innovation, and use of real time information and their unique experience, as well as support entrepreneurial activity in their teams. However, they must call for a balance, as it is argued that too much autonomy may lead to opportunistic behaviour that may serve the self or the team at the expense of the interests of the organisation (ibid).

Essentially, organisational strategies that encourage autonomy are conducive to innovation in the work place (Treuer and McMurray, 2012), particularly as in these climates people tend to work on their ideas with more intensity and with more tenacity (Frese et al., 1999). Peters and Waterman (1984) found the most successful companies in their study create radical decentralisation and autonomy "with its attendant overlap, messiness around the edges, lack of coordination, internal competition, and somewhat chaotic conditions, in order to breed the entrepreneurial spirit" (p.201). Therefore, a climate which empowers entrepreneurial individuals and teams by offering decision-taking latitude and freedom from close management oversight will gain from an enhanced entrepreneurial performance (Kuratko et al., 2014). In this way, entrepreneurs have the freedom to behave entrepreneurially.

2.2.1.2.6 Risk-taking

It is argued that an effective entrepreneurial culture is one where risk taking is encouraged (Ireland et al., 2003) and is the norm (Burns, 2013). Indeed, supporting risk taking promotes corporate entrepreneurship (Hornsby et al.,

2002) and is an important organisational practice which supports the corporate entrepreneurship cultural framework (Aaltio et al., 2006). Specifically, risk-taking encourages product and service innovation that can positively affect competitive advantage, and positively affect organisational and business growth (Karen Yuan et al., 2015, Wang and Yen, 2012). Acceptance of risk means the willingness to make risk assessment decisions and consider risky opportunities carefully (Trott, 2008). A climate that supports measured risk-taking is likely to promote team creativity as individuals push boundaries, think laterally and experiment into new areas. It is these behaviours that sustain and drive innovation (Isaksen and Lauer, 2002). Indeed, a Boston Consulting Group survey in 2015 found that 31% of respondents recognised that a risk-averse culture is a key obstacle to innovation (Birkinshaw and Haas, 2016). Ahmed (1998) argues that within a risk-taking climate a norm exists whereby it is accepted that innovation is part of the job roles of all members of an organisation.

In order to encourage risk-taking the organisation needs to promote a culture of psychological safety (Edmondson, 1999). Psychological safety, as suggested by Kahn (1990), relates to a member's "sense of being able to show and employ one's self without the fear of negative consequences to self-image, status or career" (p.708). Edmondson (1999) adds to the discussion from a team perspective, arguing that, "team psychological safety is defined as a shared belief that the team is safe for interpersonal risk-taking" (p.354). Within an organisation with such a climate, members are safe to speak without fear of rejection (Baer and Frese, 2003), are significantly more involved in their job, and put in considerably more effort (Brown and Leigh, 1996). In this way, risk taking is supported, encouraged, and endeared, inspiring the entrepreneur to express entrepreneurial behaviours.

2.2.1.2..7 Tolerance of failure

The culture and climate that tolerates failure when entrepreneurial projects go wrong supports the entrepreneurial process (Russell and Russell, 1992, Ireland et al., 2003, Burns, 2013). A culture of fear blocks the generation of ideas (Lafley and Charan, 2008), stems creativity and promotes continuity, well

proven, trusted methods and fault free work (Kuratko et al., 2011). Where people believe they will be blamed for failures (leaving them potentially tainted with suggestions that they either lack knowledge and/or skills or are have low intelligence), so they are less likely to act entrepreneurially (Van Dyck et al., 2005). Or as Lafley and Charan (2008) suggest, “a corporate culture is living thing; it will not breathe if the employees are holding their breath in fear” (p.204). Rather than be concerned with admonishment from a superior, in an entrepreneurial environment organisational members are not burdened by the fear of failure. Indeed, failure is seen as part of future success (Kuratko et al., 2011).

An organisation which wants to establish a corporate entrepreneurial spirit allows failure in the development of innovative initiatives; failures should be seen as an indirect investment into the innovation success of the future (Hisrich and Kearney, 2011). Indeed, among managers at Johnson and Johnson the maxim is “failure is our most important goal” (ibid, p.284). Honda use the mantra “a 1% success rate is supported by mistakes made 99% of the time” (Takeuchi and Nonaka, 1986, P. 143). BMW have a ‘successful failures’ programmes with a ‘flop of the month’ award for employees whose innovative ideas fall short during implementation (Hisrich and Kearney, 2011). The Tata group has a ‘Dare to Try’ award as they want “people to be bold and to not be afraid to fail” Sunhil Sinhal, Head of Quality Management Services (Birkinshaw and Haas, 2016). In a particular instance a review of a failed venture within Nokia established that there may be some future potential for the venture and so key staff were integrated into other ventures which eventually lead to it forming a new mainstream division (McGrath et al., 2006).

Entrepreneurial success is achieved by giving people the space and freedom to grow, to develop ideas and learn from mistakes, a culture that supports, “a place where you are allowed to have a bit of fun, to think unlike the norm, where you are allowed to make mistakes” (Leavy, 2005 p.39). Indeed, experimentation should be encouraged as failure is an assured prerequisite for success (Hisrich and Kearney, 2011). When it comes to experimenting, a UK newspaper CEO suggests that: “Success is about confirming or refuting a hypothesis” (Birkinshaw and Haas, 2016). It is this climate of tolerance of

failure which supports and promotes entrepreneurs to further their entrepreneurial intentions (Kuratko et al., 2014).

2.2.1.2.8 Rewards

The manner with which success and failure is recognised elucidates cultural values that in turn highlights the focus of management (Ahmed, 1998). Hisrich and Kearney (2011) argue that a proper reward system which recognises and rewards individuals who demonstrate drive, energy, effort and perseverance is an important feature of an entrepreneurial culture. How organisation members are rewarded affects the direction of their attention and a climate that rewards entrepreneurial behaviour reinforces those behaviours (ibid). Systems that encourage risk-taking and innovation have been shown by numerous studies to have a strong influence on organisation members and their propensity to behave in an entrepreneurial manner (Kuratko et al., 2014, Treuer and McMurray, 2012). Van Den Bosch and Duysters (2014a) argue that "if your goal is to create an entrepreneurial unit, you should aim to reward success and not punish failures. The use of stock benefits/ownership attracts and motivates entrepreneurial people in a much better way than regular financial arrangements" (p131). Schneider et al (1994) concur asserting that fair reward systems which go beyond job specific rewards and include rewards for several other kinds of activity are more likely to encourage displays of these kinds of behaviour. Indeed, rewards for personal and team initiatives encourage risk taking and the propensity to innovate (Burns, 2013). Van der Panne et al (2003) argues that an innovation culture explicitly recognises the collective nature of innovative efforts. Similarly, the company 3M offer a number of different rewards which recognise innovative activity including, for example, the 'Innovators Award' (Tidd and Bessant, 2013). Cannon have established a reward system based on group performance relating to patent products applied for (Takeuchi and Nonaka, 1986). Perhaps in a summative fashion, Hornsby et al (2002) assert that the appropriate use of rewards promote corporate entrepreneurship. Systems of rewarding organisational members therefore, are a very real manifestation of the values inherent in an

entrepreneurial organisation and significantly encourage the corporate entrepreneur.

2.2.1.2.9 Collaboration and teamwork

Collaboration and teamwork are often limited to the function or silo within the work place. However, innovation that involves collaboration and teamwork across functions and silos (and includes people external to the organisation) can deliver financial growth (Lafley and Charan, 2008). Indeed, Isakson and Lauer's (2002) suggest that collaboration and teamwork are a prerequisite for creativity arguing that the most creative teams have the ability to work well together, avoiding personality clashes, respecting the contributions of teammates, and organising themselves so member roles are clear. They put forward that in the least creative teams there is an unwillingness to communicate to each other, which may lead to animosity, jealousy and political posturing. Thus, it can be argued that a climate that encourages teamwork would positively support the entrepreneurial process. Treuer and McMurray (2012) also establish a link between co–worker cohesion and innovation, as the results of their research also suggest that the presence of co-worker cohesion is a predictor for organisational innovation. At 3M individual creativity is enhanced by collaboration across the divisions (Ahmed and Shepherd, 2010). Sales team members are in constant dialogue with customers, and the ideas generated are openly shared with technicians who then initiate creation of a new product. For 3M this is a fundamental part of their culture. Where there is a lack of cohesion and conflict occurs, creativity dissipates. From their research, Isakson and Lauer (2002) concluded that, of the factors studied, conflict was found to have the strongest negative correlation with creativity and change. While taking these negative aspects of conflict into account, Kuratko et al (2011) argue that 'healthy discontent' drives continuous improvement. They put forward that an entrepreneurial culture fosters a constantly challenging environment, where even after successes there is constant focus on learning and further improvement. Individuals critique, positively criticise and challenge as a means to progress. The authors caveat their discussion by suggesting that a healthy discontent will always need careful balancing to

ensure the climate remains positive. What we may surmise from literature is that a climate that is supportive of teamwork and collaboration provides fertile soil for the corporate entrepreneur to grow initiatives.

2.2.1.2..10 Learning

Turner and Pennington (2015) argue that innovation, itself a function of knowledge generation, must cross the organisational barriers and disseminate throughout the organisation. Therefore, innovation is dependent on the organisations ability to learn through being able to capture and exploit knowledge throughout the firm. Turner and Pennington therefore perceive a learning organisation as an organisation capable of continuous transformation, leveraging knowledge and experience in order to learn and innovate. However, Liu et al (2002) inclusively argue that a learning organisation is an institution which creates a learning process and this acts as a stimulus to the corporate entrepreneur to continuously pursue new ways to acquire and share knowledge. Indeed the learning organisation facilitates rapid change in the workplace as it fosters information exchange and knowledge retention enabling individuals and teams to enhance their ability to deliver better performance (Vijayabanu et al., 2015). A culture which effectively supports corporate entrepreneurship is a culture which promotes a climate for learning (Ireland et al., 2003). Schein (1994) argues that a climate for learning includes six important factors:

- The presence of approachable leaders
- Open communication across the organisation
- Empowered team members who believe they can effect change
- A focus on people rather than tasks
- An holistic approach towards problem solving
- Psychological safety

Indeed psychological safety also allows for enhanced team learning behaviour (Edmondson, 1999). Additionally, where organisations create opportunities for learning through socialisation this may provide a broader culture of learning (Graham and Nafukho, 2007).

Keith and Fresse (2011) argue that a climate which supports learning from failure also supports the learning of the entrepreneur. They assert that organisational tolerance of failure reduces the stigma surrounding failure and therefore enables more after action reviews to deliver important individual and organisational learning. Indeed, Burns (2013) argues that the norm of continuous learning from failure from entrepreneurial activity is what defines a learning climate.

The essence of existing theory argues that within a learning environment organisations will learn from entrepreneurial activities and experiments as it creates knowledge and future options (Platzek et al., 2014). In this way, entrepreneurs are supported in the development of their entrepreneurial capabilities.

2.2.1.2.11 Time for entrepreneurial activity

"The fostering of new and innovative ideas requires that individuals have time to incubate these ideas" (Hornsby et al., 1993 p.32). Flexible timelines allow individuals and teams to discover new avenues and alternatives, therefore, where time pressures exist, thought processes become restricted, making it difficult to think and behave innovatively (Isaksen and Lauer, 2002). The availability of some 'slack' for individuals allows for thinking, discussing ideas, experimenting, and being creative (Trott, 2008). Kuratko et al (2014) argue that, "research suggests that time availability amongst managers is an important resource for generating entrepreneurial initiatives" (p.39). Indeed team creativity is enhanced if time is made for generating individual or team ideas and this creates the opportunity to test suggestions, explore and develop new ideas (Isaksen and Lauer, 2002). A climate that makes time available for innovation will positively impact the entrepreneurial capacity of the organisation (Kuratko et al., 2014).

An environment supportive of entrepreneurship moderates employee workload, reducing time constraints on work, allowing individuals to work together on long term initiatives (Hornsby et al., 1993). That same supportive environment may also offer extra time for all organisational members and

teams engaged in the pursuit of innovation to pursue ideas, with jobs structured to support such activity in order to achieve short and long term organisational goals (Kuratko et al., 2014). Bessant and Tidd (2011) adds that a supportive environment not only gives time for idea generation but that suggestions are received in a positive way by bosses and colleagues; people are able to share ideas, listen to ideas and encourage each other in a constructive atmosphere.

3M exhibit such a supportive climate according to Katz (2004). 3M encourage mainly technical employees to develop interesting ideas allowing them to utilise up to 15% of their total time for this activity. The 15% rule also applies to machine run time and (potentially) to the department's budget (ibid). If the idea has promise it receives internal venture funding to enable further exploration and eventually management support to allow the individual to build a business form that idea (Tidd and Bessant, 2009). It is perhaps well known that it is through this climate that 3M developed the 'Post-it Note' which now populates most offices (Katz, 2004). In a similar way to 3M, technical employees at Google are expected to spend 20% of their time away from the main part of their roles initiating and developing projects, as are managers (Tidd and Bessant, 2013). Indeed, managers are expected to spend an additional 10% of their time on completely new products (ibid).

2.2.1.2.12 Positive emotions

Vacharkulksemsuk et al (2011) argue that a climate which supports positive emotions can increase organisational identification and the strength of relationship between people within the organisation. Indeed, these positive emotions can lead to employees being more flexible, creative, empathetic, compassionate and respectful towards others. They put forward that positive emotions can produce, unusual patterns of thought – creativity, flexibility and inclusion, receptiveness to new information, enhanced interest in others (which reduces the distinction between others and themselves), and increases trust between known people. It is also suggested that positive emotions; have adaptive benefits, signal present and long term optimal functioning, increase persistence, lead to more favourable reactions to others, as well as helping

behaviours. Essentially, Vacharkulksemsuk et al argue that positive emotions can broaden the mind-sets of people by extending their ability to see themselves, others and the social world. A positive climate is motivational and supports people to anticipate success and be willing to tackle challenges. Positive emotions, and the subsequent effects, have an important influence on the entrepreneurial process. In particular, it is argued that a positive climate fosters entrepreneurial behaviour and is supportive towards entrepreneurs: “When employees are passionate about their work, their organizations thrive. Once passion is present and reinforced throughout an organization, it becomes contagious” (Chang, 2001 p.135).

2.2.1.2.13 Commitment from top management

When the entrepreneurial values of the organisation are manifested in the commitment from top management, there is a direct relationship with positive entrepreneurial outcomes (Kuratko et al., 2014). Thus, a climate of management support reflects the willingness of managers to facilitate and promote corporate entrepreneurship within the organisation (Hornsby et al., 2002). This commitment may come in the form of prioritising, controlling, protecting, allocating resource, and active involvement (Lassen et al., 2006). Commitment can also come in the form of shaping the boundaries in which individuals may explore (Hornsby et al., 1993). Without management support, entrepreneurship can be challenging. As van den Bosch and Dusters (2014b) argue “once you lose the management’s commitment, it will be extremely difficult to secure funds, benefit synergies and survive in the long run” (p,130).

Championing innovative ideas and providing resources is a significant management activity and promotes entrepreneurial behaviour (Hisrich and Kearney, 2011), as does encouraging creativity, constant innovation, team working, the mind-set that change is normal, and that new ideas are expected (Burns, 2013, Ireland et al., 2003). Indeed, top management is supportive is one of the critical factors for innovation success (Trott, 2008). Also significant is the promotion of norms of helpfulness and cooperation, perhaps by pitching in at periods of peak activity or crisis (Schneider et al., 1994). In an organisation where there is an atmosphere of reciprocation and cooperation,

a culture is established whereby employees willingly engage in work over and beyond what is required (Schneider et al., 1994). When staff feel they belong to the organisation, the level of commitment rises (Burns, 2013). Kuratko et al (2011) argue that an entrepreneurial culture includes elements of commitment and personal responsibility. This can be encouraged by increasing the level of challenge and the involvement of team members (Ahmed, 1998). By giving individuals opportunities to get involved with day-to-day operations as well as longer term planning, management can increase levels of motivation, energy and commitment which, in turn, leads to a highly dynamic and inspiring climate (Isaksen and Lauer, 2002). In consideration of the review of theory, it is argued that a climate where top management show commitment to corporate entrepreneurship is a characteristic of an entrepreneurial organisation.

2.2.1.2.14 Summary

Through an exploration of literature on organisational culture, climates and corporate entrepreneurship, this section demonstrates that culture and climate influence entrepreneurship in many ways. The manifestation of culture yields visible, tangible clues as to the nature of organisational climate in the form of policies, practices, procedures and behaviours. This section highlights those dimensions that may support the entrepreneur and the entrepreneurial process. Specifically, openness and trust, autonomy and freedom to act, facilitation of some risk-taking, a tolerance of failure, the effective use of rewards, collaboration and teamwork, learning, creating time for entrepreneurial activity, positivity, and the commitment from top management are ten such cultures and climates.

In summative fashion, Rami and Gould (2016) argue that a ‘learning from failure culture’ can be affected by established social support and reduced hiding of failure. Indeed, when employees feel the social backing and normalising of failure communication, failure can be viewed as a means to learn. A precondition to open communication of failure is the level of trust within the hierarchy and amongst colleagues. They argue that, “respectful, constructive and fearless conduct toward each other promotes learning from

errors. Therefore strategies need to focus primarily on the organizational culture" (p.167).

Literature supports the positive relationship between not only entrepreneurship and organisational performance (Zahra, 1991, Zahra and Covin, 1995), but also of an entrepreneurial culture and organisational performance (Denison, 1990, Gordon and DiTomaso, 1992, De Brentani and Kleinschmidt, 2004). Recognising the significance of this relationship is important as it highlights the positive impact of an entrepreneurial culture on the entrepreneur.

2.2.1.3 Summary – entrepreneurial capability.

In exploring the facets that may influence the entrepreneurial capability of organisations, this thesis has considered theory relating to the characteristics of the corporate entrepreneur and characteristics of an environment that may support and enable the corporate entrepreneur to act entrepreneurially, and the entrepreneurship process.

The review finds corporate entrepreneurial characteristics are similar to those of the parent construct, the entrepreneur. Existing theory highlights that of the factors within the Five Factor model, entrepreneurs show higher levels of 'openness to experience' and 'conscientiousness'. Theory also highlights other important characteristics that include:

- A propensity for risk taking,
- A need for achievement,
- High self-efficacy,
- Internal locus of control,
- Tolerance of ambiguity,
- Passion
- Tenacity

The review of literature also illuminates 10 climates that characterise the entrepreneurial environment, those being:

- Openness and trust
- Autonomy and freedom to act

- Risk-taking
- A tolerance of failure
- Rewards
- Collaboration and teamwork
- Learning
- Creating time for entrepreneurial activity
- Positivity
- Commitment from top management

This review has not only highlighted the nature of the corporate entrepreneur but also the organisational means to enable him or her to behave entrepreneurially, maximising the value of his or her natural entrepreneurial characteristics. The review of literature has provided clear insights, illuminating the actor and the setting in which corporate entrepreneurship takes place. Within this conceptual space, whether entrepreneurial initiatives relate to new business venturing (new products or new markets), innovation, or organisational self-renewal, entrepreneurial initiatives are created and pursued. These entrepreneurial endeavours may end in success but often they end in failure. Understanding how the entrepreneurial capability of an organisation is effected creates the backdrop to the process of learning from failure and the significant factors that require managing. Each initiative is led by an entrepreneur operating in differing organisational environments, and this review now explores literature with the aim of explaining how learning from failure occurs and what factors may influence the process.

2.3 Intelligent failure

“Effective entrepreneurs are exceptional learners. They learn from everything. They learn from customers, suppliers, and especially competitors. They learn from employees and associates. They learn from other entrepreneurs. They learn from experience. They learn by doing. They learn from what works and, more importantly, from what doesn’t work” (Smilor, 1997 p.344).

Experiential learning comes in many forms (Argote and Miron-Spektor, 2011). Organisational experience can:

- Involve success and failure in outcome
- Be acquired from new tasks or those that have been regularly used in the past
- Range from ambiguous to easily interpretable
- Be geographically concentrated or dispersed
- Vary in frequency and pace
- Be acquired during or after task performance
- Naturally occur or be stimulated (experiments)
- Be rare and, therefore, more challenge to conceptualise from.

This thesis centres on learning from experiences that are acquired after task performance and predominantly inclusive of their rarity and their naturalness, or otherwise.

Argote and Miron-Spektor (2011) argue for the focus on specific experiences as a foil for learning, as it allows for a more specific approach to maximising organisational learning, as it "facilitates designing experience to promote organizational learning" (p. 1127).

Recognising learning from failure as being highly significant in the entrepreneurial process, this section seeks to explore the process of learning from failure. How do organisations learn from failure? What are the barriers to learning from failure? How do organisations manage the emotions brought about by entrepreneurial failure? In addition, how do organisations create an environment that normalises intelligent failure? Before this review explores these questions, attention centres on an exploration of organisational learning theory within the organisational behaviour domain. This forms a backdrop that will enable examination of entrepreneurial learning theory within the entrepreneurship domain, thereby enabling a more comprehensive approach towards understanding of how individuals may learn from failure within the intelligent failure context.

2.3.1 How organisations learn

Organisational learning, according to Argyris and Schon (1978) occurs through individuals who become “the agents for organizational learning” (p.19). They assert that organisational learning occurs when individuals recognise and adjust organisational thinking in response to internal and external changes, embedding these changes within the organisation. However, Fiol and Lyles (1985), suggest that whilst individual learning is important to organisational learning, it is not merely the sum of individual member learning. They argue that organisations develop and maintain learning systems that influence members transferring new knowledge to others. Building on this theory, Hedberg (1981) suggests that, “although organizational learning occurs through individuals, it would be a mistake to conclude that organizational learning is nothing but the cumulative result of their members' learning. Organizations do not have brains, but they have cognitive systems and memories. As individuals develop their personalities, personal habits, and beliefs over time, organizations develop worldviews and ideologies. Members come and go, and leadership changes, but organizations' memories preserve certain behaviors, mental maps, norms, and values over time” (1981, p.6).

Indeed, Levitt and March (1988) argue that the memory of an organisation is made up of encoded lessons from organisational activities from the past into routines and structures that shape future behaviour. Routines come in the form of organisational rules, procedures, conventions, strategies and technologies, while structures come in the form of the organisational culture and the paradigm of the organisation that acts as a supporting mechanism for these routines. Whilst the organisation may develop a memory, retrieval of experience is not always straight forward, as only parts of an organisation’s memory will be utilised at any one time. Sections of memory referred to regularly are more easily accessed. However, organisations find it difficult to retrieve older or less frequently used learning (ibid). Huber (1991) argues that there are some important influences on the organisational memory and these include the rate at which people leave the organisation, the distribution and interpretation of information, the normal ways in which information is stored, and the way in which information is recovered. Significantly, organisational

memory development is argued as being self-reinforcing: the more knowledge there is stored in the memory, the more readily new information relating to this breadth of existing knowledge is attained and used (Cohen and Levinthal, 1990).

Cohen and Levinthal (1990) suggest that an organisation's absorptive capacity relates to its ability to acquire, evaluate, and exploit information. They emphasise that prior relevant knowledge that is deep rooted in the organisation facilitates learning of new knowledge. The organisation needs this prior knowledge to evaluate and utilise new knowledge. "Some psychologists suggest that prior knowledge enhances learning because memory – or the storage of knowledge – is developed by associative learning in which events are recorded into memory by establishing linkages with pre-existing concepts" (p.129) Thus the larger the absorptive capacity the larger the potential to learn.

Cope (2005) reflects upon this at an individual level, arguing that there is an inextricable link between learning during the entrepreneurial process and prior learning. As individuals build cumulative learning, layer after layer, so this influences the extent to which they are prepared for their next entrepreneurial activity. Indeed, these collected experiences shape the attitude, beliefs and abilities of the entrepreneur. Minniti and Bygrave (2001) assert that "entrepreneurs learn by updating a subjective stock of knowledge accumulated on the basis of past experience" (p.5), and it is these individual learning histories which are highly significant as they create the basis for the ways in which entrepreneurs see and understand new experiences (Mezirow, 1991).

Huber (1991) suggests that at the birth of an organisation the learning from the respective industry and society, and the knowledge of the founder are what form an organisations 'inherited knowledge'. When the inherited knowledge is built upon with the addition of subsequent knowledge the organisation gains 'congenital knowledge'. Significantly, there is universal acknowledgement that congenital learning has a strong impact on future learning.

Developing the discussion, Crossan et al (1999) argue that learning is a dynamic process which occurs across organisational levels and over time. Specifically, they refer to three levels of learning which they suggest are, individual, group, and organisational. They identify four sub-processes that

occur across these three levels. The learning process begins with an individual 'intuiting' which, as largely a subconscious phenomenon, relates to the individual recognising patterns and possibilities from within their own stream of experiences. The individual then endeavours to 'interpret' or refine the intuitive perception. Whilst this happens at an individual level, it can also occur at group level where the combined interpretation may be more vigorous and complete. When interpretation offers a new learning of value, the group begin the 'integrating' process. Integrating relates to the development of collective meaning and coordinated group action that, if successful, will be replicated and form part of the operation. In time, the group may create more formal procedures that become embedded or 'institutionalised' in the organisation. In this way learning that occurs at the individual level transfers to the group and finally the organisation. However, it is also suggested that once the learning is institutionalised in rules and procedures at an organisational level, the learning passes back through the group level to the individual level. Thus, organisational learning is presented as a dynamic process where learning flows across the three levels, and where there is a tension between forward and backward flows: "Through feed-forward processes, new ideas and actions flow from the individual to the group to the organization levels. At the same time, what has already been learned feeds back from the organization to group and individual levels, affecting how people act and think" (p.532). The dynamic process continuously fosters organisational learning.

Takeuchi and Nonaka (1986) argue that learning by doing occurs across multiple layers (individual, group and corporate) and multiple functions creating "multiplelearning" within the organisation. Individual learning may be encouraged through the allocation of time dedicated to pursuing their own ideas, and at group level, through breaking up project teams in sub teams to tackle a given problem resulting in fast learning. Also, at corporate level, by implementing a companywide program such as "Total Quality Control". Additionally, as part of multiple functional learning, experience and learning is accumulated by functional teams being placed with departments other than their own during project development. The acquired "multiplelearning" is an important part of the organisation's human resource management program.

Building on this work, the empirical study of Bontis et al (2002) establishes a positive and strong correlation with each level of learning (individual, group, and organisation) with business performance. However, learning at the organisational level has a stronger correlation with business performance than at individual or group level. Interesting also, is that the study confirms the tension between forward (from the shop floor) and backward flows (from senior management) of lessons learnt knowledge. Specifically, results indicated a negative link between misaligned flows of learning and business performance. This implies that the management of flows is an important factor in the organisational learning process and, consequently, business performance.

Argote and Miron-Spektor (2011) put forward a learning cycle as a means to explain organisational learning. The cycle starts with experience gained from task performance actualised by the organisational members and available tools, which leads to new knowledge creation. This new knowledge is embedded in the organisations "active context" which is made up of the characteristics of organisation (such as culture, structure, and strategy), as well as organisational relationships (such as alliances and joint ventures). In this cycle, the changed organisational context then affects subsequent task performance experiences. Further, they argue that this cycle resides within an environmental context (competition, clients, and regulators), and also within a "latent context", an organisational context which includes the makeup of the members, tools they have, and which tasks they perform. The theory argues that experiential learning has a close relationship with the "active" and "latent" context of the organisation and the interaction with the environmental context, In other words, the environment and the residual labour, their tools and allocation of work, influence learning and are affected by learning gained from pragmatic experience of the past. They argue that the learning cycle occurs at an individual, group, organisational, and inter-organisational levels. In total, this theory offers a wide and holistic explanation as to how organisations learn.

Fiol and Lyles (1985) also highlight the relevance of the "active context" of the organisation and its environment, arguing that there are four contextual factors which affect the likelihood that learning will occur, which come in the form of the organisation's culture, strategy, structure, and the environment. They suggest that the norms of an organisation will influence organisational

development from a behavioural and cognitive perspective. Strategy influences learning by creating objectives to be achieved through a defined breadth of actions. An organisational structure is important in facilitating an appropriate culture and strategy. A centralised structure reinforces past beliefs and is less adaptive, whereas an organic or decentralised structure allows change of beliefs and is more adaptive. The internal or external environment can influence the ability to learn as too much stability reduces the inducement to learn or change, while too much change and turbulence can lead to overload and reduced learning. It is suggested therefore, that organisations need to consider these factors when thinking about how they will enhance organisational learning. Additionally, the support of a learning environment also impacts on the likelihood that learning will occur (Choi and Jacobs, 2011). Organisational factors that may support a learning environment include the value the organisation places on learning and development, the mechanistic rewards offered, the resources allocated to learning activities, supervisory support, and job complexity. Such a learning environment culture is able to facilitate workplace and organisational learning (ibid).

In developing the organisational learning discussion, Senge (1990) posits the idea of a 'learning organisation' a place "where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p.3). Further, he puts forward eight strategies to assist the creation of a 'learning organisation:

1. Integrating learning and working through reflection and action is significant. "A culture that integrates action and reflection arrives at better decisions so people can genuinely commit, and its people have a more prepared mental state" (p. 289).

2. Enforcing leaders who take a strategic perspective and initiate change at any level and do not wait for top management, building a team that believes change from anywhere in the company is possible, all makes significant change from the smallest initiatives more likely.

3. Becoming bicultural. Building a culture of learning recognises and accommodates two worlds, the learning-orientated world of the team close to the entrepreneur and the world of the traditional mainstream organisation.

4. Creating practice fields. As real learning occurs through making many mistakes, reflecting, and trying repeatedly, so organisations give encouragement to practicing by providing space to experiment and try new things.

5. Connecting with the core of the business. Understanding the true identity and driving values of the organisation removes the subtle barriers which limit change.

6. Building learning communities. “Networks of relationships based on common aims and shared meaning, become both a strategy and an outcome for leaders” (p.307).

7. Embracing diversity. Recognising that people tend to mix with people like themselves, embracing diversity is very significant. Building relationship across boundaries and creating inclusive communities enhances the prospect and quality of the outcome.

8. Developing learning infrastructures. Training and formal education organised and executed to high standard has significant value. The real value comes from being part of learning organisational strategy as opposed to the only strategy. Developing learning infrastructures are most effective within an integrated learning strategy.

In centring on these eight strategies, Senge (1990) puts forward a pragmatic approach for organisations to become ‘learning organisations’ which manifest in practices of deep learning “stepping back and attempting to see deeper patterns and then choosing to do things differently” (p.287).

A significant part of theory put forward by Senge (1990) centres on experiential learning and reflection, a concept which is discussed in a seminal paper by

Kolb (1981). In it, Kolb puts forward a model of experiential learning. The theory emphasises the role that experience plays in organisational learning and the model illustrates how experience is translated into concepts. 'The Experiential Learning Model' (Figure 2.2) suggests that there are four iterative stages of learning which form a cycle. The first stage is that of concrete experience which forms the source off observations and reflections (the second stage). In the third stage, the respective observations and reflections form the basis for the construction of ideas, abstract concepts or generalisations by the learner which shape action. In turn, the action is then tested in the fourth stage to offer further concrete experience, which then starts a new cycle of learning. In this way, Kolb (1984) asserts that knowledge is created by the transformation of experience.

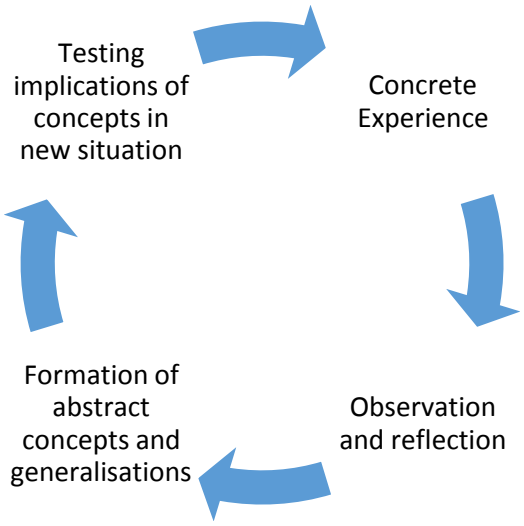


Figure 2.2 The Experiential Learning Model - Kolb (1981)

Kolb (1981) argues that to be effective individuals need the ability to "involve themselves fully, openly, and without bias in new experiences; they must be able to observe and reflect on these experiences from many perspectives; they must be able to create concepts that integrate their observations into logically sound theories; and they must be able to use these theories to make decisions and solve problems" (p.236). Important also is that he asserts that individuals have differing abilities to engage in each of the four stages, that is they have differing learning 'styles' or 'preferences'. He argues that 'convergers' have

learning abilities in abstract conceptualisation and active experimentation, ‘divergers’ in concrete experimentation and reflective observation, ‘assimilators’ in abstract conceptualisation and reflective observation, and ‘accommodators’ in concrete experience and active experimentation.

Later, Wolf and Kolb (1984) argue that individuals develop differing learning styles which learn from experience in different ways depending on their cognitive disposition. Reflecting on the experiential learning model (Kolb, 1981), they suggest that the ‘diverger’ learns through feeling and watching, the ‘assimilator’ through watching and thinking, the ‘converger’ through thinking and doing, and the ‘accommodator’ through doing and feeling. The theory recognises that an individual may not fit neatly into one description but they may have more characteristics in common with one style than another. Significant to the domain of entrepreneurship, Corbett (2005) argues that people with differing learning styles perform at a differing levels during differing stages of the entrepreneurial process. He argues that at the early stage of the entrepreneurial process (preparation) is the space for the ‘converger’ where convergent learning (thinking and doing) occurs. The stage of incubation, where individuals are thinking about an idea or problem solving, is where assimilators learn by watching and thinking that may lead to insights or ‘eureka’ moments where problems are solved or ideas are shared. The stage of evaluation where opportunities are tested, divergent learning (feeling and watching) occurs, and the final stage, elaboration where the insight becomes a reality, accommodative learning (doing and feeling) occurs.

Nonaka and Takeuchi (1995) engage in the ‘learning through experience’ discussion but argue that organisational learning occurs somewhat differently. They assert that “organisational knowledge creation is a continuous and dynamic interaction between tacit and explicit knowledge” (p.70). Accordingly, organisational learning is a process whereby the organisation amplifies individual knowledge and embeds it within the organisational knowledge network. As such, organisational learning occurs as knowledge conversion takes place via the social interaction between individuals and the exchange of tacit and explicit knowledge. Nonaka and Takeuchi (1985) argue that there are four differing processes of knowledge conversion that form a spiral.

1. In the ‘socialisation’ process, individuals share experience (tacit knowledge acquired through experience) and this creates more tacit knowledge.
2. The ‘externalisation’ process, allows the articulation of tacit knowledge into explicit constructs.
3. In the ‘combination’ process, individuals exchange and combine explicit knowledge into a new knowledge system or framework.
4. In the ‘internalisation’ process, individuals learn by doing, taking existing explicit knowledge and creating new tacit knowledge.

The spiral begins at the socialisation process and then works through the three other processes creating knowledge at each stage. However, knowledge creation also starts the journey at an individual level before expanding into and through communities that may cross section departments and divisions, through to inter-organisational communities. It is in this way, they argue, that organisational knowledge is created.

Developing their theory, Nonaka and Kono (1998) introduce a concept of ‘ba’, a Japanese word that means ‘space’. They argue that ba is “a shared space that serves as a foundation for knowledge creation” (p. 40), comprised of physical, virtual, and mental spaces (or any combination of them), providing a platform for developing individual and collective knowledge. They argue that each of the socialisation, externalisation, combination, internalisation processes has a corresponding type of ba that is especially suited it. “Each ba supports a particular conversion process and thereby each ba speeds up the process of knowledge creation” (p. 46).

- ‘Originating ba’ represent the socialisation stage in the cycle, and is a space where individuals share emotions, experiences and conceptual thinking, driving trust and commitment. It is a physical ‘face to face’ space where tacit knowledge conversion occurs.
- ‘Interacting ba’ represents the externalisation stage and is constructed through the careful selection of people with a mix of knowledge and capabilities. In this space, tacit knowledge becomes explicit as, through dialogue, individuals ‘conceptual thoughts are converted into common terms, for example, by the use of metaphors. This is the space for collective reflection where new meaning and values are co-created, becoming institutionalised in the organisational culture

- ‘Cyber ba’ represents the combination stage and is a virtual space where new explicit knowledge is mixed with existing knowledge to create more ‘ready for use’ explicit knowledge across the organisation utilisint information technology (for example of intranets, databases etc.)
- ‘Exercising ba’ is a space that supports the conversion of explicit knowledge into tacit knowledge found within the internalization stage. Learning occurs through on the job (OJB) learning supported by OJB training from senior colleagues. The use of explicit knowledge in real life applications internalises knowledge within the organisation and creates new tacit knowledge

Significantly, Nonaka and Kono (1998) argue that these spaces can be purposefully shaped by organisations, thus enhancing their ability to create new knowledge, specifically; they argue that, “ba is a platform to speed up the knowledge creation process” (p. 46). Indeed, recognising that knowledge needs to be nurtured, it is the role of management to provide ba in a way that most positively supports the dynamic spiral of knowledge creation.

Through further exploration of the cognitive nature of learning from failure, this review has considered learning within the organisational behaviour domain. It is suggested that a more holistic perspective is taken towards the nature of organisational learning in order to shape the discussion (and the thesis) on the specific domain of learning from failure. Reviewing some of the seminal literature on organisational learning, this section articulates the emerging understanding of the domain, reflecting important theories relating to organisational memory and varying ways in which individuals and organisations learn. A core theme illuminated in the review is the importance of experience in creating new knowledge. Experiential learning offers a significant learning opportunity for both the individual and the organisation. Importantly for the discussion on learning from failure, learning from the experience of failure is central to the construct. Perhaps not surprisingly therefore, learning from experience features prominently within literature in the entrepreneurial domain.

2.3.2 Entrepreneurial learning and learning from failure

Entrepreneurial learning occurs when the entrepreneur learns about themselves, the business, the environment and entrepreneurial networks, business management, and about the nature and management of relationships (Cope, 2005). Such entrepreneurial learning can occur in a number of ways. Bagheri and Pihie (2011) put forward a model of entrepreneurial learning which centres on learning from experience, social interaction, observation and reflection. They suggest that it is a dynamic process whereby the acquired knowledge from experience, observation, and social interaction is transformed by various forms of reflection. The process of reflection is highly significant and can lead to fundamental changes in an entrepreneur's self-awareness, and to critical insights related to the venture. "In essence, entrepreneurial learning refers to a dynamic and constant process of acquiring, assimilating, organizing and linking the new knowledge and competencies with pre-existing structures to be retrievable for use in routine and strategic actions" (p.452).

Cope (2005) extends the focus on experiential learning, arguing that it is an important entrepreneurial learning mechanism whereby, on a daily basis, entrepreneurs reflect on previous events or actions with the aim of ensuring better outcomes in the future. As McGill and Beaty (2001) put it, "we all learn through experience by thinking through past events, seeking ideas that make sense of the event and help us find new ways of behaving in similar situations in the future. This thinking through or reflection is the essential link between past action and more effective future action… In times of crisis or radical change reflection becomes more important and also more difficult; it is at times like these we make powerful decisions about our future" (p.21).

Theory suggests that as learning from experience occurs it enables what Cope (2005) terms 'generative learning'. Generative learning is "the ability to extrapolate and 'bring forward' one's learning from critical events to new situations, incidents, and experiences" (p.386) enabling learning from failure. Two forms of generative learning are proposed, those that are, 'adaptive', and those that are 'proactive'. Adaptive generative learning is the accumulated learning through experience, which creates a bank of learning from which the

entrepreneur can use in a similar situation. This bank of knowledge accrues incrementally and will give the entrepreneur a feeling or “knack” of what to do. Alternatively, proactive generative learning relates to the way in which entrepreneurs become alert to potential incidents. It enables entrepreneurs to develop their own early warning system that allows them to better anticipate critical events. This form of learning can give entrepreneurs more control in successfully managing their businesses. Specifically, entrepreneurs may proactively take measures to avoid replication of bad experiences. Both forms of generative learning enable positive use of lessons learned from failure adding to the discussion, Huber (1991) argues that experiential learning may be heightened in organisations who become ‘experimenting organisations’, where there is a constant state of flux in the main structures and ways of operating. An ongoing attention to experimenting produces a flow of learning opportunities, flexibility and increased adaptability within the organisation. Such organisations are comfortable with new findings and environments. Further, experiential learning is improved through the analysis of the outcome of the experiment and the availability of this analysis. As well as ensuring that an analysis of the outcome takes place, which is important, so is the accuracy of feedback relating to the cause and effect link between actions and outcomes (ibid). Dyer et al (2011) also argue for an experimental approach. They assert that questioning, observing, and networking provide information relating to the present and the past, and that experimenting provides information about what might work in the future. Experimenting enables organisations to see precisely how well ideas work in practice. Jeff Bezos, founder of Amazon.com suggests that: “Experiments are key to innovation because experiments rarely turn out as you expect, and you learn so much” (Dyer et al., 2011 p.134).

Mullins (2012) suggests that in a start-up scenario the viability of a business model can best be determined through experimentation. Rather than accepting untested assumptions drawn together in business plans, entrepreneurs test these assumptions and learn from the failures until a promising model emerges. Developing this discussion, Blank (2013b) argues that in the search to discover a customer, the entrepreneur forms a hypothesis and draws a ‘business model canvas’ outlining the key facets of the potential business. Assumptions are tested with real customers to identify problems and solutions.

The aim is gain a deeper understanding of the customer, their problems, and the business as a whole including workflow, organisation and product needs. The testing brings verification of the hypothesis or, more often, disproves the assumptions. In other words, the test fails. Learning is integrated and the customer and product briefs are revised creating a new hypothesis. The process then starts again in an iterative fashion until a business with potential emerges. In this way, "failures are not truly failures, per se but an integral part of the startup learning process" (Blank and Dorf, 2012 p.33). In a similar way 'agile' methodology relating to software innovation centres on the speed and agility of an iterative product development process where customer feedback is continually sought and received, which leads to continuous integration of changes (learning) into the product. (Blank and Dorf, 2012, Bosch et al., 2013). Both these processes centre on continuous learning for the entrepreneur and the organisation.

The hypothesis and test methodology integrates with Lean Startup theory, which centres on entrepreneurs learning swiftly from failure (and from success). Lean Startup emerged from high tech industry in the U.S and has become an important methodology for entrepreneurship (Blank, 2013a):

"It's a methodology called the "lean start-up," and it favors experimentation over elaborate planning, customer feedback over intuition and iterative design over traditional "big design up front" development. Although the methodology is just a few years old, its concepts—such as "minimum viable product" and "pivoting"—have quickly taken root in the start-up world, and business schools have already begun adapting their curricula to teach them" (Blank, 2013a p.56).

The origins of Lean Startup theory lie within the lean manufacturing system pioneered by Taiichi Ohno at Toyota. Whilst 'lean' centres on reducing organisational waste within the manufacturing process, Lean Startup centres on reducing waste (activities that do not generate customer value) involved in developing ideas, achieving this through early and continuing testing of assumptions (Bosch et al., 2013). The process emphasises continuous learning. The Lean Startup method has five principles (Reis, 2011):

1. Entrepreneurs are everywhere and the Lean Startup method can work in any size of company
2. Entrepreneurship is management geared for extreme uncertainty
3. Validated learning: Learning is validated through frequent experimentation and is backed up with the empirical data from real customers
4. Build-Measure-Learn: A fast loop of building (minimal viable) products, testing, and learning.
5. Innovation accounting to measure progress to allow work prioritisation

The essence of Lean Startup from a learning perspective is the fast iteration of experimentation (the build, measure, and learn feedback loop) to drive innovation. Learning from success, but most often failure, is the fuel of the engine of new idea development. In the Lean Startup model, every activity of development is an experiment designed to achieve learning, it works on the premise that "if you cannot fail, you cannot learn" (p.57). Entrepreneurs learn and learn fast from this approach enabling quicker development of the product (ibid). In this way, failure is viewed as a positive, proactive means to create success in all organisational sizes: "New ventures of all kinds are attempting to improve their chances of success by following its principles of failing fast and continually learning. And despite the methodology's name, in the long term some of its biggest payoffs may be gained by the large companies that embrace it "(Blank, 2013a). Lean Startup methodology therefore promotes learning from experimenting, perhaps embedding the idea of failure and learning as a prescriptive methodology for entrepreneurship.

Entrepreneurs are using the approach to manage uncertainty. According to Schlesinger et al (2012), entrepreneurs do not deal with unpredictability by thinking there way through as "thinking does not change reality; nor does it necessarily need to learning" (p.12). They argue entrepreneurs manage unpredictability by, taking a small smart step forward (one that is reflective of available resources), pausing to reflect on what has been learned, and then building the learning into what is done next. In a similar way to Lean Startup, entrepreneurs are learning from action.

However, experiential learning is not always positive or beneficial. When entrepreneurs misunderstand new situations because they are overly reliant on insights gained from previous experiences, they can fall into 'learning traps'.

This predicament may be exacerbated when entrepreneurs over-exploit actions which have initially been rewarding (Cope, 2005). Indeed, when organisations develop robust processes over a period of time (through experiential learning) it may be assumed that it has the right process and the best solution, failing to recognise that it has developed new competencies which are able to deliver an alternative process that may be more effective overall (Huber, 1991).

Desai (2015) argues that learning from failure can increase when the location of failure is spread across the organisation, rather than being concentrated. Pointing to attribution theory, he asserts that when failure is concentrated towards an individual or team, causal explanations become more centred on isolated affects. The overweighing of attribution away from the self, acts as a means to defend belief systems and self-esteem. These simplified explanations may not fully explain the interconnected complexities within organisational processes, which may lead to narrow changes. Where failure is broadly dispersed, attention is drawn to wider situational factors, beyond the dispositional factors. This encourages the exploration of a deeper structural analysis, which may lead to broader, long-term solutions. Broader failure increase learning from failure. Indeed, this may be exacerbated as the organisation size increases, as in larger organisations visibility is enhanced by the number of areas not experiencing the failure.

Rae and Carswell (2000) view learning as being at the heart of the entrepreneurial business performance. They assert that entrepreneurs learn how to grow high performing businesses by:

- Developing a set of principles which are effective in goal achievement
- Accepting the need to work with other people with complementary skills
- Learning actively, quickly and widely, recognising the potential of learning from failure
- Recognising that entrepreneurial learning is a continuous social process

They argue that these factors develop the personal values and self-efficacy of the entrepreneur, which in turn leads to the creation of ambitious goals, and the motivation to achieve these challenging goals drives learning so as they can be met. The entrepreneurial paradigm is one that asserts that learning

empowers the entrepreneur to achieve. Important to the discussion is that the attitude of the entrepreneur towards failure significantly affecting their ability to learn from such episodes. The motivation to positively seeking to learn through exploration and experimentation demonstrates a willingness to learn from failure.

Indeed, Yu et al (2014) argue that the learning from failure process is important to organisational learning from a differing perspective. They argue that the learning from failure process (recognising, analysis, conceptualisation, and applying lessons learned) enables the organisation to acquire, transfer and apply knowledge more efficiently, thus enhancing the organisations ability to learn. Thereby, they argue that these learning from failure behaviours enhance NPD performance. Significantly, the learning from failure process is helped by organisations with more developed processes of knowledge acquisition (the antecedent and basis of learning) that facilitate the identification of failure.

2.3.2.1 Higher level entrepreneurial learning and learning from failure

Argyris and Schon (1978) describe two types of learning as being single loop and double loop. Single loop learning centres on effective performance whereby individuals respond to the detection of error by adapting paths and assumptions. Double loop learning, however, is the response to error detection by challenging current organisational norms with a view to create new, more effective norms. “There is in this sort of episode a double feedback loop which connects the detection of error not only to strategies and assumptions for effective performance but the very norms which define effective performance” (p.23). Double loop learning yields the opportunity for a fundamental and deeper learning. Where as much learning occurs within a frame of reference (single-loop learning) in more regular circumstances, a new frame of reference (double-loop learning) offers a more holistic approach to a longer term outcome (Huber, 1991). As Tucker and Edmondson (2003) put it, “Second-order problem solving is a way that real change is achieved” (p.62). Fiol and Lyles (1985) also suggest that there are two levels of learning, lower and higher. Lower level learning, they assert, is, “focused learning that may be mere repetition of past behaviors, usually short term, surface, temporary, but

with associations being formed. Captures only a certain element—adjustments in part of what the organization does. Single-loop. Routine level" (p.810). Higher-level learning they deem as being "the development of complex rules and associations regarding new actions. Development of an understanding of causation. Learning that affects the entire organization. Double-loop learning. Central norms, frames of reference, and assumptions changed" (p.810).

Significantly, entrepreneurs can experience higher level learning from facing, overcoming and reflecting on significant problems during the entrepreneurial process, including the latter part, the after action review (Cope, 2003). Failures can also be the catalyst for 'transformative learning" for entrepreneurs (ibid). This higher order process of transformative learning starts with a critical or discontinuous event and ends with an individual viewing themselves very differently (Mezirow, 1991): "as we assess our assumptions about the content or process of problem solving and find them unjustified, we create new ones or transform our old assumptions and hence our interpretations of experience, This is the dynamics of everyday reflective learning. When occasionally we are forced to assess or reassess the basic premises we have taken for granted and find them unjustified, perspective transformation, followed by major life changes, may result" (p.193). Thus, it may be argued that failure is a critical or discontinued event or as termed by Cope (2005) a "critical learning event" which has the potential to deliver transformative learning to the entrepreneur. As Deakins and Freel (1998) articulate, "entrepreneurship and the growth process is essentially non-linear and discontinuous. It is a process that is characterised by significant and critical learning events. The ability of entrepreneurs to maximise knowledge as a result of experiencing these learning events will determine how successful their firm eventually becomes" (p.153).

Particularly in the event of failure, Cope (2005) argues that critical learning events have the capacity to stimulate deep reflection which leads to a higher level of experiential learning. As opposed to reflection, deep reflection relates to a reflection which is "fundamental and deeply challenging" (Cope, 2003 p.444). The deep learning experience often involves radical change and can transform the assumptions that shape action, creating a paradigm shift. This

in turn may lead to a change to personal identity as well as to awareness of improved ways of operating the business (Cope, 2005).

When it comes to learning from failure Cope (2011) puts forward an argument that learning is made of three stages across four dimensions. He argues that the three stages are made up of: an initial break to allow the entrepreneur to psychologically detach from the failure to allow healing, a period of critical reflection which rigorously pursues sense-making of the failure by the entrepreneur, and finally, reflective action where the entrepreneur comes to terms with the failure and aims to move on to new opportunities. The three-stage process allows the entrepreneur to learn about (p. 616):

- Themselves – strengths, weaknesses, skills, attitudes, beliefs and development areas
- The venture and its end – strength and weaknesses of the venture and reasons for its failure
- Networks and relationships – the nature of internal and external relationship management
- Venture management – running and controlling businesses effectively

2.3.3 Managing the process of learning from failure

Understanding the nature of entrepreneurial learning begins to illuminate how organisations learn from failure as part of an experiential learning process. However, how do organisations organise themselves to assist and support the corporate entrepreneur (and indeed the organisation) to learn from failure? As Paget (1988) puts it “making mistakes is not an issue; recognising mistakes, understanding them, correcting them, and avoiding their repetition is” (p.98). In seeking to answer this question, attention centres on the management of the process of learning from failure.

Literature provides a number of differing perspectives towards learning from negative outcomes from entrepreneurial activities, with differing stages to the various processes, and differing emphasis.

Platzek et al (2014) highlight the early perspective of Block and MacMillan (1993) who put forward a four stage model to learning from entrepreneurial activities. Stage one is the collection of documents relating to the most significant events within the activity, which are then recorded chronologically in a log book. Stage two is the questioning of the activity manager with a view to understanding the origin of the idea, how it was evaluated based on "recording of the market research process, the product development, the creation of a business plan, organisation of the activity, incentive components, and the forming of basic assumptions about the environment" (p.16). A chronological history of the activity development, events, and critical decisions is then created. The fourth stage centres on assessing the findings to draw conclusions for use in future entrepreneurial initiatives: lessons learned.

Ellis et al (2006) also put forward four stages to the process of explaining event outcomes: however they take a generic approach drawing holistic attention to:

1. Notice the event thereby stimulating the explanation process
2. Interpret the event in terms of whether it is a success or failure
3. Problem formulation: attention focuses on finding explanation for the event
4. Problem resolution: potential explanations are tested

Liker (2005) highlights the nature of the Toyota system, a management system offering a differing process by which learning from failure occurs. The process is referred to as 'practical problem solving' and has seven stages that centre on 'root cause' analysis:

1. Initial recognition of a problem
2. Clarify the problem to create the 'real problem'
3. Locate the likely area of the point of the cause
4. Locate the direct cause and then, through five 'why' probing, identify the root cause of the problem
5. Determine a countermeasure
6. Evaluate the performance of the counter measure
7. Standardise the new routine

Within U.S. government agencies 'lessons learned systems' are a common component of knowledge management infrastructures (Weber and Aha, 2003). The system starts with a lesson acquired from an experience which is collected

and verified by experts in the specialist field to ensure it meets the criteria of a ‘lesson’. The verified lesson is placed in the lessons learned repository (a computer database system) and disseminated to organisation members to reuse in the form of new military processes. In this way the system looks to maximise the knowledge value from failure episodes.

Whilst literature offers differing processes by which organisations may manage the process of learning from failure, there is some generic alignment in addressing the key areas of failure identification, failure analysis and reconceptualising, and sharing the new knowledge. Through reflection on these stages and looking to understand how organisations manage the process, the next section looks at each generic stage of the process individually. Firstly, attention focuses on identifying or recognising failure, before going on to discover how analysis and learning occurs, finally exploring communications of lessons learned.

2.3.3.1 Identifying Failure

From a process perspective, the first stage is the active and timely identification of failures (Cannon and Edmondson, 2005), recognising them as they occur. Failure identification is an important process as it can lead to individual and organisational learning (Edmondson, 2011). Significantly, in proactively highlighting problems quickly there is a reduced likelihood that these problems will multiply, grow or be incorporated in the wider organisational system. Indeed, noticing the event stimulates enquiry as “unnoticeable failures will not attract attention and will not stimulate the explanation process” (Ellis et al., 2006 p. 670). Without failure detection the individual is unable to assess the situation which enables the reporting of failure (Zhao and Olivera, 2006).

Failures may come in the form of:

- ‘Slips’, whereby despite positive intentions by individuals and teams, actions are not carried out as planned.

- ‘Rule based mistakes’ when well known procedures are carried out appropriately but the procedure is inappropriate to meet the needs of the goal.
- Or ‘knowledge-based mistakes’ where a lack of knowledge may lead to faulty causal thinking and subsequent errors. (Zhao and Olivera, 2006)

Research indicates that ‘slips’, rather than ‘rule based mistakes or ‘knowledge-based mistakes’ are more likely to be identified (ibid). However, this may be due to the context of the industry within which the failures occur as this may impact the detection rate of the detection mode (Reason, 1990).

Failures may be detected in a number of ways including ‘action-based detection’ which relates to detection as the failure occurs, ‘outcome-based detection’ which centres on the result which does not deliver the intended outcome, and through ‘detection by external limiting function’ when signals from the external environment communicate failure (Zhao and Olivera, 2006). The antecedents of the detection modes are argued as being the visibility of the error (and how noticeable the error and its consequences are), the level at which the activity is monitored, and the understanding of goals by individuals to compare with outcomes (ibid).

Before failures are made known, individuals assess the situation reflecting on the cost and benefit to themselves, their group, or the organisation. The assessment may reflect some negative emotions, such as fear, shame, embarrassment and guilt (Zhao and Olivera, 2006). Having assessed the situation individuals may then report the failure as it is truthfully, rationalise the report (editing to disguise or hide aspects of the failure to protect self of others), or blame someone else. Alternatively, they may not report the failure choosing to cover it up, handle it themselves, or ignore it (ibid).

When considering pragmatic examples, literature often highlights the Toyota production system, where identifying failure is encouraged through a policy of ‘jidoka’ which focuses on not allowing defects to move up the production line (Liker, 2005). If anyone observes an error, a cord is pulled and the whole production line is stopped to allow analysis and solving action, leading to lessons learned and system adaptation (Syed, 2015). Additionally, at Google they use a ‘Game Day’ program, which is used to increase resilience by

intentionally creating major failures in critical systems in order to test organisational systems, software and the response of the teams. Before, during and after the test, individuals are repeatedly reminded to file 'bug' reports for all visible errors and failures (Limoncelli et al., 2012).

As well as employees, failure identification may also come from actively seeking feedback from customers and other stakeholders (Cannon and Edmondson, 2005). For example, in the airline industry customer feedback and failure identification is positively encouraged so that it may be addressed (and so the customer may be satisfied). This means failures are identified quickly (Barkai and Harison, 2012). In a similar way within the hospital sector, patients and the general public highlight failures they experience or observe (Syed, 2015).

2.3.3.2 Analysing failure

Once failure is identified, the focus turns to analysis providing the means to learn from the event. Cannon and Edmondson (2005) argue that a rigorous analysis and in-depth probing may ensure that complicated problems are fully understood and it may discourage premature conclusions. Such a robust process may include a comprehensive analysis centring on the:

- Diagnosis of the problem
- Design of the experiment
- Systematic analysis of data
- Statistical process controls
- Analysis of statistics.

Further, they argue that as a vehicle to rigorously probe, formal after action reviews which discuss, analyse, problem solve and apply lessons that occur from failure, are fundamental to the process of learning from failure. Formal after action reviews may come in differing forms.

McGrath and MacMillan (2000) assert that "entrepreneurial leaders who are successful at promoting deep commitment to continuous development typically conduct constructive post-mortems" (p. 333). As an example, the leaders at

Nokia are highlighted as placing significant emphasis on venture post-mortems as they see that it significantly helps to gain further learning from entrepreneurial ventures (McGrath et al., 2006). Further, Kuratko et al (2011) argue that each entrepreneurial initiative represents an experiment and that to extract the maximum learning from an entrepreneurial experience a systematic process effort is required to get the facts, examine them thoroughly, and make conclusions about future actions. They assert that "a key task of organisational leadership is to enhance the company's abilities to use intellectual assets both strategically and entrepreneurially" (p. 444). Indeed, "organisations can help individuals learn important lessons from the valuable information embedded not only in failed events but also successful events as well" (Ellis et al., 2006 p.669). In a similar way, Senge (1990) points out that whilst entrepreneurial firms foster organisational learning they can also inhibit learning. Specifically, he suggests that entrepreneurs, who by nature tend to be action-orientated, do not establish an organisational environment for reflection. Subsequently other people can absorb this mentality of continuous action over reflection. Therefore, Senge argues that creating structures, such as the after action review, support valuable individual and organisational learning.

The term 'after action review' (AAR) originates from a tool developed by the U.S army (Senge, 1990). They carry out AAR's after combat missions or training exercises irrespective of whether the outcome is positive or negative (Gino and Pisano, 2011). The importance of an AAR rests behind uncomplicated protocols which focus on the core questions of what happened, what did we expect, and what can we learn from the difference (Senge, 1990). Important to the process is a supportive management culture that incorporates the process organisation-wide, for example DTE Energy successfully integrated AARs into their culture after several years of trying. Integration was achieved by leadership that centred on helping managers understand the value of deep learning, viewing day-to-day events and larger failures as learning opportunities, exposing AARs to organisational grassroots, and operating a team of trained facilitators. In this way, AAR's created significant organisational learning: learning from failure (ibid).

Developing the discussion on the use of AAR's, Gino and Pisano (2011) argue that organisations 'institute systematic project reviews' which align with the

military AAR's and act as a means to identify what the organisation set out to do, what actually happened, why that happened, and what the organisation will do differently next time. Indeed they highlight the animation giant, Pixar, who use AAR's and with some flexibility. Pixar uses different methods to maintain employee engagement in the AAR process (for example through asking project team members to identify the top five things they would do again, and the top five things they would not do again) and it changes the structure of the post-mortems so as to maintain its effectiveness. However, whatever the structure, data collection from across the productions is religiously collected. Interestingly also, Pixar periodically carry out a structured review across several productions to gain wider understanding (ibid).

Significantly, literature also highlights some differing ways in which organisations may structure the post-action review process. Lafley and Charan (2008) assert that an AAR should "work backwards - process to decisions, assumptions, resources, and quality of the team; only then should the culpability of people and their judgements be considered" (p. 205). They argue that the AAR should describe what occurred with an emphasis on cause and effect. Whilst the risk of an AAR is that it may become a blame game, this may be overcome by adopting a tone that is analytical, not personal. Further, they suggest that an after innovation report (AIR) may be created as an alternative or to support the after action review. The AIR report typically contains:

- A description of the project outcome with reference to original goals set
- An analysis of major causes reflecting on the effectiveness of the research, the team, the technology, resources, and considering whether the goals themselves were correct
- A clear understanding of the unexpected effects which occurred
- A reflexion of what may have been done differently
- A clarification of the lessons which have been learned

Additionally, they argue that there should be a common method of recording events, a systematic approach to creating a database which is comprehensive and "intellectually honest" (ibid, p.206).

Based on research the Harvard Business Review (2015) offers a number of tools on how to deliver AAR's'. They put forward a 75-minute agenda that centres on

- Telling the story: a narrative from one or two individuals focusing on intended goals and what actually happened.
- Capturing the discrepancy: analysing what went well, what didn't and the reasons.
- What to improve or keep the same; a focus on the future.

Ellis et al (2006) term the AAR as an 'after-event review' or an AER. They argue that the purpose of such an AER is "to help individuals and groups gather and analyse data that will ultimately improve their performance. More specially, they give learners an opportunity to analyse their behaviour systematically and to evaluate the contribution of its various components to performance outcomes" (p.669). AER's are significant as not only do individuals update or replace existing knowledge, they are able to move on from the event, as understanding can facilitate closure. Reflecting on research on Israeli Air Force pilots 'after flight reviews', they also assert that AER's may lead to more specific failure reasoning than from non-AER reasoning, and, as well as encouraging individuals to take responsibility for failures, (as opposed to positioning responsibility on external factors) individuals can learn more and faster.

Cannon and Edmondson (2005) assert that to maximise the effectiveness of such reviews the AAR groups should include those with relevant technical skill, expertise in analysis, and diverse views. The involvement of people with a diverse mix of perspectives and skills may generate an in-depth learning process. Having a group which is open, enquiring and is skilled in exploring the potential differing explanations and interpretations of the causes and consequences of the failure is highly effective at creating new knowledge. They also recognise that after action reviews have the potential to draw conflict, and sometimes this may become personal, and therefore skilled facilitators are an important consideration to a successful and productive process. Recognising the likelihood of tension and conflict that this may bring, the positive trade-off comes in terms of the quality of dialogue. A structure for

rigorous review is essential as, without such a body, individuals can misunderstand complicated problems and come to hasty, unfounded conclusions (ibid). However, attention should be given to periodically reassessing these fundamental processes so they do not become a limitation to learning by becoming a competency trap (Levitt and March, 1988).

Birkinshaw and Haas (2016) argue for a specific and painstaking review meeting that delivers a complete understanding of benefits and costs of failure to enable an increase of return failed projects. An agenda based on exploring assets from the failure (insights about customers, markets, the team and people involved, future trends, and the organisation's structure, processes, and culture), and liabilities (direct financial costs, external costs e.g. reputation, and internal costs e.g. damage to team moral and organisational fallout) is used, with the aim of delivering important insights and takeaways for the business.

In summary, literature offers considerable discussion on the differing versions of post-performance review. Whilst varying forms (and indeed names) are clearly highlighted, it may be argued that there is general alignment. Specifically, each of the reviewing platforms offers a structured process of analysis and learning which is made up of defined activities and clear systematic approaches. Post-performance review in the main is not an ad hoc or informal affair. Literature also shows general alignment in the assertion that taking a structured approach to the post failure process is more of an effective way of learning from failure than an unstructured approach.

2.3.3.3 Communicating lessons learned from failure

Huber (1991) argues that organisational learning is dependent on the way in which information is distributed. Indeed the way in which information is distributed determines not only whether organisational learning occurs, but how widely. The wider the information is distributed, the more likely the information will be utilised to create learning for the organisation. He highlights some influencing factors that affect the sharing of lessons learned. Specifically

he highlights the factors that affect the passing of information, the delay in communications, and the extent to which the information becomes distorted:

- The probability of an organisational member or unit will pass information to another member or unit depends on the relevance of the information, power and status, the cost of communicating the information, workload, the gain from passing the information on, and how often information has been passed to the member/unit in the past.

- The probability of delaying the communication depends on the member/units workload, number of sequential links in the communication chain, and timeliness of the information.

- The probability or the extent to which information becomes distorted depends upon the consequent benefit or penalty to the individual/unit, the amount of discretion allowed in the way the information is presented, the gap between the actual and desired information, work overload, and number of links in the chain of communication.

Hubber (1991) goes on to highlight the significance of interpretation to the communication process. He posits that the way in which information is interpreted has a significant effect on what is learned and retained by the organisation. He offers four factors that may influence the interpretation of information:

- An individual's paradigm. Each individual has his or her own mental paradigm that acts as a frame of reference to make sense out of new information. Significantly, this paradigm may well differ across the units in an organisation.
- The frame of reference. How the information is communicated in the first instance, that is, within what frame of reference.
- The choice of media.
- Work overload. When there is a situation of work overload, too much information cannot be effectively processed which leads to varied interpretation.

Failure lessons may be communicated more proactively when stigma is attached to entrepreneurial failure. Singh et al (2015) argue that stigma at an individual level is a painful and traumatic experience, but that it can stimulate a positive reaction. Their research suggests that post entrepreneurial failure may experience an epiphany that leads to a different understanding of the stigma, transforming it into a more positive perception. In turn, this positive disposition towards the failure motivates the entrepreneur to share the lessons learned from the failure experience. However, this may be at odds with significant volume of literature that argues for an entrepreneurial environment that reduces fear of failure (Burns, 2013), thereby reducing the stigma that is attached to failure. Literature asserts that the communication of lessons learned is enhanced when there is reduced fear of failure; where there is psychological safety (Edmondson, 1999). This leaves the question of "does reducing the stigma of failure reduce the transference of lessons learned or increase it?" unanswered.

Reflecting on the work of Hubber, Singh, and Edmondson, it may be argued that the sharing of information and indeed the sharing of lessons learned is far from a straightforward process. Communications are complex and are highly dependent on a significant number of factors that affect, the passing of, and the speed of communication, and potential distortions that influence the interpretation of new knowledge. In considering these challenges, literature articulates differing approaches to the sharing of lessons learnt.

The Harvard Business Review (2015) puts forward three ways of sharing lessons learned from the failure process with others in the organisation. Firstly, by sharing on a common server or intranet, the list of activities to be continued and those to be changed. Secondly, by forwarding the notes (detailing the project narrative, analysis of the discrepancy between intended outcome and actual outcome, and next steps) to individuals who may be running similar projects in the future. And thirdly, by sending an email to the wider team summarising and highlighting important lessons. In this way, organisations are more likely to effectively share lessons learned. In a similar proposition, Lafley and Charan (2008) highlight GE's use of an intranet to offer webcasts as a means to communicate lessons learned. The webcasts communicates which of their projects are working and which are failing and are created by the

project teams themselves. Indeed, the CEO personally gets involved in disseminating learning in this way.

Literature also highlight findings that show some organisations creating formal structures to share lessons to all employees. Birkinshaw and Haas (2016) detail one organisation that pulls together an annual 'failure report' publicising the biggest flops and distributes it to all staff. However Abu- Shanab et al (2014), in their study of 59 employees of the 'Orange' communications organisation, were unable to establish a significant correlation between 'information technology infrastructure' and 'ongoing organisational learning' which questions assumptions from previous literature.

Separately, Lafley and Charan (2008) highlight the significance of internal networking through the conscious effort of organisations to build a social network which may enable the spread of knowledge gained from project failure. As Yang and Wu (2008) put it, "knowledge sharing can be regarded as a process of interactions among people" (p.1134), indeed the mobility of people is an important way in which experienced base knowledge is spread (Jensen et al., 2007)Significantly the empirical research of Abu-Shanab et al (2014) suggests that 'knowledge-sharing practices' are a significant predictor of 'ongoing organisational learning'. In this instance, knowledge-sharing practices are considered as structured interpersonal events or meetings, thus the attention centres on person to person sharing of lesson learned (ibid). Birkinshaw and Haas (2016) assert that a review cycle, which feeds into a broader conversation, allowing the spread of lessons across the organisation. They call for 'Triple F Reviews': "We recommend bringing senior leaders (across a unit or the whole organization) together on a regular basis to talk about their respective failures. These reviews work best when they are *fast* and to the point; take place *frequently*, through good times and bad; and are *forward-looking*, with an emphasis on learning" (p.92).

Extending the argument, Rubin (2013) argues that a 'multimodal' approach may be most effective in disseminating lessons learned as it reflects the differing ways in which individuals may wish to access information. Lessons from failure may be disseminated through 'lessons learnt' meetings, presentations, web messages, newsletters, e-mails, and posters, or in the form of specific training.

Additionally, individuals may access lessons learned through organisational databases. However, “the most important thing is that the right information needs to be available at the right time to the right people” (Rubin, 2013 p.41). This perhaps is the biggest challenge. Weber and Aha (2003) also highlight the (organisational) ‘push’ and (individual) ‘pull’ mechanisms that may disseminate lessons learned but argue that these mechanisms have limitations. They assert that a gap remains between an organisations repository of lessons learned and the organisations members, and the organisational processes.

This may be due to the situation whereby:

- The distribution of lessons learned is detached from targeted organisational processes.
- Organisational members may be unaware of the repository or they may not recognise the potential of accessing lessons learned data.
- Individuals may lack time or skills to access and interpret the lessons learned, or indeed, they may not have the ability to apply lessons successfully.

They put forward a ‘monitored distribution’ system, which they suggest can enable the distribution of lessons learnt on a ‘just-in-time’ basis, when and where the knowledge is required.

Finally, Takeuchi and Nonaka (1986) argue that transfer of learning occurs when organisations convert selected project activities into standard routines or practices. As an example, they highlight the Canon “Auto Boy”, a format for reviewing projects that was adopted for all projects having been used successfully in one instance. In this way, learning from failure may be transferred across the organisation.

Literature highlights a variety of mechanisms that disseminate knowledge from lessons learned, and the challenges to these processes. What perhaps creates some alignment in the domain is the consistent focus on structures, processes, and systems as a means to share the lessons learned effectively over any unstructured approaches. Even the social networking has a meeting structure attached to it. Indeed, literature suggests that the more that knowledge is formally encoded in documents, manuals, and software

programs, the more likely that knowledge dissemination will occur (Kotnour and Kurstedt, 2000).

2.3.3.3 Summary

In reviewing literature from the learning from failure domain, an organisational process of learning from failure emerges. The review centres on three stages that act as a foil to understand the learning from failure process. They are failure recognition, analysing failure, and communicating lessons learned. In viewing the three stages, the literature is greatly influenced by discussion of a highly structured learning process centred on maximising the value from entrepreneurial failures. Learning occurs through a disciplined, pragmatic and detailed approach that centres on post action meetings, or 'after action reviews'. These meetings are often formal by nature, involving comprehensive discussion and analysis of the failure event (Cannon and Edmondson, 2005).

2.3.4 The process of learning from failure and the impact on performance

Literature draws attention to a link between learning and organisational performance. Levinthal and March (1993) assert that experienced and trained individuals and groups will normally do better than those with less experience or training. Organisations accumulate individual experience in the form of rules and procedures to effectively transfer to newer members and that "this process of routinization is a powerful factor in converting collective experience into improved average performance" (p.106), particularly as, "this feature of learning makes it a prime contributor to competitive advantage" (p.106). "Indeed learning has been considered as the competitive advantage and one of the vital tasks of entrepreneurs" (Bagheri and Pihie, 2011 p.452). Crossan and Inkpen (1995) also argue that efficient leaning organisations deliver healthier performance on a longer term than their competitors. This perspective on longer-term performance highlights the nature of organisational learning and the transference of new knowledge and shaping of beliefs that is not necessarily a short-term process (ibid). Real et (2012) also found in their

empirical study of 140 innovative Spanish industrial companies, that there was a reliable and strong correlation between organisational learning and perceived business performance. Bontis et al (2002) also found a positive relationship between learning and business performance as did Spicer and Sadler-Smith (2006). Whilst literature provides some alignment in this discussion, there is an emphasis on the longer-term association of learning and enhanced performance.

Perhaps the significance of a supportive environment is made more relevant when a link with positive organisational outcomes is established. Van Dyck et al (2005) in their study of 65 Dutch organisations within differing industry sectors, found a reliable and strong correlation between an organisational error management culture and firm performance. This study is important as the results suggest that where an error management culture exists there is a positive effect on organisational survivability, organisational goal achievement, and return on assets. Van Dyck et al (2005) argue that, "a one standard deviation improvement in error management culture results in an increase in firm profitability by approximately 19%– 23%. A company that generates a $1,000,000 return on assets could thereby increase its gains by approximately $200,000. We believe that organizations should be interested in such increases and that programs that cultivate a systematic error management approach would most likely prove to be cost-effective." (p.1238).

Yamakawa et al (2013) assert that under certain conditions failures can stimulate entrepreneurs to learn and that this may lead to new entrepreneurial growth. Their research suggests that there is significant and positive relationship between entrepreneurs who take ownership of responsibility for the failure and the growth of subsequent ventures. Additionally, the research shows a significant and positive relationship between entrepreneur's intrinsic motivation to create a new venture after a failure and the growth of subsequent ventures. Thus, the entrepreneur's ability to recover from failure is directly related to future venture growth. Indeed "the ability of entrepreneurs to recover from failure provides valuable insights into the likelihood of serial entrepreneurship" (Yamakawa et al., 2010 p.7).

2.3.5 Barriers to learning from failure

Wilkinson and Mellahi (2005) argue that, “managers need to understand two key issues concerning organisational failure. The first relates to understanding the causes and processes of organisational failure so as to help them design effective strategies to avoid or handle failure in the future. The second issue relates to understanding barriers to learning from failure and identifying strategies to overcome them’’ (p.233). Therefore, the literature review now centres on the barriers to learning from failure that organisations face and how they look to address them. In exploring these areas, discussion considers two main themes: the psychological factors that impact learning from failure and the organisational factors that affect the lessons learned process.

2.3.5.1 Psychological Factors and Learning from Failure

In exploring the barriers to learning from failure, literature suggests that there are five factors that may psychologically impact the individual and subsequently the process of intelligent failure. They include aversion to failure, high and low self-efficacy (and low self-esteem), an internal locus of control, cognitive biases, and management reward systems. Each factor is explored individually.

2.3.5.1.1 Aversion to failure

Edmondson (2011) argues that in most institutions failure and fault are virtually inseparable. The attachment of failure and fault originates from a young age when children learn that that failure means taking the blame. Indeed the origins of fear of failure are rooted in parental socialisation and parent-child relations (McGregor and Elliot, 2005). A number of theories have been put forward to explain the phenomenon suggesting it may be due to:

- Mothers who punish failure but only react neutrally to success (Teevan and McGhee, 1972).

- Mothers setting high standards of achievement but not seeing their offspring as having the required capability to achieve those standards (Smith and Crandall, 1969) .
- Maternal irritability and dependency (Singh, 1992).
- Paternal absence from home (Greenfeld and Teevan, 1986).
- Mothers high in fear of failure withholding love when their child fails or makes a mistake (Elliot and Thrash, 2004).

Indeed, McGregor and Elliot (2005) argue, in summarising psychological theory on the subject, that: “Overall, the extant data indicates that individuals high in fear of failure are socialized in a way that orients them to the possibility of failure, that exerts pressure on them to succeed beyond their capacity, and that exacts relational costs should failure occur. These individuals appear to have learned to define failure as an unacceptable event that carries negative implications for their self-worth and relational security, which leads them to vigilantly orient to and seek to avoid failure in achievement situations” (p.219).

Indeed, as individuals grow and socialisation continues, there is considerable parental influence to avoid failure as a means to offer protection from any physical harm to their offspring. Subsequently this is effectively reinforced by schools where reward systems centre around success (Cannon and Edmondson, 2001).

McGregor and Elliot (2005) argue that, in addition to parental influence, shame resides at the core of people’s fear of failure. Shame is viewed as a devastating emotion because it entails feelings of self-worthlessness, failure, badness and of being wholly defective and “this defective self is exposed before a real or imagined audience and is judged unworthy of love” (p. 219) thus potentially jeopardising important relationships. Shame is inherently associated with tendencies to withdraw or avoid and thus, it is argued that, the function of shame is to stimulate behaviour which removes the individual from the scrutiny of people and so minimise the loss of love and rejection. Having experienced the acute pain of shame, the individual learns to avoid failure in achievement situations. Shame is a key component of fear of failure and is intrinsically avoided by people at almost any cost (ibid).

Showing partial alignment, Mitchell and Shepherd (2010) argue that fear of failure is made up of five sub-dimensions of which fear of experiencing shame and embarrassment is one. However, they put forward four others, those being a fear of

- devaluing one's self-esteem
- an uncertain future
- important others losing interest,
- and upsetting important others

They argue that "each of these fear-of-failure sub-dimensions reflects the perceived internal, ability-based negative consequences of failure: fear of failure is the fear of being a failure" (p.143).

Self-perception is important to motivation and other people's perceptions can be vital to future career prospects. As such, the fear of being perceived as being inept to any degree is a significant barrier to being associated with a project failure. Indeed, these individuals are likely to hide failure as a means to maintain their credibility and influence within the organisation, and maintain their career prospects (Cannon and Edmondson, 2001).

Therefore, for most people the experience of failure has a significant psychological impact. There is a strong and deep-rooted desire for individuals to see themselves as being held in high regard by other people, especially with those people whom they frequently interact. People implicitly believe that revealing failure will negatively impact their self-esteem and this leads to a natural aversion to disclosing failure (Cannon and Edmondson, 2005). What exacerbates this challenge is that when it comes to failure, people expect to be more harshly judged than would normally be the case (Cope, 2011). In many circumstances people recognise that even in an environment where failure is openly discussed, the positive impressions of individuals can be subtly eroded and this results in further aversion to acknowledging failure publicly (Cannon and Edmondson, 2005). Goleman (1985) suggests that, "…individuals have an instinctive tendency to deny, distort, ignore or disassociate themselves from their own failures" (p.34).

Failure avoidance is a form of personal protection to avoid the blame of others who are looking to make themselves look competent. Such is the prominence

of societal blame that people tend to look to blame individuals and de-emphasise evidence of any mitigating circumstances (Alicke, 2000). Blaming, therefore, is a barrier to learning as it is unlikely that teams will effectively learn from mistakes if their mind-set is centred on blaming others (Tjosvold et al., 2004). Additionally, within the team framework there rests the potential for significant influencing. Therefore, any shared beliefs about failure can significantly influence the individual. Indeed, social influences within a work group can acutely influence the reaction to failure (Cannon and Edmondson, 2001). It is this presence of highly ingrained cognitive bias towards failure which may explain why so few organisations have moved towards a culture of psychological safety, where individuals have no fear of reprisal and intelligent failure is an accepted part of day to day working life (Edmondson, 2011).

A review of literature highlights the wide and fundamental aversion to failure and its impact on the individual and the organisation. The psychological distress of failing carries much emotional pain for the individual. Significantly, literature asserts that aversion to failure represents a fundamental challenge to the process of learning from failure.

2.3.5.1.2 High and low self-efficacy (and low self-esteem) and internal locus of control

Literature considers high self-efficacy and internal locus of control as being a significant facet in the psychology of the entrepreneur (Boyd and Vozikis, 1994, Chen et al., 1998, Anderson, 1977). However, when it comes to acknowledging failure, Cannon and Edmondson (2005) argue that such positive feelings of the self and feelings of control may be unrealistic and incompatible with honest reflection. In this way, high self-efficacy and internal locus of control act as a hindrance making it difficult to learn from failure. Although high self-efficacy can have negative connotations, the same is also true of low self-efficacy, which can reduce entrepreneurial activity. Learning from failure requires individuals to face up to their failure through critical feedback and this can form an unpleasant experience, leading to a reduction of self-efficacy. If individuals are unable to manage such psychological issues effectively then learning can be inhibited (Cannon and Edmondson, 2001). It

is not only self-efficacy that is affected by failure. Edmondson (2011) argues that analysing failure is emotionally unpleasant and can have significant knock-on effects for an individual's self-esteem. Instinctively, people would prefer to speed through failure analysis or even avoid it altogether. Indeed, people would rather leave the failure behind rather than painfully dissect it for the benefit of individual and organisational learning (Cannon and Edmondson, 2005).

Arora et al (2013) argue that some entrepreneurs are more inclined to learn from failures than others depending on their ability to harness counterfactual thinking (that is, thoughts relating to what might have been if circumstances had been different or if individuals had acted differently). Counterfactual thinking is principally triggered by negative emotional reactions to failure and disappointing outcomes (Baron, 2000).

Baron (1998) previously argued that "entrepreneurs engage in counterfactual thinking about past events less frequently than others" (p. 82) thus reducing the negative impact on entrepreneurial self-efficacy. Baron (2000) suggests three reasons for not looking backwards: Firstly, entrepreneurs have a stronger present or future-orientated perspective. Secondly, entrepreneurs have cognitive biases, such as excessive optimism and overconfidence, which leads to foreseeing positive outcomes. Thirdly, entrepreneurs maintain optimism even when having experienced repeated failures.

However, Arora et al (2013), in their survey of 138 entrepreneurs from across the United States, find that the negative impact of counterfactual thoughts on self-efficacy are moderated by positive affect (an instinctive cognitive reaction to see matters in a positive light) and high self-esteem. The results suggest that entrepreneurs with high positive affect and high levels of self-esteem lead to higher levels of entrepreneurial self-efficacy. Additionally, the results suggest that, in this instance, entrepreneurs benefit from counterfactual thinking and learning from the past. However, those entrepreneurs who have a negative affect (see matters in a negative light) and lower levels of self-esteem have reduced levels of self-efficacy and do not benefit from counterfactual thinking, thus losing the opportunity to learn. With a positive affect and higher self-esteem, the entrepreneur gains increased levels of self-

efficacy from counterfactual thinking, thus encouraging continued reflection on the past and learning for the individual and the organisation.

2.3.5.1.3 Cognitive biases

McGrath (1999) argues that cognitive biases further inhibit the ability to learn from failures, specifically, confirmation bias, misattribution of success (and failure), negative perceptions of events, and negative retrospective recollection. Confirmation bias, whereby evidence that disconfirms the individual's viewpoint is rejected, tends to make information associated with failure less vivid, less visible and less believable and tends not to be presented. Indeed, as the intelligence is distorted so the information can be misinterpreted.

The cognitive bias of misattribution of success is the perception that success is the result of the individual's owns action and failure is the result of exogenous factors. This bias can lead to incorrect correlations between actions and results (ibid). Levinthal and March (1993) suggest that "research on individual attributions of causality to events indicates that individuals are more likely to attribute their successes to ability and their failures to luck than they are to attribute their successes to luck and their failures to ability" (p.105).

Additionally, the negative perception of events related to failure can lead to pessimistic after action views of events and behaviours and thus distort outcomes. Finally, the negative retrospective recollection of events associated with failure can lead to them being avoided, not discussed and suppressed which can mean that the same mistakes occur again and again (McGrath, 1999). These biases together represent a substantial barrier to effective learning.

Mantere et al (2013), having conducted an intensive cross-case analysis of three hi-tech organisations which went bankrupt, conclude that attributions of entrepreneurial failure do not conform to attribution theory. They argue that the attributions cannot be viewed as a self-serving tendency to avoid responsibility. Indeed, they argue that entrepreneurs use self-justification to make sense of entrepreneurial failures. In this way, they maintain self-esteem

and are able to learn from the failure more effectively. Principally the study found that 63% of entrepreneurs accepted personal or collective responsibility for failure (the remainder, however, did blame others outside the organisation or blamed the hand of fate). Entrepreneurs using self-justification assigned faults to the 'old me' and insights gained to the 'new me', thus previously held beliefs about themselves are discarded to retain rationality and self-esteem. The positive outcome is that this cognitive approach diminishes negative emotions and facilitates learning from the failure. This theory is in part supported by Baron (2000) whose research indicates that entrepreneurs find it easier to admit mistakes to themselves and those around them than non-entrepreneurs.

The research of Yamakawa et al (2010) suggest that entrepreneurs who blame themselves for intelligent failure (internal attribution), rather than a factor outside of their control, are more likely to be successful with future ventures. They argue, however, that this relationship continues until the number of failures amount to a level that reduces the effectiveness of learning, self-efficacy, and subsequent new venture success. When failure levels are not affecting self-efficacy, it is argued that internal attribution stimulates entrepreneurs to learn. Additionally, Yamakawa and Cardon (2015) find that 'unstable' internal attribution is positively associated with how much entrepreneurs perceive that they learned from their failure episode. The term 'unstable' refers to the causation factor, and whether it can change over time, or not (for example, lack of knowledge on how to manage the business). Indeed, they also find that when unstable internal attribution occurs, entrepreneurs who start a new venture more quickly after venture failure, perceive they learned more from failure. Their finding that stable external attribution is negatively associated with perceived learning from venture failure perhaps supports the argued relationship between attribution and learning from failure.

Whist there is significant literature on psychological reasons for failure avoidance, McGrath (1999) suggests that anti-failure biases can lead to behaviour which centre on avoiding failure by dishonest means; specifically, through metrics manipulation, and diverting resources. Individuals can directly intervene in the evaluation of a project by manipulating relevant metrics to

produce favourable results, which means the failure may never be detected. She also adds that for reasons of a non-economic intrinsic or psychological nature, the life of partially or wholly failed projects may be extended by diverting resources to support underperforming projects, and this reduces the learning opportunity.

Due to attributional cognitive biases, Kc et al, (2013) argue that individuals are more likely to learn from other people's failure episodes than from their own failures. Individuals will attribute cause of the failed venture to the entrepreneur, and this encourages effort to understand the reasons behind the failure. Individuals are more likely to take note of other people's failures and process data in a manner to create learning and new knowledge. In this way, individuals generate significant learning from failure, and in some instances, more learning than from their own failure experiences.

2.3.5.1.4 Grieving

Entrepreneurial failure can create a mix of negative emotions which may affect the way the entrepreneur processes information and which negatively impacts on their ability to learn from such a negative event (Shepherd, 2003). Shepherd et al (2009) argue that grief is a negative emotion which is linked to the loss of something special and that managing the grief process associated with entrepreneurial failure impacts on both the ability to learn from failure, and the commitment to future projects. Entrepreneurs are often passionate about the projects they initiate and drive individuals and teams who are more creative when they are passionate about what they are doing. The more energy, passion and commitment that go into a project, the higher the level of grief when the project fails, which can then negatively affect the entrepreneur, their ability to learn and their commitment to future projects. Additionally Shepherd (2003) argues that the interference of grief on learning is higher when the volume of feedback information is greater.

Shepherd et al (2013) argue that higher levels of negative emotion occur from corporate entrepreneurial project failure when an individual:

- places more importance on the project

- is not expecting the project to fail
- has a lower level of emotional intelligence to enable emotion regulation
- has limited exposure to project failure

The higher the levels of negative emotion affect the individual as it '"narrows their attention, interferes with their information processing capabilities, and reduces feelings of control; these consequences, in turn, adversely impact learning" (p.888). Indeed, on an accumulated basis, the more project failures experienced by an individual, the more negative emotions accumulate, which in turn reduces the ability of the individual to learn from failure.

Viewing failure with a differing perspective enhances the ability for an individual to learn. To enable this process, individuals may be encouraged to engage in counterfactual thinking to enhance learning (ibid). Indeed, Arora et al (2013) suggest that training aspiring entrepreneurs in counterfactual thinking would have a positive impact. They argue that, as entrepreneurs understand themselves better so they can learn how this developed self-understanding impacts on their perspective of past events. Thus, this self-reflection and self-regulation will provide the opportunity to maintain and develop self-efficacy, and most significantly, their ability to learn from failure.

Aversion to failure, self-efficacy, cognitive biases and grieving represent psychological issues that affect the process of learning from failure. When considered together, these psychological factors suggest that managing the intelligent failure process is laden with substantial complexity and difficulty. Whilst the psychological barriers are significant to learning from failure there are some important organisational barriers that also add to the overriding challenge of gaining lessons from failure.

2.3.5.2 Organisational factors and learning from failure

A review of entrepreneurial literature suggests there are a number of factors that act as an obstacle to learning from failure which reside within an organisational context. Organisational barriers to the process of learning from failure principally reside in matters relating to management, the detection of

failure, post-failure meetings, small and large failure, termination of projects, and technical factors.

2.3.5.2.1 Management

Centring on the management issues, Cannon and Edmondson (2005) suggest that managers find it difficult to engage in effective learning from failure. They argue that the tendencies of individual denial, distortion, avoidance or disassociation from failures are heightened in the ranks of management who tend to reward success and penalise failure. This can be compounded when senior management behaviour, organisational structures, culture, policies and procedures reflect a low propensity of failure tolerance. They add that management reward systems can impact negatively on effective failure analysis as the process requires a depth of reflection, openness, patience and a tolerance for ambiguity. Managers, however, are often institutionally rewarded for decisiveness, efficiency and action, thus the juxtaposition represents a significant barrier for organisational learning.

Even when new lessons are learned there remains the challenge of transferring the new knowledge from one unit to another within an organisation which may not occur due to inefficient communication and operational systems, and due to organisational politics (Huber, 1991). Indeed, internal politics also is a significant factor that is influential in the process of learning from failure. Senior managers who seek to maintain their political power protect their interests and this can show itself in the form of non-disclosure of failure (Baumard and Starbuck, 2005). Further, the involvement of influential personnel combined with significant investment in the project can lead to the hiding of or non-analysis of intelligent failure (Manimala et al., 2006). Even at Nokia, with its well proven management systems in capturing insights and learning from failed ventures, found organisational politics difficult to manage (McGrath et al., 2006). At times politics made objective discussion of venture failure difficult and so subsequent recouping challenging. In one case a venture that was spun off was later deemed to be an attractive area of opportunity and the organisation had to relearn the knowledge gained in the spun off venture (ibid).

2.3.5.2.2 Detection of failure

Whist the process of learning from failure can be hindered by organisational politics, research suggests difficulty also rests within failure detection. Edmondson (2011) argues that the fundamental problem of intelligent failure detection is that despite the existence of sophisticated methods and systems for detection, they are prolifically underused. However, messengers of failure continue to be reticent in coming forward to communicate to their bosses and colleagues, even if they are new to the organisation. Often it is the behaviour of middle management that is a critical determinant in how detection of failure is communicated. Middle management response, encouragement of open discussion and showing of both humility and curiosity impacts on reporting teams and individuals (2011). McGrath and McMillan (2000) suggest that there are external pressures which lead to managers resisting recognition. They observed some powerful distributors that were pressurising a development manager to continue with a project regardless of the poor performance of the venture for the firm. Other failure detection problems exist particularly when it relates to customer feedback. Tax and Brown (1998) in their study of service failure found that within the service industry the biggest barrier to organisational learning is the very low percentage (5 – 10 %) of unhappy customers who register a complaint. Customers can fail to complain due to:

a) Belief that the organisation will do nothing about it

b) Not wanting to confront the responsible individual

c) Uncertainty about their rights

d) Concern over the personal cost in time and effort

e) Anticipation of negative ramifications relating to future service provision.

Even when customers do make a complaint, the study suggests that most firms fail to actually document and categorise complaints effectively, which makes learning difficult. The lack of documentation is due to staff having little interest in listening to negative customer feedback, treating complaints as an isolated event not requiring disclosure to management, avoiding taking responsibility

for the issue - blaming the customer, and having no systems in place in which to disclose information regarding complaints to those responsible for the failure.

2.3.5.2.3 Post failure meetings

Even when failure is effectively detected, there is the tricky process of managing the post-failure meetings. Indeed, Cannon and Edmondson (2005) argue that inability of management to effectively manage the post failure meetings can mean that little shared learning is achieved. Social factors can frustrate constructive dialogue and analysis, which can lead to disintegration of reviews into finger pointing, name-calling, and an opportunity to reprimand. Individuals can be derided and embarrassed in public, which can leave ill feeling and strained relationships. Essentially, most managers do not have the skills to manage such hot emotions in a way that maximises the learning potential of such a session (ibid).

2.3.5.2.4 Small and large failures

Research suggests that the size of the failure, whether it is large or small, is relevant to the discussion. Indeed, the empirical research of Baumard and Starbuck (2005) suggest that the propensity to learn is significantly reduced in both large and small intelligent failures. In the case of a large failure, managers offer general explanations for the failure, centring on idiosyncratic and exogenous factors such as wider societal trends or outside involvement thus negating any further enquiry. Additionally, larger failures occur over a longer period that may dilute accountability (due to management turnover) and create the opportunity to conceal the failure for a considerable time. In the case of small failures, management interpretation can also inhibit effective learning. Managers can interpret event failures as illustrative of the idiocy of moving away from the core mantra of the organisation. Indeed, the natural reaction of managers is to dismiss failures that contest core beliefs. In both cases, the lack of analysis negates the opportunity to learn from failure. The differing sizes

of intelligent failure affect the ability to learn and this argument has synergies with research on failure size through the lens of project termination.

2.3.5.2.5 Termination of projects

Corbett et al (2007) suggest that failure can be difficult to learn from as lead entrepreneurs lack effectiveness in choosing the best time to terminate a project. They argue that there are three termination points or 'scripts' that affect an organisation's ability to learn from failure: undisciplined termination, strategic termination, and innovation drift. Undisciplined termination relates to the quick decision to end the project, which can mean learning is reduced as the projects are not allowed to develop. Innovation drift relates to organisations letting projects with less strong prospects continue when termination would be more appropriate. In this instance, learning may be reduced due to, firstly, the time lag involved which diminishes the memory of the organisation, secondly the lack of ownership of the project, and thirdly, the non-commercialisation of the innovation. Royer (2003) asserts that innovation drift can also occur due to the collective belief within the organisation. The widespread belief of managers in a project to ultimately succeed becomes so strong that their faith blinds them from seeing the reality of the situation. This blind faith is driven by the passion of individual belief that can spread rapidly, particularly if it reinforces the desires or perceptions of other people. Further, she suggests that as blind faith spreads to the project decision makers, the ability to end a project significantly diminishes and termination drift occurs. McGrath and MacMillan (2000) refer to termination drift as 'entrapment' suggesting that it can occur when there is a mass of optimism within the venture team, or when the development manager cannot terminate the project because of the emotional burden of recognising the personal commitment and sacrifice made by the venture team. Corbett et al (2007) argue that strategic termination is the balance between the undisciplined termination and innovation drift, whereby a structured approach provides sufficient information to make a timely decision on termination or otherwise. Strategic termination maximises learning for the entrepreneur because there is a willingness to reflect on, and learn, what went wrong in order to progress future projects. Undisciplined termination and

innovation drift, therefore, lead to a significantly reduced opportunity to learn from intelligent failure. An example would be the approach of Nokia as illustrated by McGrath et al (2006). Nokia managed termination decisions decisively, usually making discontinuation rulings within the first year of the venture. By so doing, those close to the venture did not become too personally attached and were protected from any stigma that might be attached to the venture.

2.3.5.2.6 Technical factors

Cannon and Edmondson (2005) suggest that there are significant technical barriers to learning from failure. There can be an inadequate understanding of the relevant scientific method and this limitation to an individual's intuition and 'sense making' ability can lead to false conclusions. They also argue that, at a pragmatic level, one of the most important factors in identifying failure is the accessibility of necessary data and the ability to interpret it and engage in a robust process of analysis. Without this ability, the learning process is significantly impaired. Indeed, in a more generic perspective, Muehlfield et al (2012) assert that it is the complexity of organisational activities that makes it harder to learn from failure.

2.3.5.3 Summary – Barriers to learning from failure

A review of literature highlights a significant number of challenges that organisations face in trying to create and maintain an effective process of learning from failure. The challenges or barriers to learning rest within the psychological and organisational contexts and are often complex as well as difficult to address. The combination of the identified psychological and organisation factors present a fundamental challenge and it may be argued therefore, that it is perhaps not surprising that organisations find it so difficult to achieve the desired learning from failure. However, literature does offer theory as to how organisations may address these psychological and organisational challenges.

2.3.6 Managing the barriers to learning from failure

Barriers to learning from failure are significant in volume and in complexity, so how can organisations break through them? What can organisations do to normalise the process of learning from failure? In this section attention centres on managing the psychological and organisational facets to enable an effective process of learning from failure.

Farson and Keyes (2002) argue that in order to create a culture that accepts failure, where people are comfortable with the concept, the organisation must abandon the current inherent idea of personal competition. The concept of competition focuses on winning as the goal, which then heightens the negative connotations of losing, and this can stifle creativity, openness and honesty. A collaborative approach centres on problem solving, sharing information and project advancement. This collaborative approach leads the way to maximising the failure opportunity and true innovation. Also important is management's approach towards communication: "Failure-tolerant leaders send clear messages to their organisations that constructive mistakes are not only acceptable but worthwhile. Employees feel that they have been given the green light to set out and explore, no longer thinking in terms of success or failure but instead in terms of learning and experience" (p.71). This legitimisation is important. McGrath and MacMillan (2000) suggest that successful entrepreneurs 'recoup' knowledge with constructive post mortems which legitimise entrepreneurial failure: "recouping helps convey to those on the venture team – valuable talent whom the firm could ill afford to have crippled by a feeling of failure – that it was the venture that failed, not them" (p.333).

Indeed, in a study of the venture program at Nokia, McGrath et al (2006) identifies that high performers sought opportunities to be part of new ventures. At Nokia, first-hand experience of failure was seen as an essential management development practice. Nokia created an environment where failure and lessons learned were openly discussed and could therefore be transferred to other ventures. Indeed, failure was accepted by management to

the extent that those people involved in processes of intelligent failure were promoted because of their involvement.

An important part of normalising failure is for managers to respond supportively when individuals report failures, showing a questioning, enquiring mind. In order to create a climate of blameless reporting, leaders should focus on reward first and addressing the problems second (Edmondson, 2011). When managers 'shoot the messenger' it has a significant impact on the individual and the organisation and dissuades people from bringing attention to their own and other's failures in the future, thus weakening the process (Cannon and Edmondson, 2005). Kriegesmann et al (2005) highlight the approach of BMW AG in Regensburg in 1990, where the head of personnel, Gerhard Bihil, initiated a 'flop of the month' program. Employees who won the award demonstrated that they had developed an innovative idea even though they eventually failed at the stage of implementation. Significantly the award was made by Bihil and thus he took personal responsibility for the successful failure. As Bihil puts it, "as a managerial team, we regard this as a fine thing. It is a pity it didn't work, but don't let that get you down and try something else" (ibid, p. 61). Further, Kriegesmann et al (2005) also highlight an initiative at the car manufacturer called "Creative Error of the Month." The initiative goes beyond lip service to elicit genuine toleration of failure. Whilst recognising the economic need to avoid routine business process errors, the aim of the programme is achieve cultural change, "from a climate of fear to one of trust and confidence in which innovative commitment is treated fairly even if it does not in fact succeed" (p.63). By removing the punitive climate of fear of failure and offering safety nets, the organisation is positioned to increase entrepreneurial activity (Levinthal and March, 1993).

Indeed, leaders need to build a psychologically safe environment to be able to encourage employees to speak up when they identify problems, (Edmondson, 2011). "In a psychologically safe environment, members share a general sense that others will not punish them because of their mistakes" (Gu et al., 2013 p. 91).

Kahn (1990) sees psychological safety as a feeling whereby people can express themselves "without fear of negative consequences to self-image, status or career" (p. 708). People feel safe in situations where they believe and

trust that they will not suffer for their personal engagement. When people feel their situation is secure, trustworthy, predictable, and where behavioural consequences are transparent, psychological safety is prevalent. He goes on to identify four influences:

1. *Interpersonal relationships*, where there exists a state in which ongoing relationships offer support, trust, openness, and flexibility, with no presence of any threat. Stronger interpersonal relationships allow flexibility that in turn allows people to try, and fail, without fear of the consequences. It is safe to share ideas and concepts and criticism is constructive not destructive.

2. *Group and intergroup dynamics*, where informal and unconscious roles leave space for self-expression within and between inter organisational groups. In differing groups, individuals unconsciously find themselves in differing roles and, depending on the role and the situation, will feel more or less likely to engage personally.

3. *Management style and process*, where leadership behaviours demonstrate support, resilience, consistency, trust, and competence. Where management environments are supportive so people can try, and fail, without fear. Indeed, when management allow people some control over their work, so the feeling of safety increases. However, when managers are unpredictable, inconsistent or hypercritical, they create uncertainty that reduces people's propensity to engage.

4. *Organisational norms*, where those that conform to general behaviours experience safety, and those that deviate from behavioural norms experience anxiety. Norms may regulate emotional or physical action. So questioning customary thoughts or behaviours patterns tends to lead people to a feeling of less safety.

   Managers are instrumental in maintaining a climate that encourages and fosters learning from failure and, to enable team learning from mistakes, social capital is required to a certain extent (Gu et al., 2013). Nahapiet and Ghoshal (1998) determine social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (p.243), and argue that there are three individual dimensions of social capital; structural (a social

structure), relational (trust) and cognitive (a common understanding). In their research, Gu et al (2013) discovered a reliable and strong correlation between the three dimensions and team learning from mistakes. Thus, an organisational environment that can support and develop levels of social capital is well placed to enhance learning from intelligent failure (ibid).

Carmeli and Gittel (2009) assert that high quality relationships which are inclusive of shared goals, shared knowledge, and mutual respect lead to an increased propensity to learn from failure. Where there is a web of good quality internal and external relationships (strong positive social capital), so people feel safe to speak openly. Where psychological safety is prevalent, members are willing to voice concerns and act on important information from each other (Gu et al., 2013). In this way, failures are brought to the organisation's attention, which leads to analysis, new conceptions, and new knowledge. Competing goals, a lack of understanding of, and a lack of respect for each other's roles is likely to lead to blaming, reduced psychological safety and reduced learning from failure (Carmeli and Gittell, 2009).

Morand (1995) suggests that the organisational culture and organisational structure can affect an environment supportive of innovation and entrepreneurship through the medium of "interaction orders." These "interaction orders" or behaviours may be visible in:

- linguistic elements (e.g. formal: fully articulated speech, or informal: phonological slurring),
- conversational turn taking and topic selection (e.g. formal is regulated and informal is unregulated),
- emotional and proxemics gestures (e.g. formal sober facial expressions or informal latitude of emotional expression),
- and physical and contextual (e.g. formal versus informal clothing, symmetrical versus asymmetrical arrangement of furniture)

He argues that culture and structure affect these "interaction orders" that in turn affect the organisational entrepreneurial environment, such as in the free flow of information, creativity, familiarity and affective involvement of people, dynamic systems, and the levelling of status. Therefore, to influence these factors towards achieving the desired organised environment, management

may focus on developing appropriate attention towards the organisational culture and structure. Additionally, Carmeli and Gittell (2009) argue that the shaping of the organisational structure can positively impact on the development and continuation of a psychological safe environment. Where distinct divisional roles, accountable for different work activity exist, so the potential for blaming increases. Therefore, hierarchies that are by nature flat are encouraged. Additionally, the formation of a strong social structure, where high levels of trust and a shared paradigm exist, can support and enhance psychological safety (Gu et al., 2013).

Structures that support such social networking and collaboration can be effective in communicating lessons learned. As highlighted by McGrath et al (2006) Nokia were very effective at dispersing lessons learnt across the organisation. Internal structures centred on networking whereby management take pride in collaboration:

- Extensive training and networking events
- Personnel rotation to different divisions
- Documentation of codified knowledge
- Temporary assignments for skilled, experienced people

By driving collaboration (and a psychologically safe environment), Nokia effectively created a way for knowledge to be widely disseminated.

Cannon and Edmondson (2005) add that to develop this state of psychological safety leaders need to model the behaviours they desire. Firstly ‘walking the talk’ is an important part of communicating appropriate behaviour and secondly, modelling can assist in the process of showing individuals how to enact the desired behaviour by identifying and analysing failure, creating ideas and inviting different explanations and constructive criticism, and then capturing and using the learning. Further Cannon and Edmondson (2005) suggest that psychological safety is created one work group at a time, with managers and peers disseminating appropriate attitudes and activities. Indeed, developing management skills in coaching can facilitate the progression of an established learning environment. Important in the first instance, however, is that leaders accurately frame the work so that there is a shared understanding of the kind of failures that are deemed ‘intelligent’.

As part of developing the psychological safety needed by individuals, leaders need to create a vision that reinforces the entrepreneurial focus of the organisation, highlighting the importance of intelligent failure, experimentation and learning from failure. A strong entrepreneurial vision is fundamental to the ability of the entrepreneur to make sense of, and learn from failure. When confronted by failure, it is this vision that reinforces the commitment of the entrepreneur towards a successful conclusion (McKenzie and Sud, 2008).

Furthermore Lafley and Charan (2008) argue organisations should foster good innovation leaders. They argue that good innovation leaders are hard to find and therefore companies need to preserve, protect and promote them even in the light of failure. Companies that display authentic commitment to fearlessness towards failure, openly promote individuals whose projects may have failed despite effective leadership. This action speaks louder than any company communication and shows commitment to rewarding risk-taking.

Cannon and Edmondson (2005) assert that reframing the managerial mind-set may help to enhance an appropriate paradigm for organisations to manage failure effectively. The mind-set changes include:

- A learning-centred approach, which sees failure as a natural occurrence of a healthy experimentation and learning process, rather than a traditional stance where failure is deemed as unacceptable.

- The belief that effective performance involves failure avoidance should be repositioned. The new mind-set should emphasise that effective performance involves learning from intelligent failure and communicating lessons learned across the organisation.

- From a psychological perspective, curiosity, humour and a mind-set that sees capturing learning as progressive for both the individual and the organisation is the goal, rather than the normal mind-set of self-protection.

- The leadership approach should move from efficient daily management to recognise the value of spare capacity for the purposes of learning and development.

Indeed, Farson and Keyes (2002) argue that the best leaders focus on increasing the experience, knowledge, and creativity of the workforce through taking a tangible interest in the projects of their employees, analysing projects supportively rather than manipulative praising (which demotivates people), and earning empathy by exhibiting their own failings.

Van Dyck et al (2005) argue that there are seven common practices which positively support an error management culture. These include:

- Communication about errors
- Sharing error knowledge
- Helping in error situations
- Quick error decision and damage control
- Analysing errors
- Coordinating error handling
- Effective error handling

Over and above these practices Carmeli and Sheaffer (2008) identify in their research a positive and significant relationship between organisational learning from failure and what they term ‘learning leadership’ which, they argue, consists of top management teams who work to:

- Exchange high quality ideas and solutions with each other
- Encourage individual initiatives
- Instil trust among employees
- Defuse the political agenda to focus on truly essential issues.
- Downplay information and indications from financial data.

Top management working this way, provides a learning leadership approach that supports effective organisational learning from failure.

In summary, the review of literature offers a number of possible suggestions that organisations can apply to help them tackle some of the barriers associated with learning from failure. A strong theme emerges around the creation of a climate that offers psychological safety, where leaders tolerate failure, encourage collaboration and socialisation. Additionally, the managerial mind-set addresses some organisational challenges centring on shaping a culture that effectively supports learning form failure. Combining these

suggestions literature offers significant insight into how organisations may overcome barriers within the 'lessons learned' process.

2.4 Managing intelligent failure

In the exploration of literature within the entrepreneurship domain, the review discovers discourse relating to three main themes in the area of learning from failure. The themes are the process of learning from failure, the psychological and organisational barriers, and an environment that supports learning from failure. It is argued that these themes create the components of intelligent failure that require managing.

2.4.1 The process of learning from failure

Within this first theme, literature centres on three streams of discussion: identifying failure, analysing failure, and communicating lessons learned from failure. It is argued that the three streams represent a process by which individuals and organisations learn from failure.

Identifying failure: active and timely identification (Cannon and Edmondson, 2005) stimulates the explanation process (Zhao and Seibert, 2006), reduces the likelihood of problem growth, multiplication, or incorporation in organisational wide system (Cannon and Edmondson, 2001) failures detection forms include 'action-based detection'', outcome-based detection', and 'detection by external limiting function' (Zhao and Olivera, 2006), and also by customer identification (Barkai and Harison, 2012). Identifying failure represents the first stage of the learning from failure process.

Analysing failure: to extract the maximum learning from an entrepreneurial failure a systematic process effort is required to acquire the facts, examine them thoroughly, and make conclusions about future actions (Kuratko et al., 2011). Rigorous analysis and in-depth probing may discourage premature conclusions to allow complicated problems to be fully understood (Cannon and Edmondson, 2005). Analysis may come in the form of 'post mortems' (McGrath

and MacMillan, 2000), ‘after action reviews’ (Senge, 1990), ‘institute systematic project reviews’ (Gino and Pisano, 2011) or ‘after innovation report’ (Lafley and Charan, 2008).

Communicating lessons learned from failure: Organisational learning is dependent on the way in which information is distributed (Huber 1991). Influencing factors include those factors that affect the passing of information (such as relevance, workload, and gain from passing it on), the delay in communications, and the extent to which the information becomes distorted (ibid). Sharing of a common server, webcasts, emailing all assist the process (Lafley and Charan, 2008), as do ‘failure reports’ (Birkinshaw and Haas, 2016), knowledge sharing networks (Abu-Shanab et al, 2014) and a ‘monitored distribution’ system, enabling the distribution of lessons learnt on a ‘just-in-time’ basis, when and where the knowledge is required (Weber and Aha 2003).

Literature in the entrepreneurship domain suggests that in the process of learning from failure, identification is a prerequisite to the analysis of the failure, where learning occurs, before the new knowledge is shared across the organisation, leading to enhanced individual and organisational learning.

However, in the exploration of ‘organisational learning’ literature, the review uncovers Kolb’s seminal ‘theory of experiential learning’ (1981) asserts that knowledge is created by the transformation of experience into new learning. He argues, “Learning is a continuous process grounded in experience” (Kolb, 1984, p.21). He presents a theory in the form of a four stage cyclical process: Stage 1 relates to the concrete experience that forms the source of observations and reflections (the second stage). In stage 3, the respective observations and reflections form the platform for the construction of ideas, abstract concepts or generalisations by the learner that shape future action. The action is then tested in stage four to offer a further concrete experience, which then starts a new cycle of learning.

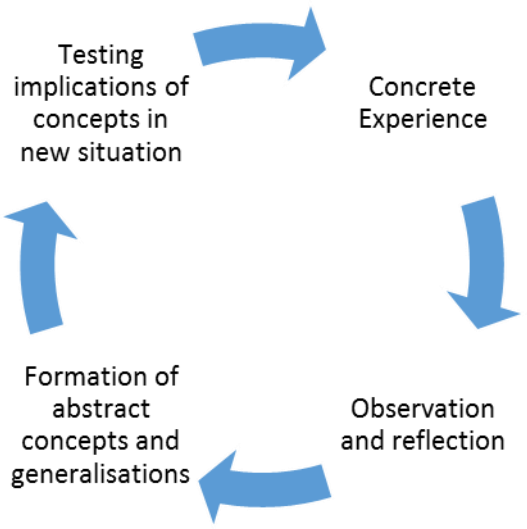


Figure 2.1 The experiential learning model - Kolb (1981)

Kolb (1984) argues that “immediate personal experience is the focal point of learning” (p.21). In developing his theory he draws significant engagement from authors in enhancing and expanding the discussion on experiential learning across the years within the ‘organisational learning’ domain. This includes Senge (1990) Wolf and Kolb (1984) Nonaka and Takeuchi (1995) McGill and Beaty (2001) and Huber (1991) to name a few. Indeed, even within the entrepreneurship domain Jason Cope (2000, 2003, 2005, 2011), a prominent author in entrepreneurial learning adds to experiential learning and learning from failure theory.

Perhaps, therefore, it may be argued that the literature review highlights two processes that add to the understanding of how organisations may learn from failure: One centring on organisational processes and another centring on a cognitive process. It may be further argued therefore, that the two may be combined to create a model that sees the learning from failure process as a combination of the two:

Figure 2.2 The Process of learning from failure - adapted from Kolb (1981)

The adapted model of Kolb (1981) above shows the amalgamation of both cognitive and organisational processes to deliver a five-stage model that illustrates the nature of the process of learning from failure.

Stage 1: Taking Kolb's (1981) model, the conceptual of a 'concrete experience' is extended to reflect a concrete experience centre around an intelligent failure. That is, an outcome where failure occurrence is recognised

Stage 2: 'Reflection' replicates the 'observation and reflection' stage of Kolb's model (and is supported by numerous authors for example Daudelin, (1996), Cope, (2003), Pittaway and Cope, (2007), and Bagheri and Pihie, (2011).

Stage 3: 'Analyses and conceptualise' reflects Kolb's 'formation of abstract concepts and generalisations' incorporating the nature of the pragmatic organisational process of analysis and the 'after action review'.

Stage 4: 'Sharing knowledge and concepts' is an additional facet to Kolb's model and reflects the organisational process of sharing lessons learnt highlighted in entrepreneurial failure literature. As an example, in exploring a 'Lessons Learnt System' used by U.S. Government agencies, Weber and Aha (2003) identify a process for storing and distributing the lesson learned. The process is made up of four stages. As lessons come from experience, they are collected from those who lived the experiences. These 'collected' experiences are 'verified' for their correctness and then put in 'store', which in this case is

in the ‘Lessons Learnt’ computer software. ‘Dissemination’ the last stage follows before the lessons are reused within the organisation.

Stage five: ‘Testing implications of new concepts’ from Kolb’s model is shaped to ‘try a new approach’ in the adapted model. ‘Try a new approach’ relates to entrepreneurship theory centred on redirection of initiatives when failure occurs, specifically lean startup theory. As a new venture is developed through a process of iterative experimentation, when an experiment delivers a negative result, the venture may ‘pivot’ in a new direction utilising the lessons learned from that experiment (Ries, 2011, Blank and Dorf, 2012 Furr et al., 2014).

In the adapted model, if the new approach ends in a failure occurrence the 5 stage-cycle starts again.

In this way, it is argued that the adapted model reflects the important constructs identified in literature and provides understanding as to the process of learning from failure.

2.4.2 Psychological and organisational barriers to learning from failure

From the review of literature, theory is discovered which purports that barriers to learning from failure are predominantly psychological or organisational by nature. Psychological barriers include aversion to failure (Edmondson, 2011), high and low self-efficacy (Cannon and Edmondson, 2001), cognitive biases (McGrath, 1999), and grieving (Shepherd et al., 2009). Organisational barriers include management behaviours (Baumard and Starbuck, 2005), detection of failure (McGrath and MacMillan, 2000), post failure meetings (Cannon and Edmondson, 2005), termination of projects (Corbett et al., 2007), and technical factors (Muehlfeld et al., 2012). Each of these barriers have individual complexities and require strategic consideration to enable organisational learning.

2.4.3 An environment which supports learning from failure

Literature suggests that these barriers to learning from failure may be addressed by creating and maintaining an environment that supports learning from failure. Specifically, an environment which normalises failure, a climate that offers psychological safety (Edmondson, 2011), where leaders tolerate failure (Kriegesmann et al., 2005), encourage collaboration and socialisation (Farson and Keyes, 2002), and where a managerial mindset is developed which shapes the culture to manage organisational failure processes effectively (Van Dyck et al., 2005).

2.4.4 Managing intelligent failure – the review of literature

The review of literature shapes current understanding in the area of learning from intelligent failure. Discussion predominantly lies within three areas: The process of learning from failure (made of organisational and cognitive processes), psychological and organisational barriers to learning from failure, and an environment that supports learning from failure. Essentially literature purports that in order to effectively manage intelligent failure, organisations need to strategically manage the three areas (Figure 2.3).

Figure 2.3 Managing intelligent failure

Literature also argues that managing intelligent failure leads to individual and organisational learning from failure episodes (Huber, 1991, McGrath, 1999, Cope, 2005, Cannon and Edmondson 2005, Bagheri and Pihie, 2011, Edmondson 2011), therefore offer an output as in figure 2.4.

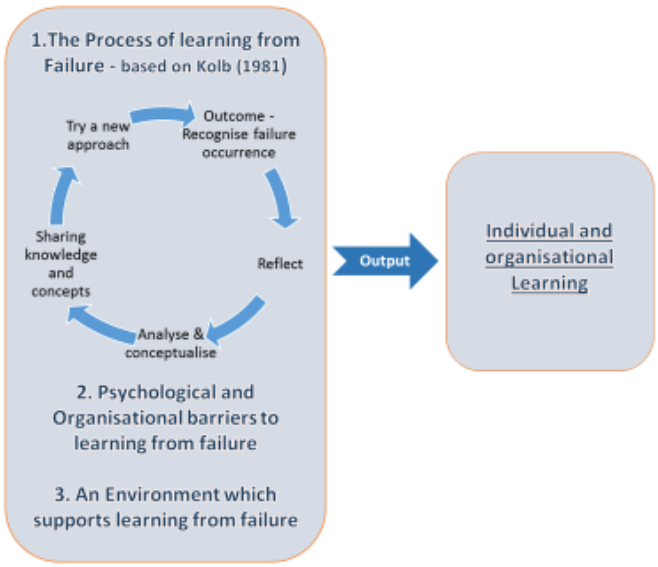


Figure 2.4 Managing intelligent failure and individual and organisational learning

2.4.5 The organisation's entrepreneurial capability

Literature suggests that an organisation's entrepreneurial capability is its overall capacity to utilise internal and external resources to explore (recognise, discover, create) and exploit opportunities (Abdelgawad et al., 2013). It also suggests that entrepreneurial capability is predominantly effected by the nature of the environment of the organisation, and the nature of the corporate entrepreneur.

The nature of environment may affect the organisation's entrepreneurial capability as it may affect corporate entrepreneurs within the organisation ability to operate. Literature puts forward a number of climates that may be supportive to corporate entrepreneurs and, therefore, the organisation's entrepreneurial capability. The climates include openness and trust (Isaksen and Lauer, 2002), autonomy (Kuratko et al., 2014), risk-taking (Hornsby et al.,

2002), tolerance of failure (Lafley and Charan, 2008), rewards (Ahmed, 1998), team collaboration (Treuer and McMurray, 2012), and learning, time for entrepreneurial activity (Bessant and Tidd, 2011), positive emotions (Vacharkulksemsuk et al., 2011), and commitment from top management (Burns, 2013). When considered together, the climates offer a clear indication of the nature of an entrepreneurial environment.

The presence of corporate entrepreneurs within the organisation also enhances the entrepreneurial capability of the organisation. Literature argues that the predominant characteristics of the corporate entrepreneur relate to their need for achievement (McClelland, 1961, Collins et al., 2004), risk taking propensity (Brockhaus, 1980, Zhao et al., 2010), self-efficacy (Bandura, 1977, Chen et al., 1998), internal locus of control (Rotter, 1966, Mueller and Thomas, 2001), tolerance of ambiguity (Norton, 1975, Schere, 1982) and need for autonomy (Rauch and Frese, 2007b, Thapa, 2015).

In consideration of current entrepreneurship literature, it may be argued that the combination of entrepreneurs and the nature of the entrepreneurial environment affect the entrepreneurial capability of the organisation and forms the construct within which entrepreneurial initiatives materialise. Some of these entrepreneurial initiatives end in failure. Thus, the organisation's entrepreneurial capability embeds the generation of initiatives and ventures, and forms the location for failure episodes and subsequent learning (figure 2.5).

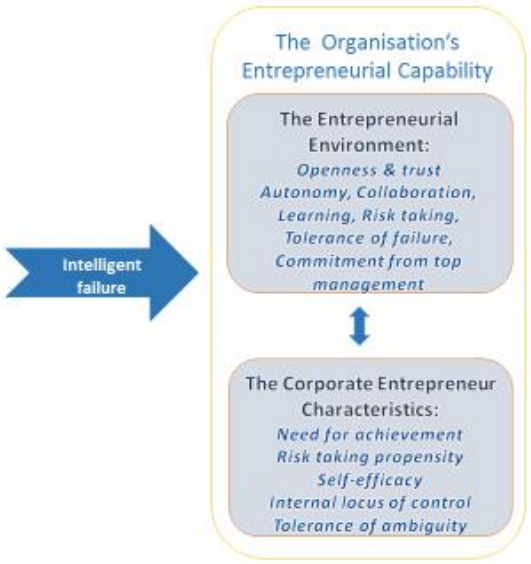


Figure 2.5 The organisation's entrepreneurial capability

2.4.6 The conceptual framework

In considering the above components together, it is possible to conceive a conceptual framework showing possible linkage (figure 2.6).

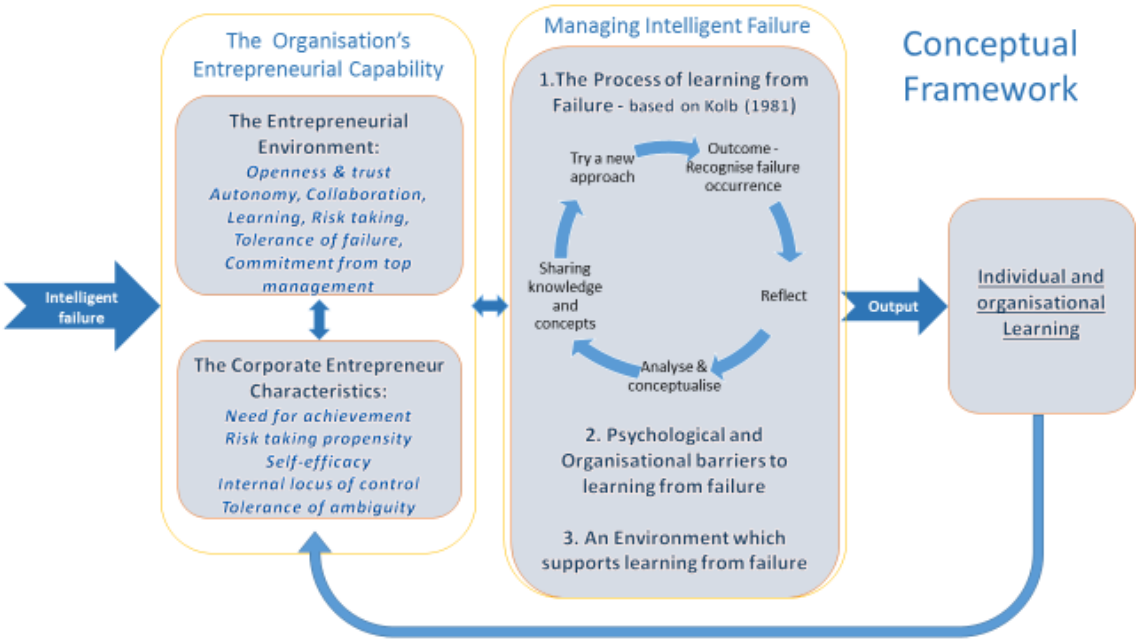


Figure 2.6 Conceptual framework (drawn from literature review)

2.4.6.1 The relationship between entrepreneurial capability and managing intelligent failure

In the conceptual framework, intelligent failure resides within a level of entrepreneurial capability which, as a construct affects managing intelligent failure. Indeed, for some elements within the managing intelligent failure process, the relationship is vice versa. For example:

Levels of openness and trust affect the management of intelligent failure because it can reduce or increase the psychological barrier of failure aversion (Cannon and Edmondson, 2001). In an opposing direction, managing failure aversion, as part of the managing intelligent failure process, affects levels of openness and trust within the entrepreneurial environment, which encourages or discourages entrepreneurs to act (ibid), thus affecting the entrepreneurial capability of the organisation. Other elements that affect the entrepreneurial capability may include collaboration, learning, and tolerance of failure, self-efficacy, and internal locus of control.

2.4.6.2 The relationship between individual and organisational learning, and entrepreneurial capability

The conceptual framework also illustrates that individual and organisational learning gained from failure episodes affect certain elements within the organisation's entrepreneurial capability. For example, learning may affect the corporate entrepreneur by enhancing their self-efficacy, that is, they believe in their own capability to perform a task in a similar domain to a higher level. Learning may also affect the corporate entrepreneur's internal locus of control by reinforcing their natural 'internal' disposition by enhancing their ability.

Within the entrepreneurial environment context, individual and organisational learning may enhance the climate of learning (Cannon and Edmondson, 2005) and enhance the readiness of the organisation to learn, (Sitkin, 1992). It may also enhance management commitment to entrepreneurship as learning creates a valuable result and may be added to the existing stock of organisational knowledge (Hubber, 1991).

2.4.7 The managing intelligent failure conceptual framework

A summary of the conceptual framework:

Intelligent failure is embedded within the entrepreneurial capability of the organisation.

The entrepreneurial capability affects, and is partially affected by, the managing of intelligent failure.

Entrepreneurial literature centres on three elements that are argued as making up the managing intelligent failure construct:

1. The process of learning from failure (inclusive of both cognitive and organisational mechanisms)
2. Psychological and organisational barriers to learning from failure
3. An environment which supports learning from failure

It argued that to engage in learning from failure intelligently, each of these elements are addressed by management. As managers address each element, so they are “managing intelligent failure”.

The outcome of managing intelligent failure is argued as being enhanced individual and organisational learning. Learning feeds back into the existing levels of entrepreneurial capability within the organisation. In this way, the management of intelligent failure affects the development of the organisation’s entrepreneurial capability (as well as enhancing organisational knowledge stocks).

After consideration of the proposed arguments, it is possible to develop the initial theoretical framework put forward at the beginning of the review by incorporating these identified constructs to derive this conceptual framework (figure 2.6).

2.4.8 Managing intelligent failure: Conclusion

2.4.8.1 Augmenting the learning from failure domain

Baumard and Starbuck (2005) assert that "there has been so few studies of learning from failure" (p.282). Whilst research offers insights into important aspects of the learning from entrepreneurial failure domain, literature suggests that a relatively small number of academics have addressed the phenomenon. McGrath (1999) and Shepherd (2003) argue that there is an absence of developed theory on literature in entrepreneurial failure. Indeed, recently, Harrison and Leitch (2005), in their review of existing literature conclude that research on learning from failure remains in its infancy: "Despite the recent upsurge in interest, organisational learning from failures has received only scant attention by management investigators despite its avowedly pivotal role in prevention of escalation into ineffective systems" (Carmeli and Sheaffer, 2008 p.468). In an interpretive phenomenological analysis of entrepreneurial learning from failure, focusing on 'key contributions', Cope (2005), a prominent author in the learning from failure domain, posits that, "reflecting on these contributions to understanding learning from failure, what emerges is a lack of rich substantive evidence to support conceptualisations, particularly within the entrepreneurial context" (p.206). At a holistic level Rae and Carswell (2000) argue that, "greater understanding of the ways in which people learn to work in entrepreneurial ways is needed if significant advance in entrepreneurial activity is to take place since, in our view, learning is critical to entrepreneurial effectiveness" (p.220). It may therefore be argued that additional research is required to develop understanding across the width and depth of the learning from failure domain.

Further, Cannon and Edmondson (2001) argue that "another limitation in the literature is that the process of learning from failure has not been clearly described" (p.162) and that the knowledge of the conditions under which management of failure takes place is lacking. Ten years later and it is suggested that the gap in literature remains: "It appears almost axiomatic that learning occurs in relation to failure, and yet a clear articulation of the specific learning processes and outcomes of venture failure remains elusive" (Cope,

2011 p.606). In this article Cope continues: “Despite enlightening the personal and social dimensions of learning from failure, what is missing from these studies is a committed engagement with wider learning theory that can aid a deeper conceptualisation of what entrepreneurs learn from failure as well as how they learn it” (p.606), “if learning from failure is indeed a journey then further research is required to understand what this journey entails, what stages are involved and what obstacles may line the way” (p.606).

Reflecting on the need for further research in the learning from failure domain, and specifically on the heightened need for further research into the process of learning from failure itself, this thesis seeks to address this gap by empirical exploration into the cognitive and organisational processes of learning from failure.

2.6 Conclusion

This chapter has reviewed existing literature with the aim of increasing understanding of entrepreneurial failure learning. It looks to explain how organisations learn from failure. In seeking to develop an enriched understanding of the learning from failure process, it first explores the nature of entrepreneurship, corporate entrepreneurship, and the entrepreneurial process, as a means to provide a base of theoretical knowledge to underpin the thesis. The review then seeks to illuminate the setting for entrepreneurial failures by centring attention on the corporate entrepreneur and the nature of the organisation that enables entrepreneurship.

With an enhanced understanding of the entrepreneurial organisation the review highlights literature that explores the cognitive and organisational processes that shape and influence learning from failure. It articulates the nature of organisational learning from failure, the challenges to the process and how they may be overcome. Importantly, it also highlights from a cognitive perspective how individuals may learn from failure. Finally, the review delivers a conceptual framework that pulls together the central facets of attention from literature to tentatively propose a holistic perspective of how organisations may manage intelligent failure.

The review highlights that:

- The theory of entrepreneurship is beset with ambiguity, differing arguments and lack of alignment. Attention centres on innovation (Schumpeter, 1934), perception and exploitation (Kirzner, 1979), the strong relationship between the opportunity and the entrepreneur (Knight, 2012 (1921), Timmons and Spinelli, 2004, Shane, 2012), and resources, (Casson, 2003 (1982), Say et al., 1843, Penrose, 2011 (1959), Ireland et al., 2003), as a means to bring clarity to the nature of entrepreneurship.

- The entrepreneurial organisation hosts a corporate entrepreneur who may have a need for achievement (McClelland, 1961, Collins et al., 2004), risk taking propensity (Brockhaus, 1980, Zhao et al., 2010), self-efficacy (Bandura, 1977, Chen et al., 1998), an internal locus of control (Rotter, 1966, Mueller and Thomas, 2001), tolerance of ambiguity (Norton, 1975, Schere, 1982) and need for autonomy (Rauch and Frese, 2007b, Thapa, 2015). In order to support the traits of the entrepreneur the entrepreneurial organisation may create supporting climates such as, openness and trust (Isaksen and Lauer, 2002), autonomy (Kuratko et al., 2014), risk-taking (Hornsby et al., 2002), tolerance of failure (Lafley and Charan, 2008), rewards (Ahmed, 1998), team collaboration (Treuer and McMurray, 2012), and learning, time for entrepreneurial activity (Bessant and Tidd, 2011), positive emotions (Vacharkulksemsuk et al., 2011), and commitment from top management (Burns, 2013).

- Cognitive learning from failure is heavily centred on experiential learning and centres on a dynamic process where knowledge is gained from experience, observation, and social interaction (Huber, 1991, Cope, 2005, Bagheri and Pihie, 2011). The organisational process of learning from failure centres on the stages of identification, analysis and communications of lessons learnt (Cannon and Edmondson, 2005, Rubin, 2013).

- Barriers to learning from failure are psychological or organisational by nature. Psychological barriers include aversion to failure (Edmondson, 2011), high and low self-efficacy (Cannon and Edmondson, 2001), cognitive biases (McGrath, 1999), and grieving (Shepherd et al., 2009). Organisational barriers include management behaviours (Baumard and Starbuck, 2005), detection of failure (McGrath and MacMillan, 2000), post failure meetings (Cannon and Edmondson, 2005), termination of projects (Corbett et al., 2007) , and technical factors (Muehlfeld et al., 2012).

- Barriers to learning from failure may be addressed by generating an environment which normalises failure creating a climate that offers psychological safety (Edmondson, 2011), where leaders tolerate failure (Kriegesmann et al., 2005), encourage collaboration and socialisation (Farson and Keyes, 2002), and by developing a managerial mindset which shapes the culture to manage organisational failure processes effectively (Van Dyck et al., 2005).

The review of literature provides a means to create a conceptual model that draws together on significant theories that relate to organisational learning from failure. The conceptual model creates a framework for the empirical exploration of learning from failure, the next stage of the research. The review also illuminates the necessity for research into the cognitive and organisational processes of learning from failure (Cope, 2011). This thesis responds by centring research in this area to develop further the explanation of how organisations manage intelligent failure.

Chapter 3 Research Methodology

3.1 Introduction

The aim of this research project is to explore how organisations manage intelligent failure in order to enhance their entrepreneurial capability. Primarily through interviews with individuals, and supported by a survey, this research aims to interpret findings in order to shed new light on how learning from intelligent failure occurs, and how the process is managed. Subsequently, the project will compare the findings with entrepreneurial literature, particularly relating to the process of learning from failure. The aim of this chapter is to address the nature of empirical exploration and the research methodology.

The chapter discusses the nature of the study and the nature of the research phenomenon, that being the management of intelligent failure. It builds upon a conceptual model derived from literature to explain the complexities inherent in the process of managing intelligent failure domain. The philosophical approach of the research project is addressed through consideration of the philosophical influences of the researcher before centring on the research philosophy, ontology, and epistemology. This forms the philosophical approach that encompasses the whole research project and suggests that the research is appropriately served taking an inductive approach.

Discussion will move on to explain and justify the use of a multiple case study strategy using mixed methods and the detail of how the research was executed. It is argued that a predominantly qualitative approach, centring on semi structured interviews, suits the exploration of the social complexity entwined in the research area, however, some use of quantitative data is also justified within the overall case study strategy. The chapter then explains how data is analysed with a full discussion that argues for the quality of the research design of this project. The ethics and limitations of this research are also discussed. In the first instance, attention centres on the nature of the research object and the philosophical approach that underpins this study.

3.2 The nature of the research object

From the review of existing literature a conceptual framework (figure 3.1) is considered, discussed, and utilised as means of shaping the subject of enquiry. In seeking to explore the identified areas of enquiry through empirical research, consideration is first given to their nature.

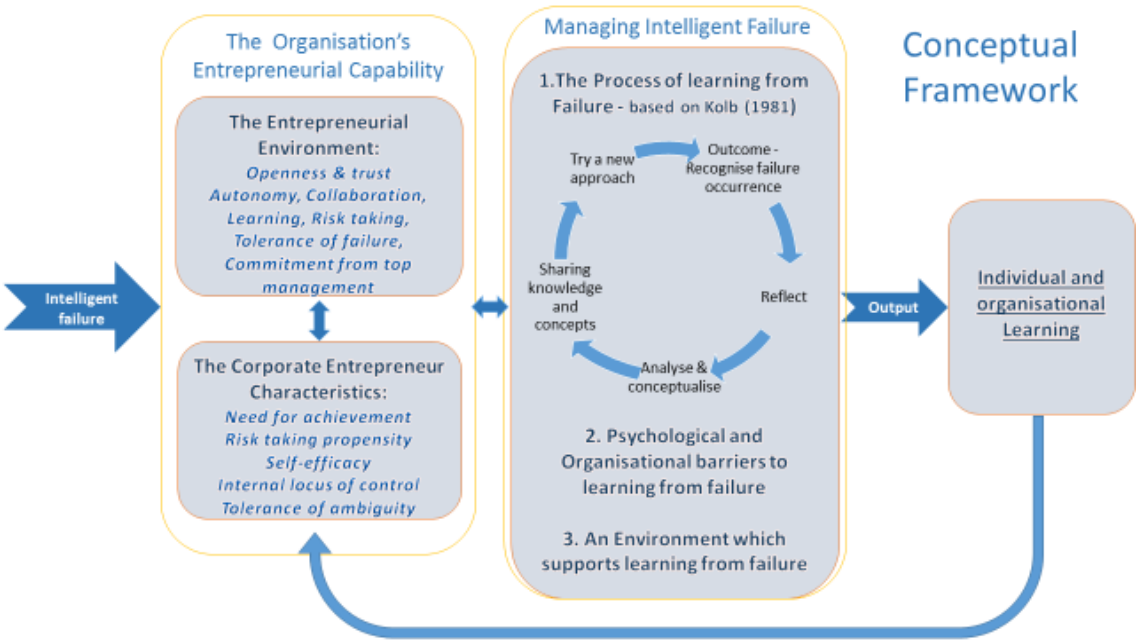


Figure 3.1: A conceptual framework based on a review of literature

According to the review of literature, the process of managing intelligent failure is a structured process involving failure identification, analysis, learning from failure, and communication of those lessons. The process is supported by an environment that is specifically supportive to intelligent failure, and by the management of the negative emotions that are attached to failure.

Literature asserts that learning from failure proves elusive (Manimala et al., 2006, Corbett et al., 2007). Further reading offers a number of potential reasons as to why learning from failure is problematic. Indeed, literature elucidates that the principle barriers to the process fall into two main areas,

those being psychological, and organisational (Cannon and Edmondson, 2005).

Literature informs us that the psychological barriers centre on the inherent fear individuals have of failure which, derived from early child influences, heavily influences individual response when failure arises, or when the potential for failure arises (Carmeli, 2007). In this way, how people react when faced with failure, or the potential to fail, is heavily weighted in the psychology of the person and their individual exposure to failure and their experiences (ibid). Additionally, there are social influences that affect the research object. How society and organisations consider failure bears on the mind of the individual and their actions (Baumard and Starbuck, 2005). In this way, the psychological barriers also form part of the organisational barriers to learning from failure. Where organisational structures, culture and policies and procedures reflect low tolerance of failure, individuals are more likely to fear failure and avoid it, or association with it, at almost all costs (Farson and Keyes, 2002). Other organisational barriers include internal politics, senior management behaviour, dishonest avoidance of failure, and the subtle people management skills required to manage after action reviews (Cannon and Edmondson, 2005).

By reflecting on the significant number of psychological and organisational facets offered by literature, the researcher argues that managing intelligent failure is both a highly emotive and highly complex phenomenon, and this is an important concern within the project design. As Cope (2011) highlights, “studies have been vital in building a clearer appreciation of failure as a complex process rather than an isolated event” (p.606). Within the research design, therefore, the very distinct nature of the process of management of failure domain shapes the empirical process at each stage.

3.3 Philosophical approach

3.3.1 Philosophical influences of the researcher

The researcher comes from a background in industry. He has twenty-eight years of experience in the retail industry, across a mix of sectors, sixteen years

as a senior manager, of which six as a managing director. In consideration of this research project this is highly significant, as Delbridge and Kirkpatrick (1994) put it, “because we are part of a social world we are studying we cannot detach ourselves from it, or for that matter avoid relying on our common sense knowledge and life experiences when we try to interpret it” (p.43). A pragmatic paradigm influences the researcher’s view of the nature of reality, and what constitutes knowledge.

Having worked with many people in many contexts the researcher, reflecting on his experience, views reality as an entity that is multifaceted, colourful, shifting and multidimensional. Reality is not black or white, yes or no, or indeed static. Reality is based upon an individual’s interpretation of a phenomenon in a moment of time. In many ways much of the man management work of the researcher has been managing reality where one person’s perspective of reality does not concur with another’s, generating confusion and sometimes conflict.

In this way, the researcher considers meaning and knowledge to be shaped by social interpretation and social influences, and is therefore highly subjective. In managing business, observations and data analysis offer extracted interpretation at a moment in time, but often, in the experience of the researcher, it is pragmatic and open discussion with the team members, which create deep and meaningful insights that create real meaning and new knowledge. The researcher sees numerical simplicity as a foil for the knowledge creation that comes with deep and meaningful enquiry engaging in the detail and nuances of a highly complex social world. The researcher considers much of his knowledge, which has been supportive in his career progression, has come from his subjective enquiry. Therefore, it is perhaps not surprising that the researcher adopts an interpretivist philosophy when considering the nature of the research project. Weber (2004) argues that within an interpretivist research approach, the research object is interpreted in light of the meaning structure of the researchers lived experience. In this way, the researcher’s philosophical approach significantly influences the research project.

3.3.2 Research Philosophy

In reflection of literature within the managing intelligent failure domain, and his own experience of managing organisations, the researcher views the nature of reality in the managing intelligent failure domain as being a subjective phenomenon rather than an objective phenomenon. Whereas objectivism "represents the position that social entities exist in reality external to and independent of social actors" (Saunders et al., 2012 p.131), subjectivism "asserts that social phenomenon are created from the perceptions and consequent actions of social actions" (ibid p.132). The researcher considers that the reality of managing intelligent failure lies within a highly emotional and complex social organisational phenomenon, one which is not static by nature but constantly evolving, changing, and in a highly dynamic fashion. Indeed, one that is full of opaque, obscure and indistinct components.

In perceiving the reality of managing intelligent failure as a subjective phenomenon, the researcher also perceives reality as being socially constructed. 'Social constructionism', according to Creswell (2013), in the discussion on the work of Crotty (1998), asserts that humans create meaning through engagement with the world they are interpreting, making sense of it based on their historical and social perspectives, and that meaning is generated by social interaction. Indeed, "social phenomena and their meanings are continually being accomplished through social interaction" (Bryman and Bell, 2007 p.22). The researcher considers that reality within the managing intelligent failure construct arises where social actors within the organisation place differing interpretations on intelligent failure and intelligent failure situations, which is dependent on their perceptions of the situations and how they view the organisational world. Consequently, the behaviours, actions and social interactions within the management of intelligent failure domain will be shaped by the differing interpretations of these social actors.

In essence, the researcher sees the reality of managing intelligent failure as being a subjective and socially constructed phenomenon and takes an 'interpretivist' view of what may establish acceptable knowledge in this domain.

3.3.3 Epistemological Approach

Interpretivism “focuses on reality as a human construct which can only be understood subjectively. Although it is possible and even probable that there is an independent, concrete reality out there, humans can only know it through the filtering lenses of their sensory organs and a priori assumptions. We could never be one hundred percent sure that the world exists as we perceive it. Social realities are even less concrete since they are created by cultural communities” Kroeze (2012 p.2). Further, “interpretive philosophy is premised on the epistemological belief that, "social process is not captured in hypothetical deductions, covariances, and degrees of freedom (as inherent within a ‘positivist’ philosophy). Instead, understanding social process involves getting inside the world of those generating it" (Rosen, 1991) within Orlikowski and Baroudi (1991 p.14). Interpretivists centre on subjective meanings and social occurrences, situational detail, the reality behind these details, and subjective meaning leading to actions. Positivists, however, centre on observable reality to provide credible data, causality and law like generalisations, and reduce phenomenon to their simplest elements (Saunders et al., 2012). Weber (2004) argues that interpretivists intentionally constitute knowledge as they, “try to make sense of the world, recognising their sense-making activities occur within the framework of their life-worlds and the particular goals they have for their work” (p.6), whereas positivists “believe that human experience of the world reflects an objective independent reality and that this really provides the foundation for human knowledge” (ibid p.6). In this way, interpretivist research centres on subjective propositions in the search for new knowledge whilst positivist researches centre on objective propositions (Becker and Niehaves, 2007). Interpretivists conduct research among people rather than objects. They interpret their everyday social roles with the meaning they give to these roles, and the social roles of others in accordance with their own set of meanings (Saunders et al., 2012 p.137). Therefore, the study of the social world “requires a different logic of research procedure, one that reflects the distinctiveness of humans as against the natural order” (Bryman and Bell, 2007 p.30). Whereas positivists believe that reality is separate from the researcher, interpretivists believe the researcher cannot be separated (Weber, 2004).

The phenomenon of managing intelligent failure is a highly emotional and socially complex entity. The complexity lies within the psychological and sociological influence on individuals and within differing organisational environments. The phenomenon is made more complex as perception of intelligent failure may also be highly contextual. The researcher argues that the subjective proposition presented within the scope of this thesis beckons an interpretivist approach and that, in order to gain understanding of this multifaceted subject, only exploratory research conducted in and amongst people will reveal the required rich and deep insights. In this way, the research may create the opportunity to develop new meaning and knowledge in the management of learning from failure domain on which to build.

3.4 Inductive approach and qualitative research

Whereas deductive reasoning requires a set of premises to create a conclusion, “inductive conclusions contain knowledge claims not analytically implied by the premises” (Ketokivi and Mantere, 2010 p.316). In other words, deductive reasoning is conclusive, whereas inductive reasoning is inconclusive. “Deduction is conclusive reasoning, because the conclusion never states more than is contained in the assumptions that make up the argument, whereas an inductive argument always does” (Greetham, 2006 p.28). Whereas the deductive cause-effect link is restrictive of alternative explanations, an inductive approach engages in understanding the way humans interpret the social world they live in, yielding differing and multiple explanations (Saunders et al., 2012). Indeed, inductive reasoning begins with observations which lead to the development of general laws, “inducing the universal from the particular” (Schwartz-Shea and Yanow, 2013 p.27). Where collected data is used to explore phenomena, identify themes and patterns and create conceptual frameworks, this leads to theory generation (Saunders et al., 2012). In line with the interpretivist paradigm, the researcher argues for an inductive approach to explore managing intelligent failure and thereby generate and build theory. Rather than seek falsification or confirmation of existing theory, as is preferred by the deductive paradigm, this research aims to explore how people interpret the identified complexities of the managing

intelligent failure construct, and how this could offer many different explanations, new meanings and new knowledge.

In alignment with an inductive paradigm and the aims of inductive research, a qualitative research design is preferred as the primary research design. Qualitative research is inherently inductivist, constructivist, and interpretivist by nature (Bryman and Bell, 2007), thereby reflecting the philosophical nature of this thesis. “Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasize the value-laden nature of inquiry. They seek answers to questions that stress how social experience is created and given meaning” (Denzin and Lincoln, 2011). In trying to understand the social complexities and how they affect (or are affected by) the way in which organisations manage intelligent failure, the researcher argues that the open and exploratory nature of qualitative research is more appropriate to the discovery of multiple explanations, and to the generation of theory in this domain. Qualitative methods have the capacity to enhance peripheral vision and provide rich descriptions of phenomena which enhances contextual understanding, as well as offering a means to explain significant realities and relationships (Sofaer, 1999). Indeed, qualitative data has a strong potential for revealing complexity, providing clear “thick descriptions” immersed in a real context (Miles and Huberman, 2014). Also, such qualitative data, “with the emphasis on people’s lived experiences, are fundamentally well suited for locating the meanings people place on the events, processes, and structures of their lives and for connecting these meanings to the social world around” (ibid p.11). On this basis, the researcher argues that a qualitative enquiry is suited to unravelling the complexities and contextual nature of the management of intelligent failure domain and delivering rich insights that may inform future theory. In addition, the researcher argues that the management of intelligent failure domain is in its infancy meaning there is less theory to test in a manner more appropriate to quantitative enquiry. In this way, the management of intelligent failure domain is more suitable of a qualitative approach. As Creswell (2013) puts it “if a concept or phenomenon needs to be understood because little research has been done on it, then it merits a qualitative approach” (p.18).

However, whilst qualitative research is argued as the dominant and preferred method, the researcher also sees the value of quantitative research, as part of a mixed methods approach within a case study research strategy, as a means to assist in achieving the overall aims of the thesis. Quantitative research "embodies a view of social reality as an external, objectivity reality" (Bryman and Bell, 2007 p.27). Creswell (2013) argues that in seeking to identify the factors which influence an outcome, a quantitative approach may be warranted. Quantitative research is used as a means to elucidate the organisational factors that influence the entrepreneurial environment of each organisation within the study. Whilst quantitative research may not be suited to delivering the rich texts of the complexities within the management of intelligent failure domain, it can assist by numerically measuring data to offer supportive holistic insights and understanding towards some of the constructs of the management of intelligent failure process for purposes of comparison with the main qualitative data.

3.5 Case study research strategy

Eisenhardt (1989) argues that, "the case study is a research strategy which focuses on understanding the dynamics present within single settings" (p.534). Case studies explore the dynamics of a research subject in its own real life natural context in a single or multiple case format providing the research project with a rich data source (Saunders et al., 2012). Indeed case studies can take on an embedded design where multiple level analysis occurs within each study. The term case study is also referred to as a research strategy as it may involve more than just a choice of method, using a variety of data sources (Piekkari et al., 2008). Indeed, as there may be many variables of interest, rather than just data points, the use of multiple sources of evidence is important (Yin, 2013). Case studies are often the preferred method of choice when, the phenomenon of focus is within a real-life context and is contemporary, where the researcher has limited control of events, and where the research questions are prefixed with 'when', 'how', or 'why'(ibid). "The case study method allows investigators to retain the holistic and meaningful characteristics of real-life events" (Yin, 2013 p.4).

As a research method, the case study has a unique strength in that it has the ability to deal with a wide variety of evidence including interviews, documents, observations and attributes. Yin (2013) suggests a single-case study is more suited to specific situations such as when it represents: the critical case in testing a well formulated theory, an extreme or unique case, the representative or typical case, or it is a revelatory case previously inaccessible to academic enquiry, or when it is longitudinal. Single case study allows for deeper and longer research delivering rich contextual insights into the dynamics of phenomena, and has the capacity to create or challenge existing paradigms (Dyer and Wilkins, 1991). However, the single case study is even more prone to criticism of validity due to the singular nature of the research and the findings (Yin, 2013).

The inclusion of multiple cases (between 4 and 10 cases according to Eisenhardt (1989)) allows the case researcher to increase the robustness of a finding by replicating it across cases. Multiple case studies with a variety of data collection can improve the validity of the study (Piekkari et al., 2008). Indeed, it is argued that the researcher should select additional cases according to whether similar (literal replication) or different (theoretical replication) results are predicted by emerging theory (Piekkari et al., 2008). However, Dyer and Wilkins (1991) are less convinced by the argument of Eisenhardt and view her multiple case study approach as a hybrid and of being superficial because of its thin description and lack of context, and argues that it can do no more than build on existing theory. However, in a reply to Dyer and Wilkins, Eisenhardt (1991) rebuts the argument, insisting that “the theoretical insights of case studies arise from methodological rigor and multiple-case comparative logic” (p.626). Miles and Huberman (2014) argue that whilst not to quantitative standards, cross case analysis can enhance generalisability and or transferability to other contexts, thus supporting the use of a multiple case study approach. In perhaps summarising the strengths and weaknesses, Denzin and Lincoln (2011) argue that the strengths of case studies lie within their depth, their high conceptual validity, their understanding of context and process, and their ability to foster new hypotheses and new research questions. They argue that as weaknesses, case studies may include selection bias, which may overstate or understate relationships, they yield

weak understanding of occurrence in the population, and that statistical significance is often unknown or unclear.

In reflection of these arguments, this research project utilises the multiple case study strategy to engage in a mix of research methods across a mix of organisations. Within the real life context of six organisations, it seeks to study where the contemporary phenomenon of managing intelligent failure is explored with the 'how' prefix: How do organisations manage intelligent failure? The aim of the research is to explore more deeply the phenomenon within its natural setting, seeking to elucidate some of the complexities to offer deep and meaningful insights. A case study strategy is an appropriate research strategy to support the enquiry of such a highly complex domain (Piekkari et al., 2008). The aim of the research is also to explore polarities of organisational types to gain further insights into the phenomenon and enhancing the robustness and offering increased validity. A multi-case study has the capacity to demonstrate replication (Saunders et al., 2012). Recognising the dual aims of depth of enquiry and replicability, a cross sectional multiple case study approach is argued as being the most effective means to meeting the needs of this research.

3.5.1 Mixed methods

Eisenhardt (1989) argues that, "case studies typically combine data collection methods such as interviews, questionnaires, and observations. The evidence may be qualitative (e.g., words), quantitative (e.g. numbers), or both" (p.835). In following a multiple case study approach with the aim of deep enquiry with the potential for significant replication, research takes a mixed methods approach to research. Patton (1990) argues that, "in real-world practice, methods can be separated from the epistemology out of which they have emerged" (p.136). Indeed, "multiple methods is increasingly associated within business research because it is likely to overcome weaknesses associated with using only one method as well as providing scope for a richer approach to data collection, analysis and interpretation" (Saunders et al., 2012 p.164). Mixed methods addresses the potential problems of validity as "the multiple sources of evidence essentially provide multiple measures of the same

phenomenon" (Yin, 2013 p.117). In this way, the research project has balance of depth and replicability and for these reasons the mixed methods approach is utilised by this research.

3.6 The empirical research

3.6.1 Sampling approach

Research takes a convenience sampling approach that provides a range of organisations that are entrepreneurially diverse and from a mix of sectors. "Convenience sampling is probably the most common sampling strategy" (Patton, 1990 p.242). The researcher approached organisations within his wide network to facilitate savings in research time and cost, and because of the increased likelihood that these organisations would be high quality research vehicles. Of the six organisations within the study, one demonstrates an environment supportive of entrepreneurial activity, a high tech Epos supplier, and one that demonstrates an environment that is unsupportive of entrepreneurial activity, a division of a government department, which is bureaucratic by nature. The other four organisations demonstrate environments that offer varying degrees of support for entrepreneurial activity and sit between these two organisations. The intention is to include organisations at polar ends of the entrepreneurial spectrum (and in between) within the convenience sample. As Eisenhardt (1989) argues "given the limited number of cases which can usually be studied, it makes sense to choose cases such as extreme situations and polar types in which the process of interest is "transparently observable"" (p.537). The maximum variation approach can yield high quality and detailed descriptions of each case and its uniqueness, as well as significant shared findings which cut across cases which are valuable because they are derived from their heterogeneity (Patton, 1990). To enhance case study selection further, organisations from differing industries were included. By ensuring representation of the levels of hierarchy and a mix of functions within each organisation, a representative perspective overall is offered, allowing the converging or diverging evidence to be uncovered and explored, to deliver rich insights into the managing intelligent failure domain.

In both the survey and interview, research process respondents within each organisation were approached on as random a basis (within the hierarchy/function criteria) as operationally achievable by the organisation's coordinator. In essence, the sample strategy, whilst 'convenient' aims to obtain data from a mix of organisations with very differing entrepreneurial natures, from differing industry sectors. Within each organisation, data are captured at each hierarchal level and across organisational functions. The sampling method aims to support a multiple and deep enquiry approach supportive of an effective multi-case strategy.

3.7 Quantitative research

Within the convenience sampling approach, the researcher made an instinctive assessment of each organisation and the presence (or non-presence) of an environment supportive of entrepreneurship. To move towards verification of the assessment, a Corporate Entrepreneurship Audit (CEA) (Burns, 2013) was undertaken to assess the entrepreneurial nature of each organisation. Additionally, the quantitative research is used to assist the analysis of findings from the interviews. The audit is based on self-assessment/perception from participants and is therefore not an exact measure.

Burns (2013) argues that organisations have four architectures which are those of leadership, culture, structure, and strategy. Combined, these four architectures create an overarching organisational entrepreneurial architecture. With the aim of indicatively assessing each organisations entrepreneurial nature, an average is taken of the four architecture results that offers an indicative overall score (an overarching organisational entrepreneurial architecture). The higher the score, the more prominent the entrepreneurial environment. The percentage scores of the organisation were spread as follows: 72.5 (most entrepreneurial environment), 69.9, 66.0, 60.3, 56.8, and 54.4 (least entrepreneurial environment). The CEA is described in detail below and the full survey results are available as appendices 1 to 6. It must be highlighted that these results are of a low level of statistical significance; however, they are supportive in creating some understanding of

the entrepreneurial nature of the sample, and later in this study, in the discussion on environments that may support the process of learning from failure.

3.7.1 Corporate Entrepreneurship Audit (CEA)

The audit replicates a survey created by Burns (2013). Each organisational architecture has key characteristics, which if present to a high level, indicate an advanced entrepreneurial nature within that architecture. The key characteristics of support of for organisational entrepreneurship are identified within the architectures of leadership, culture, structure, and strategy:

Leadership:

Visionary, good communicator/motivator, strategic thinker and learner, emotionally intelligent with strong interpersonal skills, relationship builder, team player, builder of confidence, builder of an open organisation that shares information, clarifier of ambiguity and uncertainty, and builder of empowering opportunities.

Culture:

- A balance between individualism and collectivism, reflecting the importance of individual contribution and collaboration
- Low power distance, reflecting egalitarianism and flat and open relationships and knowledge flows
- Low uncertainty avoidance, reflecting tolerance of risk, a preference for flexibility, and individual and team empowerment
- A balance of achievement focus and cooperation, networks and relationships

Structure:

- Structures to encourage and facilitate entrepreneurial activity
- Facilitates that can be utilised to encourage creative thinking
- Participation in significant networking activity and open innovation
- Strategic alliances and joint ventures with other organisations

Strategies:

- Strategy development is deliberate or emergent, but is continuous and under pinned by a strong vision
- Decentralised decision making, incremental and adaptive, maximising flexibility, underpinned by a strong direction
- An understanding of organisational strengths and competences at both corporate and business levels
- An inherent understanding at business level of the basis of its competitive market and how customer value can be enhanced
- The presence of strategies to encourage innovation and internal growth, and creativity with a commercial edge

The CEA is a survey which has 100 statements (25 statements per architecture) randomly assembled (appendix 7). Respondents indicate a score for each statement dependent on how true they believe the statement to be. The score range is from 0 to 6. A score of 0 indicates a statement is not true at all, and 6 indicates that it is very true. The survey was uploaded to the internet via the software 'Lime Survey' where respondents completed the audit in one sitting, on line, at their place of work. All responses were anonymous, voluntary and given over a 3 week period. A minimum of 10 (up to 20) respondents were conveniently sampled from across the hierarchy of each organisation from across organisational departments, on a ratio of 2 from the senior team, 3 from middle management, and 5 from department teams for every 10 respondents. The research accentuated quality (100 questions) over quantity (a small percentage of organisational members). Each organisation had a 'coordinator' who acted as the point of contact, and liaised with the researcher to ensure the approach was consistent.

Data was transferred from LimeSurvey to SPSS (Statistical Package for the Social Sciences) software for analysis. SPSS analysis produced results on each architecture responses focusing on the minimum, maximum, mean, and percentage scores, as well as producing a cluster analysis and a frequency table. Additionally, the mean score was established for each statement within each architecture, and then averaged to provide an overall score.

It is recognised that the CEA survey results are indicative only.

3.7.2 Data analysis

The survey data from the CEA was analysed to meet two separate aims: to assist the selection of cases to be engaged within the study, and to provide additional data to consider alongside the data gained from the interviews.

Analysis centres on the four organisational architectures (leadership, culture, structure, and strategy) and organisational data. All data was analysed using the SPSS tool to produce analysis in the following forms:

1. Mean score results – bar chart.
2. Percentage results – bar chart.
3. Average combined architecture result – bar chart.
4. Descriptive statistics – indicating number of completed responses, minimum, maximum and mean scores, and standard deviation.
5. A cluster analysis.
6. A frequency table – indicating frequency of each score between 0 and 6.
7. Leadership (architecture) – mean score for each of the 25 questions – bar chart.
8. Culture (architecture) – mean score for each of the 25 questions – bar chart.
9. Structure (architecture) – mean score for each of the 25 questions – bar chart.
10. Strategy (architecture) – mean score for each of the 25 questions – bar chart.

The average combined architecture results figure is used to indicate how entrepreneurial the environment is within each organisation. The higher the average (percentage) score, the more prominent the entrepreneurial environment.

The main part of the analysis centres on the detail of each architecture to provide indicative insights into the environment of the organisation and its appropriateness as a means to support entrepreneurship. The analysis is considered alongside the prime research approach of semi-structured interviews as it has only limited statistical significance.

3.8 Qualitative research – Semi structured interviews

As has been highlighted, research predominantly takes a qualitative approach, using semi-structured interviews as part of a multi-case study strategy.

3.8.1 Semi-structured interviews and the research question.

Semi-structured interviews relate to the research question of "how do organisations manage intelligent failure," because of the nature of the research area, specifically, its complexity, and its newness (and its appropriateness within this multi-case study strategy):

- Complexity: Semi-structured interviews as an appropriate choice for exploring complexity.

This thesis argues that the phenomenon of managing intelligent failure is a highly complex entity. The complexity lies within the psychological and sociological nature of the failure construct and the influence on individuals, and within differing organisational environments. The phenomenon is made more complex as perception of intelligent failure may also be highly contextual. Saunders et al (2012) argue that semi-structured interviews that ask open questions enable exploration of multifaceted and complex constructs offering the opportunity to gain insights and an understanding as to what is happening. Therefore, the open and exploratory nature of semi-structured interviews is more appropriate to the discovery of multiple explanations, and has the capacity to enhance peripheral vision, providing rich descriptions of phenomena, enhancing contextual understanding (Safaer, 1999). Additionally semi-structured interviews are suited to gaining understanding of the meaning respondents place on their experiences of events, processes, and structures (Miles and Huberman, 2014). In essence, "qualitative research is able to draw a more complete picture of an organisation" (Buschgens et al, (2013 p.765) as it can reveal the idiosyncrasies and basic assumptions in the minds of individuals within that organisation (ibid).

- Newness: Semi-structured interviews as an appropriate choice for exploring new concepts.

It is argued that the management of intelligent failure domain is in its infancy (Cope 2011), which means that there is less theory to test in a manner more appropriate to quantitative methods. Literature argues that the most appropriate way to gain understanding of a concept that has had little research into it, is to take a qualitative approach (Creswell, (2013). Therefore, semi-structured interviews offer a means to explore this underexplored phenomenon.

- Appropriateness within this multi-case study strategy: Semi-structured as a preference over structure and in-depth interviews

As part of a case study strategy, an open ended, unstructured, or in-depth interview approach may not sufficiently allow for case comparison (Yin, 2013). Additionally, a structured interview may be restrictive by nature, thereby reducing the exploratory nature of the research (Saunders et al., 2012). However, semi-structured interviews, within a loose comparative framework, offer the opportunity to explore the real world through a similar lens, collecting rich and detailed data. Semi-structure interviews allow significant variation (and probing) within the interview structure, whilst also allowing sufficient structure in order to compare responses.

In consideration of these factors it is argued that, as a method of enquiry, semi-structured interviews provides an effective means as to explain “how organisations manage intelligent failure,” as well as to explore:

- The processes that organisations use to learn from failure
- The importance of a process for managing intelligent failure to the organisation
- How failures are recognised and how they are analysed
- How individuals and organisations learn from failure
- How lessons learned are disseminated across the organisation
- The nature of the outcomes of the process of learning from failure
- How environments can support learning from failure
- Why organisations do not learn from failure

All of which represent the areas identified within “the aims of the research”.

3.8.2 The practicalities of the interview process

The research involved between 10 and 13 (mostly 12) interviews which were conducted in each organisation over three or four visits over two or three weeks, with all organisational interviews completed within a five month period. 71 interviews in total. The interviews ranged in length from 35 minutes to 70 minutes with most taking between 55 and 65 minutes, all of them recorded. Interviews took place on site within the premises of the various organisations. Subsequently, interview recordings were fully transcribed. Transcribed interviews were imported to NVivo software for coding.

Interviews are semi-structured and centre on the main themes identified in the conceptual framework derived from the literature review as in figure 2.6. The conceptual framework focuses enquiry on the entrepreneurial capability, the process of learning from failure, the environment that supports intelligent failure, the management of emotions, and individual and organisational learning. Questions were drafted, peer reviewed and test answered by the researcher, before being accepted. More questions were prepared than could be answered with the aim of offering some flexibility to theme enquiry. Questions are available as appendix 8.

Due to the nature of semi-structured interviews, the open questions allowed for variance. Open and flowing conversations were encouraged and, as conversations developed, the prepared questions acted as reference point to the researcher to ensure consistent enquiry across each theme. Questions were used to shape theme discussion. However, not all the questions were used and often questions flexed to reflect responses from the interviewee (including follow up questions in order to probe and build upon responses).

3.8.3 Challenges to the interview process

Yin (2013) argues that whilst interviews have the advantage of focusing directly on the topic of the case study and are insightful in that they provide perceived causal inferences and explanations they also have disadvantages. The disadvantages are that interviews can be bias due to badly asked

questions, bias from the interviewees, inaccuracies due to respondent recall errors, and reflexivity where the interviewee gives the interviewer the answer they want to hear. Alvesson (2010 p.76) goes into depth suggesting the principal challenges to collecting accurate data from an interview are complex and include:

1. The social challenge of coping with an interpersonal relation and complex interaction in a non-routine situation.
2. The cognitive challenge of finding out what it is all about (beyond the level of the espoused).
3. The identity challenge of adapting a self-position that is contextually relevant (and/or comfortable for the interviewee).
4. The 'institutional' challenge of adapting to normative pressure and cognitive uncertainty through mimicking standard forms of expression.
5. The challenge (or option) of maintaining and increasing self-esteem that emerges in any situation involving examination and calling for performance.
6. The motivation problem of developing an interest or rational for active participation in the interview.
7. The representation/construction challenge of how to account for complex phenomena through language.

Bryman and Bell (2007) argue that, based on the work of Kvale (1996), the criteria of a successful interviewer include being: knowledgeable (in the subject area), structuring, clear, gentle, sensitive, open, steering, critical, remembering, interpreting, balanced, and ethically sensitive. The researcher centred attention on these facets as a means to face the inherent challenges within the interview process. Preparation time was given before each interview to compose and focus on the intricacies of interviewing taking consideration of the organisational context. Reflection on previous interviews also aided pre-interview preparations. Saunders et al (2012) argue that forms of bias may be overcome by "recognising that all research methods have limitations and through careful preparation to conduct interviews to avoid bias that would threaten the reliability and validity of your data" (p.408). As well as attempting to apply appropriate techniques encouraged by literature (for example "Interviews – Learning the Craft of Qualitative Research Interviewing" by Kvale and Brinkmann (2009)), the researcher also used embedded communication

skills gained from the prior experience of 25 years of people management within industry, towards maximising the potential of the interviews. In this way, awareness of the challenges of interviewing and the awareness of approaches to tackle them and minimise their impact were considered and applied.

3.9 Data analysis

Semi structured interviews were recorded, transcribed and exported to NVivo software for coding. For all 71 interviews, within NVivo each interview is coded into themes. Qualitative template analysis is used. King (2004) asserts that template analysis is a technique whereby the researcher creates a list of codes (the template) that represent the themes identified within the transcribed text. The advantage of template analysis is that it is "a more flexible technique with fewer specified procedures, permitting researchers to tailor it to match their own requirements" (p.267). He argues that this approach to data analysis is appropriate for explorative research and for seeking objectivity to demonstrate the reliability of the coding.

The analysis began with the creation of an initial template before being revised in response to the analysis, as it progressed. In the first instance, first order codes emerged that largely remain within the four key areas of enquiry (reflecting the themes from the conceptual framework, and subsequent questions within these themes) "as often the best starting point for constructing an initial template is the interview topic guide" (King, 2004 p.259). The volume of data found on the fear of failure (within the 'Intelligent failure and individual' enquiry space) led to a specific code, as did the significant material surrounding the entrepreneurial process that emerged. Thus, in the hierarchy of coding, the first order NVivo nodes are:

- Entrepreneurial architecture
- Entrepreneurial process & innovation
- Fear of failure
- Management of intelligent failure
- Outcomes (from managing intelligent failure)

From these broader, higher order codes emerged 61 sub nodes.

Having identified this initial template, the template was revised to include insertions, deletions, changing scope, and changing higher order (King 2004):

- Insertions where an issue in the text relevant to the research question is not covered by a code, requires a code.
- Deletions where a code has been created but it is found to have no use.
- Changing scope of a code by redefining it from being too narrow or too broad
- Changing higher order classification of a code to reflect its best fit

The final template reflected the iterative movement between emerging data, themes, concepts, and relevant literature to enable categories to be rationalised, reorganised, and reduced down to two principle concepts more relevant to the thesis, making the level of data more manageable (Gioia et al, 2013).

Within the two principle concepts of ‘managing intelligent failure’ and the ‘entrepreneurial environment’, an individual organisational level analysis and a cross case analysis occurs. Each case was written up independently before cross case analysis pursued combined themes, as is commiserate with the inductive approach (Patton, 1990).

For each stage of the principle concept ‘managing intelligent failure’ (identifying failure, analysing failure, and communicating lessons learned from failure) cross case analysis centres on themes similar to each stage across all organisations, similar to all stages across all organisations, as well as other themes that are identified as of interest. For the concept of the ‘entrepreneurial environment’ a cross case analysis on selected organisational factors takes place.

3.10 The quality of the research design

Lincoln and Guba (1985) assert that establishing trustworthiness of enquiry defends it against criticism of lack of rigor. Trustworthiness they argue can be gained through establishing 'truth value' (establishing confidence in the truth of the findings), applicability (the extent to which the findings may be applicable in other contexts), consistency (determining whether similar outcomes would reoccur if the enquiry was replicated in the same context), and neutrality (establishing the degree that the findings are effected by the respondents over biases and motivations of the enquirer). Further, they argue that this criteria for trustworthiness may be obtained through focusing on four facets, those being credibility, transferability, dependability, and confirmability. This theoretical template is used to explain the research design and how it addresses each component.

3.10.1 Credibility

Credibility is established in a number of ways:

- The investment of significant time within the organisation to gain an understanding of the nature of the culture as "it is not possible to understand any phenomenon without reference to the context it is embedded" (Lincoln and Guba, 1985 p.302).

- Establishing a relationship of trust by strictly adhering to the agreed approach (with each organisation) to the research design and ethics (as described below), and by being consistent, transparent, and professional at all times, continuously building positive rapport.

- Peer debriefing. The thesis supervisors played an important role in exposing the researcher to searching questions, testing and working emerging hypotheses, developing and testing steps of the methodological

design, and relieving the strong emotions of the researcher to enable consistent quality of judgement.

- By continuously refining the hypothesis so that it accounts for all the organisations of the study without exception.

- Member check: key informants reviewed a draft case study report. In order to gain feedback as to the validity of the findings from the key informants from each of the organisations, presentations were made in person. The approach of personal presentations was used as organisational leadership demonstrated a general reluctance to read material from this research. Organisations gave verbal acknowledgement as to the validity of the facts of the research.

3.10.2 Transferability

Lincoln and Guba (1985) argue that, “the naturalist cannot specify external validity; only he or she can provide only the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility” (p316). In this way, the enquiry achieves a ‘thick description’ to harness a conclusion towards transferability by engaging in multiple sources of evidence.

Research centres on six organisations with differing characteristics. A mix of manufacturing and service organisations of differing sizes were included in the research. They range from a high tech epos supplier with an environment supportive of entrepreneurship to a government service body with an environment that is generally unsupportive of entrepreneurship, thus offering a wide mix to the enquiry. The use of multiple case study evidence is often judged as being more convincing and can lead to a more robust study (Herriott and Firestone, 1983). In studying six organisations the study centres on analytical generalisation (rather than statistical generalisation) offering similar evidence. Additionally, this research project compares empirical

research to literature which indicatively suggests that findings have a broader theoretical significance going beyond the cases within this study (Marshall and Rossman, 2006).

3.10.3 Dependability

To address dependability this research project establishes a chain of evidence. In the first instance, the thesis makes extensive citations from the case study database to enhance the discussion. Secondly, the use of software enhances the process of record keeping and analysis. Thirdly, the database shows the evidence indicating the time of capture, e.g. the date and time of each interview. In addition, the process of data collection follows the procedures laid out in the case study protocol (appendix 9) and additionally, the content of the protocol links with the initial study question. Finally, the use of a semi structured interview approach enhances dependability using carefully conducted questioning which can explore responses from a variety of angles (Saunders et al., 2012).

3.10.4 Confirmability

In line with literature and following the case study protocol, this research project creates a path for others to review offering the potential to replicate the approach in order to arrive at the same findings and conclusion (Saunders et al., 2012, Yin, 2013), and to ensure the findings are substantiated within the data (Lincoln and Guba, 1985).

3.10.5 Additional framework

Hogg and Maclaran (2008) argue that the quality of research may be established based upon the authenticity, plausibility and criticality of the enquiry. Whilst there is overlaps to the previous framework of (Lincoln and

Guba, 1985), it highlights some different factors that act as a foil to elucidate the quality of this research. The project exhibits:

- Authenticity, which derives from clearly identifying the data collection and analysis processes, demonstrating the thoroughness in carrying out these processes, whilst highlighting potential personal bias.

- Plausibility, which derives from aligning research processes with established methodological practices, the significant experience at senior organisational level of the author, and the differentiating of the findings as singular contribution, thus addressing a gap in literature.

- Criticality, which derives from provoking the recognition of differences and examining those differences, using a subjunctive mode, and encouraging the reader to probe the presented analysis.

3.10.6 Summary

This section utilises the two seminal frameworks of Lincoln and Guba (1985), and Hogg and Maclaran (2008) that centre on credibility, transferability, dependability, confirmability, authenticity, plausibility, and criticality; theory which forms the basis of later theory put forward by Yin (2013). The elements of the two frameworks are used as a foil to illuminate how the research has taken measures to significantly enhance the quality of the empirical research.

3.11 Ethics

In consideration of the ethics related to this research, reference to the principles and expectations for ethical research demanded by the Economic and Social Research Council (ESRC) are considered. Specifically the “ESRC

Framework for research ethics - Updated January 2015" is used as a form of reference, reflection and compliance (ESRC, 2015).

Additional literature embellishes the researchers understanding and is used in addressing the ethics issues pragmatically, principally Bryman and Bell (2007), Miles and Huberman (2014), and Patton (1990).

Research has been carefully designed to ensure recognised standards of integrity, objectivity, and quality. Potential risk of harm to participants and researchers is mitigated by reflection, planning and action throughout the process. The research is independent and has no conflict of interests with any of the organisations within the study, or individuals there within.

An overview of the research project highlights the potential psychological risk related to the research subject of organisational failure. Fear of failure, association with failure, and the revisiting of negative emotions due to failure were identified as a potential reason why individuals may not wish to participate or withdraw from the research. The issue was made clear and assurances were given before each interview that participants could withdraw at any stage. Separate to the sensitivities aligned within the discussion of organisational failure, and reflecting on its purpose and nature, it is argued that the research generally offers a lower level of risk of transcending ethical standards of study.

At each stage of the research process thought and action was given to research participants. At the earliest stages of contact with participating organisations, assurances were made in writing as to the ethical framework to be used, that being the "ESRC Framework for research ethics". Within the written communication to organisational leads (in the main CEOs) included were the "six key principles of ethical research". During discussions with organisational coordinators (often personal assistants) with regard to respondent selection, reference was further made to ensure voluntary participation, free from undue influence. At the beginning of each interview, confirmation was taken of their voluntary participation and informed consent.

Throughout the interview the rights, dignity and autonomy were respected and appropriately protected. As a follow up to the pre-interview written communication and to ensure understanding, at the beginning of each

interview, interviewees were given information about the research including the purpose, methods and its intended use. Discussion also centred on what was required from themselves, the confidentiality through the qualitative research process and their anonymity through the quantitative research process. Permission was requested for the recording of the interview. Interviewees were informed that the recordings would be anonymously labelled and transcribed. The recordings would only be accessible to the researcher and be stored safely for up to 5 years (Sieber, 1998) when they would be deleted. It was emphasised that no one in their organisation would ever know of the details of their personal contribution. The researcher offered complete transparency to research work protocols at all times throughout the data gathering, analysis, and feedback processes. In taking this assertive approach to the consideration of ethics, the researcher argues that the research has been carried out to a high ethical standard.

3.12 Research limitations

Whilst the research aimed to enhance transferability through a multi case study strategy, it may be argued that including six organisations in the study may have spread the focus of the enquiry too wide at the expense of the depth of analysis. This highly socially complex and multi-faceted phenomenon may have benefited from a centred approach to uncover deeper, richer insights. The data from the six organisations, whilst showing some replicability and therefore adding to the validity of the research, does not offer the generalisability of a quantitative research method. It would appear that qualitative research constantly experiences this tension between breadth and depth. Patton (1990) argues that broad or narrow is contextual to the nature of the research and cannot be viewed as good or bad choices. He posits that it should be viewed as choices among alternatives.

This research project took the approach of sampling by convenience. Convenience sampling is an approach that, by its very nature, lacks strategic intent and this may lead to the non-inclusion of relevant and significant data in a way that a ‘purposeful’ sampling approach might deliver. By being strategic in case selection additional meaning may have been uncovered. As Patton

(1990) puts it “convenience sampling is neither purposeful or strategic” (p.242). So whilst the sampling approach may have been appropriate to this research project it may also have been limiting.

Whilst the researcher argues that his significant business and managerial experiences may enhance the quality of the research process (for example a developed emotional intelligence to improve the quality of data collection within the interview process), it is recognised that it may also be a limiting factor. The researcher has been immersed in a commercial business culture for a long period and it is recognised that this cultural lens as part of his own lens of the world may affect the research project. As Denzin (1989) puts it “every researcher brings preconceptions to the problem being studied.” These preconceptions impact the assumptions of the researcher which may create bias in the way that questions are formulated and asked, the way the researchers hears and understands the answers to the questions, and the way the researcher analyses and synthesises the data in the generation of new knowledge. Whilst findings have been verified by the respective organisations in the study and alternative perspectives of the findings have been considered in the discussion chapter to mitigate potential bias, it is recognised that the researcher’s cognitive biases may act as a limitation to the research project.

3.13 Reflections on methodology

Patton (1990) argues that, “There are no perfect research designs” (p.223). Reflecting on the executed methodology of this thesis, and whilst confident of the overall quality of the research design, it is recognised that there are a number of ways in which the researcher may have enhanced this research project.

At a holistic level, research may have further benefitted from an approach that centred on less width and more depth. Reading widely ended with the creation of a wider conceptual model and, in exploring the wider conceptual model, provided tension with gaining depth of enquiry. Literature highlights this phenomenon as the classic trade-off between depth and breadth (Patton, 1990). A tighter focus may have delivered more in-depth data of value for this

project. To that end a pilot study, may have provided “some conceptual clarification for the research design” (Yin, 2013 p.92) and helped centre the research more precisely.

In a similar way, during the data analysis stage, the researcher may have grouped material together more tightly by coding more efficiently. Less coded groups may have assisted in achieving depth at an earlier stage, saving time and channelling interpretative energy.

Whilst an approach engaging multiple sources of evidence was utilised, triangulation may have enhanced the project still further. Triangulation of sources has the advantage of converging lines of enquiry (Yin, 2013). The researcher considered triangulation as a means to improve the credibility of the findings and subsequent interpretations (Lincoln and Guba, 1985). However, not satisfied with the quality of empirical observations, the researcher decided to centre on the significant volume of interview data and achieve additional depth of analysis instead.

Purposeful sampling may have added to the effectiveness of the research enquiry. Organisations selected by ‘maxim variation’ or ‘heterogeneity’ sampling may have delivered some additional variation to the concepts and their interrelationships (Patton, 1990). For example, it may have been of empirical value to note the diverse variations that emerge from organisations on polar opposites on the entrepreneurial - non-entrepreneurial axis.

3.14 Conclusion

This chapter has examined the methodological approach applied to this research project and the philosophical approach that underpins the study. In reflection of the philosophical influences of the researcher and the nature of the research object, the researcher argues that the ontology of the management of intelligent failure process is socially constructed. He also argues that an interpretive methodological approach is most appropriate to elucidate the deep complexities which reside in this multifaceted research object. Further, this chapter justifies an inductive approach and the predominant use of a qualitative method as part of multiple case study

strategy. The use of semi-structured interviews is argued as being best suited to addressing the research question; “how do organisations manage intelligent failure?” This area of research is deemed as both new and complex (Cope 2011), and literature supports the use of the semi-structured interview to explore such spaces (Saunders et al 2012, Buschgens et al, 2013,Creswell, 2013). In this way, this chosen method is well placed to explore this multifaceted and complex construct to gain understanding as to what is happening: explaining how organisations go about managing intelligent failure.

Whilst recognising the limitations of this research, the detailed description of the data collection and analysis show the process as being robust. An assertive approach towards the ethics of the research is taken.

In setting out a clear logic to the approach to this research project, and by clearly detailing the protocols of the research design, and arguing for the quality of the approach taken, this chapter asserts that the data collection methods are essentially credible, transferable, dependable and confirmable.

Chapter 4 Findings

"The intent of the findings sections is to narrate an informative story that is driving forward some new concept development and theoretical discovery with the careful presentation of evidence" (Gioia et al, 2013 p.23.)

This chapter lays out the findings in a manner that reflects the journey of the enquiry, and follows a strategic (and yet highly emergent) path relating closely to the analysis of data, specifically, the qualitative coding process. In this way, the chapter intends to provide a foil for new concept development with careful presentation of evidence. It lays down the findings from empirical enquiry within six differing organisations reflecting the principle constructs of interest. The six organisations include an epos (electronic point of sale) systems supplier, a processed juice supplier, a public house operator, a regional wildlife organisation, an area development agency, and area division of a government agency.

4.1 The coding process and layout of findings.

With the aim of exploring elements of the conceptual framework, the semi-structured interviews explore four key areas across all six organisations:

- The nature of entrepreneurship within the organisation
- The process of managing intelligent failure
- Intelligent failure and the individual
- Outcomes from managing intelligent failure

Having transcribed the interviews, NVivo software was used to code material.

4.1.1 The initial template, hierarchy and coding

In the first instance, first order codes emerged that largely remained within the four key areas of enquiry. The volume of data found on the fear of failure (within the 'Intelligent failure and individual' enquiry space) led to a specific code, as

did the significant material surrounding the entrepreneurial process that emerged. Thus the initial template, first order nodes are:

- Entrepreneurial architecture
- The entrepreneurial process
- Fear of failure
- Management of intelligent failure
- Outcomes of managing intelligent failure

Under these nodes, sub nodes emerged as part of the first ordering process as follows:

1. Entrepreneurial architecture:	• Culture (sub sub nodes of autonomy, collaboration, control, hierarchy, learning, openness, politics, trust) • Leadership • Strategy • Structure
2. Entrepreneurial process	• Corporate idea systems • Experimenting • Idea generation • Lack of a process • Problem solving • Resources • Sources of entrepreneurship • Volume of ideas
3. Fear of failure	• Blame • Levels of hierarchy • Failure acceptance • Failure non acceptance • Negative impact • No fear of failure • Ok to fail • Positive impact • Risk taking • Sustaining success • Tolerance of failure
4. Management of intelligent failure	• Avoiding failure • Identifying failure • Analysing failure • Learning from failure (sub sub nodes of barriers, communications of lessons learned, deep learning, single loop learning, and personal reflective learning) • The after action review

	• Challenges • Review structure (sub sub nodes of formal, informal, timing, guidelines) • Significance of failure • Non perception of failure • Management support of the process
5. Outcomes of managing intelligent failure	• For the corporate entrepreneur (sub sub nodes of resilience (drive to do better), need for achievement, need for autonomy, passion, positivity, risk taking, self-efficacy) • Entrepreneurial intensity • Individual learning • Organisational learning

4.1.2 The revised template

Seeking similarities and differences amongst the nodes, sub nodes, categories are rationalised, reorganised, and reduced down to the more relevant categories making the level of data more manageable. Attention centres on 'Managing Intelligent Failure' and the 'Entrepreneurial environment'.

The revised template and codes are reduced as follows:

Managing Intelligent Failure	
	Significance of managing intelligent failure (MIF)
	Recognition of intelligent failure
	Non recognition of intelligent failure
	Identifying failure
	Use of 'failure' word
	Analysing failure
	Structure
	Learning from failure
	Deep learning from failure
	Cross dept. learning from failure
	Personal reflection/learning
	Managing the after action review
	Communications of lessons learnt
	Managing failure emotions
	Localised MIF (at department level)
	Challenges to MIF process

Entrepreneurial Environment	
	Culture (Client centric, innovative nature, experimenting, vibrant working atmosphere, family values, informality, autonomy, collaboration, bureaucratic, hierarchy, learning culture, openness , trust, politics, risk taking, pace of change, impulsive, fear of failure, blame, tolerance of failure)
	Leadership
	Strategy
	Structure

To enable case comparison, the newly defined themes are compared with each case individually within a Conceptual Clustered Matrix (appendix 11) confirming the presence (or otherwise) of the themes and relevant comments, as "conceptual clustered matrices are most helpful when some clear concepts or themes have emerged from the initial analysis" (Miles and Huberman, 2014 p.174).

4.1.3 The final template revision: Iterative cognitive movement between emerging data, themes, concepts, and relevant literature

4.1.3.1 Thematic focus

Upon reviewing the "Managing Intelligent Failure" matrix (appendix 11), common data to all organisations was identified that potentially differed to current literature. This encouraged the further exploration of the specific and individual stages of the process of managing intelligent failure (as identified by literature):

- Identifying failure
- Analysing failure
- Communication of lessons learned

4.1.3.2 Similar to each stage across all organisations

Next, as a means to analyse the data for each stage, a table highlighting cross case similarities for each stage is created, also showing dissimilarities (table

4.14). The cross case similarities of each stage emerge and offer some propositions that may be new to existing literature.

4.1.3.3 Similar to all stages across all organisations

As well as similarities at each stage, upon reviewing these tables, analysis emerges that certain data can be found in all stages across all organisations. Thus, the data becomes relevant to the entire process of managing intelligent failure for all organisations in the study. Four such themes are identified. Findings predominately indicate that, across all cases, the processes of failure identification, analysis and learning, and communication of lesson learned are:

1. Unstructured
2. Informal
3. Ad hoc.
4. Ongoing within regular operational activity.

Again, adding to the relevance of the findings is that the data offers a variation to current literature. These findings are explained in full later in this chapter.

4.1.3.4 Other identified themes

Three other themes in the cross case comparison (appendix 11) within the ‘managing intelligent failure’ data deemed as being relevant to all cases are also highlighted and explained in full. These are:

- Management of negative emotions:
- Management priorities:
- The word ‘failure’

4.1.3.5 Additional focus: the entrepreneurial environment

From the cross case comparison (appendix 11), components of the “Entrepreneurial Environment” are compared and a collated summary of selected organisational factors supportive of entrepreneurship evidenced

within the six organisations is created. This is presented in a case ordered matrix, starting with cases where the environment is more supportive of entrepreneurship. This presentation is a powerful way of understanding the differences across cases (Miles and Huberman, 2014 p.215), enabling. Upon examination of the matrix, it is possible to see that each organisation has differing environments. Therefore, it is possible to identify that the 'management of intelligent failure' findings are irrespective of the entrepreneurial nature of the organisations.

The section on the entrepreneurial environment summarises findings from both the interviews and the survey relating to the respective culture, leadership, strategy and structure of each organisation. It should be noted that survey results are of a low level of statistical significance but add to the general review of findings. They can be found in appendices 1-6.

4.1.3.6 Chapter layout

In line with the identified coding process and emergent analysis, findings are presented on a case-by-case basis initially. Following a full explanation of each organisation, tables summarise principle findings for each organisation in the area of the 'entrepreneurial environment' and the process of 'managing intelligent failure'.

A cross case analysis follows that reviews findings across all six organisations and presents a summary of entrepreneurial environments, common traits to the managing intelligent failure process, evidence of unstructured and informal learning from failure, cross case consistencies within each stage of learning from intelligent failure, and finally, other consistencies across the cases. In this way, the coding process and analysis shape the presentation of the findings (simultaneously enhancing the qualitative rigor (Gioia et al., 2013)) to a position of interest to be explored in the subsequent 'Discussion' chapter thus enabling concept development.

The essence of this chapter rests within the presentation of findings as to how organisational entrepreneurs learn from failure within different environments, and how organisations manage the process of intelligent failure.

4.2 The EPoS Systems Supplier

4.2.1 Introduction

This organisation is the No1 supplier of EPoS (Electronic Point of Sale) systems to the hospitality industry in the UK. The business was founded in 1979 by the current CEO and has been run as an independent family business ever since. It centres on manufacturing and supplying EPoS systems (software and hardware) to help large and small pubs, bars, restaurants, hotels or leisure venues improve the quality of service, and profit margins. From a straight forward EPoS system the integrated hospitality management system has been developed and also offers ‘guest management’, ‘kitchen management’, ‘stock management’, and ‘purchase to pay management’. In this way, the system allows hospitality operators to manage their sites/estates effectively

The organisation has experienced significant growth in the last seven years (£10m to £54m turnover) and has recently relocated to an enlarged office space that is more supportive of innovation and entrepreneurship. The workforce has risen to approximately 350 people across five locations however; the Head Office is the principle location holding over 200 staff. The business has an extensive list of clients and business partners.

The organisation offers an environment that is supportive of the entrepreneur and entrepreneurial activity. As a high technological business, it is situated in a fast moving and highly competitive market where product life cycles are short. Innovation and entrepreneurial activity therefore is very significant to the organisation. Data suggests that the organisation is forward thinking, constantly evolving and continuously striving to achieve extra excellence and change.

Entrepreneurial initiatives of a mix of sizes are frequent and across most departments. Whilst the level of entrepreneurial intensity is driving the business forward, the consistent surge of new ideas is creating significant pressure within the organisation. There is an ongoing tension between keeping effective maintenance of existing products with the focus on new product

development. Clearly, the volume of activity is affecting product delivery schedules and product quality.

There is a highly creative workforce particularly in the front end of the organisation's innovation process. Significantly, there is evidence of creativity in supportive functions such as the Help Desk, and also supportive business functions such as HR and Finance which may be generally be perceived as less creative areas. Entrepreneurs have the opportunity to create ideas in most settings, freely and continuously expressing their creative energies and instincts. Individuals are encouraged to create and develop initiatives in a number of ways and generally find supporting resources available.

4.2.2 Entrepreneurial environment - summary

To understand the nature of the organisation, findings are summarised within the headings of culture, leadership, strategy, and structure. Supporting data under these same headings can be found in appendix 10, and surveys appendix 1.

4.2.2.1 Summary of the findings relating to the entrepreneurial environment

Table 4.1 Epos supplier entrepreneurial environment summary

Epos Supplier		
Culture and manifested climates		• Innovation • Experimentation • Client centricity • Vibrancy / fast pace of change • Informality and collaboration • Autonomy • Learning • Openness and trust • Managed risk-taking • Tolerance of failure and low fear of failure

Leadership		• Informal, non-hierarchal, friendly and approachable • Leadership based on trust and clear principles • CEO and COO driving force • Innovation focused • Strongly based on a clear and guiding 'vision' • Dynamic and passionate • Highly supportive of entrepreneurial activity and opportunity focused
Strategy		• Encased in a strong 'vision' • Partly formal and structured • Largely emergent and centred on opportunity seeking actions, sometimes impulsive and often instigated by external sources (suppliers/customers) • Considered with a long term approach
Structure		• Non hierarchal • Open • Collaborative • Unstructured and informal • Flexible to the needs of the individual initiative

Qualitative evidence indicates that there is an environment supportive of entrepreneurship. This is supported by the data below that indicates the level of spend on R&D. According to the organisation, the money spent on R&D has fluctuated as it has moved from having some outsourced expensive resource to cheaper internal resource.

Year ended		R&D Expenditure
		£'000
30/06/2016		3840
30/06/2015		3829
30/06/2014		5048
30/06/2013		4133
30/06/2012		2542
30/06/2011		2304
		21,696

Epos system supplier investment in R&D 2011-16

The company argues that the turnover graph below suggests that the development (and increase) in market leading products has had a positive effect.

Epos system turnover 2000-15

4.2.3 Management of intelligent failure

“We don’t use the word ‘failure’. We use the word, ‘that didn’t work, let’s move on’” (Property Director). Within the organisation, failure is generally unrecognised, particularly in the creative and development areas. The postive energy from the senior team means that when entrepreneurial failure occurs, one of two scenarios take place. Projects can drift, becoming less and less visible, meanwhile the organisation’s energy becomes focused on more current and promising initiatives, or the initiative pivots in another direction towards eventual success: “We probably haven’t failed at all to be honest. We’ll just adjust what our plan is and carry on” (CEO). In the operational support departments however, failure is recognised as a construct and is generally frowned upon.

Within the organisation, there is a broad recognition of the value of learning from failure. The client centric nature of the organisation heightens the perceived importance of learning from failure particularly as a means to ensure the failure is not repeated. Learning from failure is most prominent when it is customer related: “(Company name) has always been very focused on what the clients think so the fact that… if your clients are not happy you know that’s

again defining your failure and you do learn from that" (Technical and Marketing Communication Manager).

The recognition of the value of learning from failure starts at the top of the organisation, however there is also recognition that a process of managing intelligent failure is largely lacking. The lack of a process is in part due to management wariness of processes and structures: "having it in the mix is important but putting it in the front of the mix would tend to drive analytical behaviour and we're a relatively small, relatively agile company," (COO).

The organisation has learned to reduce the risk of large failure by applying significant effort at the front of the entrepreneurial process, when a new entrepreneurial initiative is put forward. This involves significant discussion, collaboration and strategic review. Additionally product quality is fully tested at each stage of development and is identified as a crucial part of the operation. The organisation believes its focus on product quality has been highly significant to the recent successes of the organisation.

In the operational areas of the organisation, the growth of the company and the level of success achieved creates an attitude that reduces the importance of failures, and therefore the need to address them: "in the grand scheme of things it's probably been ninety percent success and ten percent failure, which is near enough to not have any lights shining down in the corners, looking for where things are failing" (Deputy Help Centre Manager). Clearly, findings suggest that learning from failure is sometimes absent: "There seems to be a lack of awareness to when things aren't working" (ibid) and therefore, there is a "cycle where every new release has got the same issues" (ibid). However, generally issues of failure brought to the attention of the Help Centre, are often then resolved by the Development team. This is where the learning takes place.

The process of the management of intelligent failure is not prevalent or a priority for the organisation, although it does occur. However, at an operational level enquiry can often be limited to: "this is working, this is not working, forget that bit, do that bit … move on" (Deputy Help Centre Manager) and at a senior level there is sometimes even less enquiry: "If something doesn't work, we just move onto something else, and I suppose we don't really retrospectively sit

and look back why" (Property Director). The forward drive of the organisation onto new initiatives is a significant challenge for the learning from failure process.

Time availability is a challenge to the learning process for the organisation. A tension exists between the time needed to carry out existing operational activity and the time required to deliver new initiatives. This is heightened by the number of initiatives being driven by the organisation as it is consistently looking towards the next new opportunity. Communication is also a challenge. The organisation has a number of external locations and when it comes to venture failure there is often limited communication between each team. Any learning from failure tends to stay within each location.

4.2.3.1 Identifying failure

The organisation has trouble identifying failure occurrences: "I think that's probably our biggest failing; actually recognising to say, "That hasn't worked out. What are we doing about it?"" (Property Director).

When identification does occur, it is the organisation's customers who principally identify failures. The main mechanism by which customers communicate failure issues is through the Help Centre. Calls are logged onto the computer system and brought to the attention of the Development team when the issue cannot be dealt with by Help Centre staff. The system allows data to be analysed and used to communicate problems. As the Technical Manager puts it: "we do have really good processes in place for logging bugs and calls, you know, when we attend a field trip and we take four Aztec 36s as we did, the help centre will say "ok in the last week we have had 231 calls about this release" or whatever so we have quantifiable … we have metrics - really easily understood metrics on problems and issues with the software product……We have a process in here for recording everything that we find, so nothing ever gets swept under the carpet."

When larger failure occurs which significantly impacts on the operations of the customer, communication often is directly to a member of the senior management team, and often, the CEO.

Separate to customer identification of failure, sales and profit figure variations to expectations act as a trigger to identifying failure. This may occur by an individual or through analysis in a routine management meeting or at a Board meeting. There is no formal process of reviewing initiatives that might enable identification in a structured manner.

4.2.3.2 Analysing failure

Within the organisation there is sometimes little analysis of failure particularly at senior management level, where there is an averse attitude towards operating the business using a systematic approach, and instead, a strong entrepreneurial forward force: “I suppose, in some ways, our culture is ‘we f****d it up, okay, we kind of understand why let’s just move on’, in some ways, rather than sitting there analysing our arse for two month’s thinking about stuff.” However, there is a degree of holistic analysis which is engaged with informally often out of hours and in a social setting. A significant venue for senior managers to meet after hours and discuss business activity is in a public house adjacent to the offices. The very informal nature of the process is in keeping with the culture of the organisation. Analysis also occurs through ongoing dialogue between senior team members during normal day-to-day activities.

Whilst informal structures of failure analysis are more common and preferred, a more formal approach exists in the form of the organisation’s senior team monthly meetings. Whilst not specifically formed to discuss entrepreneurial activity, the senior team discuss larger initiatives and project failure as it materialises. Additionally, the senior team engage with the whole organisation by completing a tour of the UK offices. As part of the open session that includes discussion of the vision, current priorities, and successful initiatives, there is an opportunity for reflection on initiatives that have failed where staff can express their thoughts on why failures have occurred. These sessions add to the analysis of failure.

Within the development departments, ad hoc meetings occur as failure is identified. The meetings are open and support team members to communicate freely and without risk of blame. The energy centres on understanding the

nature of the failure and what lessons can be learned. The manager reduces any emotion attached to the failure and honesty and openness are encouraged. A set of minutes of actions are created as a record of the meeting.

In some of the support operations analysis of failure does take place and is supported by a software system. When an issue is identified, the system offers up a 'ticket number'. The details of the failure are then logged under the number and saved. The software enables wide access to the ticket number that allows different individuals to analyse, learn and assist in the resolution process. 'Stand up' meetings are held each day in a nearby open office where 'ticket' failures are discussed as a team. Attention centres on the potential resolutions and what has been learnt. Often potential resolutions are tested to provide further learning. When new initiatives are deployed, there are weekly meetings with the project manager to gain feedback on the new initiative. Any failures are worked through collaboratively with the aim that the failure does not reoccur. The essence of the system is resolution first, then learn: "From an organisational perspective, its reaction first, fix the problem, and then try and learn what went wrong, and ensure that those don't happen again in the future. So it's like an ongoing process" (Operations Director). Accepting the 'ticket system', there is very limited evidence of documentation of the analysis of failure generally.

As customers are an important mechanism in failure identification, interacting with team members, they are sometimes important in assisting in resolving the failure and analysing what happened prior to the failure. This collaborative approach often occurs through open discussion without the intermediary of a project manager. This enables direct dialogue between the programmers and customers which can deliver a more precise and in-depth analysis of the failure creating more in-depth learning. Customer engagement therefore offers an enhanced level of analysis and learning.

The organisation experiences single and double loop learning. Double loop learning is found to occur at a senior level where a more holistic mindset engages in the learning experience: "I think the takeaway from it (a failed £1m venture called Sigma), from my perspective and I think to an extent (name of CEO) is we shouldn't ever underestimate the role our person…collective personality and culture and business ethics have on the success or otherwise

of the product." The organisation generally sees itself as analysing bigger failures better than smaller failures. Single loop learning is found in the core operational areas of the business. When issues occur the focus centres on how to recover the situation and make sure the failure does not reoccur.

4.2.3.3 Communication of lessons learned

There is little evidence of a structured approach to the dissemination of new knowledge gained through failure episodes across the organisation: "As for communicating intelligent failures, that's a difficult one because it's not something we would do normally and there's no mechanism in place" (Technical and Marketing Communications Manager). However, when software issues are resolved the product manager releases a 'manifest' that details changes to the software and lessons learnt which goes to the development team. The new knowledge may be shared informally. As the Office and Fleet Manager puts it, "we don't keep a logbook of lessons learnt, or anything like that, but just generally, we try, through discussion around the department, to make sure everyone's aware of what's happening." Further, "we have quite an open-plan office. In the finance department, we all sit together, so we'd normally have a little chat. We do have occasional team meetings where we'll sit and have a proper discussion, but it's usually just, "By the way, guys, this is what's happening." It's quite informal" (Office and Fleet Manager).

Communication is largely centred on ad hoc discussion and meetings although there are some regularly scheduled meetings where informal conversation occurs. These usually takes place within departments. However, one manager did articulate that he did operate a lessons learnt document: "There's lessons learnt documents that don't necessarily get shared to everybody in the business, but they will get shared with, let's say, for example, by my teams" (Operations Manager). At an organisational level, there was no evidence of communication of larger failures and, within the organisation, no evidence of learning from failure from other departments. As the COO puts it, "we're having to be a lot more trusting that this knowledge transfer is actually taking place in the absence of a structured channel."

4.2.3.4 Emotional management

There is little structure in the management of the negative emotions relating to entrepreneurial failure. At the senior level, informal support is effective in managing the emotions related to failure. The CEO describes the team as being “like family” and “you’ll see us later on when we’ve had a few beers in us.” However, he also realises that “further down the organisation maybe slightly different” and evidence supports this view: “I would say the business is not great at supporting that (emotional support after failure) always, you know, and I think it’s because…..there’s nothing personal there; it’s just the business has very high expectations” (Operations Director). However, within the organisation, the friendly and supportive nature of the culture does positively affect individuals facing failure, and additionally, middle management are positive and encouraging in these situations.

4.2.3.5 Summary of findings relating to the process of managing intelligent failure

Table 4.2 Epos supplier: Findings summary - managing intelligent failure

Epos Supplier		
Identifying failure		• Customer feedback highly significant whether via helpdesk or direct to middle and senior management. • Internal identification predominantly informal, ongoing and ad hoc by nature. • Help Centre utilise an internal software system that logs failure details.
Analysing failure		• Some lack of tolerance of 'analysing' activities by SMT. • Analysis by SMT is mainly informal and often in an informal setting • SMT monthly meeting incorporates some failure discussion • Ad hoc meetings occur as failures are identified • Software system allows wide access allowing individuals to contribute to analysis and learning • Co-analysis and learning direct with customers • Analysis also occurs in teams - often unprompted 'stand up' discussions. • SMT organise annual roadshow to discuss initiatives development activity. • Limited in-depth learning • Limited focus on a process for learning from failure • Generally weak at analysing failure as an organisation.
Communication of lessons learned		• Software system to store product failure data and resolutions. • No mechanism for sharing non product lessons leaned • However, generally sharing of lessons occurs on an ongoing and ad hoc basis within open plan office space (stand up meetings), or informal meetings. • Large failure lessons not openly shared. • Mainly informal and unstructured.
Emotional Management		• Mixed level of organisational support • Development functions supported, however implementation functions less supported (fear of failure). • Generally the family and friendly feel offers a supportive culture whilst there is no clear management approach is provided.

4.3 The Processed Juice Supplier

4.3.1 Introduction

Founded in 1999 by the current Chairman and his wife, the organisation is a provider of processed fruit and vegetable juices. In recent times the organisation has experienced significant growth with sales in the last 10 years increasing from £2m to £55m+. It is now the top supplier in the UK. As one of Europe's leading processed fruit suppliers it, imports, blends, stocks, re-packs and distributes high quality processed fruit ingredients which are sourced directly from suppliers around the world. The organisation is able to provide the customer with any quantity of chosen fruit ingredients in almost any packaging with tight adherence to stringent supplier and accreditation guidelines. The business has an important capability in the area of new product development (NPD) where it has a reputation for providing creative product solutions. The organisation successfully develops products with UK major multiples such as Waitrose, Sainsbury's, Marks and Spencer, Tesco, and Asda. Recently the business purchased a large distribution centre to manage anticipated demand. Staffing numbers have now reached 175 and the senior team has increased to 6 directors reflecting the needs of the business as it has grown and its future ambitions which mainly rest in Europe and markets beyond. The company now has a partner structure with four partners each holding 25% of the business. The partners are made of the Founder (and also Chairman) and three of executive directors.

4.3.2 Entrepreneurial environment - summary

To understand the nature of the organisation, findings are summarised within the headings of culture, leadership, strategy, and structure. Supporting data under these same headings can be found in appendix 10, and surveys appendix 2.

4.3.2.1 Summary of the findings relating to the entrepreneurial environment

Table 4.3 Juice supplier entrepreneurial environment summary

Juice Supplier		
Culture and manifested climates		• Opportunity seeking and impulsive • Innovation • Client centric • Family values • Informality and collaboration • Autonomy • Learning • Openness & trust • Risk taking • Tolerance of failure and low fear of failure
Leadership		• Entrepreneurial mindset • Leadership by example • Supports individual entrepreneurial activity • Close working relationships with staff • Strong team ethos • On occasion can overpower organisation
Strategy		• Highly emergent • Predominantly unstructured • Mainly short term focus and dependant on the next venture, however, long term goals drive a vision
Structure		• Low levels of structure - non hierarchal management structure • Predominantly informal structures • Open communication channels • Increasing level of structure as the organisation grows • Flexible and adaptable

4.3.3 Management of intelligent failure

“We're not very accepting of intelligent failure. We will tend to try and make it work- I think it's a function of the nature of the business. So we might steer it into a different direction from the original intention” (MD). Findings suggest that little intelligent failure is recognised as, in the main, if the initiative is not achieving it will be channelled in a different direction until it does succeed or, the initiative loses traction within the organisation and fades until it disappears. Nonetheless, there is a persistent approach to bringing the initiative to fruition. As the Business Development Manager (2) puts it, “failure is not really an option. You've just got to keep going until, you know, you get to where you need to be.” There is a consistently positive outlook; “It's not worked this time but, you know, it may work in the future. It's, you know, they never wholeheartedly cut something short and say ‘okay that's it, we're never doing that again’, it just wasn't the right time” (Ibid). The organisational expectation is that the initiative will eventually work. The organisation does not recognise when intelligent failure occurs, and the word ‘failure’ is not generally used very much. The word is not a natural part of the organisational vocabulary because, as the MD, when talk about the company, puts it, “I think psychologically it's very much success driven and we're very much a commercially, sales driven and in that world that's not a term considered appropriate.”

There is evidence to suggest that the organisation’s recruitment strategy is a factor that limits entrepreneurial failure. The organisation has invested in recruiting experienced individuals with significant talent in important areas of the company, including the senior team. The recruitment strategy is deemed as important in the development of the organisation.

When it comes to recognising the importance of managing intelligent failure, there are mixed responses from the interviewees, however, generally people see the importance of learning outcomes. There is evidence of a change in approach as the organisation grows. The Founder and Chairman views a process for managing failure with some caution; “I think it’s important that we don’t put a big emphasis on it. I think it’s one of those, really - we just have a very honest approach to it that didn’t work. Why didn’t it work? Fine! And within literally minutes it’s put to one side, because we’re already spinning another

plate anyway, or plates." However, the organisation sees change: "probably a while ago, it would have been 'move on to the next new exciting project', whereas now there is more reflection and more drive in the sense of 'Let's have a look at that in a different way to make a success of that, let's consider the lessons that have been learnt, positive or negative in terms of future project'. So that is considered at a strategic level on a regular basis" (Operations Director). The MD sees a process of learning from failure as "vitally important"; "You know, you can't have success without an element of failure along the way and I think it's just recognising that." Whilst there is view within the senior team that managing intelligent failure has varying degrees of importance it is not recognised by all on the ground. As the Business Development Manager puts it, "when somebody fails here or something goes wrong, I think it's forgotten quite quickly, and truthfully I would say I'm not sure an awful lot is taken from that at the moment. I would say at the moment it's probably not very important."

Significantly, the approach towards failure management is evolving or, as the MD puts it, "I think it was probably perfectly ok in the entrepreneurial phase (to not learn from intelligent failure) because it was always onto the next thing, onto the next thing, and the next things very exciting isn't it. So, it's almost not considered, and instantly forgotten. And then you move into the transition phase where it probably would be more negatively considered, and I think we're now coming out into the next phase and the growth of the business where it (a process for learning from failure) would be constructively viewed."

Evidence suggests that there is a very limited structured format to the management of intelligent failure within the organisation. When learning from failure does occur it is informal and happens in an ad hoc way. The emphasis of the business generally is to not linger on failure and move on to the next entrepreneurial initiative. A quick 'wash up' and then move on towards turning the next idea into a reality.

Findings suggest that the organisation is highly entrepreneurial, being driven forward by a highly entrepreneurial Founder and Chairman. From the perspective of developing an enhanced learning process, the highly entrepreneurial nature creates a challenge in itself: "you very rarely go back and review - and learn the lessons from intelligent failure of some of the

previous ones (initiatives). As the next one's much more exciting and it's onto the next - and there's always a next. And that' much more fun - or potentially much more fun than a considered review" (Operations director). In essence, there is a limited willingness to engage in enhancing the failure learning process and, additionally, there is evidence that the lack of time is also a challenge. The entrepreneurial process does not currently promote failure-learning processes, however, there is recognition that, as the business is getting bigger, these processes may add value and that they should be developed. The challenge is how to manage an organisation "that's trying to pull in two different directions (being entrepreneurial and corporate) at the same time" (Operations Director).

4.3.3.1 Identifying failure

The organisation often views failure as a state whereby correction and further direction will lead to eventual success rather than an endpoint. However, within the entrepreneurial process failure is identified (even if the 'failure' word is not used) in a number of informal ways. Separate to individual or team identification, customer feedback is a principle mechanism to understand that a failure has occurred; supplier feedback is an additional mechanism.

The process of identifying failure within the organisation is largely ad hoc, informal and on an ongoing basis. The size of the organisation, the open workspaces and the lack of fear of failure by individuals allows failures to be identified quickly as a part of an open ongoing dialogue. Generally, individuals are close to their work, therefore constant assessment of the initiative is taking place. This leads to management being aware of most situations. The open nature of the organisation means ongoing informal monitoring is constant.

At a senior level there are open and continuous discussions going on in the form of back-chanel and impromptu conversations where new ventures are discussed. The ongoing monitoring of activity assists failure identification. Whilst there may be no detailed targets created, there is an expectation of the likely performance level for the initiative and discussion forms if these levels do not materialise. Within the operations department there is a more structured

approach to the assessment of performance with the use of KPI's, and SMART goals which are reviewed regularly.

However, there are formal review processes that manifest in regular management meetings when significant projects are discussed within the team. There is also an all-day Senior Management meeting that occurs in a monthly basis where initiatives are reviewed as part of the agenda. Discussion is lengthy by nature and in detail and minutes are produced: "Many of the strategic projects, the bigger business projects would be considered within this SMT, the senior management team. And those would be presented on a monthly basis. So, the level of progress would be presented, discussed, and that would be dependent on - you know, what was the target, the financial target, what was the level of success" (Group MD).

4.3.3.2 Analysing failure

The larger business ventures are considered by the senior management team and this may occur in the more formal monthly senior management meetings or, more often informally. The senior team may hold an after action review which is termed as a mini post mortem: "Where are we? You know, how have we arrived at where we're about? Where are the recognisable failings in us as a management team to manage properly or to direct properly in certain circumstances and what are our corrective actions now? So you know, you're talking about a mature, experienced, professional people that, you know, will understand the topics" (Managing Director).

However, analysis is also on an informal level and often external to the business in a social setting. Essentially the entrepreneurial mindset of the organisation has limited time and low tolerance of data analysis. "For every intelligent failure, we've got six positive things happening at that one moment so we give it very scant time and we rely on the fact that within our tighter group, we all know what we did and how we did it and that's in that memory bank that we wouldn't necessarily make those mistakes again. So we don't spend too long analysing the failure, because we're already too busy on the

new thing. Our attention span to it (analysing failure), led by me who's got a very short attention span…..we just move on."

Where analysis does occur within the core of the organisation, it is informal and unstructured. Rather than book a meeting room, discussion breaks out in the open workspaces. However, generally there was little evidence of any in-depth analysis of failure within the organisation leading to deep learning. The nature of the organisation is not to stop and analyse the situation fully and discussion is not recorded. The organisation prefers to move forward quickly, either to forget the event, or to start on the next venture.

Individuals often have a mindset that engages in the process of learning from failure at a personal level. This involves individuals analysing events in their own mind with the aim of making sense of failure episodes. From this analysis comes personal learning which is then available for sharing with teams. The culture positively supports this approach to learning by encouraging experimentation.

However, as a whole the analysis of failure within this organisation is generally weak, lacking depth and a focused a mindset. This is part due to a limited focus on the process of learning from failure by management, but mainly due to the opportunity seeking mindset of the organisation, which relentlessly drives new venture development.

4.3.3.3 Communication of lessons learned

The organisation has informal channels of communication that are open and unstructured. This is supported by the management approach and by the open workspace. When analysis of initiatives does occur, the lessons learned from the failure experience are generally shared as part of usual ongoing dialogue within teams and indeed between departments. There is a significant volume of communication taking place on a daily basis, and these informal conversations move knowledge around the business. As the different teams are generally physically and psychologically close to one another, there is awareness of failure in other sections and therefore lessons learned may be communicated. However, more often lessons learned remain with individuals

and the teams and are not documented in a way that means they can be referenced to in the future.

The senior team in the organisation is less effective at communicating lessons learnt from intelligent failure. The Founder and Chairman asserts; “I think we are poor, as a business, of communicating intelligent success, or intelligent failure. One of our criticisms, as the four partners, we’re not brilliant at talking to our team.” So whilst there is no evidence of significant structural barriers to the communication of lessons learnt from failure, the necessary emphasis and energy may be lacking.

4.3.3.4 Emotional management

There is little evidence of a structured approach to the emotional management of intelligent failure. The organisation has an environment where there is very little fear of failure that means there is minimal emotion to manage when failure does occur, however, some individuals overly self-chastise causing unpleasant emotions. The opportunity seeking culture of the organisation drives individuals to move on quickly, forget the failure and move on to the next initiative. In this way, thoughts do not rest long on the failure occurrence. Support comes from the closeness of teams who help individuals through any moments of unhappiness by encouraging them with supportive words. Emotional management is not a structured process. The caring culture provides emotional support in the main and this starts at the top from the senior management team.

4.3.3.5 Summary of findings relating to the process of managing intelligent failure

Table 4.4 Juice supplier: Findings summary - managing intelligent failure

Juice Supplier		
Identifying failure		• Customer feedback • Supplier feedback • Individual and team identification • Ad hoc • Largely informal and unstructured process • Continuous "picking up messages" via email chatter, informal discussion, ongoing monitoring.
Analysing failure		• Some lack of tolerance of 'analysing' activities by SMT. • Analysis by SMT is mainly informal and often in an informal setting • SMT monthly formal meeting • Ad hoc meetings occur as failures are identified • Analysis also occurs in teams - often unprompted 'stand up' discussions. • Limited deeper learning • Limited focus on a process for learning from failure • Generally weak at analysing failure as an organisation.
Communication of lessons learned		• Some communication of lessons • Informal • Ad hoc • Within teams and across departments • Mainly through on going dialogues • Little communication from senior team • Little documentation of lessons learned • No electronic mechanism for lessons learnt storage • Lack of management focus or emphasis
Emotional Management		• Very low fear of failure therefore reduced failure emotions • However self-chastising evident • Support derives from the closeness of teams and also from management • Ad hoc and informal • No structured emotional management processes

4.4 Public House Operator

4.4.1 Introduction

The company was founded in 1777 brewing beer for the local community. The business has been run by subsequent generations of the founder, without a break in the lineage, ever since. The current CEO is the 11th family member to run the company. The organisation has continuously expanded enlarging the brewery and acquiring pubs. The company now owns over 200 pubs of which just under 50 are 'managed'. The other 150+ pubs are 'tied' and are run by tenants. The organisation remains an independent company and is a leading operative in the brewing and hospitality industry. The Head Office and Managed House Division represent the core of business operations (notwithstanding the importance of the brewery) and are the focus of this research. In the hospitality industry, the organisation is recognised as being innovative, all be it in a relatively traditional market.

The aim of the organisation is continue to grow whilst remaining an independent family company and to lead the UK market in brewing and hospitality. In the Head Office and Managed House Division, there is just under 400 staff.

The organisation hosts an environment, which is both entrepreneurial and yet process led and bureaucratic. The firm has a shorter line on decision-making and can move faster than big organisations in the industry; the systems and procedures help ensure effective implementation. However, the bureaucracy and lack of resources are a restraint on entrepreneurial activity. So while the organisation is highly entrepreneurial in some aspects, for example creating a public house out of 15 shipping containers, in other ways the organisation is not so entrepreneurial, particularly away from the centre in the branches. While entrepreneurship is promoted in Head Office, it is very different for the branches where there is a different climate within which entrepreneurs to operate. For the branches, the priority is the effective delivery of operational processes as opposed to new ideas and initiatives. Generally, the organisation engages in entrepreneurship with less risk.

Entrepreneurship and idea generation occurs under the backdrop of an approach that challenges current thinking. The organisation has demonstrated its ability to transform in recent company history. At the centre, the Retail Director who is responsible for product development drives idea generation. There is a constant flow of initiatives of varying size within the centre. In the branches, larger initiatives are advanced by General Managers and taken to the centre. Within the branches there is evidence of an open collaborative approach to the creation of event based activities. There is also significant low-level ideas arising from across the sections some of which are driven by problem solving. These ideas may be referred to the general manager depending on their significance. The larger the change the more authority required.

There is evidence that resources are available to the organisation to support entrepreneurial activity at company level; at branch level, there is significantly less resource. The organisation is comfortable investing large sums in new market initiatives. Much of the invested money comes from accumulated funds. The company takes a long-term approach to strategy and finance.

4.4.2 Entrepreneurial environment - summary

To understand the nature of the organisation, findings are summarised within the headings of culture, leadership, strategy, and structure. Supporting data under these same headings can be found in appendix 10, and surveys appendix 3.

4.4.2.1 Summary of the findings relating to the entrepreneurial environment

Table 4.5 Public house operator entrepreneurial environment summary

Public House Operator		
Culture and manifested climates		• Family values • Entrepreneurship (with some innovation) • Mostly informal • Client centric • Autonomy • Often collaborative • Moderate levels of bureaucracy • Moderate hierarchal approach • Learning • Openness & trust • Managed risk taking • Tolerance of failure and low fear of failure
Leadership		• Non hierarchal approach • "Custodian" leadership style (CEO) • Through a strong vision • Visible, open and approachable • Centred on supporting staff to fulfil their own potential • Centred on creating entrepreneurial environment
Strategy		• Strong direct approach • Mainly top down • Long term approach • Structured and emergent strategy • Vison and values align both emergent and structured strategy
Structure		• Traditional management structure (softened by management approach) • Cross functional collaboration mainly at HO • Open communication structures generally • Branches have significant procedural structure

4.4.3 Management of intelligent failure

Failure as a concept is not generally recognised within the organisation and is a word that is not used. 'Not working and didn't work are used to replace the word 'failure'; "I guess because failed is final, and it's just game over; forget it. Whereas 'didn't work' kind of insinuates 'didn't work but possibly could'. So there is sort of a get-out clause, as opposed to failure is final" (GM location P). Failure is perceived as a moment in time before a new action is engaged to move the initiative towards success. The moment of 'not working' is part of the entrepreneurial process and not an end in itself; "it (failure) doesn't happen, because a lot of the time everyone's adapting" (Assistant Manager, location T). There is also a positive energy that prevails: "as an organisation they don't want you to think you've failed. They are very upbeat, making people's day and making sure they've got a happy, friendly team that are going to deliver" (Shift Manager at location P). Significant also is the link between failure and learning: "there isn't a lot of room for failure. It's all very much learning" (Assistant Manager at location T).

Large failures are avoided by significant effort applied to the front of a new entrepreneurial process. Avoiding failure is pursued through vigorous discussion before the idea is developed, as the Retail Director puts it, "we get a consensus agreement upfront, a lot of consensus, a lot of discussion about something upfront, so it's a collegial decision to progress with something…….so I think it's almost the George Washington thing, 'if I had seven hours to cut down a tree I'd spend six hours sharpening the axe' and that's…I think that's a very good quote and it applies very much to what we are doing."

The management of failure as a process is not prevalent or a priority for the organisation, although it does occur especially at the centre. Generally, the management of intelligent failure is unstructured and informal. Whilst it is largely recognised as being something which would support the organisations growth, failure management is seen as an opportunity rather than a current reality; "I think the after action review we've got to think much more about the process of how to track and disseminate the learnings….and how do we make sure that we don't repeat the mistakes" (Retail Director). However, there is also

evidence that learning from failure has only limited traction: “in essence, it’s (the initiative) failed and I’m comfortable, I don’t really need to know the exact reason it’s failed. It’s probably because, you know, our time is limited and I know if I use my time somewhere else it’ll get more benefit, if that makes sense. So, I think that’s why I’m happy to just let things drop” (General Manager of location P).

4.4.3.1 Identifying failure

When new entrepreneurial initiatives are implemented the organisation identifies outcomes in three main ways; firstly, by the company’s Management Information System (MIS), which provides relevant sales, costs and profit data on a daily, monthly or yearly basis to directly inform management of the performance of the new venture. Lack of footfall is also monitored. This is important because, as the CEO puts it “we have clear parameters of what we’re trying to achieve; what we’re expecting to achieve. So we’d be able to review that against the numbers and also experientially as well. I mean, we would all visit the place (location of the initiative) many times.” A quarterly review of developments is held by the Director of Development that highlights initiative failure. Secondly, outcomes are identified through customer feedback whereby customers express their view via the ‘trip advisor’ app, in person, or by email. Customers are given the CEO’s direct email address on the back of every menu in the branches. Trip Advisor is reviewed for people’s reactions and “if we are seeing a constant theme or something that’s just not, right not working, then things normally change quite quickly” (Retail Director). Thirdly, by experience and feel. Being in the new venture or being in and amongst the event offers intuitive data as to the performance of the initiative. It is possible to see the numbers of customers and their reaction to the new initiative actually on location. This may include the lack of atmosphere, the customer’s lack of engagement, or that they appear to be uncomfortable in the surroundings.

New initiatives are monitored on an ongoing basis through a collaborative and informal approach. There is no evidence of a structured process to identify failure except the quarterly update on developments by the Retail Director. Most failure identification happens outside of this meeting through week-to-

week informal conversations discussing matters continuously as the initiative progressed.

Identify failure can sometime be a challenge for the organisation, which experiences termination drift. When project failure does occur the situation is not fully recognised as discussion, interest, and activity slows to an eventual stop and then the project loses all visibility to the organisation. However, failure is recognised but sometimes after only exhaustive engagement: “the nature of our company, or the nature of our heritage, and the nature of [name of CEO], is to keep going until we actually get to that point where somebody says ‘do you know what? This is a failure. Let’s just get out’” (General Manager at location P)

4.4.3.2 Analysing failure

Analysis and learning from failure is predominantly an informal and ad hoc process. At a top tier level, informal analysis occurs on a week-by-week ongoing basis when the CEO and Retail Director (responsible for product development) converse. Analysis of quantitative and qualitative data is continuous, taken seriously, and drives future action to remedy and improve the performance of the initiative. Reasons for lack of progress or failure are considered based on anecdotal evidence, sales or cost data. There is a general expectation of what is expected and significant time is invested with other senior directors in analysing new developments and this partially formalised on the Board’s two ‘away days’. There is a quasi-formal quarterly business review process by the Director of Development, where all new developments are discussed. The review centres on performance, a reflection on what action has occurred and lessons learned. There is no evidence that there is any set agenda for discussion. Subsequent analysis at Board level is on an informal basis.

Within the centre, there is a mix of differing forms of analysing failure and learning from failure, which incorporates some structure, but mainly the process is informal and more ad hoc. This can involve impromptu stand up discussion or informal meetings. Building project management has the most

developed approach to managing failure following the introduction of a ‘standard project methodology’. The new approach centres on effective monitoring and reviewing of building projects. Review structures in this instance are both formal (meetings with an agenda, checklists, and surveys) and informal (on site discussions).

Initiatives within the branches are informally reviewed for learning points through weekly meetings with discussion generally centring on answering questions such as: “Did we think it was a success? What were the positives, what were the negatives, what could have been improved on? How could we have done that? What could I have done to have marketed better or pushed it further or got more bodies down? Next time, what do we think we should be doing?” (GM of location T). The points are then “kept in mind and go on board for the next event” (ibid). There was no evidence of written documentation relating to discussion in formal or informal analysis of failure.

There is evidence that where learning from failure occurs the learning is of a ‘single loop’ nature rather than ‘double loop’ learning nature. This is particularly the case within the main body of the organisation. Generally, analysis and learning remains close to the detail and specifics of the venture rather than examining the lessons learned within the wider context. There is also evidence that some lessons are not being learned and that mistakes reoccur. However, the CEO does demonstrate deeper learning and was able to express an example of a third party failure, which has provoked him to, “fundamentally re-think how we ran our whole managed division.”

4.4.3.3 Communication of lessons learned

Where lesson are learned from failure, there is little formal communication within the project team, or department, or branch. In most instances, there are no written notes of discussions relating to lessons learnt. Where written notes occur they are personal and are not distributed or, at a senior level, some formal notes are taken at some meetings and circulated to the Chairman and the Board. However, there was evidence of a structured approach in the Building Surveying section where there is a formal survey tool to identify and

communicate failures to the organisation. Predominantly informal communication is the most usual form of dissemination of lessons learned. This occurs through person-to-person conversations, in the form of ad hoc stand up meetings and team updates on continuous basis. In some instances, people are referred to individuals who have experience in a relevant project area and this acts as means to share lessons learned in the past. This personal approach is preferred to reading written reports.

In the main where lessons are shared, this occurs within teams or departments. There is little evidence to suggest that lessons learnt are shared across internal organisational boundaries. An informal monthly meeting takes place where regional managers meet for lunch. A loose agenda may include some communication of lessons learned. However, branches view themselves as separate and independent and are therefore not sharing lessons learnt, except where the general manager is more outgoing and well connected. The findings suggest that overall there is little sharing of lessons learnt from failure.

The main challenges to the communication of lessons learned are:

- A lack of time due to the ongoing operational activity. There is evidence that increasing time is being spent on implementation over innovation with a view to catching up with the ideas already in the pipeline: “There is a slight wariness of too many initiatives……..there is a danger of us trying to do too much” (Retail Director).
- A fear of the centre and the Retail Director.
- The feeling of independence in the branches that creates a mind-set of isolation, which is restrictive of outward communication.
- The working relationship between the centre and the branches
- The lack of a planned management of intelligent failure process. Whilst there is a process that has emerged and that is adding value to the entrepreneurial capability of the organisation, it lacks clarity and effectiveness.

4.4.3.4 Emotional management

Emotional management is unstructured, informal and instinctive. In the centre where most entrepreneurial activity takes place, the collaborative nature of venture creation creates 'team responsibility' over and above 'individual responsibility'. Evidence suggests that collaboration significantly reduces the likelihood of failure episodes and acts as a support mechanism when failure does occur. As the CEO puts it "everyone rallies round them (those individuals caught up in failure). They know it's….absolutely fine. There are…these things do happen and I think….Yes, I think people rally around and are supportive. I mean did the director involved in that retail trial at one of our pubs get lambasted for it? No. He was very open about it and he said 'I've cocked up', and everyone moved on and that was fine." Within the branches teams are close so when failure does occur (even when it is a low-level initiative): "There's always going to be people there to support you" (Bar supervisor). Indeed, general managers go out of their way to reassure individuals that responsibility is a team, not an individual matter.

The organisation views failure as a means to learn and bring closure; "one is to understand what we've learnt…..and two, I think, is to staunch the wound for people emotionally" (CEO). So attention centres on confirming the failure, learning, controlling individual exposure, reassuring and moving on to the next venture. "I get really annoyed with people when they hark back to people's failures, even in a sort of joking sense. It just doesn't do anyone any good" (CEO). At a lower level, intelligent failure is valued as a tool to guide training and development. In the main, the family and team values are strong and individual support through failure is significant. Important also is that there is a low level of fear of failure which means there is less negative emotion attached to failure.

4.4.3.5 Summary of findings relating to the process of managing intelligent failure

Table 4.6 Public house operator: Findings summary - managing intelligent failure

Public House Operator		
Identifying failure		• Management Information System (MIS) • Customer feedback (e.g. Trip Advisor, in person, or via email) • Experiencing the event • Ongoing monitoring and informal discussions within teams. • One quarterly meeting specifically reviewing developments. • Experience termination drift
Analysing failure		• Predominantly informal and unstructured • On going • Ad hoc • A quarterly review of developments formerly (although) with an informal agenda) • Stand up meetings • As part of cyclical operations meetings • Board 'Away Days' • 'Standard Project Methodology' within Building Project Development • Largely single loop learning (except at ST level).
Communication of lessons learned		• No organisational storage mechanism • Mainly dissemination is via individuals and teams on an ongoing and ad hoc basis • Informal by nature • 'Building' dept. has formal survey tool to communicate lessons • Little sharing between branches • Individuals from previous initiatives are used to utilise previous lessons learnt
Emotional Management		• A low fear of failure • Family values form the supportive framework for failure. • No clear formal approach • At all levels people 'rally' around to support the individual(s) - the organisation is highly caring

4.5 The Regional Wildlife Organisation

4.5.1 Introduction

The regional wildlife organisation is a charity set up 53 years ago to protect and promote wildlife. Today it looks to create a reinvigorated natural world that helps deal with the environmental threats of climate change. It has a key role in creating wildlife havens, championing wildlife, and works to increase the value that people place on wildlife

As a charity, it depends on individual support from the general public. Revenues come from membership and support for specific appeals. Consultancy is another income stream; however the largest revenue comes from grants, and also successful project bids. The previous CEO retired four years ago after twenty years of service. Whilst there was significant growth in that time, the new CEO has taken organisational growth to a new level. The organisation has 125 staff members.

The corporate entrepreneurs within the organisation are given appropriate support to create and develop initiatives and opportunities. Findings from the interviews are rife with examples of entrepreneurial initiatives and endeavours. The organisation represents a good place for the entrepreneur to operate. As the Communications Team Leader puts it, “I think there are some bright people here and we have very bright guys managing it and my line manager is very clear sighted. So I think it’s that sort of intellectual energy within an organisation that will mean that there is a certain amount of entrepreneurship”.

There is a significant flow of initiatives to encourage entrepreneurial behaviour. As the Fundraising Director puts articulates, “we’re a reasonable sized charity, but we’ve got big land holdings, we’ve got big projects that we’re delivering and we’ve got a whole load of new initiatives all sort of pushing forward at the same time.”

“There’s a willingness to innovate, there’s a kind of leadership support for that in a sense that, you know, we are pushed to try to push boundaries, try new things, do things differently, do things better, so I’d say, you know, within the

context that we're in, I think the (organisation) is a very entrepreneurial organisation" (Director of Fundraising).

4.5.2 Entrepreneurial environment - summary

To understand the nature of the organisation, findings are summarised within the headings of culture, leadership, strategy, and structure. Supporting data under these same headings can be found in appendix 10, and surveys appendix 4.

4.5.2.1 Summary of the findings relating to the entrepreneurial environment

Table 4.7 Regional wildlife body entrepreneurial environment summary

Regional Wildlife Body		
Culture and manifested climates		• Innovative • Experimental • Informal • Autonomy • Collaboration • Moderate levels of bureaucracy • Low hierarchy • Learning culture • Openness & trust • Risk taking • Tolerance of failure and low fear of failure
Leadership		• Leadership with an entrepreneurial mindset • Values driven • Through a strong vision • Encourages experimentation • Visible, open and approachable and non hierarchal • Charismatic • Leadership by example
Strategy		• The organisational vision provides strong and clear direction • Predominantly emergent as opportunities arise • Long and short term approachs
Structure		• Informal • Structures to monitor and manage risk • Shallow management structure • Open communication channels • Matrix structure engaged in project (field) work

4.5.3 Management of intelligent failure

Within the organisation, there is little recognition of failure occurrence. Failures tend to be infrequent and often small. The lack of known failures maybe due the collaborative work completed at the front end of the initiative in the planning stage that is evident. Failures are described as “hurdles” (IT Officer) as part of a cycle of work whereby teams get together to redirect the initiative. Significantly, though, the word ‘failure’ is not largely used and instead people say such things as ‘it didn’t work’: “Fail is a very hard word, isn’t it? It’s a very…..I mean, I suppose we probably do use it occasionally, but we probably say ‘that didn’t work’” (NIA Project Manager).

In terms of the management of the process of learning from failure, there are some informal processes but learning from failure episodes is not prolific: “I mean, this is the first time I’ve felt uneasy with any of the questions. No, we’re not really good at that, I think it’s kind of a ‘oh well, never mind’. I don’t mean that in an aggressive or arrogant way” (Commercial Director). Certainly there is a sense that because entrepreneurial areas of the organisation are so busy driving initiatives forward that when failure occurs they are “totally consumed by the next thing” (Communications Officer) and a review process does not take place. There was evidence however, that the attention to learning from failure can vary significantly depending on the manager responsible for managing the initiative.

Inherently though, the processes for learning from failure are underdeveloped. “The delivery is great but we’re not always so good at the proper set up and authorisation processes and also the closing down of it – which is partly about how we capture and disseminate learning. So there’s a kind of ‘processy’ structural weakness that we’re looking to address at the moment there” (Funding Director).

There is recognition of the importance of learning from failure at senior levels within the organisation, yet there is little evidence of senior management communicating the significance of failure to the organisation as a whole. Additionally there is recognition of the potential benefits of a process for managing intelligent failure; however, this has not translated into the creation of new structures and protocols.

Interviewees consistently responded that the most significant challenge to the learning from failure process is lack of time. The lack of time mainly reflects the level of entrepreneurial activity rather than core workload, although that also affects the amount of available time. The shortage of time means the process of managing intelligent failure is often weakened or just does not happen at all: “we’re rushing from one thing to another and you don’t always have that pause point to reflect in a constructive way about how something might or might not work” (Fundraising Director). The other significant challenge to the failure management process is the remoteness of multiple offices away from Head Office.

4.5.3.1 Identifying failure

Identification of failure sometimes comes via discussion in regular operational meetings. Ventures are discussed at cyclical weekly or fortnightly meetings on a ‘one to one’ basis or at team level. Through regular monitoring of projects the point of failure recognition comes early and presents the opportunity to address it and potentially find a way forward.

Frequently failure is identified even before these meetings, as teams are highly collaborative and often work together in close proximity, chatting informally. The nature of open plan layouts in the office space allows for ongoing dialogue between individuals within their team: “We sit next to each other so pretty quickly you can tell if some things aren’t...well you’ve got the stats from previous years, the stats about media appearances and people responding to our materials. So we can see pretty quickly whether things are going in the right direction” (Communications Team Leader). Often projects have milestones and targets to achieve that act as a guide to progress. In everyday conversations, teams are constantly (informally) considering how the project is performing against relevant milestones. This means identification can be swift.

Failure identification may also come from variation in financial targets that are sometimes highlighted first by the Commercial Manager “who will come and say ‘hang on, what’s going on here? We’ve got a massive overrun on this’, you

know, we think right, we'll go straight in and look at that" (CEO). Within marketing initiatives, attendance numbers and visitor feedback determine results and, therefore, are an alternative measure to identify failure or success.

In general terms, individuals are very close to their work and are quickly aware when issues arise and the initiative is failing. Management put forward a mantra that encourages individuals to let them know as early as is possible, as they "don't like surprises" (Commercial Manager). What can make failure identification harder is the flexibility of most of the targets that causes significant ambiguity and makes failure occurrence less clear.

4.5.3.2 Analysing failure

At an individual level self-reflection is considered important by a number of interviewees; "the self-awareness and self-reflection time is something that, for me personally, is really hugely important" (Commercial Director). For the DRBC Manager, the failure "made me re-evaluate the original concept. Was it the right thing to do? Would I have done it differently? I think you've always got to look back and say, right. What would I have done differently? And if I did it again, you know, would it have or not?" Individual self-reflection is then often shared with colleagues.

Generally, analysis and learning from failure is an informal process. Discussion is free flowing between individuals and the team on an ad hoc basis at their workstations. Discussion ends when team members feel that the topic is exhausted. The term 'wash up' was used several times to describe this activity: "As a team we would just go back and say, okay why hasn't that worked and ... I think then you just analyse what's happened, is it to do with the location, is it do with what was on offer. Is it to do with how it was promoted and there are always opportunities to change some of those parameters to try again" (Communications Officer). Analysis can centre on trying to break down the venture into its component parts and examining these sections individually. Essentially, much of the analysing that takes place is informal and on a collaborative basis whether that be internally or externally with project stakeholders.

Analysis and learning can take place on a cyclical operational, team, or on a 'one to one' basis' with line managers: "I have one to ones, formal one to ones, well formal, like monthly planned one to ones with my two team leaders. So if we've got big projects going on, so the case in the north of the county, the nature reserve who is leading on quite a large chunk of it, I'll catch up with him on the phone and pop out to see the work and stuff just so I'm on top of what's happening. I'll catch up with the Team Leader and do it formally once a month and check he's happy with how work's going. And then at that point if that's not gone well then we would sit down, and sort of I guess, I suppose the phrase had a "wash up meeting" on it, in a way, and work out what's gone wrong because nearly always if something's gone wrong like that we will have to do it the next year" (Land Manager). Indeed, in the field project area there is a more enhanced structured process to learning from failure whereas the remainder of the organisation exhibits an unstructured approach.

At a senior level much of the informal approach is replicated: "So we reviewed the business case, we reviewed the finances, we looked at the context in which we'd set it up, we thought well we'd assumed a certain context when we set up the business but the reality was a very different context and how should have we recognised that earlier? So really it was just sitting down and talking in a constructive, honest way about it" (Director of fundraising). Also evident is the nature of enquiry and analysis at a senior level where analysis and learning is at a deeper level. Whilst there is some evidence of a deeper level of probing of failure episodes within the senior team, for the rest of the organisation there is limited evidence of a refined process to in-depth analysis. Indeed, single loop learning mainly occurs within the core of the organisation, while double loop learning is only evidenced within the senior team.

Generally, across the organisation, learning from failure occurs and this is particularly the case in the more entrepreneurial areas. Interestingly, however, there is little conscious recognition of this process. Learning is almost intuitive as individuals who are highly engaged in their initiative are continuously thinking about them with intensity. When failure occurs, the entrepreneurs are highly motivated to understand what has happened.

4.5.3.3 Communication of lessons learned

Evidence suggests that some learning from failure is disseminated, most if it via informal structures. Lessons are generally shared within teams rather than the whole organisation and mainly on an ad hoc basis. This principally occurs through day-to-day activities. There is a strong cyclical operational meeting structure at department, team and staff levels however; there was little evidence that the meeting structure was used to communicate lessons learnt. Lessons are shared more often within teams. Notes are not made and lessons are not generally shared outside of the team structure. Certainly there is no formal process of communication and limited documentation; "what we don't do is have a sort of formal acknowledgement of 'okay, this is a new idea, this is a record or where it's gone right, this is a record of where it hasn't gone so right and then we will put that on a part of the server that we can all share" (CEO). However, communication between individuals is good and individuals are "quite good at feeding or learning off one another" (IT Officer). It was also highlighted that sharing of information with other wildlife organisations from other regions was quite weak; "the conservation sector is competitive as well as collegiate" (Communications Team Leader).

4.5.3.4 Emotional management

Support for entrepreneurs when failure occurs is evidenced throughout the organisation. This supportive approach starts at the top with the CEO: "You have that human emotion and I think certainly my take in terms of how I deal with it is I try and get the team together and say 'don't worry guys, we gave it our best shot, we can't win them all.'" There is a consistent view within the core of the organisation that people are generally supportive when things do not work out. There is evidence of individuals being empathetic and caring towards each other.

This support extends to when things go wrong. "I think at all levels there's that feeling that, you know, it's not down to one person to sort out if there's something going wrong, it's down to a number of people supporting each to

other. There is evidence of team members socialising out of work and this further enhances the open channels of communication" (Land Manager). Whilst there is no structure to managing negative emotions, the culture offers a supportive environment for the entrepreneur.

4.5.3.5 Summary of findings relating to the process of managing intelligent failure

Table 4.8 Regional wildlife body: Findings summary - managing intelligent failure

Regional Wildlife Body		
Identifying failure		• Mainly informal • Ongoing monitoring against milestones or targets (financial, operational dates of completion, attendance numbers, customer feedback) • Individuals generally very close to their project • Ongoing dialogue between individuals on an ad hoc basis within their open work spaces • Through cyclical operational, team, or 'one to one' meetings.
Analysing failure		• Mostly informal, little structure involved • Self-reflective analysis • One to one meetings • Collaborative • Ad hoc and ongoing within team workspace • Team meetings ('wash up') • Some discussion at cyclical ops meetings • Projects team are more structured in their analysis • Mainly single loop learning • Some SMT deep learning
Communication of lessons learned		• No specific mechanism for storing lessons learned • Mainly through informal open dialogue • Ongoing • Ad hoc • Between individuals • Within teams • Limited dissemination outside of team • Limited sharing outside of the organisation to likeminded external parties • No strategy, emphasis or energy to share lessons learned generally.
Emotional Management		• Low fear of failure • No recognised structures • Caring culture delivers a supportive environment • The approach starts at the top

4.6 The Area Development Agency

4.6.1 Introduction

The area development agency was set up in 2010 to bring about the regeneration of the local area and deliver economic benefits to the whole community. As an organisation, it has similarities to the Regional Development Agencies (RDA) set up by the government of the day in 1998 abolished in 2010. Nine RDA's existed (covering the whole of England) and were financed from central government to, advance economic development, encourage business efficiency, competitiveness, and employment, to improve the development of employment skills, and contribute to sustainable development. This area development agency was set up by the local authority as an enterprising way to maintain support for business (post abolishment of the RDA) and the local economy. Significantly, the remit is considerably less, as is the financial support, with funds made available from the local government authority. The organisation has 140 staff members.

The agency operates in five areas:

1. Facilities Management: It manages council owned buildings through its Facilities Management team.
2. Affordable Housing: It is responsible for delivering the region's new affordable housing programme on behalf of the District Council.
3. Asset Management: The Asset Management Service within the agency offers a comprehensive professional service relating to the management of council assets.
4. A visitor attraction operator: A renovated aristocratic house is now operated by the agency as a visitor attraction.
5. Regional Innovation Centres: The agency manages two regional Innovation Centres providing affordable workspace and support services to the local business community.

From being fully funded by local government it is now part funded by local government with the remainder of funds coming from external activities. The organisation has 85 staff members.

Working life for the corporate entrepreneur is regularly difficult. Whilst ideas are verbally encouraged by the organisation, there is no clear path to create and develop an initiative. Often ideas are not received well as line managers are short of time and resources. Sometimes ideas are ignored or they are bounced back by the manager with little offer of genuine support. Often ideas are received enthusiastically, but then any momentum is lost due to work overload on the ground. However, the more senior the position in the organisation the more time and resource is available. Entrepreneurs further down the hierarchy are likely to have significantly less time and resources.

There is no specific innovation process, however, there is entrepreneurial activity which centres on ‘asset surpluses’ as they arise from project savings. The surpluses represent a reactive approach to entrepreneurship. When these funds become available ideas are sought and so for the entrepreneur timing of idea presentation is highly significant. Importantly, any ideas need to be closely relevant to the current strategy in order to gain traction with management.

The organisation does not offer entrepreneurs free time to think and progress ideas; it is up to the individual to make time or do it out of working hours. The organisation is very much target driven and individuals are “working 100% just to deliver targets” (Planning and Housing Manager). When time can be found, there is often a lack of resources and this can be down to budget restrictions and reduced staffing. This can have implications as innovative ideas are stifled when individuals see colleagues struggling with current workload. The organisation suffers from inflexibility in budgeting and funding allocations.

The organisation is protocol lead and offers significant frustration to the entrepreneur.

4.6.2 Entrepreneurial environment - summary

To understand the nature of the organisation, findings are summarised within the headings of culture, leadership, strategy, and structure. Supporting data under these same headings can be found in appendix 10, and surveys appendix 5.

4.6.2.1 Summary of the findings relating to the entrepreneurial environment

Table 4.9 Area development agency entrepreneurial environment summary

Area Development Agency		
Culture and manifested climates		• Bureaucratic nature and reduced autonomy for the individual • Focus is on the process over the client • Hierarchal • Quasi informality • Subdued atmosphere in open plan offices • Less open, less trust • Less collaboration • Less learning • Political • Low risk taking • Slow pace of change • Low failure tolerance and fear of failure • Blame culture
Leadership		• Hierarchal • Vision statement lead • Leads 'surface' innovation • Focus on compliance • Risk averse • Well-liked and respected • Lack visibility • Partial tolerance of failure
Strategy		• Structured and formal • Transparent to external stakeholders • Focused on core compliance operations • However aims towards a new entrepreneurial platform • Long and short approach
Structure		• Hierarchal management structure • Clearly defined roles and responsibilities • Tight processes and heavily target driven • Mainly informal communication channels

4.6.3 The management of intelligent failure

Significantly, failure as a word is not often used. Interviewees found it very difficult to articulate just why the word is not used. Instead of failure, the term 'it didn't work' is used. "It's just learning isn't it? You're not ... failure is a way of learning to move things forward and you might just not even consciously go, well that's a failure, that's a failure, you've just gone, oh that's been done that way" (Registered Valuer). However, others view failure as a means to a successful end: "To me there's no such thing as a failure, there's just an alternative solution" (Business Manager).

Evidence indicates that there is general recognition of the value for the process of managing intelligent failure. As the Contracts Engineer puts it: "I think going through the process enhances the learning because just asking the basic questions, what went well? What didn't go so well? Did we achieve what we wanted to achieve? How can we do better next time? Just going through that review generates that sort of thought process". He also suggests that, "doing the review is a much more positive closure to a project and it allows us to get some sort of measurement on performance". However, it can also have other connotations; "I think for team wise and for individuals it can be seen as kind of a blame game I suppose of what didn't work and even though not what didn't work but whose fault was that that it didn't work" (Marketing Assistant).

There is general recognition of the importance of learning from failure. Failure learning processes assist in stopping repeated mistakes that are costly, waste time and can lead to losing customers and threaten the organisation. The process of learning from failure helps develop the organisation's increased learning and offers early warning signs of future problems. Learning from failure can make tacit learning explicit which counters the problem of long-term staff leaving or retiring taking significant knowledge (learned through failure episodes) with them. As the building surveyor puts it, "There are people who are very close to retirement. Now we need to get information from them to say don't do that, that doesn't work, these are things I've tried in the past – it doesn't work, those are failures, small scale failures but you know, that link to larger failures."

Whilst the significance of learning from failure is generally accepted, there is only limited evidence of a process to effectively learn from failure episodes within certain areas of the organisation.

4.6.3.1 Identifying failure

Identification of failure mainly occurs through informal discussion within teams in their workspaces. Where failure is identified, it is through an ongoing monitoring process by individuals and teams and ad hoc checking of data. Failure identification also occurs through the cyclical operational review meetings that can incorporate discussion on entrepreneurial activity as is deemed necessary. Additionally, identification may come through cost centre analysis activity or indeed simply the project running out of cash. The Business Manager asserts that "as the manager overseeing those cost centres, each month I'm reporting to all of the managers and the Chief Executive and the Financer Group regarding the performance of those units and there will come a point at which they will say, 'well hang on this isn't working, we need an alternative.'"

There is little evidence to suggest that the organisation is effective at identifying failure. Indeed, findings suggest that the organisation experiences innovation drift. Projects can drag on much longer than anticipated: "I don't think they are good at actually saying "Right, let's leave that to bed now" and then it's just carry on….I just don't think they're good at identifying which bits are going wrong" (Marketing Assistant).

Essentially, there is little evidence of a structured approach to recognising failure and identification is primarily an informal process.

4.6.3.2 Analysing failure

Analysing of failure occurs in a number of ways. Analysis and learning can be generated through individuals and their own personal reflections: "I do look at things in my head quite, quite a lot and I go over them and over them" (Facilities

manager). Individual analysis is then informally shared with colleagues within teams and often within the open workspaces. Discussion, therefore, breaks out on an ad hoc basis. The analysis and learning centres on understanding the main issues relating to the failure, however, there is no structured mechanism to guide the process. Informal discussion occurs in the office space where colleagues may be talking to each other on a 'one to one' basis, or gathered around a desk conversing as a team. Additionally, analysis and learning occurs between the individual and their line manager: "So a mistake might have been made and then normally we would sit down and talk about why that was and what process we might be able to put in place to ensure that doesn't happen again" (Planning and Housing Manager). Beyond the manager-team member, analysis occurs through the regular operational meetings that are scheduled on a monthly basis. Whilst the meetings are not purposefully aimed at failure episode evaluation, discussion takes place on an ad hoc basis. The informal and generally unstructured approach is the predominant form of analysis and learning from failure. Analysis and learning is of a mainly single loop nature with limited evidence that a deeper, wider level of learning occurs.

However, in the building and projects management department there is evidence of a more structured process. After action review meetings centre analysis around a generalised agenda on what went well, what did not go well, what could be done better next time, what has not been delivered, and did the project achieve its aims. Further, analysis centres on contractor and sub-contractor performance and review forms returned from participating bodies within a project. Minutes of meetings are taken and 'action lists' are created and reviewed within the existing meeting format.

When projects are lengthy and the end finally arrives, individuals grow tired and interest wanes. People want to get back to their regular work: "they just want to get back to their day to day, so another meeting about the project is, you know, they're starting to lose the appetite for it" (Contracts Engineer). The lack of engagement makes it hard to effectively review the project. The process of learning from failure can also be used for political gains as individuals use it as a means to highlight particular issues. In most instances, there is no formal programme management. Indeed, from idea creation or opportunity

recognition through to planning and implementation, there is no real entrepreneurial pathway for individuals to follow.

4.6.3.3 Communications of lessons learned

In the main, lessons learned from failure are not disseminated effectively among teams and across the business, as the Marketing Executive points out: “so ok we have had a look, we think we know what went wrong, but actually we will now completely forget to tell everybody else about it.”. Knowledge from similar previous projects is not automatically transferred forward. At best, learning is shared with the direct work group however; it is unlikely that sharing goes beyond team boundaries. Passing on knowledge gained is not a priority, “you know your nice to dos and your have to dos, and disseminating information is a nice to do and it’s not a have to do” (Planning & Housing Manager). Indeed, time is an issue: “if we do tell everybody else about it, they are so busy that they won’t get the chance to read the email I sent, or you know, time to make the meeting where I tell everybody about what lessons I have learned” (Marketing Executive). Indeed, the organisation is in “permanent delivery mode” (Planning and Housing Manager). Lack of time affects the ability to analyse and communicate in a suitable format. Even when the ‘lessons learned’ reports are available on-line, they are rarely accessed.

Lessons learned may be shared in regular operational meetings; however, communication in some areas of the organisation is not that frequent. The meeting format for general knowledge sharing is weak. Additionally, there is a reluctance to want to learn and hear the issues when the communication is from outside the individuals own work group. In addition, some people have an attitude whereby they keep information to themselves and are simply not prepared to share gained information. Separately, managers can act as barriers to the flow of entrepreneurial ideas as they themselves are not entrepreneurial and, therefore, are not instinctively motivated to recognise potential winning ideas. Finally, the lack of collaboration between departments reduces the flow of lessons learned. Essentially, there is a lack of open communication generally, and therefore there are reduced levels of shared learning from failure.

There is considerable learning and knowledge stored in long standing employees, much of it from lessons learned from previous projects. However, when these individuals leave the organisation there is no formal handover process so much of the knowledge is lost.

4.6.3.4 Emotional management

There is little evidence of a structured process to managing the negative emotions derived from venture failure. Management have not raised the subject specifically or given guidance to the organisation with a suitable approach. Support comes from friends and team members: “knowing the people within my team we are quite supportive of our colleagues as a group, as a unit” (Business Advisor). Collegial support is the main form of support for entrepreneurial failures. However, there is also evidence of individuals being isolated by peers: “you get like a distance feeling. If something goes wrong, people will distance themselves from it. This is the reality of it” (Contracts Engineer). In this instance, the fear of failure makes it harder for the entrepreneur to get the personal support that they is need to recover and move on.

4.6.3.5 Summary of findings relating to the process of managing intelligent failure

Table 4.10 Area development agency: Findings summary - managing intelligent failure

		Area development agency
Identifying failure		• Informal discussion • On an ad hoc basis • Within workspaces • Ongoing monitoring • Cost centre analysis • Running out of cash • Some discussion within cyclical operational meetings • Evidence of termination drift
Analysing failure		• Individual reflection • One to one with colleague or with manager • With team • Informal • Unstructured • Ad hoc • Within workspace • Within cyclical operations meetings • More structured approach within 'Building' dept. • Mainly singe loop learning
Communication of lessons learned		• No specific mechanism for storing lessons learnt • Some communication within teams • Little communication outside of teams • Not an organisational priority • Some sharing of lessons learned with cyclical operational meetings • Informal • On an ad hoc and ongoing basis • Unstructured • Some fear of failure • Communication generally less open
Emotional Management		• Unstructured • No organisational guidance • Ad hoc and informal • Support from team members • Evidence of fear of failure • Individuals can feel isolated as people distance themselves from the failure

4.7 An Area Division of a Government Agency

4.7.1 Introduction

Parliament created the government agency in the late twentieth century and divided it into 8 geographical regions, each controlling 2 area divisions within each region. In December 2014, the regional divisional level was removed meaning the 16 areas report directly to the centre in London. This study involves one of these areas. As with the national agency, the area division is responsible for a diverse, complex and dynamic mix of activities. The organisation acts as a regulator for the domains for which it has responsibility. The area division has 470 staff of which a higher than normal proportion are highly skilled or qualified (to level of PhD) in various scientific fields. Staff are situated in the former regional office and three other external locations.

For the corporate entrepreneur, this is a difficult place to operate. The bureaucratic nature makes it difficult to progress initiatives, particularly if the initiative is of a significant size, as the area in this study is one of sixteen that make up the national organisation. In order not to be perceived as “going tribal” (Deputy Regional Director), the other areas need to show support for ideas generated within any individual regional area. The chances of gaining agreement at a national level are therefore limited. The process of developing an initiative is longwinded and exhausting, as numerous hurdles have to be jumped. Therefore, idea generation can be stifled, as individuals do not feel they have the appetite or energy to develop an initiative, or they simply give up along the way.

The organisation at a national level has set up a ‘Continuous Improvement Programme’ with a central team who look at the larger programmes, procedures and processes to make them more efficient. The programme further reduces the chances of gaining national support for area initiatives as it forms an additional barrier to idea take up. A lack of incentive to innovate also impedes entrepreneurial behaviour as any innovations that results in efficiencies lead to savings, which are then taken by central government. There is additional pressure from government with regards reduced budgets.

The entrepreneur has to operate in an environment where there is resistance to change, where individuals demonstrate rigidity, preferring the status quo. However, there are areas and individuals although the minority, but do operate entrepreneurially. There is evidence of some individuals in middle management continuing to develop initiatives regardless of the culture and the institutional barriers that exist. The most significant space for driving entrepreneurial ideas (although of a smaller size) is at the lower end of the management hierarchy. Fieldwork teams experience more change and have to show creativity in dealing with challenges that are often novel by nature. Developments in these areas can occur if there is a lower level of resource requirement.

However, when ideas do form, the lack of a clearly defined entrepreneurial process limits the development opportunity: “There’s a lot of red tape as an organisation, a lot of bureaucracy, a lot of hierarchy, so often you don’t know who to go to get the response that you want, so there’s often not a clear channel from idea to fruition” (ABPPBP). The lack of process clarity and the bureaucratic nature of the organisation create a barrier for idea generation, “you kind of think, ‘oh I’ve got another idea. Oh, I can’t be bothered now. ‘cause it’s too much like hard work’” (Ibid). The entrepreneurial process is delivered in a more cautious way: “what we do is try and produce a perfect product, but what we should produce is a prototype” (Area E Manager) thus product development is slow. In addition, there is a “one size fits all” (F S Team Leader (location B)), which does not reflect the nuances of regional locations. The entrepreneurial process also involves significant consultation that can be widespread and time consuming. This form of consultation leads to a design which can be over engineered, can cause frustration due to the lack of clear decision making, and eventually lead to subsequent failure: “I think one of the problems with the agency is it’s almost ‘too many cooks spoil the broth’ with committees. I think the committees grow too big, What you need is clear direction from maybe one person with two really strong advisors, or three at the most; and what you tend to get is a massive committee and you just get a hundred ideas thrown in and it’s just a mess” (Scientific Technical Specialist, location B).

Up to date technology is not readily available to the organisation. This reduces the opportunity for the entrepreneur to harness new technology to create innovation, and take advantage of opportunities that new technology may bring. `

Essentially, there is an intrinsic pressure on the organisation to manage its core responsibilities as the core priority. Then, and only then, is there time to consider entrepreneurial activity. The organisation does not see its role as a developer of new ideas, more an operator of compliance. Indeed, the agency's role as a regulative body means that consistency is very important and that failure can affect its reputation. Therefore, the organisation does not encourage experimentation.

4.7.2 Entrepreneurial environment - summary

To understand the nature of the organisation, findings are summarised within the headings of culture, leadership, strategy, and structure. Supporting data under these same headings can be found in appendix 10, and surveys appendix 6.

4.7.2.1 Summary of the findings relating to the entrepreneurial environment

4.11 Area division of a government agency entrepreneurial environment summary

		Area division of a government agency
Culture and manifested climates		• Bureaucratic and conformist • More formal than informal • Limited autonomy • Inflexibility • Hierarchal • Resistant to change • Highly political • Limited openness/trust/collaboration • Risk averse • Non-experimental • Slow pace of change • Blame culture • Low tolerance of failure and fear of failure

Leadership		• Hierarchal • Focuses on continuity and compliance • Entrepreneurship is a minor activity • Can be a block to idea generation • Professional, approachable, friendly, and inclusive • Inflexible
Strategy		• Mainly structured, but some emergent strategy • Encased in a strong organisational vision • Long term approach • Centred on compliance and operations, efficiencies and effectiveness
Structure		• Hierarchal management structure • Large volume of prescriptive policies and procedures • High levels of operational structure • Predominantly structured internal communication systems • Informal communications within 'specialist' departments

4.7.3 The Management of intelligent failure

Failure is not a word that is used often in the regular organisational vocabulary. Instead other phraseology is used; “so we didn’t say it had failed, what we said was well, we realise that that sort of thing doesn’t work for us in the future” Area E Manager. Evidence also suggests that failure recognition goes against internal policy. As the Analyst from the E Team puts it, “I think we have a very positive attitude and that failure is again a very negative thing and we do have this way of promoting well-being and that may be linked into it.”

When considering the entrepreneurial process, the organisation does not show a significant level of organisational learning from failure. Evidence suggests this may be due to individuals not wishing to admit to the intelligent failure. Learning can be quite discreet, or as the Technical Specialist (location B) puts it, “I think most of us learn just by experience and then just keep it to ourselves.” The only evidence of lessons learned related to processes associated with Health & Safety. Within the findings, there is no suggestion that learning occurs at a deeper level. Learning from failure is predominantly a personal activity, excepting some of the field workers who may learn from the Communities of Practice when failure occurs. In essence, learning from failure is “local and ad hoc” (S T Specialist, location B).

There is very little evidence of a learning from failure process or as the Deputy Regional Director puts it, “I don’t think we do that (manage a process of learning from failure) brilliantly.” Referring to learning from failure at the F R Operations Manager suggests, “I don’t think there is a process – not that I’ve sensed anyway.” What the findings do suggest however is that the organisation has robust procedures and capabilities to manage ‘post incident’ activity to capture lessons learned. “It’s just because it has a bigger profile and you are dealing directly with the public and other professional partners……, you know, Councils, Policing, Emergency Services” (Team leader, location B). Findings do not suggest that these procedures and capabilities are used for managing failure. This may be due to the profile of the organisation and its priorities, as Team Leader T (location B) puts it; “(the management of ‘incidents’) is a more critical activity to the business, so we feel as though we must put the time and effort in, whereas me building a new whatever gismo, well it’s not that critical to the business.”

4.7.3.1 Identifying failure

There are limited processes and systems in place for identifying intelligent failure. Indeed, there is no recognised way that failure is identified as part of a formal process and therefore it is often down to the line manager. Identification occurs predominantly by individuals within teams as part of ongoing work. Recognition of failure occurs through regular monitoring and reflection against milestones and targets. In the field, some of the project work involves technical aspects such as sampling that provides data as part of a monitoring process, which then illuminates failure.

Essentially, identification of failure is hindered by people’s fear of failure and the low organisational tolerance of failure. It is also hindered by the inefficiencies within the bureaucracy. When initiatives are launched nationally effective feedback can be difficult: “You would send them (the feedback on failure identification) to one person, because someone had been told that’s the person who was dealing with it, and then someone else goes, “Oh, no, that’s the other… No, you need to speak to this person, because they’re the one that’s picking it up.” Therefore, there was about six people’s names who were

collecting feedback, but nothing official. And you were like, “Well, how is this gonna be captured?” (ABPPBP).

The organisation generally does not have the structures or culture to support entrepreneurial activities and this the same when it comes to identifying entrepreneurial failure.

4.7.3.2 Analysing failure

Generally, there is little evidence of failure analysis across the organisation: “I don’t know whether or not we do an in-depth sort of review or we have an in-depth discussion of why stuff doesn’t happen in the way that we’d planned” (Deputy Regional Director). There is evidence of some analysis of failure where large formalised projects occur, but very little evidence to suggest there is a level of analysis for other entrepreneurial activity within the organisation: “One of the things in the organisation we don’t do is evaluation. We don’t evaluate how things are going…..I don’t think we ever look back” (Area Business Manager).

Where analysis does take place, it is mainly an informal process and often between an individual and his or her manager: “The bottom line is by having an honest conversation about what went right and what went wrong. What could have gone right? What could have happened? What should have happened? What didn’t happen?” (Deputy Director). However, generally initiatives end without investigation, reflection or analysis; the initiative “just gets forgotten and we move onto something different, so we’re not doing any analysis” (Team Leader, T, location B). “We tend not to look back at those things that didn’t work and find out why they didn’t. So, why did it fail? And then, well, actually, if we go and start the process again and get to that point where it did fail, how can we do something different to make sure we can get to the point where it’s successful? I think we always want to pick up an idea and start it from scratch” (ABPPBP). More analysis does occur within the field working teams where there is informal discussion as the team meets on an ad hoc basis. Talking amongst the teams about how projects are developing is almost instinctive.

However, analysis and learning from failure is shallow, lacking depth of enquiry and engagement. Indeed, there is little analysis of failure within in this organisation.

4.7.3.3 Communication of lessons learned

When lessons are learned, there is evidence of some communication however; the flow is inconsistent, depending largely on the area of the business. Essentially, lessons are not openly shared, as there is little mention of failure by management and there is a natural disposition to only highlight successes. Indeed, even when there is a good analysis behind a failure episode, management shy away from communicating the nature of the failure and lessons learned. The failure is hidden.

There is no formal communication path to transfer new failure knowledge across the business. Communication may occur via emailing contacts or via cascades where new knowledge is transferred down through the management hierarchy. Communication may occur at small workshops, meetings, or teleconferences. Communication also occurs between individuals in their teams. However, whilst there is a range of communication routes there is little evidence that controlled or targeted communication of lessons learned does take place.

Communication across the regional areas occurs via the Communities of Practice. However, separate to the communities there is little evidence of communication of lessons learned between regions: “I think sometimes we could do a lot better sharing because some people have got a solution to a problem that they don’t think about sharing. And the same probably down here, that we have solutions to problems that we don’t share sometimes” (Field Services Team Leader, location L). Currently no mechanism exists for sharing knowledge widely.

In essence, there is little communication of lessons learned within the region and with the regions. Communication, when it does occur, is principally informal, with close colleagues, or with the team or with fellow specialists in other regions.

4.7.3.4 Emotional management

When intelligent failure occurs, there are limited emotional support mechanisms within the organisation. There is no formal process to deal with the negative emotions related to failure episodes. The support that does exists resides within the working teams or through peer to peer discussions. Line managers may also engage in some support and offer reassurance.

4.7.3.5 Summary of findings relating to the process of managing intelligent failure

Table 4.12 Area division of a government agency: Findings summary - managing intelligent failure

		Area division of a government agency
Identifying failure		• No formal process • Informal discussion • On an ad hoc basis • Within workspaces • Ongoing monitoring • Review of milestones and targets • Fear of failure restricts identification • The bureaucratic nature of the organisation restricts identification • Running out of cash • Some discussion within cyclical operational meetings • Evidence of termination drift
Analysing failure		• Generally little review of outcomes • Little evidence of failure analysis • Minor evidence of 'one to one' discussions with colleague or with manager • Within team • Informal • Unstructured • Ad hoc • Learning of a shallow nature
Communication of lessons learned		• Little communication of lessons learned • Failures lessons hidden • No specific mechanism for storing lessons learnt • No formal structures • Some communication within teams • Little communication outside of teams • Informal • Unstructured • On an ad hoc and ongoing basis • Communication generally less open
Emotional Management		• No formal support mechanisms • No organisational guidance • Unstructured • Ad hoc and informal • Support from team members

4.8 Cross case analysis

Six different organisations provide evidence for the thesis to consider. Each organisation offers rich detail of the nature of its entrepreneurial environment, and most significantly, how each organisation manages the intelligent failure process. To enable some distillation of the findings, tabular representations are put forward.

4.8.1 A summary of entrepreneurial environments evidenced within the six organisations

Findings suggest that each organisation has different mix of environments. Table 4.13 offers a Case Ordered Matrix that illustrates a number of organisational factors to offer an indicative (only) perspective as to the nature of the organisations.

The evidence from the six organisations indicatively suggests that the entrepreneurial environments of each organisation are different. Whereas the Area Division of Government and the Area Development Agency exhibit significant levels of hierarchy and bureaucracy, the Epos System Supplier and the Processed Juice Supplier exhibit very flat structures and less structured operating systems. The regional wildlife organisation and the public house operator are situated somewhere in between with more moderate levels of hierarchy and a mix of operating systems. Generally the organisations that are less hierarchal exhibit more openness and trust, collaboration, tolerance of failure, informality, individual autonomy, risk taking, and less internal politics, and are less resistance to change. Construct Table 4.13 selects some of the organisational factors to cross-reference against each organisation to summarise findings further.

Table 4.13 Case Ordered Matrix: Collated summary of selected organisational factors supportive of entrepreneurship evidenced within the six organisations.

		Epos Supplier	Juice Supplier	Public House	Wildlife Org	Dev Agency	Gov Agency
Innovation		✓✓	✓✓	✓✓	×	×	×
Opportunity seeking		✓✓	✓✓	✓	✓✓	×	×
Emergent strategy		✓✓	✓✓	✓	✓✓	×	×
Learning climate		✓✓	✓✓	✓✓	✓	×	×
Openness and trust		✓✓	✓✓	✓	✓✓	✓	×
Leadership supportive of entrepreneurship		✓✓	✓✓	✓✓	✓✓	✓	×
Tolerance of failure		✓✓	✓✓	✓✓	✓✓	×	×
Risk taking		✓✓	✓✓	✓	✓	×	×
Open, flat, or no org structures		✓✓	✓✓	✓	✓	×	×

Key: × Limited evidence ✓ Partially evidenced ✓✓ Significant evidence

Whilst recognising that within these environments, the management of the failure process occurs differently, this thesis focuses on the findings that are evident across all environments.

4.8.2 Common traits in the managing intelligent failure process

From the analysis of data, important themes emerge within the process of managing intelligent failure. Table 4.13 summarises the findings as to how organisations manage failure by focusing on each part of the process. For each part of the process, the table identifies themes evident across all organisations and, of secondary interest, identified themes that are not evident in all the organisations. Attention centres first on identifying failure:

Table 4.14 Collated summary of organisational findings: Managing failure process

	Identifying failure
Generally evident across the case studies	• Largely an informal and unstructured process • Customer feedback is an important means of failure identification • It may also occur through review within cyclical operational meetings • However, the process of identification is mainly by informal discussion of individuals within teams, within their own workspace, who continuously "pick up messages" via conversations and email chatter. • It is also through individuals and teams monitoring targets and milestones on an ongoing basis. • Identification is predominantly an ongoing and ad hoc process

Non-general evidence within the case studies	• Quarterly meetings specifically reviewing developments
	• Site meetings to review project progress (mainly physical developments)
	• A Help Centre utilise an internal software system that logs failure details
	• In more bureaucratic environments, fear of failure restricts identification
	• Termination drift occurs in some cases
	• Otherwise identification can come from:
	  • Supplier feedback
	  • Management Information System (MIS)
	  • Cost centre analysis
	  • Running out of cash

	Analysing failure
Generally evident across the case studies	• Limited management focus on a process for learning from failure • Organisations are generally weak at analysing failure • Lack of structure towards analyses (through 'after action reviews') • Discussion of failure can take place within regular cyclical operational meetings • Also at one to one meetings with manager or with peer • Analysis is largely ad hoc process upon identification of a failure episode • Discussions are within team workspaces and often involve impromptu 'stand up' meetings • Analysis is informal without a specific agenda • Analysis delivers single loop learning
Non-general evidence within the case studies	• Some lack of tolerance of 'analysing' activities by senior management team (SMT) • Analysis by SMT can be informal and in a very informal setting • Self-reflection as means to learn from failure • A quarterly review of developments formerly with an informal agenda • Or as part of Main Board 'Away Days' • Or as part of a 'Standard Project Methodology' within Building Project Development • Project teams are more structured in their analysis • Analysis by the senior team leading to double loop learning

	Communication of lessons learned
Generally evident across the case studies	• Little management focus or emphasis • Lessons are often not communicated • If they are, they are not communicated consistently or widely • Larger company failures are not overtly communicated by senior team • There is no clear communication process • Largely informal and on an ad hoc basis • Occurring between individuals and also within teams within workspace • Less communication outside of teams • Little documentation of lessons learned with limited or no organisational storage mechanism
Non-general evidence within the case studies	• 'Stand up' meetings or informal meetings • Failure lessons hidden • Little sharing outside of the main operating branch with other branches or external parties • Building' functions have a formal survey tool to communicate lessons learned • Individuals are used to utilising lessons learned from previous initiatives in the creation/development of new initiatives

	Managing failure emotions
Generally evident across the case studies	• Management has no clear approach or designated process • No organisational guidance • There are no formal support mechanisms • Emotional support comes from team members (or friends) • It is informal and hoc

Non-general evidence within the case studies	• Very low fear of failure therefore reduced failure emotions
	• Some individuals self-chastise
	• Support derives from:
	  ○ The closeness of teams
	  ○ Management
	  ○ The closeness of a family culture
	• Development functions supported, however implementation functions less supported (fear of failure)
	• At all levels people 'rally' around to support the individual(s) - the organisation is highly caring
	• The approach starts at the top
	• Individuals can feel isolated as people distance themselves from the failure

When examining the findings in the classification of “Generally evident across the case studies” within the identifying failure, analysing failure, communication of lessons learned, and managing emotions processes, it is recognised that whilst there is some evidence of a structured approach to the process of learning from failure; learning from failure is predominantly unstructured. The summarised findings predominately indicate that, across all cases, the processes of failure identification, analysis and learning, communication of lesson learned, and managing emotions are:

1. Unstructured
2. Informal
3. Ad hoc.
4. Ongoing within regular operational activity.

Whilst this data offers evidence of the nature of the process across the cases, there is also evidence to confirm that the organisations have actually learned from failure in this manner.

4.8.3 Evidence of unstructured, informal learning from failure within the organisations

Where the informal learning from failure mechanisms exist within the organisations, there is evidence that learning takes place. Indeed, evidence suggests that learning from failure for most of the organisation is predominantly single loop and lacks some depth, however, double loop learning is evident at senior team level and this may reflect their strategic mindset. However, lessons are being learned. For some organisations, informal learning from failure means not making the same mistakes twice, for others it can mean gaining deeper learning experiences that impact on the organisational paradigm. The lessons from failure offer some fundamental learning episodes for the companies with the result that behaviours and protocols change. Table 4.15 offers some examples of informal learning episodes taken from the examination of the empirical findings.

Table 4.15: Examples of informal learning from failure:

Organisation	***Nature of the Intelligent Failure***	***How does informal learning take place***	***Location***	***How do people know they have learned***	***Subsequent change***
Epos Supplier	Organisation lost £1m on venture into hardware sales division	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Pub; Ad hoc internal spaces*	Senior Team now recognises that business growth needs to be in alignment with culture and core capabilities.	New ventures will be scoped to ensure alignment exists with culture and core capabilities
Juice Supplier	Launch of Nitrates drink for athletes	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Pub; Ad hoc internal spaces*	Senior Team recognises business needs to bring in retail experts next time	No retail experts, no retail product launches
Public House Operator	Launch of new coffee bar concept	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation at several layers in the hierarchy	On location; Ad hoc internal spaces*****	Mistake is not replicated and a new process is established for future concepts	Redesign of the coffee bar concept
Wildlife Organisation	Set up regional recruitment company supporting sister organisations	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Ad hoc internal spaces*****	Senior Team determination to not allow the failure to reoccur	Organisation set to focus on independent approach towards recruitment

Development Agency	Set up of two work-hubs in the region	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Ad hoc internal spaces*	Senior Team recognises that poor marketing caused failure.	Enhance the marketing programme significantly
Regional Government Agency	Launch of new water sampling kit using Pisa electronic technology	Collaboration from field staff to directors Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Ad hoc internal spaces*	Senior Team recognise that lack of confidence in the product, the ability to actually launch and embed, and winning over the user represent lessons learnt	Significant enhancement of launch processes for future initiatives

*Ad hoc spaces: open workspace, breakout meeting rooms or managers office

4.8.4 Cross case consistencies within each stage of the learning from failure processes

In reviewing the above summary tables of the stages of learning from failure, the following consistencies occur:

- Failure Identification:

The failure identification process occurs via customer feedback, open team discussion, email chatter, MIS, financial data, milestone or target referencing, within cyclical operational meetings, and discussions with line management.

- Failure analysis:

The analysis and learning process is generally underdeveloped and often weak, in a mix of locations, often within cyclical operational meetings, without

formal agenda or minutes, and within working team or ‘one to one’. Learning is mainly ‘single loop’ with some ‘double loop’ learning at a senior level.

- Communication of lessons learned;

The process of communicating lessons learnt is not overt and generally not a management priority, mainly occurring within teams and not between teams or across the organisation or, indeed, outside the organisation. The organisations share some lessons within cyclical operational meetings.

- Across all stages:

Some structure to the process of learning from failure, although disparate, is evident in software systems (organisational memory), specific development review meetings (quarterly, annually, or as determined by the failure occurrence), within functions engaged in project work (particularly building projects).

4.8.5 Other consistencies across the cases

- Management of negative emotions:

Management of negative emotions from failure episodes is generally weak with little evidence of any strategic approach. Predominantly support comes from the fellow team members, friends, or line management, and is highly reflective of the supportive nature of the culture.

- Management priorities:

A ‘learning from failure’ process is not a significant priority to management.

- The word ‘failure’:

Interestingly also, is that the ‘failure’ word is not generally used either because failure is avoided or hidden (and therefore not recognised), or it is perceived as a point of pivot (redirection) rather than an ending and therefore still ‘work in progress’.

4.9 Summary

This chapter communicates the journey of enquiry that moves towards theoretical discovery. It presents the outcome of a thematic data analysis process that engages in emergent coding techniques that deliver central themes of interest. Six organisations including an epos systems supplier, a processed juice supplier, a public house operator, a regional wildlife organisation, an area development agency, and area division of a government agency have been analysed on an individual basis and as part of a cross case analysis.

Using template analysis two concepts emerge. In the ‘managing intelligent failure’ concept (identifying failure, analysing failure, communicating lessons learned from failure, and managing failure emotions) cross case analysis centres on the themes similar to each stage across all organisations, similar to all stages across all organisations as well as other themes that are identified as of interest. Secondly, in the concept of the ‘entrepreneurial environment’ a cross case analysis on selected organisational factors confirms the variance of environments of the organisations of study.

From the approach to the thematic analysis, important findings that differ from existing literature emerge and are presented, and provide a basis for the ‘Discussion’ chapter to explore, with the aim of developing existing and new theory.

Chapter 5 Discussion

5.1 Introduction

Learning from failure is argued as being the hallmark of a truly innovative organisation (Cannon and Edmondson, 2005) delivering a significant number of benefits to the organisation (Sitkin, 1992) and is, therefore, an essential component of success (Lafley and Charan, 2008). Learning from failure is an important construct in the entrepreneurial domain. At the core of the lean start-up model, where experimentation is at the heart of venture growth, learning from failure through the iterative process of build, measure, and learn, drives entrepreneurship (Ries, 2011). Learning from failure increases individual and organisational learning and therefore enhances the entrepreneurial capability of an organisation.

Thematic analysis of data laid out in the 'Findings' chapter moves attention towards some prominent themes within the principle focus of the 'managing intelligent failure' and 'entrepreneurial environment' subject areas. In this chapter attention centres on comparing and contrasting these themes with literature to enable a discussion that delivers new ideas, concept development and theoretical discovery.

Within the discussion on managing intelligent failure, the areas of identifying, failure, analysing failure, the communication of lessons learned, and managing emotions, which emerged from thematic analysis, are considered within Kolb's theory of experiential learning (1981). Particular attention centres on learning that is unstructured, informal, ad hoc, and ongoing within regular operational activity. These are key themes identified in the data analysis and reside within each stage of the process. Using Kolb's (1981) theory enables a fuller discussion incorporating additional theory and findings to help explain how organisations manage the process of learning from failure. Discussion centres firstly on the process of learning from failure by exploring the five stages that literature argues as representing the core components:

- Failure recognition
- Reflection
- Analysing and conceptualising
- Sharing knowledges concepts
- Trying a new approach

Secondly, the discussion centres on the management of an organisational environment that may support the process of learning from failure. For both subject areas, discussion considers the key themes that emerges from the data analysis and important theoretical constructs to uncover some differing perspectives that are argued as adding to existing theory in the learning from failure domain.

5.2 The Management of the process of learning from failure

Introduction

Literature in the entrepreneurial failure domain consistently argues for differing reasons, that learning from failure should predominantly be a structured process. Huber (1991) argues that experiential learning through experimentation is improved through the outcome analysis and the availability of this analysis to the organisation. Both analysis and the accuracy of the cause and effect feedback is important. Kuratko et al (2011) argue that each entrepreneurial initiative represents an experiment and that a systematic process is required to extract the maximum learning from an entrepreneurial experience. Indeed, Kolb and Fry (1974) view the process of reflection, within the cycle of experiential learning, as being structured and challenging. Tidd and Bessant (2013) also argue that organisations should instigate a form of review of innovation projects in order to develop organisational technological and management capabilities. In a similar vein, when managing failure, McGrath and MacMillan (2000) assert that in order to promote deep commitment to continuous entrepreneurial development entrepreneurial leaders carry out constructive post-mortems. Being more specific, Senge (1990), a strong proponent of the value of learning from failure, argues that by

creating structures such as the ‘after action review’, it is possible to harness valuable individual and organisational learning.

However, whilst literature propounds that a structured approach offers the best chance to learn from failure, most organisations do not take this approach. Manimala et al. (2006) suggest that generally organisations find it difficult to create and operate a systematic process to analyse failures yet “one has to scientifically analyse them and derive appropriate lessons” (p.56). Cannon and Edmondson (2005) suggest that “organisations that systematically learn from failure are rare” (P.299). Significant and consistent findings from across the case studies suggest that systematic analysis and learning from failure is indeed a problem. For example, the CEO of the epos supplier asserts that, “I don’t think we do enough lessons learnt in what we’re doing as an organisation…..so, I think probably just doing it better, a more thorough job of it, would probably help.” Or, as the agency Deputy Director puts it, “I don’t know whether or not we do an in depth sort of review or we have an in depth discussion of why stuff doesn’t happen in the way that we’d planned it to happen.” The lack of analysis is evidenced by organisations that have more entrepreneurial structures such as the epos supplier: “As a company, not even just at a department level, as a company, what went wrong isn’t…. wash-ups aren’t done” (Deputy Help Centre Manager). Additionally, the Operations Director of the juice supplier asserts that, “there isn’t a structure in place to actually try and drive out the issues and identify clearly what’s gone wrong and put an action plan in place.” The stock controller describes the current approach of the organisation: “You know the phrase like “busy fools”, I think we’re a bit like that sometimes. No one really stops and…..we don’t really properly stop and analyse. I can’t think of anyone who would ever write a report like that or properly consider what’s just happened.” Organisations with an environment supportive of entrepreneurial activity are generally unsystematic and less structured by nature and therefore find formality and structure difficult to establish as it comes up against the natural culture. For organisations with an environment that is less supportive of entrepreneurship, the subsequent lower level of entrepreneurial activity is not creating the requirement for a specific differentiated process. Within all organisations in the study, structured failure processes are lacking.

Some of this may be explained by the perceived lack of importance of the management of failure process. As the COO of the public house operator puts it, “having it (the management of intelligent failure) in the mix is important but putting it in the front of the mix would tend to drive analytical behaviour and we’re a relatively small, relatively agile company.” This attitude is replicated by the processed juice supplier’s CEO: “I think it’s important that we don’t put a big emphasis on it (management of intelligent failure). I think it’s one of those, really - we just have a very honest approach to it that didn’t work. Why didn’t it work? Fine! And within literally minutes it’s put to one side, because we’re already spinning another plate anyway, or plates.” This response is at significant odds with literature that argues for a systematic approach to effectively leverage learning from trying new things out: from experimentation. Indeed Leonard Barton (1991) argues that organisations can take the form of a ‘learning laboratory’, a term which describes “an organisation that is dedicated to knowledge creation, collection and control” (p.91). Within this argument, structure is significant.

The attitude of some of the organisations reflects a predominantly explorative mind-set; a focus on the present and the future, over a focus on the past (Arora et al., 2013). Indeed, they perceive little value in managing failure particularly as they are averse to formal structures. Organisations within the study that have more bureaucratic internal environments and exploitative mindsets have differing reasons for not valuing the process. Principally they relate to their core reason for being (compliance) and the reduced value they place on creating entrepreneurial initiatives.

For those organisations that focus on explorative activities, learning is taking place, however, there is often a preference just to move on from the failure. The founder and chairman of the processed juice supplier suggests that: “for every intelligent failure, we’ve got six positive things happening at that one moment so we give it very scant time and we rely on the fact that within our tighter group, we all know what we did and how we did it and that’s in that memory bank that we wouldn’t necessarily make those mistakes again. So we don’t spend too long analysing the failure, because we’re already too busy on the new thing.” This trait is replicated at different levels in the hierarchy. As the general manager of location P (Public House Operator) puts it; “in essence,

it's (the initiative) failed and I'm comfortable, I don't really need to know the exact reason it's failed. It's probably because, you know, our time is limited and I know if I use my time somewhere else it'll get more benefit, if that makes sense. So, I think that's why I'm happy to just let things drop." In this way, entrepreneurs are perceiving a negative trade-off between learning from failure and pursuing the next initiative.

This phenomenon is described by Peters and Waterman (1984) as the "numbers game" (p.209) where innovation success is driven by the understanding that failure is inevitable. For example, understanding that the chances of success are 10% means that attention centres on driving the volume of initiatives to a higher number thereby increasing the overall number of successful ventures. By taking this approach, the organisation is effective in delivering innovation. However, a counter argument might suggest that if more learning from these failures occurred then perhaps the percentage rate might increase from 10%. In this way, the need for volume may reduce and the organisation may waste less resource and energy and achieve the same level of innovation success. Whilst this counter argument may have some validity, Peters and Waterman (1984) argue that the 'numbers game' approach is a 'championing system' which they posit as being closely linked to the consistently successful organisations within their study.

In essence, the case study research findings offer an aligned perspective with current literature putting forward that learning from failure in a systematic way is rare. It is fair to say that each organisation does not primarily learn from failure using a structured review process. To be clear, the challenge of creating and maintaining a systematic process of learning from failure is an experience shared by each organisation in the study. In this way, the research findings support existing theory.

Informality and formality

As has been highlighted, the theme of informality emerges from the data analysis as a construct relevant to learning from failure for all the organisations (as well as learning that is unstructured, ad hoc, and ongoing within regular activity). Morand (1995) argues that informal or informality "refer to social situations or gatherings that are generally characterized by behavioural

spontaneity, casualness, and interpersonal familiarity. In contrast, formal and formality refer to situations and social relations that are more regimented, deliberate, and impersonal in nature" (p.831). He suggests that informality imbues looser, casual behaviour, and formality imbues tighter and disciplined behaviour. This may be in the form of linguistics, conversational turn taking, emotional and proxemics gestures and physical codes, such as clothing or layout of furniture. The discussion engages informality and formality within the organisational context and is reflective of this perspective.

Discussion approach

In seeking to further understand how organisations learn from failure intelligently this thesis refers to Kolb's (1981) theory of experiential learning. The theory puts forward that learning occurs across four stages that form a cycle. The stages are experience, observations and reflections, the formation of a concepts, and experimentation (Figure 5.2).

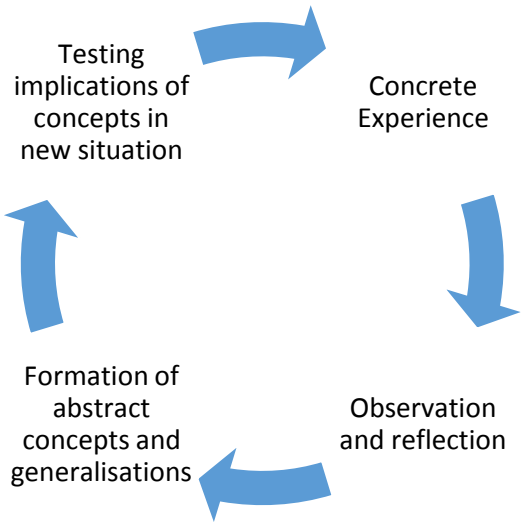


Figure 5.1 The experiential learning model - Kolb (1981)

The conceptual model derived from the literature review offers an extension of Kolb's theory reflecting the nature of learning from failure at an organisational level (Figure 5.3). Similarly, the extended model includes the sharing of new concepts, an important element in the organisational learning process. Using this conceptual model as a framework for discussing the process of learning from failure, this section considers the findings from the empirical research with theory put forward in existing literature.

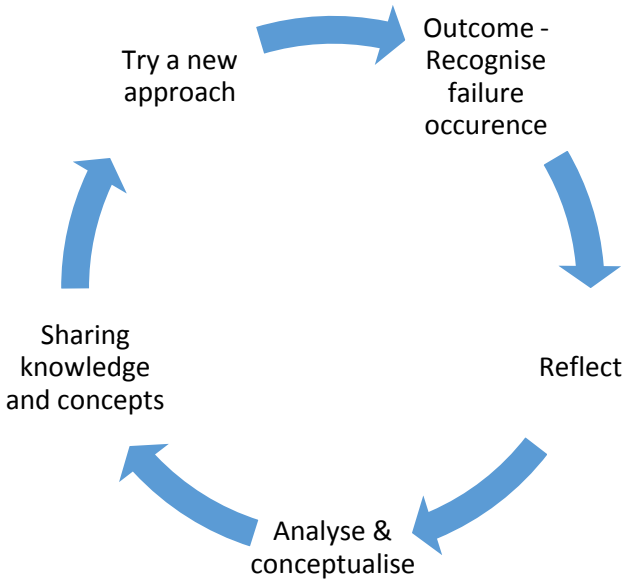
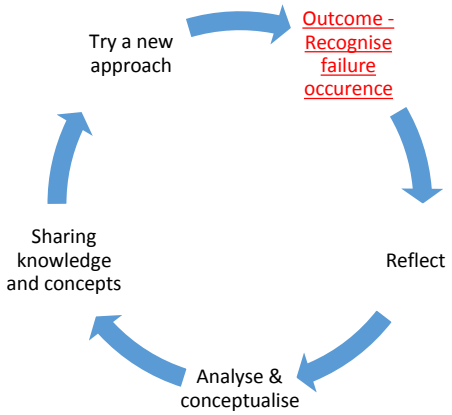


Figure 5.2. The Process of learning from failure - adapted from Kolb (1981)

5.2.1 Recognising failure



5.2.1.1 The significance of identifying failure

Findings suggest that where there is reduced levels or no identification of failure there is less looking back, less deep analysis of the failure by the organisation and therefore, less learning from failure. In not detecting a failure, the organisation does not gain the individual and organisational learning that should derive from the failure. Without the recognition of failure it may also be

argued that intelligent failures become just ‘failures’ and have the potential to be expensive in terms of resources, time, and organisational effort. In addition, when undertaking deeper analysis, the organisation may find it is at significant risk of making the same mistake twice, or indeed missing an early warning sign of a potentially large failure in the future, both which may be very costly to the organisation. Indeed, the organisation may miss capturing all the benefits of learning from failure offered by literature and highlighted in the literature review. It is argued, that failure identification is highly important to the process of learning from intelligent failure and, therefore, to the organisation.

5.2.1.2. How do organisations identify failure?

Cannon and Edmondson (2005) argue that timely identification is a prerequisite in the process of learning from failure. Actively seeking feedback from employees, customers and other stakeholders is effective when identifying failure. While there is evidence of feedback as a means to recognising failure, there is little evidence from the empirical findings to suggest that failure identification is part of a formal process generally.

For most organisations in the study, there is very little evidence of a specific formal and/or structured approach to the way they attempt to identify failures. Indeed identifying failure is significantly absent. As the Property Director of the epos systems supplier puts it, “I think that’s probably our biggest failing; actually recognising to say, ‘that hasn’t worked out. What are we doing about it?’”. It is similar for the Area Division of Government. “I don’t think our organisation has a recognised way of recognising failure on entrepreneurialism” (Area E manager), or as the Team Leader puts it, “I don’t think … I don’t know if we have any sort of way of detecting them (failures) really. It’s just something that failed. Oh that’s a shame. That looked quite good but it never really got here did it? I don’t think there is any … I’m pretty sure we haven’t got any formal, or even informal way [laughs] of detecting that to be honest.” However, the identification process is not totally devoid of structure in all organisations. Led by the Retail Director, the public house operator holds a quarterly review meeting to discuss entrepreneurial activity and this acts as a means to assess outcomes. There is also evidence from the

findings that when larger building or externally financed projects arise there is a structured approach to measuring progress. Additionally, some organisations utilise the structure of existing cyclical operational meetings as a vehicle to discuss the outcomes of entrepreneurial initiatives, although this may be of an ad hoc approach as opposed to the initiative being a dedicated item on an agenda.

In the main, recognition of failure (when it is recognised) occurs informally and on an ad hoc basis. Failure is identified by individuals and teams through the constant monitoring of initiatives against their milestones and targets through day-to-day and week-to-week work activities. There is often a general expectation of the likely performance for the initiative and discussion will form if these levels of performance do not materialise. Financial information and management information systems illuminate failure when sales or profit does not meet expectation. Sometimes it is simply the project running out of cash. In the case of a 'special event', simply being at the event, experiencing the atmosphere, is enough to detect failure; however, attendance numbers and visitor feedback are also significant. However, feedback direct from the customer can often prove to be important in identifying failure and is a principle mechanism. Identification of failure is often more prominent when it is customer related (indeed on occasion some customers go to the top of the organisation when failure occurs): "(Company name) has always been very focused on what the clients think so the fact that… if your clients are not happy you know that's again defining your failure and you do learn from that" (Technical and Marketing Communication Manager, epos system supplier).

Open, close and collaborative teams discuss initiatives and their performance as part of a constant open dialogue meaning indicators of performance levels are frequently communicated. Often working together in close proximity, people are aware of entrepreneurial ventures and pick up messages relating to progress of the initiative the throughout the span of the project, and discussing them informally. As the Stock Controller of the juice supplier puts it, "we're all in an open plan office so you hear a lot of stuff even if it's nothing to do with you." Email exchange can also highlight the initiative's progress. Essentially, failure identification occurs through fluid and open communication

by individuals and teams highly engaged in the initiative who are regularly monitoring activity and progress.

5.2.1.3 The speed and flexibility of informal and ad hoc identification

Therefore, whilst failure identification is largely an informal and ad hoc process, evidence suggests that there are significant informal routines within the organisations that successfully identify failures. Evidence suggests there is often an energy about the process whereby entrepreneurs are highly engaged with the initiative and the outcome. Where there is little or no fear of failure, identification of failures is more likely. Certainly, there is limited evidence from interviewees that they experience the constant reoccurrence of failures. It may be argued that the informal and ad hoc process of failure identification has the advantage over a more formal and/or structured approach of being more responsive. The ongoing monitoring of initiatives offers the potential for failure identification to be faster in that identification occurs as it happens, as opposed to during a scheduled meeting structure with a potential time delay. Through prompt identification the organisation is alerted to the failure and is able to react quickly in addressing the situation. This may save significant time, energy and cost and lead to a swifter positive outcome for the initiative in the future. In other words, this may lead to minimisation of the effects of failure for the organisation and to a more fluid and faster entrepreneurial process. Additionally, it may be argued that an informal identification process offers more flexibility. Within a more structured approach, creating a schedule of meetings to review progress may encourage group decision making at an untimely moment for the initiative. There may be natural stages for each initiative at which it is best to judge an outcome and this time may fall between scheduled meetings. Financial and political pressures may encourage the presumption of outcomes that may be incorrect leading to bad and wasteful decisions. The flexibility of informal identification processes can allow outcomes to be assessed as and when the natural stages of the initiative develop. In this way, better decisions can be made leading to positive outcomes for the organisation.

5.2.1.4 Obscuring Failure

Whilst findings indicate that failures are recognised via informal and ad hoc formats there may be instances where some failures are recognised but kept hidden. Evidence suggests that within some departments, within some organisations, there is a fear of failure and a fear of being blamed. The fear of being blamed for a failure encourages individuals to conceal the identification of a negative outcome. In certain situations individuals may prefer to disassociate themselves from failure through denial, distortion or avoiding failure (Cannon and Edmondson, 2005). At the epos systems supplier there is higher tolerance of failure in the early stages of initiative development, however, “as soon as an activity becomes visible to the wider organisation that tolerance tends to disappear” (COO). Within the functions which centre on compliance the organisation is described as having “a very low tolerance level for failure problems” (Operations Director). In these situations, failures are often not identified. Where there is fear of fear of failure, an individual may not wish to disclose the identification of a failure. It is argued that they may find it easier to hide the failure if identification measures are looser, informal and ad hoc. Alternatively, the lack of vigorous and focused attention may come with a more structured meeting format and, is more likely to uncover hidden or distorted information relating to a failure and its identification. In this way, a structured approach may be effective in failure recognition.

5.2.1.5 Termination Drift

Evidence from across the case studies indicates that initiatives can drift on without clear outcome identification and action from management. Initiatives can drag on, as the Marketing Assistant at the development agency puts it, “I don’t think they are good at actually saying “Right, let’s leave that to bed now” and then it’s just carry on.” Corbett et al (2007) argue that the timing of terminating an entrepreneurial initiative impacts on the organisations ability to learn from failure. They argue that allowing initiatives to drift can reduce learning due to the time lag, lack of ownership, and the non-commercialisation of the initiative. It is suggested that the optimum approach to learning from

failure is when the choice to terminate an initiative is strategic, that is when an outcome meeting is planned so that if termination is agreed, it avoids early or late decisions. Findings suggest that management within the case study organisations often believe that ultimately the initiative will work and the organisational optimism (as identified by McGrath and MacMillan (2000), and Royer (2003)) adds to the continued pursuit of it. There is little evidence from the findings of strategic termination. Essentially, many of the initiatives are pursued until fruition, or they continue in the background of activity until starved of resources and management time, they fade and die. It is therefore argued that the ad hoc approach to monitoring progress leads to a lack of proficiency at identifying failure that, in turn, leads to termination drift. A structured process to identification may be more effective.

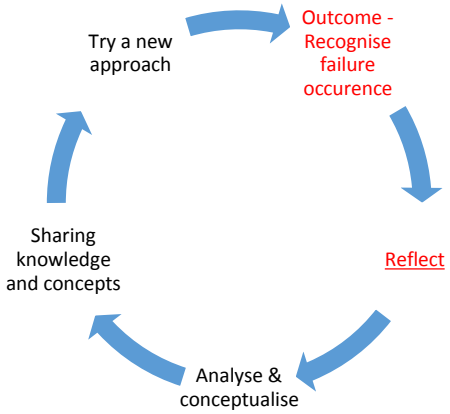
5.2.1.6 Recognising failure - Conclusion

The identification of failure is highly important to the process of learning from failure and the organisation. Yet despite its significance, evidence suggests that organisations often struggle to identify failure or are inconsistent in their approach.

Whilst literature accentuates the positives of a structured approach to the process of identifying failure this section highlights some of the strengths and weaknesses of both a structured process and an informal process. It is argued that the informal process is more favourable to failure identification as it may be more responsive, timely and flexible. Speed of identification allows identification to occur immediately, potentially reducing costs. Flexible identification allows identification within the natural stages of the outcome of an initiative. However, it is also argued that informal processes of identification of failure can lead it being hidden or distorted, and also delayed due to termination drift. With a structured approach more vigorous enquiry may uncover failure and the circumstances surrounding the event. Similarly, the structured approach that induces more focused, assertive enquiry and action may reduce the level of termination drift for entrepreneurial initiatives. In consideration of the natural advantages to both structured and informal processes, perhaps there may be an argument for a combined approach. That

is, within the framework of a structured approach that addresses the issues of termination drift and failure hiding, the informal process can run alongside to enable speed and flexibility of failure recognition. In this way, formal and informal systems may be considered as complimentary rather than polar opposites. By illuminating the potential value of informal identification processes to the identification of intelligent failure in this way, it is argued that this thesis adds to the literature on intelligent failure by extending the arguments of Cannon and Edmondson (2005).

5.2.2 Reflecting on failure



5.2.2.1 Personal reflection

Daudelin (1996) argues that "reflection is a highly personal cognitive process. When a person engages in reflection, he or she takes an experience from the outside world, brings it inside the mind, turns it over, makes connections to other experiences" (p.39). The process allows the individual to step back and conceptualise, creating new meaning. In other words, reflection creates the opportunity for the entrepreneur to bring together disparate knowledge from previous experiences (Pittaway and Cope, 2007) to assimilate and reframe conceptual understanding (Bagheri and Pihie, 2011). Pretorius and Le Roux (2011) argue that the beliefs of an entrepreneur affect their mental structures, which in turn affect their intentions. It is the reflection on these routed beliefs,

in the light of the entrepreneurial failure, that offers enhanced understanding, and this may lead to improved learning for the entrepreneur. The reflection process is argued as being a two-stage process: Bringing the failure experience into the conscious, followed by self-questioning and answering. It is a process that offers an interrogative experience, yielding new knowledge and then considering how best to use it. In this way, reflection enables entrepreneurs to learn from the failure and enhnace their ability to learn how to learn. Reflection is considered a highly significant means for entrepreneurs to learn from failure (Cope, 2003).

Within the case studies, personal reflection is evidenced as an important mechanism for individuals in assimilating the failure experience to make sense of past events. As the Commercial Director of the regional wildlife organisation puts it, “the self-awareness and self-reflection time is something that, for me personally, is really hugely important”. The Marketing Executive from the area development agency uses reflection to effect sensemaking: “I will probably tend to go through the, you know, the discussion in my own head almost of, you know, “well what happened there, why didn’t it work?”……..So “well we tried this actually”….and “why is that not resonating with people?” “What is it, what’s stopping them?” Is it that we have got the wrong product, or are we aiming it at the wrong market?” Personal reflection offers a means to learn and it can often be the first stage of reflection with group reflexion following thereafter.

5.2.2.2 Personal and peer reflection

The case studies demonstrate that when learning from failure occurs, it is often instinctive and driven by individuals who are close to and engaged with the initiative. Learning from failure often encompasses personal experiences and reflections that are shared with team members to aid sense making and cognitive understanding. This form of heuristic learning can be powerful as it combines personal and group experiences and reflections, with an intensity that can deliver meaning. In this way, the heuristic inquiry may be argued as reflecting the essence of ‘heuristic inquiry’ identified by Patton (1990). He argues that personal experience, reflection and insights are the prime source

of data, and shared reflection with team members experiencing and reflecting upon the failure, delivers understanding to the individual. Understanding comes from personal reflection and shared discussion with colleagues. Indeed, “the power of heuristic inquiry lies in its potential for disclosing truth. Through exhaustive self-search, dialogues with others, and creative depictions of experience, a comprehensive knowledge is generated, beginning as a series of subjective and developing into a systematic and definitive exposition” (Douglass and Moustakas, 1985 p.40). This personal and collective process often feels instinctive for the case study organisations. During the research interviewees, at times, found it hard to specify learning from failure episodes and this may be because entrepreneurial learning is often an unconscious and informal process (Cope and Watts, 2000).

In the case studies, often individuals instinctively engage in analysis and concept building both individually and collectively, talking about projects and how they are developing. In effect, this means that lessons could be learnt without people really recognising that they are being learnt. Crossan et al (1999) argue that entrepreneurs learn informally and on an ad hoc basis through ‘intuiting’ which occurs when individuals subconsciously develop insights by the personal process of recognising similarities and differences, patterns and possibilities based on previous experiences. This sensemaking tool helps to create meaning from the new phenomena. In turn, the individual endeavours to ‘interpret’ or refine the intuitive perception individually and with others to develop shared understanding. Indeed, the organisations maybe experiencing ‘autopoietic’ learning (Nonaka and Takeuchi, 1995) whereby ideas emanate from autonomous individuals, diffuse with the team, and then become organisational. Where autonomy exists within the case studies, it may be argued that the ‘autopoietic’ system is generating new knowledge (ibid). Findings suggest that whilst the organisations have some structure to create time for reflection predominantly it is an informal process for the individual (sometimes out of work time) and for the group within their natural workspaces. Liker (2005) identifies such reflection practices within the Toyota production system in the form of a ‘Hansai-kai’ (reflection meeting) when failure occurs. The reflection process is the antecedent to the process of analysis and concept building (Kolb, 1981). As a mechanism for reflection and subsequent learning

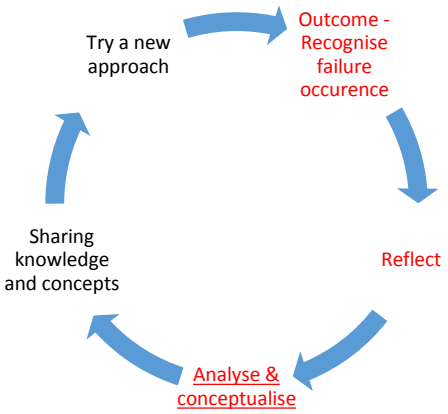
from failure evidence suggests that intuitive analysis, sensemaking, and the existence of an autopoietic system are important. Indeed the very intuitive and subconscious cognitive analysing and learning offer a meaningful explanation as to how organisations may learn from failure.

However, whilst these unstructured mechanisms may add significant value, it may also be argued that even more might be gained from establishing some structured reflection. Utilising a considered list of headings, questions or frameworks could assist in enhanced reflection, increasing the learning from failure. For example Johns (2000) puts forward a structured model of reflection which centres on aesthetics (what was I trying to achieve? why did I respond as I did? what were the consequences for myself and others?), self-awareness (why did I feel the way I did within this situation?), ethics (did I act for the best? What factors were influencing me?), and reflexivity (how does this situation relate to previous experiences? How could I have handled this better? What would have been the consequences of alternative actions?) In this way, a deeper level of reflection may enable more insights. Taking time out to reflect is important, as it creates a framework that may sharpen the focus, making better use of reflection time and leveraging more lessons of varying sizes.

In considering the reflection process, this thesis highlights the significance of reflection in learning from failure. Within the learning from failure domain, there is limited discussion of the role of reflection and the process of learning from failure. Drawing from the results of this research (within innovation, entrepreneurship, and learning literature), this thesis extends current theory on learning from failure.

Having gained insights into the reflective stage of learning from failure, the next section centres on forms of organisational analysis and conceptualisation that occur after failures.

5.2.3 Analysing and conceptualising to extract learning from failure episodes



5.2.3.1 Learning from failure as a structured process

Literature argues that post performance learning can be effective when it occurs in a formally structured approach such as the 'After Action Review' (Senge, 1990, Cannon and Edmondson, 2005). Post-performance learning meetings centre on understanding the causes and processes of failure (Wilkinson and Mellahi, 2005), learning about skill and competency gaps, and learning about the project fit and alignment with organisational strategy (Corbett, 2005). Indeed, literature maintains that analysis should focus on diagnosing the problem, the design of the experiment, systematic analysis of data, statistical process controls, and the analysis of statistics (Cannon and Edmondson, 2005). Toyota, as the literature review uncovers, have developed a seven stage process of analysing and conceptualising centred on a 'root cause' analysis as a means to utilise structure to improve the process of learning from failure (Liker, 2005). Root cause analysis consists of:

- The initial recognition of a problem
- Clarifying the problem to create the 'real problem'
- Locating the likely area of the point of the cause
- Locating the direct cause (and then through five 'why' probing)
- Identifying the root cause of the problem
- Determining a countermeasure
- Evaluating the performance of the counter measure
- And standardise the new routine (ibid)

In this way, a structured approach offers a more detailed, precise and robust approach with the potential to create a deeper level of learning. As a team leader at Roche pharmaceutical puts it: “It doesn’t come naturally to share failures, and you have to give people time, so you cannot really do this as part of regular rhythm meetings. You need to create space for it to happen, to put it on the calendar” (Birkinshaw and Haas, 2016). Current research consistently argues that effective learning from failure occurs when it resides within a structured process.

From the findings, there is evidence of various forms of structure that the organisations use to analyse and conceptualise in order to extract learning from their failures. Evidence shows the use of software, daily meetings, and weekly reviews with project management, formal monthly SMT meetings, quarterly reviews, and ‘one to one’ reviews, all as a means to learn from initiatives that have failed. Whilst there is variety of forms across the case studies, the organisations use of them is limited or very limited. Often the form is used only in certain areas of the business. For example, the epos supplier has a structured software system that is used to rectify and review software launch issues. Once an issue is identified a ‘ticket number’ is offered by the system which then allows the logging of information and details, providing a link for people to access the data and see the issues and subsequent work required to resolve them. There is a ‘standard meeting’ which takes place on a daily basis in an adjacent office where the team get together and openly discuss progress, what has been discovered and lessons learnt, and possible solutions for testing. For the public house operator there is a quasi-formal quarterly business review process, where all new developments are discussed. The review centres on performance, a reflection on what action has occurred and lessons learned. Within the wildlife organisation, many of the projects involve formal ‘one to one’ meetings on a monthly basis between the manager and team leaders. At the government agency, if the initiative is part of a formalised project then a formal review takes place where milestones or ‘gateways’ are monitored and respective discussion occurs although perhaps not rigorously. For the juice supplier structure comes in the form of a monthly senior management meeting that takes place over the course of the day. It is structured with an agenda and subsequent minutes. In these instances,

analysis takes place and lessons learned by focused and planned review of activities with a view to achieving a detailed and in-depth understanding of the failure and the context.

5.2.3.2 Learning from failure as a semi-structured process

Organisations within this study evidence a semi-structured approach towards the analysis and learning from failure with a form of informal 'after action reviews'. The term 'wash up' is used in the regional wildlife organisation, and refers to an informal analysis where there is no fixed agenda and discussion centres on an ad hoc dialogue until members feel that the topic is exhausted. Another semi-structured approach is the 'away day' that is formally organised but the contents of the away days are designed to be informal and are approached informally. The 'away day' is also used by the epos supplier. A number of the organisations use regular or cyclical operational meetings as a means to assess initiative developments and performance, and open discussion about reasons for performance if the project falls short of expectations. There was also evidence of organised meetings but with a very fluid and open agenda. The COO of the epos supplier explains, "We're not pointing fingers. We just need to understand, so there's usually a bit of calm down everyone. No-one's gonna lose their job [laughs]. Encourage … that's the word I'm trying to say here, encourage people to be open and honest and to put the shit on the table so that we can look at it and go ah you know there is something we can learn from that, or occasionally, do you know what that was just back luck or whatever. So that's one type of meeting and typically that will resolve itself into a set of minutes of actions." Whilst there is an element of structure to the process, informality is incorporated. In this way, it may be argued that the structure is shaping a more robust process and the informality may weaken the level of analysis, which can lead to reduced levels of learning and reduced depth of learning (single loop learning).

5.2.3.3 Learning from failure as an informal process

Findings from across the case studies demonstrate that analysis, conceptualisation and learning from failure is predominantly an informal process. There is an absence of a consistently structured process or approach across divisions and up and down the hierarchy. Evidence from the findings suggest that learning occurs through ongoing and ad hoc analysis, often collaboratively, in informal locations and with a loose agenda. Fluidity and informality of tone represent the nature of the informal process.

In a similar way to the ongoing monitoring of data that assists failure detection, so ongoing analysing, conceptualising and extraction of learning is evidenced within the organisations. The CEO of the public house operator explains, “I mean, I would speak to the director on a weekly basis anyway. We’d all have anecdotal evidence, I’d see the numbers, I’d know what was expected, what wasn’t expected. I would spend a fair amount of time, as would many other senior directors… we would talk about it as we went along.” Generally, across divisions and up and down the hierarchy of these organisations, individuals and teams are, informally discussing the aims of the initiative, using quantitative analysis that can show variances to expected outcome, before taking a qualitative approach by engaging and experiencing the initiative (by being present) and talking with those individuals closely involved. The ongoing approach can offer a more spontaneous analysis, conceptualisation and learning experience which may have some advantage particularly as the experience and contextual data is fresh in the mind and, therefore, potentially less likely to be forgotten or subject to bias. Analysing failure soon after identification gives the advantage of examining evidence which is uncontaminated by organisational discourse, distorted recollections and physical alterations. Informal analysis offers this particular advantage.

Open discussion occurs in the organisations in the study but to varying degrees. Where organisations provide higher levels of psychological safety, the process of analysing and learning from failure occurs through very open discussion. As the Sales Manager of the juice supplier puts it, “people are very candid in our senior management team and they will happily talk about particular issues that they’ve had and things that have not worked.....and they’ll

come up and down the structure of the organisation and we just sit and talk about those things. It's done on a very informal basis."

These open discussions occur in different spaces. Sometimes stand-up meetings spontaneously occur in the middle of the open workspace, or meetings are convened in breakout meeting rooms or managers offices. The analysis may take place in different locations to gain a deeper understanding of the failure. There is a richness of discussing a failure where it occurs within the production or customer space giving added contextual data to consider. For two of the organisations that demonstrated an internal environment that is supportive of entrepreneurship, analysing and learning occur in very informal surroundings. For the CEO of the Epos system supplier it is, "probably me and P (the COO) in the pub to be honest". A similar approach is taken by the CEO of the juice supplier. The location benefits from being away from the office, freeing the mind to focus on holistic discussion. Literature highlights the value of reflection and knowledge creation away from the business. Nonaka and Takeuchi (1995) highlight Honda's approach to socialisation of tacit knowledge through meetings located in local resorts, where individuals drink 'sake', eat together and bath in the hot springs. Whilst a separate location away from the business offers freedom to the mind, the lack of structure to the discussion may yield a relatively underdeveloped learning experience compared with a meeting approach with a clear agenda and minutes. In not systematically extricating the lessons learnt from failure, it may be argued that these organisations are not maximising the full learning opportunity.

In this informal process of learning from failure, learning happens over a period of time and not in one structured episode. Indeed, the timing of informal learning varies considerably. Analysis may begin as soon as the failure occurs or it can be at the next most convenient time, hence the fairly ad hoc nature of the analysis. More often though, a discussion meeting is organised within a relatively short period after failure recognition. There is very little evidence of the use of agendas, which means there is often a free flowing discussion among people connected to the initiative with a genuine engagement in factoring how the failure came about, where to move forward, and what lessons have been learned. As the Business Development Manager at the juice supplier puts it, " normally it would be, you know, just a sit-round chat, it

would be quite informal, it wouldn't be very structured, it would just be you know so what have we learned." It is not the case that purposeful, structured agendas and specific meetings are driving analysis, conceptualisation and learning.

Often analysis and conceptualisation in the case studies is a collaborative process whereby individuals analyse and discuss failure, as Bagheri and Pihie (2011 p.455) put it, as a means "to share and challenge their different insights and reasoning processes, discover weak points on their reasoning and the ways to improve them, correct one another, adjust their understanding on the basis of others' understanding and, more importantly, apply the acquired knowledge and skills to solve the problems". In this way individual and collective learning occurs. For the organisations, learning is largely a fluid process of learning through practice or as Brown and Duguid (1991) put it, "learning-in-working" (p.41). Particularly evident in the specialist teams within the organisations are "communities of practice" (ibid). When complex failure occurs individuals work together collaboratively to make sense of failure through sharing hunches, insights, and mistaken beliefs creating new knowledge. Kolb (1981), in his theory of experiential learning, argues that the sharing of tacit knowledge between individuals, through such structures, is a clear means by which to convert tacit knowledge into codified knowledge, and create new knowledge. Developing this line of theory, Nonaka and Kona (1998) argue that new individual, group, and organisational knowledge is created through the ongoing conversion of tacit and explicit knowledge via the processes of socialisation, externalisation, combination, and internalisation. They argue that, recognising the validity of this dynamic spiral process of knowledge conversion, management can support the mechanism by supporting 'ba', that is, "the shared space that serves as a foundation for knowledge creation" (p.40). Further, they assert that managers can offer knowledge leadership by creating effective ba (whether the spaces are physical, virtual, or mental, or a combination thereof). They posit that 'originating ba' (which supports socialisation) is a face-to-face space, that 'interacting ba' (which supports externalisation) is a peer to peer space, that 'cyber ba' (which supports combination) is a group to group space and that 'exercising ba (which supports internalisation) is an on-site space.

Understanding the nature of these four spaces enables managers to nurture the spaces individually and as a whole to maximise their potential. Indeed, the role of management is to manage the process of knowledge creation. It may be argued that this process potentially offers us further explanation as to how learning from failure may occur via an informal, unstructured process within the organisations. Indeed, informal learning from failure within the six organisations is often an ongoing heuristic activity that is collaborative by nature. However learning does occur, as is evidenced by the summarised by the table below (Table 5.1: repeated from the 'Findings' chapter) albeit that the learning may be single loop rather than double, that learning may be of a more shallow nature. Therefore, whilst straightforward and visible lessons relating to the project may be learned, deeper lessons that create advanced learning and value at an organisational level generally are not as forthcoming. In this way, it may be argued that this more informal, less rigorous, approach to learning from failure may not be generating the deeper, substantial double loop lessons that may arise from a disciplined and structured approach.

Table 5.1: Examples of informal learning from failure:

Organisation	***Nature of the Intelligent Failure***	***How does informal learning take place***	***Location***	***How do people know they have learned***	***Subsequent change***
Epos Supplier	Organisation lost £1m on venture into hardware sales division	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Pub; Ad hoc internal spaces*	Senior Team now recognises that business growth needs to be in alignment with culture and core capabilities.	New ventures will be scoped to ensure alignment exists with culture and core capabilities

Juice Supplier	Launch of Nitrates drink for athletes	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Pub; Ad hoc internal spaces*	Senior Team recognises business needs to bring in retail experts next time	No retail experts, no retail product launches
Public House Operator	Launch of new coffee bar concept	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation at several layers in the hierarchy	On location; Ad hoc internal spaces*****	Mistake is not replicated and a new process is established for future concepts	Redesign of the coffee bar concept
Wildlife Organisation	Set up regional recruitment company supporting sister organisations	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Ad hoc internal spaces*****	Senior Team determination to not allow the failure to reoccur	Organisation set to focus on independent approach towards recruitment
Development Agency	Set up of two work-hubs in the region	Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Ad hoc internal spaces*****	Senior Team recognises that poor marketing caused failure.	Enhance the marketing programme significantly
Regional Government Agency	Launch of new water sampling kit using Pisa electronic technology	Collaboration from field staff to directors Ongoing; ad hoc; individual and peer reflection; individual and peer analysis and conceptualisation	Ad hoc internal spaces*****	Senior Team recognise that lack of confidence in the product, the ability to actually launch and embed, and winning over the user represent lessons learnt	Significant enhancement of launch processes for future initiatives

*****Ad hoc spaces: open workspace, breakout meeting rooms or managers office

5.2.3.4 Analysis and conceptualisation: Structure or non-structure?

The discussion on analysing, conceptualising and learning from failure highlights the differing perspectives provided by literature and the evidence from the empirical findings. Literature assertively argues that to effectively analyse, conceptualise and extract learning, significant organisational discipline and structure is required. The structure of a formal approach may be more inclusive, rigorous, in-depth, and therefore deliver more single and double loop learning, particularly the latter. Indeed, being part of the process may also broaden team member knowledge and competencies. The structured approach is argued as being the preferred approach to learning from failure, despite organisations fundamentally struggling to engage with such structures. Findings support existing literature and suggest that organisations do not engage in a highly structured approach to learning from failure.

The organisations in this study use a mixture of mechanisms in which failure, when recognised, is analysed and conceptualised to extract learning. Additionally, each organisation has its own different mixture of mechanisms. There is evidence of some structures and quasi structures in which the process takes place; however, predominantly learning from failure is an informal affair. Learning occurs as a dynamic, collaborative, constant, and informal process often intuitive, subconscious and part of a diffusive 'autopoietic' system that creates new individual and organisational knowledge. Levitt and March (1988) highlight the phenomenon of 'superstitious learning' where "the subjective experience of learning is compelling, but the connections between actions and outcomes are miss-specified" (p.325). It may be argued that the informal process does not offer the structures and in depth approach required to avoid such disruptive learning episodes.

Importantly though, evidence shows that the organisations are learning from failure in this informal way. Informal systems can be more spontaneous, offer fluid analysis and ongoing learning in a way that may replicate the informal

nature of the organisations (although this does vary amongst the case studies). Individuals that are part of informal cultures may find structures and disciplines at odds with the paradigmatic norm. Therefore, it is argued that there are positive values to both formal and informal learning. However, it is also posited that the argument for a structured approach is highly compelling due to the intrinsic detailed and thorough methodology yielding more robust analysis, conceptualising and deeper learning.

Yet is it a simple case of one mechanism being better than another? Svensson et al (2004) argue that formal and informal learning cannot be considered as separate entities. They argue that learning in the work place occurs through the dynamic interaction of formal and informal learning. Indeed, Choi and Jacobs (2011) posit that it would be difficult to perceive either form of learning to be successful without the other as competence is achieved through the integration of knowledge gained from formal and informal learning. Neither entirely formal nor informal, they argue that both forms are complimentary and occur concurrently as all types of workplace learning is likely to be inclusive of formal and informal qualities. Additionally, Jensen et al (2007) argue that when organisations combine explicit and tacit learning mechanisms, they perform significantly better than when relying on just one form. Their research centres on two type modes of learning and organisation: Science, Technology, and Innovation (STI) and Doing, Using and Interacting (DUI). STI centres on codifying knowledge prioritising 'know what' and 'know why', and DUI centres on more pragmatic knowledge where learning comes from on-the-job learning with an emphasis of gaining 'know how' and 'know what', and is tacit and often localised by nature. STI is a formal process of R&D that produces explicit and codified knowledge, and DUI is an informal learning interaction within and between organisations which delivers tacit knowledge. Interestingly, they highlight an institutional bias towards STI mode learning in a similar way to the majority of current learning from failure theory does for a structured approach. However, the main findings "show that what really improves innovation performance is using mixed strategies that combine strong versions to the two modes" (p.690). They assert that the two modes of learning can co-exist and complement each other. Knowledge management therefore should centre on creating strong versions of STI and DUI and working them together. In

consideration of this work and in the context of learning from failure, discussion is encouraged as to the value of considering either structured or unstructured, informal learning mechanisms as a better learning vehicle. Indeed, it encourages an approach that centres on maximising the effectiveness of both learning mechanisms, with a view to effecting an appropriate knowledge management strategy that combines both learning mechanisms.

In a similar vein, Argote and Miron-Spektor (2011) refer to the concept of "mindfulness". They argue that learning processes can be mindful, which include analogical reasoning, and less mindful, which include stimulus response learning. They argue that both processes can complement each other, "with mindful processes enabling the organization to shift between more automatic routines and routines embedding past experience and conserving cognitive capacity for greater mindfulness" (p. 1128). These authors argue for the utilisation of a more dualist approach to learning processes, which centre on structured learning and unstructured learning.

Indeed, Dörfler and Baumann (2014) in their case study research into the drastic failure of the A380 Airbus program, found that within the 'problem solving' context, an approach that engages ad hoc mechanisms (where senior management that take direct control by establishing rigid monitoring processes), followed by systematic process (which is more bottom up, with wider inclusion from across the organisation, leading to broader variety of explanations, and the development of trust) may be most effective in redesigning organisational behaviour. They highlight the deficiencies of the ad hoc approach to problem solving but also recognise some positives. For example, an initial quick fix and can avoid or reduce a situation deteriorating further, which can bring stability, and bring awareness. Whilst arguing the positives of a systematic process as being suitable for more rigorous and 'deep' problem solving activities, they suggest that a sequential approach whereby ad hoc problem solving mechanisms preclude a systematic approach may be most effective, as it draws value from both approaches.

Further, Senge (1990) recommends that organisations create a learning environment where individuals continuously learn both structured, formal processes and unstructured, informal processes. Perhaps the ongoing and ad hoc analysis and conceptualisation can add value to a structured approach by

offering a pre-analysis that occurs close to failure identification, rich with unspoilt data. Perhaps the structured approach to analysis can help develop a paradigm of enquiry to help enhance the informal analysis more naturally. As Choi and Jacobs (2011) put it, “formal learning programs give employees experimental learning tools that make it possible to perform self-initiated learning through self-reflection” (p.242). In this way, discussion moves away from a singular perspective to one that engages with a dualist approach to learning from failure. One that principally recognises both the inherent strength of a structured approach and the strengths of the more natural organisational approach. Indeed, the prevailing paradigm within the organisations is highly significant as it is difficult to change dominant paradigms (Kuhn, 2012). Where environments within the case studies have structures that are supportive of entrepreneurship, the paradigm is forward looking, with less patience for structure and looking backwards. Therefore, attempting to push against this paradigm may not be as effective as trying to work with it, combining different processes. It is argued therefore, that whilst a structured approach may offer a more effective means to learn from failure, there is a role for an informal process and that a mix of structure and non-structure may offer increased organisational performance when it comes to learning from intelligent failure. Therefore, it is argued that informal learning from the process of intelligent failure has significant value, more than is currently recognised in the entrepreneurship literature domain.

5.2.3.5 Learning styles

In the ‘structure, not structure’ discussion the four learning styles put forward by Kolb (1981) may be considered. He identified ‘convergers’ as individuals who use ‘hypothetical-deductive reasoning focusing on specific problems. ‘Divergers’ have the ability to view situations from differing perspectives. ‘Assimilators’ create theoretical models and use inductive reasoning. ‘Accomodators’ learn by doing. This theory highlights the individuality of learning and that each person will have an individual mix of the four styles with a heavy preference for one or two of the styles. Educational literature promotes the consideration of learning styles to create effective classes, modules and

programmes (Morss and Murray, 2005). By extension, it is argued that this theory is also relevant to learning within organisations and, specially, from failure episodes. In considering that there is not just one learning style but four learning styles (and variations); it may be argued that organisations might reflect this phenomenon in the strategic consideration of the process of learning from failure. One learning process may well not suit all. A learning style that suits one individual may not suit another. Recognition of learning styles and planned methods to engage an individual, based on his or her learning style, may deliver more overall learning. Indeed a process looking to engage a mix of the learning styles could produce more learning at an individual level and therefore at an organisational level. For example, the informal learning approach may be supportive for 'accommodators' who "tend to solve problems in an intuitive trial-and-error manner" (Kolb, 1981 p.238), whereas 'convergers' may find a structured approach more supportive of a deductive mindset. Additionally the learning styles could be considered within a structured process so that activities within structured sessions (such as after action review meetings) are created to engage individuals from all four learning styles.

Corbett (2005) widens the discussion on learning styles by arguing that "individuals with differing learning modes will perform better during different parts of the entrepreneurial process" (p.483). He perceives the front end stages as being the domain of 'convergers', 'assimilators', and 'divergers'. However, when it comes to the latter stages of the process where final decisions are made, where resources are organised, and forward actions pursued, he argues that the 'accomodator' is best suited. The strength of the 'accomodator' rests in the natural orientation to carry out plans. The 'accomodator' is adaptive, learning by doing, learning by experimentation, learning by failure. Therefore, it may be argued that in deciding on a suitable process for learning from failure, consideration should be given to learning styles theory as a means to engage individuals in a way that reflects their natural orientation.

Mueller and Shepherd (2016) refer to two differing cognitive styles, 'analytical' and 'intuitive'. Whereas analysts have an orientation towards detail, centring on hard data, and preferring a sequential step-by-step approach to learning,

intuitives are more holistic and use an open-ended and flexible approach to solving problems. They assert, “in terms of individual learning, analysts and intuitives have been found to observe, reflect, and process their experiences differently, leading to significant contrasts in learning preferences” (p.9). Positing that failure events represent a context of change, high complexity, and ambiguous information, they argue that an approach that is more open-ended is required. Specifically they argue that an intuitive cognitive style is more suited to this context. An intuitive cognitive style enables analogical reasoning which connects knowledge from dissimilar situations. However, an analytical approach prefers to solve problems with structured methods where investigation is highly detailed, offering detailed information in a sequential analysis which is less suited to such an environment of complexity and ambiguity (ibid). It may be argued therefore, that the ‘intuitive’ cognitive style, which may best unravel failure episodes and create new lessons, is one that operates best in an unstructured environment, more informal by nature. Consideration of these cognitive styles in managing the failure process (structures and non-structures) may enhance overall learning.

In essence, literature highlights the significance of learning styles to the way individuals learn. When considering this theory in the area of entrepreneurial failure, it is suggested that learning styles may influence how individuals learn from failure. Additionally it is suggested that the process of managing intelligent failure might strategically consider the various cognitive or learning styles in order to maximise individual and organisational learning as, “cognitive style can have important implications for task design” (Hayes and Allinson, 1994 p.66).

5.2.3.6 Analysing and conceptualising from failure occurrences

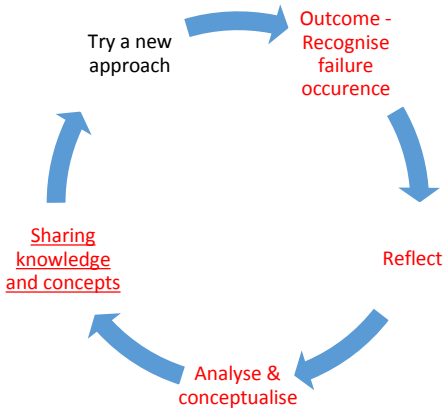
In this section, discussion has highlighted the significance of structure, semi-structure, and informal forms of analysis and conceptualisations from failure to extract learning. A structured approach inclusive of planned after action reviews, in designated meeting rooms, inclusive of key initiative stakeholders and detailed agendas offer a robust and deep analysis, thought generation, and learning. A personal and collective informal approach that is by nature

ongoing, spontaneously located, and collaborative can offer an intensive inquiry and one that uses uncontaminated data. Literature offers a persuasive argument for a structured approach being ultimately the more effective means to learn from failure. However, whilst the argument for a structured approach may be compelling, this section has perhaps identified the need for consideration of a dualist approach to learning from failure, one that recognises the value of informal learning and "that both forms of workplace learning can be viewed as complementary" (Choi and Jacobs, 2011 p.252). Whilst it is argued that a structured approach offers a robust process with the potential for deeper learning, the natural informal learning approach offers a continuous and fluid process, one that can occur closer to the point of failure identification, potentially offering a valuable pre-analysis.

This section has highlighted, and supports existent literature in identifying, the lack of formal structures within organisation in failure enquiry. It is clear that the case study organisations do not learn from failure via a structured approach. In this way, the research adds to existing literature.

This section also highlights the significance of informal learning from failure. Whilst lacking some vigour, there is evidence of individual and organisational informal learning from failure, some of which is at a deeper level. Literature on learning from failure offers limited recognition of the value of the informal process of learning from failure in the research domain. Through the heavy emphasis on the importance of a structured approach, there is perhaps an under representation of the values of the informal process, and inference that organisations are not learning from failure unless it is via a structured process. This thesis adds to theory by highlighting the significance of informal learning from failure, its potential advantages, and how a dualist approach might be considered, particularly as the general informality of organisations may be a strong influence on the individual paradigm.

5.2.4 Sharing knowledge gained from failure enquiry



5.2.4.1 The significance of new knowledge communication for organisational learning

In the previous sections discussion has centred on how individuals and teams identify, analyse, conceptualise and extract learning from failure. Organisations struggle to effectively learn from failure for many reasons. It is therefore of high significance that the valuable lessons learned from a formal or informal process of enquiry should be efficiently shared within the organisation. Indeed, the way in which the distribution of knowledge occurs determines whether organisational learning actually occurs and how widely (Huber, 1991). The more widely the information is distributed the more likely the information will be utilised to create learning for the organisation (ibid).

5.2.4.2 Struggling with structures for the communication of lessons learnt

Levitt and March (1988) suggest that in order to utilise new knowledge gained from experience, codification is required either in the form of documents, accounts, files, standard operating systems, rules and regulation literature, and standards of professional practice. In this way, the organisational memory is developed ready for utilisation. Indeed, whilst recognising that lessons knowledge learned from failure episodes may be significant, they are not necessarily long lasting. The findings from the research of Parker (2013) suggest that, for the individual, knowledge accumulates over the course of successive ventures, but that over time this knowledge dissipates, due to the gap in using the knowledge and the individual forgetting. He argues that this is also true of social capital when groups (including those groups engaged in learning from failure activities) are disbanded. In this situation, knowledge is dissipated due to the passing of time, spatial distance, and lack of use. In consideration of this theory, it may be argued therefore, that to prolong the value of lessons learned, codification in some form is in important to long-term knowledge capital of the organisation.

Within the case studies, there is only limited evidence of structure when it comes to codifying lessons in the form of software applications, minutes, or notes and then sharing with the organisation. As the COO of the epos systems supplier puts it, “we’re having to be a lot more trusting that this knowledge transfer is actually taking place in the absence of a structured channel.” Trusting may not be the answer as his colleague asserts, “as for communicating intelligent failures, that’s a difficult one because it’s not something we would do normally and there’s not really a mechanism in place” (Communication Manager). The concern is shared by the Retail Director of the public house operator, “I think the after action review we’ve got to think much more about the process of how to track and disseminate the learnings….and how do we make sure that we don’t repeat the mistakes.” Some of the issues relating to effective communication of lessons learnt from failure relate to time and workload which is relevant to all the case studies but to varying degrees. As the Marketing Executive of the area development agency puts it, “So you know, so ok we have had a look, we think we know what went wrong, but actually we will now completely forget to tell everybody else about it, or if we do tell everybody else about it, they are so busy that they won’t get the chance

to read the email I sent, or you know, time to make the meeting where I tell everybody about, you know, what lessons I have learned from this. So, I think it is an area that we probably could improve on." Structures of process are limited. Organisations are struggling to communicate some significant lessons thus reducing the level of learning and risking error replication in the future. Indeed frequent error replication is identified at the epos supplier software development department for example, "we make…as a company, we make the same mistakes again and again and again. That different releases of the software have the same issues in them again and again and again" (Deputy Help Centre Manager). Evidence from the findings firmly indicate that, in a similar nature to the early stage of the learning from intelligent failure process, the communication and dissemination is predominantly an informal event. Whilst there may be only limited structured channels of communication, findings show a significant level of collaborative communication within teams. This informal communication may disseminate more lessons learnt than is perhaps visible to organisational members.

5.2.4.3 Collaboration and team discussion

There is evidence of significant levels of collaborative communication within teams where lessons learned are shared as part of an ongoing dialogue. Case study organisations with an environment more supportive of entrepreneurship have informal channels of communication which are open and unstructured. "I think there's a lot of communication that happens all the time" (Finance Apprentice of the processed juice supplier). Also, physical space impacts communication as is evidenced by the new office at the epos supplier: "since they've moved to the new office, people kind of walk about and actually go and see each other, and talk to each other, rather than emailing….you learn more than you did" (Deputy Help Centre Manager). Organisations communicate lessons learned as part of the flow of ongoing collaborative work as close teamwork facilitates considerable communication. These informal channels disseminate some of the lessons learned from intelligent failure. The ad hoc nature of communication is prominent in the case studies, often this is within regular operational meetings. "I think the answer is quite a lot of it

(communication of lessons learnt) is ad hoc. Quite a lot of it is discussed in team meetings and so we have entire trusts of staff meetings which happen four times a year" (MD, wildlife organisation). The most common form of learning is through informal conversations whereby individuals share lessons learned from colleagues. As the HR assistant (of the epos supplier) puts it, "the more you speak to people, and the more situations you deal with the more you learn about things." Informal conversations move knowledge around the business. Communication is largely collaborative and informal in the form of ad hoc discussion and meetings, as well through regularly scheduled operational meetings. In this way, lessons from failure are 'integrated' as the development of collective meaning occurs within the organisation and new protocols are established, then replicated, eventually forming part of the operation as established routines as it is 'institutionalised' (Crossan et al., 1999). Within these organisations, dissemination occurs almost subconsciously. At practitioner level, lessons from failure can be stored in the organisational memory as stories (Brown and Duguid, 1991) which are openly shared in an ad hoc manner and informal situations. These stories can be disseminated by the autonomous teams, which are interconnected across the organisation to become embedded in the social system (ibid). Where communication of intelligent failure occurs in the case studies it is a largely a collaborative process.

5.2.4.4 Effective communication and disseminations of lesson learnt

A systematic approach to memory management may offer a more complete memory of lessons learned from failure. A systematic memory that safely protects and makes this new knowledge accessible to the wider organisation on a permanent basis. The systematic process offers a robust process as it is not at risk to staff turnover, absence or memory loss; it is a fixed resource. However, it may also be argued that a structured organisational memory may be less accessible as searching is required and that depends on how user-friendly the nature of the system is (something highlighted by the development agency), and the propensity of individuals to engage in such activity (if they are not engaged with research). Evidence from the case studies suggests

individuals prefer networking and team discussion as a means to source relevant information. This is reflected in the limited structural memory identified. In the organisations within the study, organisational memory is primarily made up of individual and team memory. Sometimes memory is encoded in work routines. As Crossan et al (1999) put it, “Over time, spontaneous individual and group learning become less prevalent, as the prior learning becomes embedded in the organisation and begins to guide the actions and learning of organizational members” (p.529).

Empirical evidence suggests that communication and dissemination of lessons learned (held within the organisational memory) is predominantly an informal process that occurs at individual and team levels during the course of day-to-day and week-to-week activity on an ad hoc basis. It is argued that dissemination is a diffusive process where new knowledge permeates the organisation through socialisation (Nonaka and Takeuchi, 1995) and storytelling (Brown and Duguid, 1991). Indeed Brown and Dugid (1991) assert that the narratives embedded in the social system are difficult to transfer into explicit structured organisational procedures. Particularly as “organizational assumptions that given the ‘right’ medium people will exchange information freely overlook the way in which certain socio-economic groups, organizations, and in particular, corporations, implicitly treat information as a commodity to be hoarded and exchanged” (p 54). Further supporting the argument of the presence of informal and unstructured learning, Takeuchi and Nonaka (1986) posit that the transfer of learning can take place through what they call “Osmosis”, where key individuals from one project are assigned to subsequent projects, thus spreading and utilising new knowledge. This is supported by Argote and Miron-Spektor (2011). Further, they argue that there are other transfer mechanisms as well as personal movement, such as social networks and alliances.

In this way, it may be argued that the informal processes of knowledge distribution offer a more effective platform. Indeed the communication of lessons learnt may be better targeted and in a timelier fashion. When the public house operator engages in new initiatives it spends much time planning, discussing and reflecting on previous initiatives. As the Retail Director puts it, “So I think it’s almost the George Washington thing, if I had seven hours to cut

down a tree I'd spend six hours sharpening the axe and that's … I think that's a very good quote and it applies very much to what we are doing now." In this way, individual's specifically relevant lessons from previous intelligent failures making the dissemination very focused and effective, particularly as the narration may engage a fuller description of the previous failure and the context within which it occurred. The individual memory may be better explained and allows for probing and questions. Separately, informal communication can often be a fast process within collaborative communities (Brown and Duguid, 1991). The risk however, for dissemination processes reliant on individual memory is loss, distortion and bias. In addition, the system is particularly reliant on individuals being available for team discussion, and indeed, remaining in the organisation. By the nature of the informal communication process, it is reliant on individual or team memory and this can make it less accessible to the organisation as a whole. Huber (1991) points out that the probability of an organisational member or unit will pass information to another member or unit depends on the relevance of the information, workload, and the gain from passing the information on, and how often information has been passed to the member/unit in the past. Indeed high workloads are identified as reducing communication of lessons learned in the case studies. Informal communication is open to various disturbances that can significantly affect its effectiveness: the ad hoc nature may mean that, as a system, it is less consistent. Yet despite these drawbacks, literature suggests that based on the open and collaborative engagement with failure, the informal channels are disseminating the lessons learnt from failure. Indeed Brown and Duguid (1991) argue that in complex failure situations the formal channels of memory (such as manuals and guides) can blinker the organisation. The explicit communication is unable to replicate the complexities that are better resolved through individuals finding 'work arounds' which are then shared via community communication. Therefore, it is asserted that the informal channels are important to the communication of failure lessons.

However, whilst informal communication of lessons learned is occurring, it is argued that as a process it is, as a whole, less robust than a more structured approach. The rigidity of structure in memory systems and communication channels bring considerable consistency and reliability to the knowledge

transfer process. Perhaps differing approaches to communicating new knowledge from failure dependent on contextual matters should be considered. For example where high technical complexity exists (as in the epos suppliers case) informal channels may be preferred. Whereas in less complex projects (such as the roll out of new pub formats) by the public house operator, more explicit mechanisms are engaged to memorise and communicate learnings. Consideration of different approaches may be argued as a strategic process requiring a structured assessment of the organisational context. The organisations in this study may be learning informally but they are not fully aware of how their organisations learn, and it may be more by chance than by plan. However, the organisations are supporting free flowing communication (to varying degrees) by creating supporting environments, which is more by design. In essence, it is argued that a structured approach to communication through both formal and informal channels may deliver a more effective process. This argument, in its infancy, requires further research however; this thesis opens up a discussion into how both informal and formal mechanisms may be effective in failure knowledge dissemination, and how they may be used successfully in differing contexts.

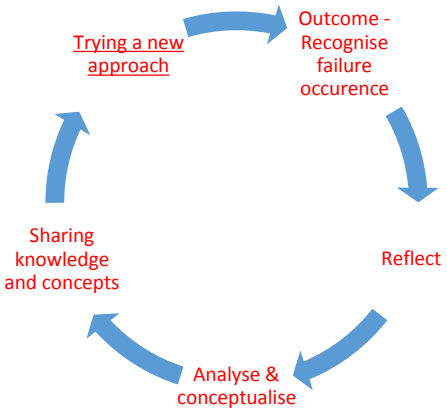
5.2.4.5 Sharing knowledge gained from intelligent failure - Conclusion

The dissemination and communication of lessons learnt is important for organisational learning particularly as organisations find learning form failure difficult. How knowledge is distributed determines whether learning occurs and the breadth of learning (Huber, 1991).

Whilst literature centres on a structured approach towards creating organisational memory and channels of knowledge distribution, organisations in the study offer only limited evidence of structure in the way lessons are codified. Indeed, communication is largely via informal collaboration and ad hoc discussion between individuals and teams. Lessons from failure are in intuitively diffused within teams and across the organisations permeating the organisation through socialisation and institutionalising new knowledge.

Systematic processes have the advantages of providing a more dependable process, one that is consistent, reliable, and long lasting. A systematic approach is a fixed resource potentially open to a wide audience. Alternatively, informal unsystematic processes can offer a fuller description of failure with an enhanced qualitative texture allowing probing and deeper understanding. Communication of lessons learnt may be targeted, timelier and often faster. However, dissemination may be less reliable due to memory loss, distortion and bias and may provide a memory that is less accessible to the organisation as a whole. There are also matters relating to the team member and their probability of passing on information. It is generally argued that to achieve an enhanced process of communication of failure, a systematic approach will facilitate an advanced organisational memory and breadth of dissemination. However, it is also argued that informal mechanisms may be as effective as formal mechanisms dependant on differing contextual situations. Therefore, a structured strategic process of considering and selecting appropriate formal or informal mechanisms for failure lesson communication may deliver optimum effectiveness. In highlighting the values of the informal process of communicating new knowledge from failure, this thesis adds to existent literature by broadening the discussion in the entrepreneurial domain beyond the focus on systematic processes.

5.2.5 Trying a new approach



Kolb's experiential learning model (1981) suggests that newly formed abstract concepts and generalisations are tested in new situations creating a new

concrete experience. The empirical research indicates that, at an organisational level, the case studies largely reflect Kolb's model. Indeed findings suggest that having communicated the new thoughts, ideas and generalisations derived from the analysis of the failure, organisations often adjust their position towards a new approach or future direction. The new approach reflects the lessons learned from the failure and may be adopted immediately in a new direction for the initiative, or may be stored in the organisational memory for future utilisation in developing an entrepreneurial initiative. It is interesting to note that Kolb's experiential learning theory is embedded in current lean innovation theory (which centres more on learning by doing, experimentation; a systematic approach to fast continuous learning) is now being transferred to the field of entrepreneurship.

5.2.5.1 Initiative redirection

Organisations in the study exert significant effort to make initiatives work and therefore when they fail sometimes energy is aimed at redirecting the initiative and trying again. As the managing director of the processed juice supplier puts it, "we're not very accepting of intelligent failure. We will tend to try and make it work - I think it's a function of the nature of the business. So we might steer it into a different direction from the original intention". Or, as the CEO of the epos system supplier put it, "we probably haven't failed at all to be honest. We'll just adjust what our plan is and carry on." Or for the Business Manager for the area development agency, "to me there's no such thing as a failure, there's just an alternative solution." Lessons learned from the failed initiative or from previous initiatives (stored in the organisational memory) are utilised to inform a new attempt at delivering a successful outcome. The redirection of initiatives may be considered in the light of lean startup theory that centres on experimentation. If the experiment delivers an unexpected result, the venture may 'pivot' in a new direction (Blank and Dorf, 2012).

5.2.5.2 Stored lessons for future initiatives

Literature asserts that entrepreneurs accumulate knowledge gained through experiential learning in a ‘cognitive store’ with which they reflect upon (Cope, 2005), linking new experiences with those of the past to gain new meanings (Boud et al., 2013 p.9). In this way insights which are developed from past events are applied to future actions (Daudelin, 1996). In line with literature, evidence from the case study organisations suggest that lessons may be stored for future use in the organisational memory. From Table 5.1 we understand that the Epos supplier advocates, “new ventures will be scoped to ensure alignment exists with culture and core capabilities”. Based on the lessons learned from the failure, the Epos supplier is creating a platform for future initiatives to refer. Whilst not immediately applicable, the new approach is available for utilisation in the future. For the juice supplier the lesson of “no retail experts no product launches” also rests within the organisational memory for use in future initiative consideration. Therefore, lessons from failure may be preserved for use in the future to form new concepts.

5.2.5.3 New approaches

Whether the lessons learned from failure are utilised earlier or later, findings indicate that they are often tested with new entrepreneurial initiatives. This is significant as it leads to effective use of the new ideas, concepts, and generalisations to create a successful venture. However, what we understand from the findings is that often failure is not effectively analysed or conceptualised to enable new thinking, new ideas, and new generalisations. Without effective analysis and thought generation, the new approach may replicate some of the reasons for previous failures and are highly wasteful of organisational resource. What is also significant is that findings show that the organisations often follow that path of testing new ideas derived from failure analysis and conceptualisation in a way very similar to how Kolb (1981) articulates, as they create new directions (or ‘pivots) for current initiatives or attach previous lessons learned to new initiatives. Indeed this reflects current lean start-up theory that centres continuous learning through continuous experimentation to deliver innovation (Ries, 2011, Furr et al., 2014). Therefore, this research supports existing theory in this area.

5.2.6 Managing the emotions in failure

In the process of managing intelligent failure, literature suggests that managing the emotions of individuals and teams surrounding the intelligent failure is an important aspect. The principle author in this domain, Dean Shepherd (2003, 2009a, 2009b, 2009, 2011) argues that intelligent failures can create a mix of negative emotions which can affect the entrepreneur and negatively impact on their ability to learn from failure and their commitment to future projects. Grief, as a negative emotion linked to the loss of something special, can follow intelligent failure, especially as individuals and teams are often passionate and highly committed to project development. Individuals with high levels of grief learn less from failure and therefore managing emotions when failure occurs is important. Indeed, Shepherd (2009b) argues that to manage the grief associated with failure individuals might oscillate between the two orientations of grief recovery, those being loss orientation and restoration orientation. Loss orientation confronts grief, working a way through the negative feelings in order to reduce the level of emotions. Restoration orientation takes an alternative approach focusing on suppressing emotion and encouraging a return to normal life activity. It is argued that rather than a singular approach to grief recovery, the way to effectively speed the process is through oscillation between both orientations. As a faster recovery is enabled, so this allows individuals to learn more from feedback. Grief management forms an important part of the managing of intelligent failure process (Shepherd, 2003).

Generally, across the case studies, there is little evidence of managing emotions in a structured fashion and support is often informal and instinctive to the culture. However, a strategic approach to its consideration is evidenced. The CEO of the public house operator views intelligent failure as a means to bring some closure, “to staunch the wound for people emotionally.” Indeed, he has a forceful perspective: “I get really annoyed with people when they hark back to people’s failures, even in a sort of joking sense. It just doesn’t do anyone any good.” The CEO of the wildlife organisation takes a similar view and creates a structured response through a team briefing, as he puts it, “you have that human emotion and I think certainly my take in terms of how I deal

with it is I try and get the team together and say 'don't worry guys, we gave it our best shot, we can't win them all.'" In organisations with open environments, there is a strong sense of family that provide a supportive environment for when failures occur. The friendly and supportive nature of the culture positively affects individuals facing intelligent failure. As the Business Development Manager within the processed juice supplier puts it, "There isn't really an aftercare support – there isn't, really. You just kind of get on with it, forget about it and move on. It didn't work – move on." Further she adds, "So, everybody's quite encouraging. There's no set place in structure or system but, you know, it's a quite a strong team and you kind of go, "I heard about that thing that happened. Just… you know, you gave it a really good shot. Just bad timing or you know it just didn't work. Don't worry about it – well done," sort of thing. It's that kind of culture." These natural support mechanisms are important. As the Bar Supervisor in the public house operator in location P puts it, ""we just like to look after each other." Indeed loss and restorative approaches to grief management are more likely to derive from instinctive support resulting from the team's culture. Whilst organisations within the study often engage in an intuitive approach to supporting individuals, there is a generally a lack of structure and strategic consideration to the subject which can lead to inadequate support at times. As the Operations Director of the epos supplier puts it, "I would say the business is not great at supporting that (failure emotions) always, you know, and I think it's because…..there's nothing personal there; it's just the business has very high expectations." In organisations with less open environments, sometimes there is no support at all. As the Contracts Manager at the area development agency puts it "you get like a distance feeling. If something goes wrong people will distance themselves from it. This is the reality of it."

Also evident from the findings is that when failures occur, there is a lack of a real sense of grief from the entrepreneur as might be expected (based upon literature). This may be due to the future-focused orientation of the entrepreneur who quickly moves their focus onto the next initiative (Arora et al., 2013), or the limited recognition of failure as a concept. Where there is less fear of failure within the organisation there is also less evidence of pain from failure. Perhaps the corporate entrepreneur enclosed in a collaborative team

feels less personal grief compared to the start-up entrepreneur (often the centre of focus in literature) who intelligently fails. However, there is evidence from the case studies of some higher levels of emotion and individuals self-chastising and, therefore, there are emotions that need support.

The organisations in the study highlight that, in essence, there is little 'management' of emotions as a process. Intuitive and unmanaged grief support mechanisms that derive from the supportive culture may be argued as being more immediate and authentic, however it does depend on the individual and their relationship with team members. Certain individuals may feel exposed. A more strategic process may create a more consistent and therefore effective approach. Indeed, a more strategic approach to managing the negative emotions of failure may enhance the process of grief recovery by creating awareness of the issue and offering a comprehensive and high quality (trained) organisational response. Team support may always be important but a considered approach to managing the process is argued as being the most effective means of tacking this area of failure. On this basis, it may be argued that both structured and unstructured forms add value and a strategic process to determine appropriate usage may enhance the management of failure emotions. Certainly, without managing failure emotions organisations risk experiencing reduced learning from failure and experiencing error reoccurrence (Shepherd et al., 2011, Cannon and Edmondson, 2005).

5.3 Managing an environment that supports the process of learning from failure

Having explored the process of learning from failure, discussion now centres on the management of an organisational environment that may support the process of learning from failure.

Entrepreneurial literature suggests that an environment can be created to normalise the failure process, principally through the formation of a psychologically safe environment, and through transformation of the management mind-set (Carmeli, 2007, Edmondson, 2011, Gu et al., 2013).

Creating a psychologically safe environment for learning from failure includes:

- Clearly articulating the difference between failures and intelligent failures (Edmondson, 2011).
- Management consistency and predictability (Edmondson, 2011)
- Creating a strong social structure and high levels of trust (Gu et al., 2013).
- Encouraging high quality relationships (Carmeli and Gittell, 2009).
- Not 'shooting the messenger' (Edmondson, 2011).
- Changing the management mind-set includes:
    - Articulating a vision that heightens the importance of learning from failure (McKenzie and Sud, 2008)
    - Management modelling behaviours to communicate the desired behaviour (Cannon and Edmondson, 2005).
    - Taking a tangible interest in initiatives that fail and openly sharing own failure experience (Farson and Keyes, 2002).

In our case studies however, there is limited evidence of activities purposely focused on nurturing an intelligent failure mind-set, but there is evidence of some organisations (and to varying degrees) creating a psychological safe environment. Specifically, some organisations have or are creating a strong social structure and high levels of trust, and encourage high quality relationships. However, the creation of psychological safety relates to encouragement of a positive and entrepreneurial working environment rather than one that supports the management of failure. Within the case studies, there is no evidence of management articulating a vision that heightens the importance of learning from failure or that clearly explains the difference between failure and intelligent failure. Essentially the organisations offer little purposeful management towards an environment that supports intelligent failure specifically.

5.3.1 Entrepreneurial climates and supporting intelligent failure.

The review of corporate entrepreneurship literature illuminates the organisational climates that are supportive of corporate entrepreneurship. This thesis argues that some of these are supportive of the latter stages of the entrepreneurial process, specifically, managing intelligent failure. Supportive

climates may include, top management support, openness and trust, autonomy, tolerance of failure, rewards, collaboration and teamwork, learning, time for entrepreneurial activity and positive emotions.

5.3.1.1 Commitment from top management

Kuratko et al (2014) argue that when entrepreneurial values are manifested in top management commitment there is a direct relationship with positive entrepreneurial outcomes. This commitment may come in the form of championing ideas, providing resources (Hisrich and Kearney, 2011), promoting norms of helpfulness, cooperation (Schneider et al., 1994), and change (Ireland et al., 2003). Indeed commitment and personal responsibility can be supported by increasing the level of team involvement and challenge (Ahmed, 1998). By involving team members in daily operations and strategic work, management can increase levels of motivation which may help build a stimulating and dynamic environment (Isaksen and Lauer, 2002). Therefore, commitment from top management centres on development and maintenance of the intelligent failure paradigm and may facilitate an environment that can positively respond to the challenges of failure.

5.3.1.2 Openness and trust

Of the climates that support creativity, openness and trust are identified by Isaksen and Lauers (2002) as the most supportive. Openness relates to the free flow of unrestricted communication where open debate is encouraged (Kuratko et al., 2011). A high level of trust encourages new idea creation (Ahmed, 1998) and sharing of knowledge irrespective of roles and responsibilities (Burns, 2013). The climate of trust begins with the way management behave. As management develop a sense of fairness through their actions, so the fairness generates trust (Schneider et al., 1994). As highlighted by Gu et al, (2013), openness and trust is crucial for the formation of psychological safety, and psychological safety is highly significant to the process of learning from failure. Where there is fear of failure (and low levels

of psychological safety), learning from failure is reduced and failure is distorted or hidden. Openness and trust may support a more effective process of enquiry and analysis without fear of blame, where radical and differing points of view are welcome. It may also be argued that as openness and trust also promote free flowing communication, that also assists in the dissemination of lesson learnt.

5.3.1.3 Autonomy and freedom to act

Literature argues that a climate of autonomy is supportive of entrepreneurship. Burns (2013) argues that as individuals are given more scope to influence their work so they are more likely to try new ways of doing things, which in itself is a considerable asset in the learning from failure process. The climate also increases the intensity with which an individual works and the amount of time they dedicate (Frese et al., 1999). The intensity of the individual's engagement within an initiative may intuitively encourage curiosity when they fail. In an environment where there are low levels of fear of failure and autonomy, it is argued that entrepreneurs are more likely to actively engage in learning from failure.

5.3.1.4 Tolerance of failure

Aversion to failure represents one of the most significant obstacles to learning from failure (Edmondson, 2011, Carmeli and Gittell, 2009). In some situations individuals may prefer to disassociate themselves from failure through denial, distortion or avoiding failure (Cannon and Edmondson, 2005). The fear of failure may be the fear of shame or embarrassment, devalued self-esteem, losing the interest of important colleagues, or of upsetting important colleagues (Mitchell and Shepherd, 2010) Indeed the fear of failure is the fear of being a failure. The fear of failure can affect each stage of the learning from failure process. From the identification of intelligent failure, the analysis, and the communication of lessons learnt, fundamental and wide aversion to failure can reduce the effectiveness of the process and reduce lessons learnt (Cannon

and Edmondson, 2005). It is argued therefore, that where organisations have an environment with a high tolerance of failure, increased learning from failure occurs. Indeed fear of failure within an organisation can be eased when a climate of tolerance of failure exists (Kahn, 1990).

5.3.1.5 Rewards

Ahmed (1998) argues that the way in which management recognises success and failure influences the organisational culture and climate. Hornsby et al (2002) assert that the appropriate use of rewards promote corporate entrepreneurship. Indeed, Hisrich and Kearney (2011) suggest that the reward system is a significant feature of an entrepreneurial climate; rewarding entrepreneurial behaviour reinforces entrepreneurial behaviour. Whilst much literature centres on rewarding creative activities, there is also discussion on rewarding failure. Kriegesmann et al (2005) discuss the approach taken by BMW, who initiated a 'flop of the month' award as an important tool to encourage innovation but at the same time encourage learning from failure. Nokia, recognising the knowledge gained from failure, promoted individuals involved with failures so that the new knowledge might be transferred to other ventures (McGrath et al., 2006). A climate of rewarding entrepreneurial failure may help create an environment that supports the management process.

5.3.1.6 Collaboration and teamwork

Collaboration and teamwork are a prerequisite for creativity and therefore a climate which supports collaboration and teamwork is one which supports entrepreneurship (Isaksen and Lauer, 2002). Indeed co-worker cohesion is a predictor of organisational innovation (Treuer and McMurray, 2012). Whilst emphasis on collaboration and teamwork may centre on the earlier stages of the entrepreneurial process, it is also important at the failure stage as teams try to make sense of failure. Where higher levels of teamwork and collaboration exist there may be increased effectiveness in identifying, analysing, learning

and communicating lessons derived from failure. For example, collaboration in the analysis stage represents an important part of the ‘after action review’ construct.

5.3.1.7 Learning

Ireland et al (2003) argues that an entrepreneurial environment fosters a climate of learning. A learning climate may offer a social system where “members learn conscious communal processes for continually generating, retaining and leveraging individual and collective learning to improve performance of the organisational system in ways important to all stakeholders” (Drew and Smith, 1995 p.5). Indeed organisational support for learning reflects the value the organisation places on learning and development (Choi and Jacobs, 2011). A climate of learning will exist where leaders are approachable, empower their team members and believe they can make change happen, focus on people over tasks, encourage open communication, where there is an environment of psychological safety, and where there is an holistic approach is used to solve problems (Schein, 1994). Indeed the after action review adds to the overall climate of learning (Keith and Frese, 2011), indeed a learning climate may improve an organisations readiness to learn (formally or informally), and is inclusive of a willingness to learn by members (Wang and Ahmed, 2003). It may be argued that such a climate, by its very nature, would support the management of intelligent failure. A learning environment is supportive of the process of learning from failure.

5.3.1.8 Time for entrepreneurial activity

Kuratko et al (2014) assert that an organisation’s entrepreneurial capacity will be enhanced by a climate that makes time available for innovation. Advancing the discussion, Isaksen and Lauer (2002) argue that time for idea creation enhances team creativity as it establishes the opportunity to test initial suggestions, explore and develop new ideas. Tidd and Bessant (2013)

highlight the climate which supports innovation at Google, whereby technical employees spend 20% of their time away from their core responsibilities, working on new initiatives and their development. 3M in a similar way allows 15% (Katz, 2004). The allocation of time is a reliable indicator of the organisations desire to innovative by allowing individuals the freedom to explore new ideas, try things out, and fail.

In considering the management of intelligent failure process, and reflecting on literature, it may be argued that time for entrepreneurial activity could enhance learning from failure. Isaksen and Lauer (2002) argue that making time available allows teams to discover new avenues and alternatives, to think and enter deep levels of reflection. Such additional time centred on failure analysis, therefore, may facilitate learning from failure and, by extension, the management of failure process.

5.3.1.9 Positive emotions

Vacharkulksemsuk et al (2011) argues that a climate that supports positive emotions can:

- Increase trust
- Lead to more favourable reactions to others
- Lead to actively helping others
- Enhance interest in others
- Increase the strength of interpersonal relationships
- Produce varying and unusual patterns of thought
- Increase an individual's receptiveness to new information
- Increase persistence
- Increase motivation
- Increase individuals propensity to tackle challenges

In essence, a positive climate may broaden mind-sets by extending the ability of individuals to see themselves, others and the social world (ibid), thus potentially enhancing the power of enquiry and analysis. It is argued therefore, that positive emotions are supportive of the process of learning from failure.

5.3.1.10 Managing an environment that supports the process of learning from intelligent failure: Conclusion

Intelligent failure literature argues for a targeted approach to managing an environment that normalises learning from failure. However, there is only limited evidence of its occurrence within the organisations of the study. However, there is evidence that some organisations have an environment more supportive of entrepreneurship, offering some psychological safety, which may also support the process of learning from failure. This section highlights existing literature that illuminates important climates supportive of entrepreneurship, and which it may be argued, individually and as group, as being specifically supportive of the back end of the entrepreneurial process, that being the process of learning from failure. It is further argued that these climates offer support for both structured and informal mechanisms of learning from failure. In consideration of these arguments, it may be posited that a strategic approach to managing the environment centred on enhancing certain climates may deliver an effective management approach. This thesis extends existing theory relating to environments that can normalise failure to make a case for a number of climates supportive of entrepreneurship, which create a platform for effecting deep analysis and deeper understanding. In this way, it is argued that a strategic approach to managing the environment centred on enhancing the identified climates may add to the delivery of an enhanced process of managing intelligent failure.

5.4 Conclusion

In this chapter, discussion has focused on examining key themes that emerged during the data analysis and important theoretical constructs taken form literature. Attention centres on the management of the process of learning from failure (recognising, reflection, analysing and conceptualising from failure to extract learning, sharing new knowledge and concepts, and trying a new

approach), management of emotions related to intelligent failure, and management of an environment supportive of learning from failure.

Literature argues that the management of intelligent failure process is more effective in creating new knowledge from failure if the process is structured. As Carmeli and Sheaffer (2008) assert, “The theory of organizational learning suggests that well-orchestrated and structured mechanisms of learning from failure are key processes in robust and reliable organizations” (p.468). Indeed Kotnour and Kurstedt (2000) conclude from their quantitative data that not only do formal lessons learned produce a higher quality of lesson learned, they have greater effect on subsequent ‘decision quality’ than informal lessons. Formal lessons learned make higher quality information available than informal lessons and are therefore more effective at supporting decision makers. Further, literature also suggests that most organisations find it difficult to effectively adopt these structures and learn from failure. Empirical evidence indicatively supports these theories. Taking the six organisations together, there is limited evidence of a finely tuned approach towards managing failure, indeed it is often lacking. For the case studies, learning from failure is predominantly an informal process. Table 5.4 summarises the perspectives of literature and the predominant nature of the research findings.

Stages in the Learning from Failure Cycle	**Formal structures** *put forward by literature*	**Informal structures** *largely evidenced by findings*
Recognition	Timely meetings to enable identification is a prerequisite in the process of learning from failure (Cannon and Edmondson, 2005)	Ongoing and ad hoc by individuals and teams constantly monitoring initiative performance
Reflection	Reflection meetings for example Toyota production systems offers a 'Hansai-kai' or reflection meeting when failure occurs (Liker, 2005).	Individual and peer to peer in informal work settings
Analysis & Conceptualisation	'After action reviews' (Senge, 1990, Cannon and Edmondson, 2005) Post performance meetings (Wilkinson and Mellahi, 2005)	Ongoing; ad hoc; individual, peer-to-peer, or group meetings in open workspace, breakout meeting rooms or managers office. Agenda – loose
Sharing	Codification of new knowledge into documents, standard operating systems, rules etc. (Levitt and March, 1988)	Individual, peer to peer, and groups collaboration via informal communication channels
Trying a new approach	Experiential learning theory (Kolb, 1981) Structured approaches to venture development (Ireland et al., 2009)	Individuals and teams informally progressing initiatives

Table 5.2. A Summary of the predominant arguments from literature and predominant research findings relating to forms of learning from failure.

As learning from failure is a largely informal process, the organisations within the study are failing to maximise the opportunity to extract new knowledge from the failures as they occur, restricting individual and organisational learning. Further, there is a significant risk of failure reoccurrence that may be highly costly to the organisation. Nonaka and Takeuchi (1995) highlight the success of Japanese car manufacturers' approach to learning from failure within a clearly defined structure. Liker (2005) is even more specific with his focus on the Toyota production system, articulating the success from continuous improvement or 'kaisen', a structured process. The Toyota Way internal document 2001 is clear: "We view errors as opportunities for learning. Rather than blaming individuals, the organisation takes corrective actions and distributes knowledge about each experience broadly. Learning is continuous companywide process" (Liker, 2005 p.250). However, this chapter opens up a discussion that suggests that there is a role for a more informal approach and that perhaps a more dualist approach may be considered.

When it comes to recognising failure, the discussion recognises the values of a structured approach. It is suggested that a structured approach offers a vigorous, focused and assertive enquiry as a means to uncover failure. However, in considering the empirical evidence, the discussion also highlights some potential advantages of an informal process that may be more timely and flexible. Therefore, it is argued that informal mechanisms of failure recognition may be supportive of a structured approach.

In a similar way, it is argued that analysing and conceptualising failure may benefit from both formal and informal mechanisms as they could be viewed as complementary forms. Whilst a structured approach offers a robust, deep analysis and learning experience, the informal structures may be seen as natural to the prevailing organisational climates, offering a continuous and fluid process approach, one that can occurs closer to the point of failure identification, and which potentially may lead to valuable pre-analysis.

This discussion also recognises learning styles theory and how it may affect learning from failure and how strategical consideration of this may enhance the process of learning from failure. Recognising the natural orientation of individuals as to how they learn may enable organisations to better plan and

effect structures, methods and systems to maximise learning from failure episodes.

Organisations in the study communicate lessons learnt from failure through informal collaboration and ad hoc discussion between individuals and teams. Lessons are intuitively diffused within teams and across the organisations, permeating them through socialisation and institutionalising new knowledge. Yet dissemination may be less reliable due to memory loss, distortion and bias, and it may provide an organisational memory that is less accessible to the organisation as a whole. A systematic approach, however, is a fixed resource argued as being more dependable and potentially open to a wider audience. The discussion suggests that both mechanisms may offer value and that the organisational context may inform a strategic approach to mechanism selection.

Discussion moves from managing the process of learning from failure to managing the emotions involved with project failure. Case studies offer little evidence of significant consideration of managing the negative emotions resulting from failure. In this way organisations risk experiencing reduced learning from failure and error reoccurrence. Literature suggests a strategic approach may enhance the process of grief recovery by creating awareness of the issue and offering a comprehensive and high quality organisational response (Shepherd et al., 2011). However, intuitive support for individuals is evidenced within teams as an organisational climate and often is sufficient as a support mechanism. This informal mechanism may still be relevant to supporting a strategic approach to managing emotions.

When it comes to managing an environment that is supportive of learning from failure, case studies offer limited evidence of planned activities. However, some organisations have an environment which is more supportive of entrepreneurship generally, offering some psychological safety and therefore support the latter stage of the process, managing intelligent failure. This thesis extends the arguments from existing literature and puts forward a number of climates that may be supportive of both structured and informal processes of learning from failure. In this way, it is argued that a strategic approach to managing the environment centred on enhancing supportive climates may deliver an effective management approach.

In examining the management of learning from failure, this thesis highlights the potential value of managing the process effectively, and how organisations continuously fail to manage the process, negating the opportunity to gain new knowledge. It argues that a structured process is important in effectively coordinating a process of learning from failure, more so than an informal process. However, informal processes may have an important role, indeed at each stage of the management of failure process an argument is presented for the consideration of the values within an informal process. Therefore, this thesis argues that the two mechanisms may be seen as coexisting, indeed complementary, and may be considered in a dualist light. This thesis also argues that irrespective of the nature of the process, there are a number of climates that may enhance the learning from failure process, thus making an important contribution to managing failure.

Chapter 6 Conclusion

6.1 Introduction

The thesis has explored the domain of entrepreneurship, the sub domain, corporate entrepreneurship, and specifically the area of entrepreneurial failure. The aim of the research was to answer the overriding question:

How do organisations manage the process of intelligent failure?

Enquiry centred on:

- The processes that organisations use to learn from failure
- The importance of a process for managing intelligent failure to the organisation
- How failures are recognised and how are they analysed.
- How individuals and organisations learn from failure.
- How lessons learned are disseminated across the organisation.
- The nature of the outcomes of the process of learning from failure
- How environments can support learning from failure
- Why organisations do not learn from failure

In exploring these areas and answering the research question this thesis adds to existing literature in the entrepreneurial research area and, by specifically focusing on the process of intelligent failure and the learning process of failure episodes, addresses a gap in current literature (Cope, 2011). It also adds to literature on the practical management of the learning from failure process.

6.2 Research project approach

In the first instance, a literature review was carried out with the aim of exploring existing theory on entrepreneurial failure to gain an understanding of how organisations learn from failure. An exploratory approach was taken to review

literature that started encompassed a broader domain enquiry before a snowballing process narrowed attention. Articles were identified until it was considered that the necessary depth and breadth of literature had been sourced and no more relevant articles could be found. In the first instance overarching entrepreneurial theory was addressed in order to provide a theoretical base on which to rest the thesis, followed by a review of literature that centred on the characteristics of the organisational entrepreneur and the characteristics of an entrepreneurial environment. By so doing, the thesis illuminates the setting for the entrepreneurial process and the outcome of entrepreneurial failure. The review also explored the cognitive and organisational processes that influence or are influenced by the learning from failure process, and how they may be managed. Having reviewed current literature, the thesis offered a conceptual framework (figure 6.1) which draws together the important constructs to provide a holistic perspective as to how organisations manage intelligent failure and thereby effect their entrepreneurial capability. The conceptual framework was used as a means to empirically explore six organisations.

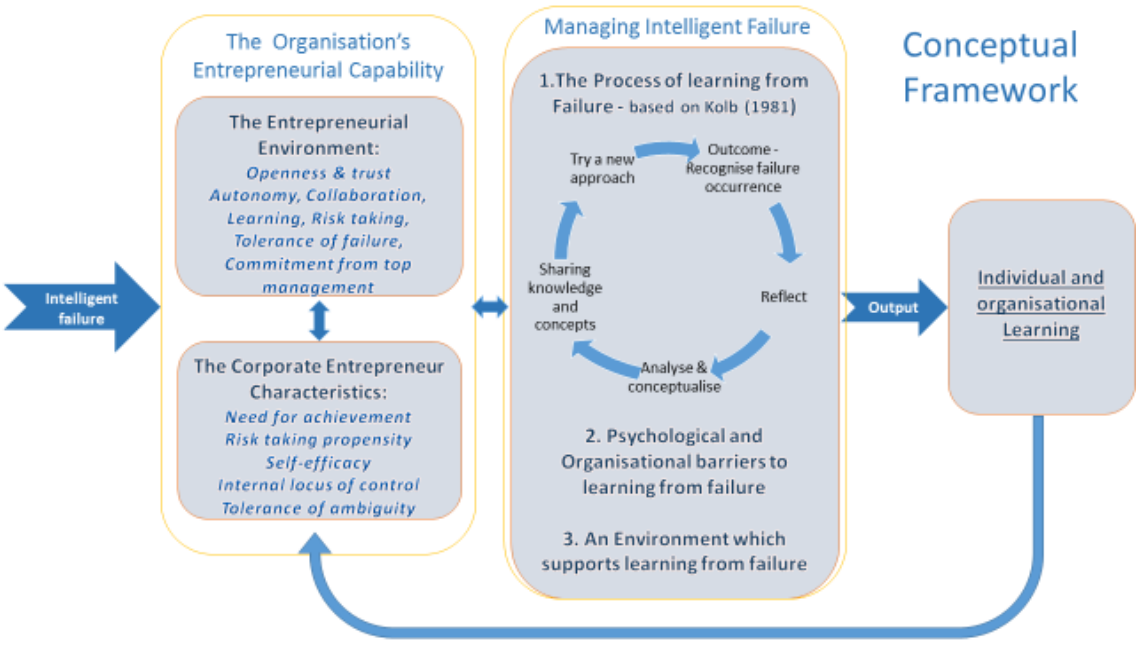


Figure 6.1. A Conceptual Framework of Managing Intelligent Failure

Arguing that the ontology of the process of intelligent failure is socially constructed, the thesis has taken an interpretive methodological approach to illuminate the deep complexities that reside within this process. An inductive approach was taken which centres on the predominant use of a qualitative method, as part of multiple case study research strategy.

6.3 How do organisations manage intelligent failure?

Literature predominantly argues that the management of intelligent failure process is more effective in creating new knowledge from failure episodes if the process is structured. As Carmelli and Sheaffer (2008) proffer: "Well-orchestrated and structured mechanisms of learning from failure are key processes in robust and reliable organizations" (p.468). However, the findings from the six organisations within the empirical study indicate that there is some evidence of a structured approach to the process of learning from failure, but predominantly it is unstructured, informal, ad hoc, and ongoing as part of regular operational activity. The process is not a significant priority for management and is therefore generally underdeveloped which means that lessons from failure may be lost. Additionally, within the different stages of the process of managing intelligent failure findings suggest that:

- Failure identification, when it occurs, is from customer feedback, open team discussion, email chatter, MIS, financial data, milestone or target referencing, within cyclical operational meetings, and discussions with line management.

- The analysis and learning process is often weak occurring in in team workspaces (often impromptu 'stand up' meetings) or 'one to one' conversations, cyclical operational meetings, and management 'away days'. Learning is predominantly 'single loop' with some 'double loop' learning at a senior level.

- The process of communicating lessoned learnt is not overt and generally not a management priority, mainly occurring within teams and not between teams or across the organisation or, indeed, outside the organisation. There is little documentation of lessons learned and few or no organisational storage systems.

- The management of negative emotions is generally weak with little evidence of any strategic approach. Support mainly comes from fellow team members, friends, or line management, and is highly reflective of the supportive nature of the culture and leadership.

Whilst organisations within this study generally fail to engage in a structured approach towards learning from failure, which literature proffers as the most effective manner, it does occur and is evidenced. Often learning from failure episodes are intuitive to both individuals and teams highly engaged in the initiatives. Indeed, it is often the case that failures are not perceived as failures; just points of pivot on a journey towards eventual success.

6.4 The roles of structured and unstructured processes in managing intelligent failure

This thesis argues that, given the significant volume of literature articulating the importance of structure to the process of learning from failure, the organisations within the study are failing to maximise the opportunity to extract new knowledge from failure episodes. Indeed, they experience the significant risk failure reoccurrence and must absorb the cost.

However, this thesis also argues that whilst a more vigorous, focused and assertive enquiry into failure identification may be achieved by the use of a structured approach, the informal process engaged by the organisations may be timely and flexible. Indeed, it also argues that, rather than being polar opposites, formal and informal mechanisms may be viewed as complementary forms. Recognising that the structured approach may lead to an enhanced, robust, deep analysis and learning experience, an informal structure could be

perceived as natural to the prevailing organisational climate, thereby offering a more instinctive, fluid and continuous process that can occur closer to the point of failure identification. The informal process may also lead to valuable pre-analysis available for utilisation as part of a more structured approach. In a similar way, the systematic forms of sharing lessons learnt are argued as being open to a wider audience and as more dependable yet informal forms allow intuitive diffusion within in teams and across organisations permeating new knowledge, as it is available. Both forms can offer value and the organisational context may inform a more strategic approach to the appropriateness of which mechanisms to utilise. Further formal and informal mechanisms may also be both supportive of managing the emotions involved in project failure. In this way, the thesis argues for a dualist approach to the consideration of processes centred on learning from failure rather than a pure focus on structure, which may allow both systems to coexist and indeed complement each other.

6.5 Contribution to theory

6.5.1 Principal contribution to theory

In the first instance, this thesis supports current theory that argues for the use of a formal and structured approach as a means to effectively learn from entrepreneurial failure episodes, Senge 1990, Wilkinson and Mellahi (2005), (Liker 2005), Ellis et al (2006), and Platzek et al (2014). However, most significantly, this thesis argues that unstructured and informal processes are also of value to the process of learning from failure. In looking at each stage of the process of learning from failure (recognising failure, reflection, analysing, conceptualising, and communication of lessons learned), the thesis argues for the consideration of a dualist approach, allowing formal and informal mechanisms to be viewed as co-existing and complementary:

a. Recognising failure: This thesis argues that an unstructured, informal process of identifying failure has the advantages of being more responsive, timely and flexible. By illuminating the potential value of informal identification processes, this thesis adds to existing literature, Cannon and Edmondson (2005), Reason (1990), Liker (2005), Barkai and Harrison (2012), Syed (2015) Limoncelli et al (2016).

b. Reflecting on failure: This thesis argues that the 'reflective' stage of learning from failure is an important part of the process, particularly the unstructured, informal mechanisms, and adds to existing entrepreneurial learning literature, (Nonaka and Takeuchi (1995), Crossan et al (1999), Cope (2003, 2005), Pittaway and Cope, (2007), Bagheri and Pihie (2011).

c. Analysing and conceptualising failure: This thesis argues that unstructured, informal analysis and conceptualisation of failure has significant value in the learning process and adds to current theory, McGrath and MacMillan (2000), Lafley and Charan (2008), Kuratko et al (2011), Gino and Pisano (2011), and Birkinshaw and Haas (2016). As a mechanism of learning, this thesis argues that it can be more natural, more spontaneous, and offer a continuous, fluid process, one that can occur closer to the point of failure identification, and potentially offering a valuable pre-analysis.

d. Sharing lessons learned: In highlighting the values of the unstructured, informal process of communicating new knowledge from failure (that is a fuller, richer more qualitative description, timelier and often faster), this thesis adds to literature by broadening the discussion in the entrepreneurial domain beyond the focus on systematic processes, McGrath and MacMillan (2000), Lafley and Charan (2008), Kuratko et al (2011), Gino and Pisano (2011), and Birkinshaw and Haas (2016).

Summary: Principal contribution to theory

This thesis argues that for organisations to optimise learning from failure, both formal and informal mechanisms should be considered together within a singular approach. This adds to important literature in the intelligent failure domain, Sitkin (1992) Cannon and Edmondson (2001, 2005), Baumard and Starbuck (2005), Ellis et al (2006), Madsen and Desai (2010), and Muehlfeld et al (2012).

This contribution to the theory of informality is illustrated in Figure 6.2 and Figure 6.3 below. Figure 6.2 illustrates the positive facets inherent to formality within the process of learning from failure put forward by existing literature. Figure 6.3 illustrates the positive facets inherent to both formality and informality (evidenced in the empirical findings) within the process of learning from failure. The illustration shows how formality and informality may be considered at each stage of learning from failure, suggesting a method that optimises the strengths of each approach leading to the optimising of organisational learning from failure.

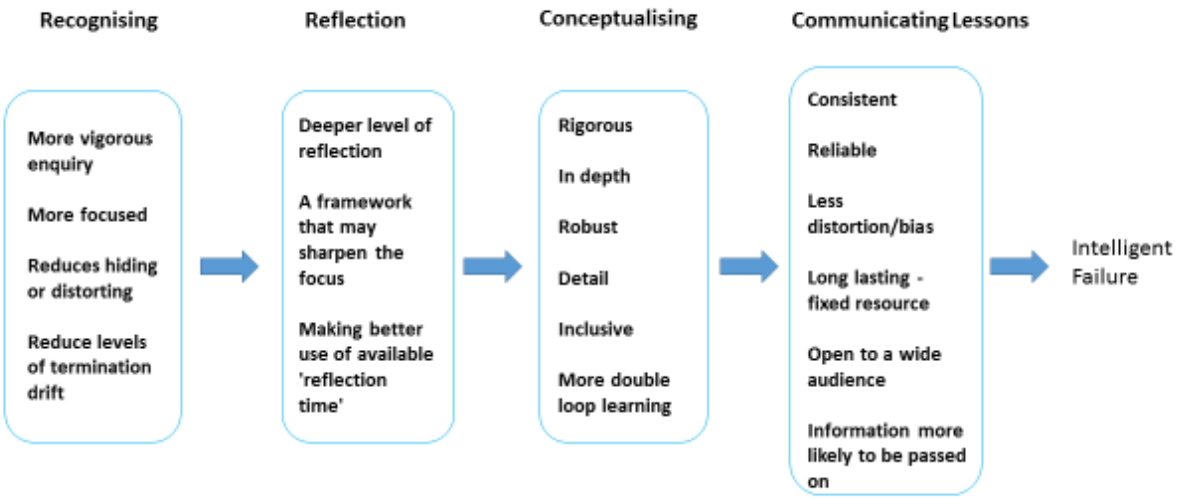


Figure 6.2: The positives inherent in formality within the process of learning from failure put forward by literature.

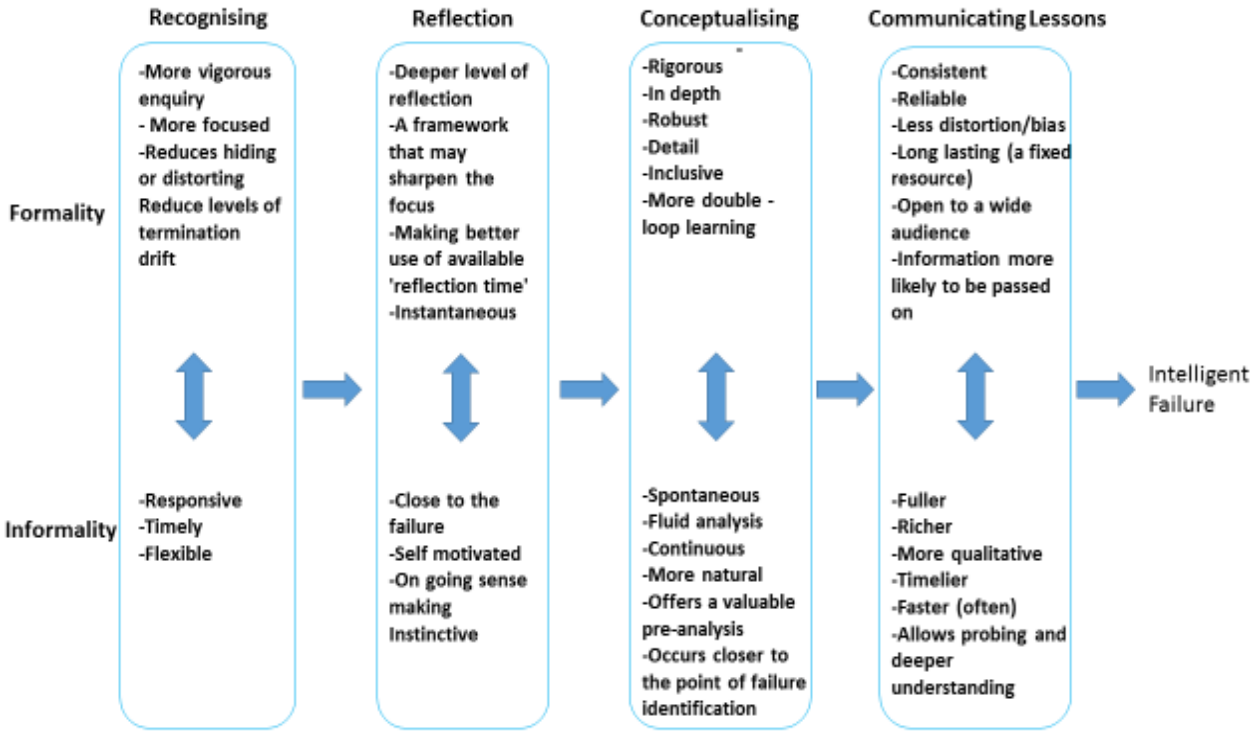


Figure 6.3: The positives inherent in formality and informality within the process of learning from failure, and the optimisation of learning from a dualist approach.

6.5.2 Additional contributions to theory

This thesis also contributes to existing literature in a number of different ways:

1. The empirical research of six organisations delivers new case findings to the learning from failure domain adding to existing case studies, such as Tucker and Edmondson (2003), Baumard and Starbuck (2005), Carmeli and Gittell (2009), and Cope (2011).

2. This thesis supports existing theory that asserts that organisations find it difficult to create structures to manage the learning from failure process. For example, Cannon and Edmondson 2001, Manimala et al 2006, and Madsen and Desai (2011).

3. This research supports existing theory by finding that organisations use knowledge gained from failure learning to create new directions for initiatives that test cognitive suppositions, Ries, 2011, Blank and Dorf, 2012, Furr et al., 2014

4. Finally, this thesis extends existent literature that centres on environments that may support learning from failure, Hoecht and Trott (1999) Isaksen and Lauer, (2002),Van Dyck et al (2005), Hisrich and Kearney (2011), Edmondson, (2011), Keith and Frese (2011), Vacharkulksemsuk et al (2011), and Burns (2013).This thesis argues that a number of organisational climates that support an entrepreneurial environment, specifically support the process of learning from failure. The climates are top management support, openness and trust, autonomy, tolerance of failure, rewards, collaboration and teamwork, learning, time for entrepreneurial activity, and positive emotions.

6.6 Contribution to practice

This thesis contributes to practice in a number of ways:

- The significance of learning from failure:

This thesis affirms the importance to organisations of learning from failure episodes and the significant potential benefits available to the organisation, as well as the potential threats of not effectively learning from failure. By drawing attention to the importance of learning from failure, this thesis raises awareness of the opportunity for practice to grasp the positive value that effective intelligent failures processes offer.

- The importance of formality in enhancing intelligent failure:

This thesis affirms the importance to organisations of having a formal, structured approach to the process of managing intelligent failure, highlighting the benefit of robust systems and tools on individual and organisational learning. The formal approach engages in a process with clear timelines and after action reviews that are well lead, with a focused agenda that allows for a robust process that increases the likelihood of double loop rather than single loop learning. Structures that facilitate quick failure recognition, deep analysis and learning and that allow effective dissemination of lessons learned either directly or through the organisations memory, create the opportunity to enhance the potential value from failure episodes. Literature highlights the difficulty that organisations experience in creating structures for learning from failure. Practice may reflect on formality and learning from failure in their organisations, and draw potential process solutions from existing literature to enhance the effectiveness of intelligent failure mechanisms.

- The importance of informality in enhancing intelligent failure:

This thesis puts forward a new perspective that centres on the value of informal learning from failure. In failure identification, informal mechanisms may be more responsive, timely and flexible. In analysing failure, they may be more natural, more spontaneous, a continuous and fluid process, close to the point of failure identification. In communication of lessons, informality may offer a fuller, richer, qualitative description, which is timelier and faster. Practice therefore, may consider informal processes and learning from failure as a valuable means to acquire knowledge from failure episodes.

- To optimise the management of intelligent failure, a dualist approach towards formality and informality should be considered.

In highlighting the potential positives that may arise from an informal approach, this thesis argues that both formal and informal processes may be considered together. In this way, practice may strategically develop a process (taking into consideration contextual organisational factors) that reflects on the advantages of both formal and informal failure learning mechanisms, thereby optimising the potential to learn from failure.

- Learning styles that enhance learning from failure processes:

Further, this thesis highlights the significance of learning styles put forward in literature and the potential implications for the learning from failure process. In recognising that individuals have different cognitive styles and learning modes, the organisation is enabled to effect a process to engage a mix of the learning styles that might meet the learning needs of more people, producing more learning at an individual level and therefore at an organisational level. In drawing attention to existing theory, practitioners may reflect on their process so that learning styles of individuals are considered strategically when considering intelligent failure processes. In this way, individuals and the organisation may increase their ability to learn more from failure episodes.

- An environment that supports intelligent failure:

This thesis highlights the significance of the environment of the organisation, and how it may affect the process of managing intelligent failure. By extending arguments within current literature, this thesis puts forward a number of climates that may be supportive to both formal and informal failure learning mechanisms. Those climates are, commitment from management, openness and trust, autonomy and freedom to act, tolerance of failure, reward, collaboration and teamwork, learning, time for entrepreneurship activity, and positive emotions. Practitioners, therefore, can consider a strategical approach that is inclusive of tactics that may enhance these climates to augment the learning from failure process.

6.7 Further research

1) Unstructured learning from failure.

   This thesis puts forward some tentative theory on the significance of unstructured learning from failure as a means to enhance or complement more structured mechanisms. However, additional research is required to identify the unstructured processes that are inherent in the learning from failure process. Developing the findings of this thesis, a closer definition and categorisation of the types of unstructured learning from failure and their nature would enable a deeper understanding of the construct. Are the unstructured processes ad hoc and ongoing? Alternatively, are there some underlying, subtle structures that influence the process? In the unstructured process, are some organisations better at gaining valuable learning? Does the physical location of the process affect the learning from failure outcome? Answering these questions will enable a more advanced understanding of the management of intelligent failure construct. Indeed, a specific focus on just the one informal mechanism may add support or otherwise to the existing findings of this thesis, and identify additional ways informal structures may support the management of intelligent failure process in: recognising failure, reflection, analysing, conceptualising, and communicating lessons learnt. In this way, further understanding of this young theory within the entrepreneurial failure domain may be developed to offer insights into how it may be utilised within a strategy that is centred in structured processes.

2) Learning Styles

   Additionally, further research is required to focus specifically on 'learning styles' theory and the process of learning from failure. Additional research should centre on how a learning style affects an individual and how they learn from failure. This may be of significance as the learning style of the founder or top management may influence the entire management of the lessons learned process. There may also be value in trying to understand how learning styles theory may be utilised within the various after action review forms. For example:

- Recruitment of individuals for the review meeting. Is a balance of learning styles required, or just more of one learning style?
- Considering an appropriate agenda for the review meeting. Should the agenda engage with each learning style to ensure all perspectives are included?
- Taking the review meeting. Should discussion utilise differing cognitive learning styles to maximise individual learning and subsequent organisational learning?

Engaging with learning style theory in the learning from failure domain would open a fresh stream of novel research that would add to existing literature.

3) Entrepreneurial environments and managing intelligent failure

The empirical study researches six differing organisations that have different environments. Each of those organisations exhibit differing approaches towards failure management processes. Further research in this area should focus on the impact of entrepreneurial environments on the management of failure. How are certain environments supportive of the process and which climates are important to that environment? Having suggested a number of climates that may be relevant in this exploratory study, further research is required to understand the relationship between the organisational environment and the failure learning process. Current literature offers insights about relationships between organisational climates and the entrepreneurial process in a more general way. By focusing purely on the latter stage of the entrepreneurial process, further research would help to illuminate the nature of the relationship, adding to current literature and an increased understanding in this area.

4) Failure and Pivots

Also identified in the empirical research is the lack of use of the ‘failure’ word. In some of the environments that are less open, there is evidence of fear of failure, which may part explain this phenomenon. However, in environments that are more open the ‘failure’ word is not used because at that moment the initiative is deemed as ‘not working’ and a ‘pivot’ or new direction is determined. Further research is required to explore this phenomenon to understand the nature of a pivot in the entrepreneurial environments. What

makes them different, should a pivot moment spur engagement in a different form of after action review, and is there any other reason why the ‘failure’ word is not used explicitly?

5) Industry and country

Whilst this thesis offers some insights into the process of managing intelligent failure in a mix of organisations in a variety of sectors, all within the UK, further research into specific industries (indeed sectors) and countries outside the UK would enhance knowledge in this domain. Research into the manufacturing and service industries, for example, may highlight significant variations, which may reflect their respective cultures and structures.

Additional research of a similar nature, but in other countries may also inform the managing intelligent failure discussion. Research, for example, could explore how the various international cultures affect the engagement with the process, or, what differing outcomes from the process are and how are they valued. Exploring other countries would illuminate the domain and add to existing theory.

6) The outputs of the intelligent failure process and the entrepreneurial process

This thesis suggests that managing a process of intelligent failure can positively affect organisational learning, which can positively affect the entrepreneurial process. Further research into the outcomes of the intelligent failure process may enhance the discussion about the value that it may, or may not bring. How does an effective process affect creativity, innovation, initiative development, team collaboration, and organisational growth? How does the process of managing failure affect the effectiveness of the process as a whole? The quality of initiatives? The quantity? Does managing failure effectively ensure a better front end to the entrepreneurial process? A specific area of focus may be the effect on the entrepreneurial mindset of corporate entrepreneurs. How do the differing levels of engagement and effectiveness of managing intelligent failure affect the entrepreneurial mindset? Deeper insights into the outputs of intelligent failure would allow a richer understanding

of the process. By exploring the outcomes of learning from failure specifically, an understanding of a full range of positive and negative attributes may be gained, which could offer a clear understanding of the value that it brings to the entrepreneurial process. This research would also add to existing theory.

6.8 Reflective thoughts on the writing of this thesis

Learning by doing has been a core construct within this thesis centred on intelligent failure. In writing it, learning by doing has also been the central pillar of the researcher's learning experience. The process has led to learning at every part of every stage of the journey, pulling together a significant volume of learning in numerous areas. The rich experience of developing new skills, finding new answers, and stretching the researcher's conceptual thinking has come from doing: learning from writing this thesis.

Amongst a myriad of learning points, one stands out: The focus on depth rather than breadth. Whilst the researcher has learned that there is a constant tension between breadth and depth of enquiry within research generally, less focus on breadth might enhance his practice. An assertive approach to research design in tightening the scope of analysis and the approach to sampling may have improved this research. Indeed it could be argued that the researcher was slow/and or reluctant to scope activities and attention at many stages of this research. Narrowing the focus and pursuing a deeper level of enquiry will add to the quality of future research by teasing out important insights. It will also allow the author's research practise to develop, as a tighter research design will lead to less wastage of time and a more efficient process; if not closely relevant to the research, managing volumes of data and a wide discussion can be time consuming and inefficient. Reducing the breadth of the research perhaps could have centred on using a tighter definition of the corporate entrepreneurship construct, 'purposeful' sampling, and the inclusion of fewer organisations within the study (but the same number of total interviews). Additionally, a triangulation of research method would improve the credibility of the in-depth findings and subsequent interpretations.

However, reflecting on this research project, the researcher recognises that he has also learned that there are some positives from a broader approach. The wider search for new knowledge in this thesis has enabled the discovery of new fertile areas of academic interest. It has added new findings and theories to existing theory and, at the same time, it has opened up new opportunities for further research in a domain, which literature suggests is underexplored.

Separately, the researcher has also learned the positive value of:

- A sound conceptual model as a key instrument in the research process. In this thesis, the conceptual model shapes the exploration of the intelligent failure process and, in this way, has strengthened the work.

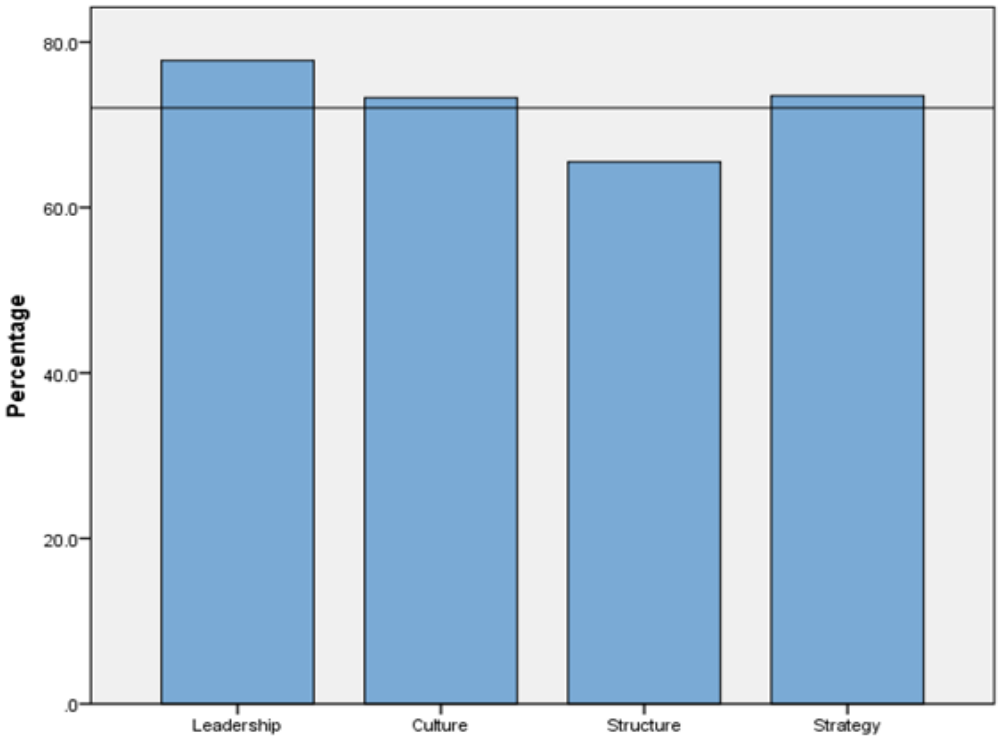
- A robust methodological approach as the backbone to quality research. Immersing himself in philosophical and methodological literature has created personal learning for the researcher, and a sound approach to carrying out this research.

In reflecting upon and recognising some of the stronger and weaker elements of this thesis, the researcher further develops his ability to critically self-analyse and learn. Learning by doing has been important in writing this thesis and will continue to be important in developing the career of the researcher.

Appendices

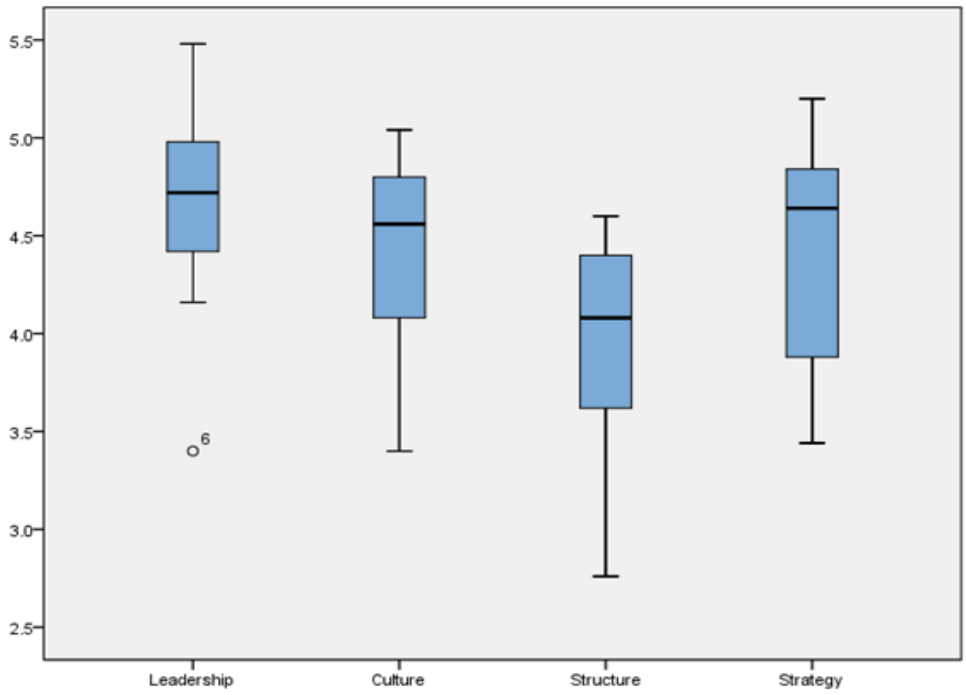
Appendix 1: Epos Supplier Corporate Entrepreneurship Audit Results

Architecture Results (Percentage)



---------- = Average of the combined architecture results = 72.5%

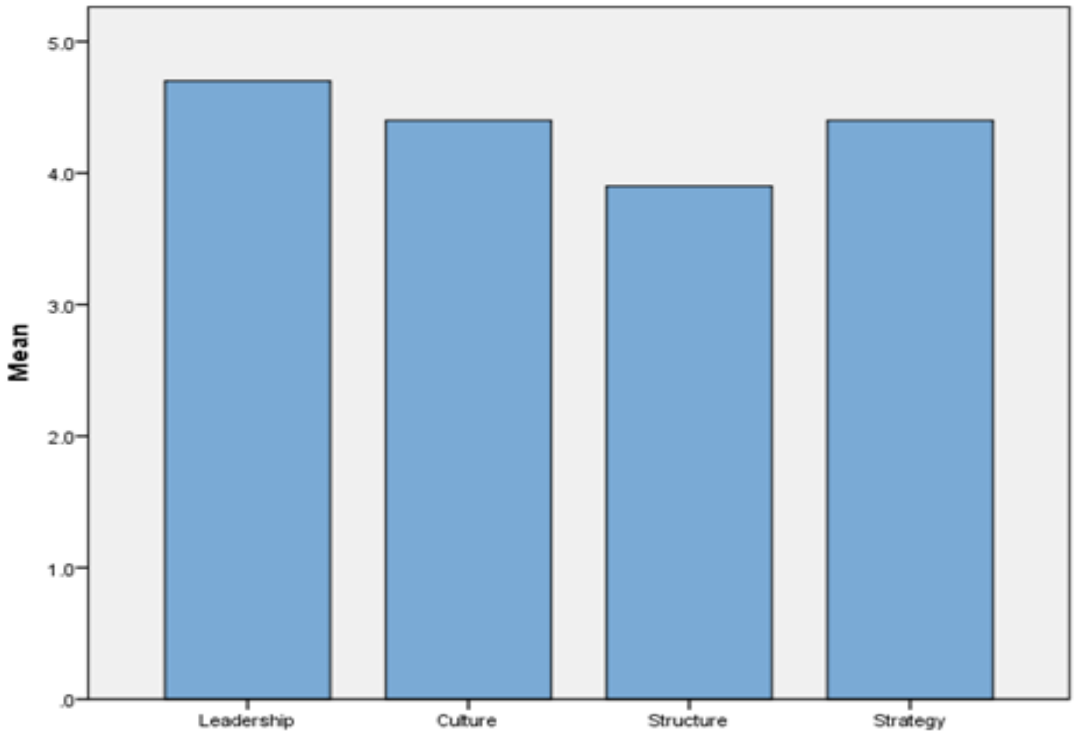
Cluster Analysis (Scores 0-6)



Descriptive Statistics (Architecture)

	N	Minimum	Maximum	Mean	Std. Deviation
Leadership	11	3.4	5.5	4.665	.5694
Culture	11	3.4	5.0	4.396	.5521
Structure	11	2.8	4.6	3.931	.6212
Strategy	11	3.4	5.2	4.411	.5995

Architecture Results (Mean)



Frequencies

Statistics

		Leadership	Culture	Structure	Strategy
N	Valid	11	11	11	11
	Missing	0	0	0	0

Frequency Table

Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	9.1	9.1	9.1
	4	1	9.1	9.1	18.2
	5	8	72.7	72.7	90.9
	6	1	9.1	9.1	100.0
	Total	11	100.0	100.0	

Culture

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	2	18.2	18.2	18.2
	4	2	18.2	18.2	36.4
	5	7	63.6	63.6	100.0
	Total	11	100.0	100.0	

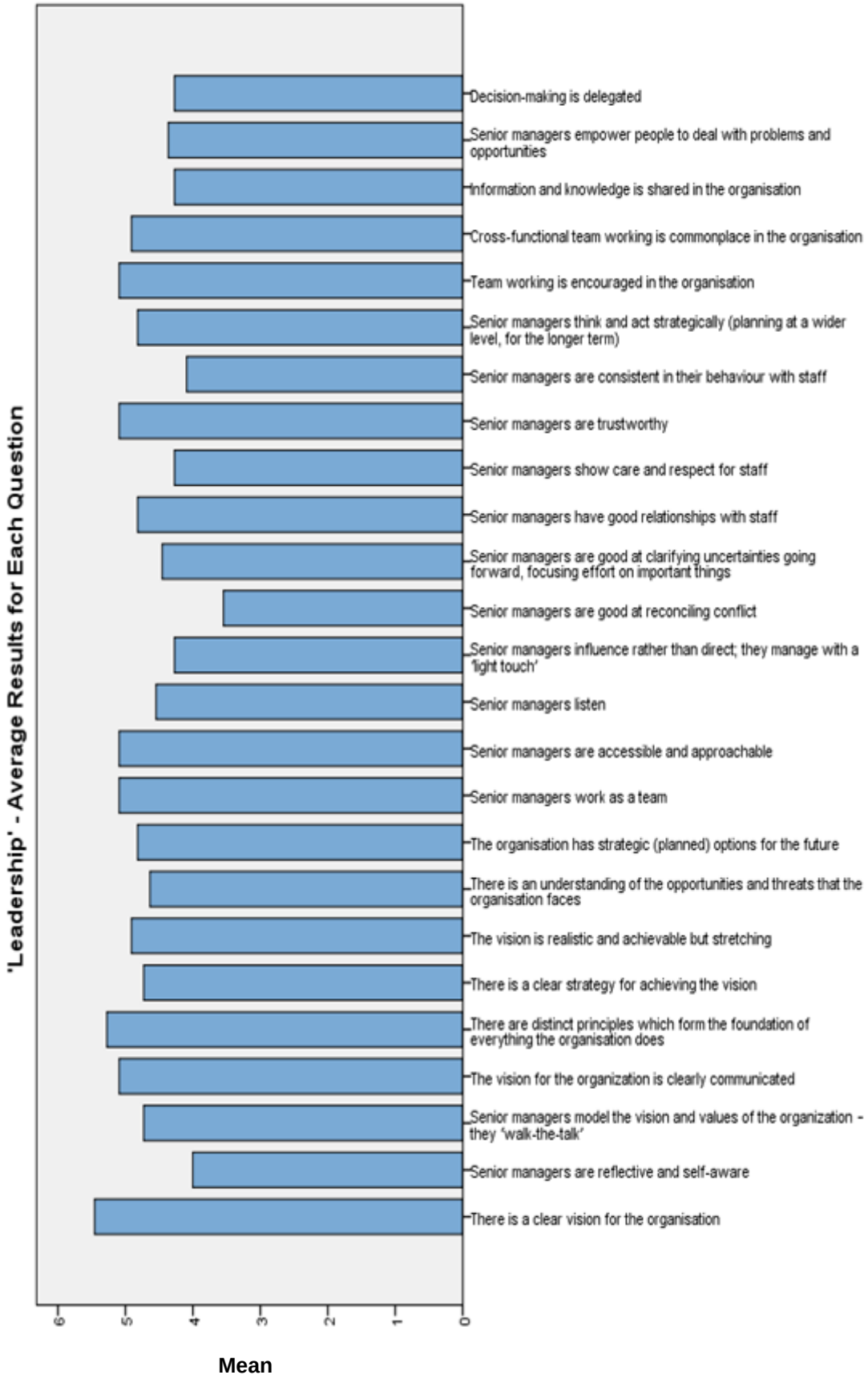
Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	3	27.3	27.3	27.3
	4	4	36.4	36.4	63.6
	5	4	36.4	36.4	100.0
	Total	11	100.0	100.0	

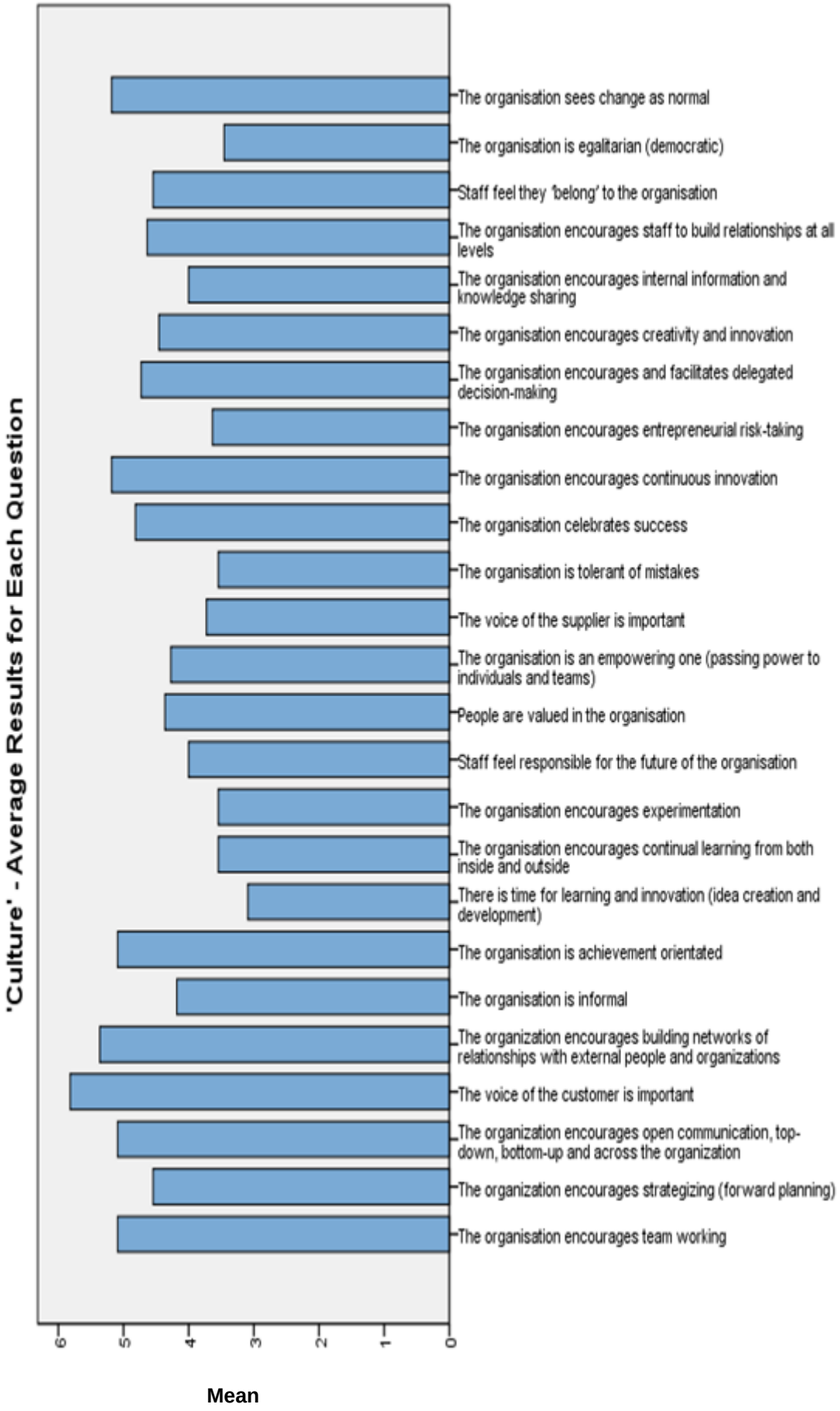
Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	9.1	9.1	9.1
	4	4	36.4	36.4	45.5
	5	6	54.5	54.5	100.0
	Total	11	100.0	100.0	

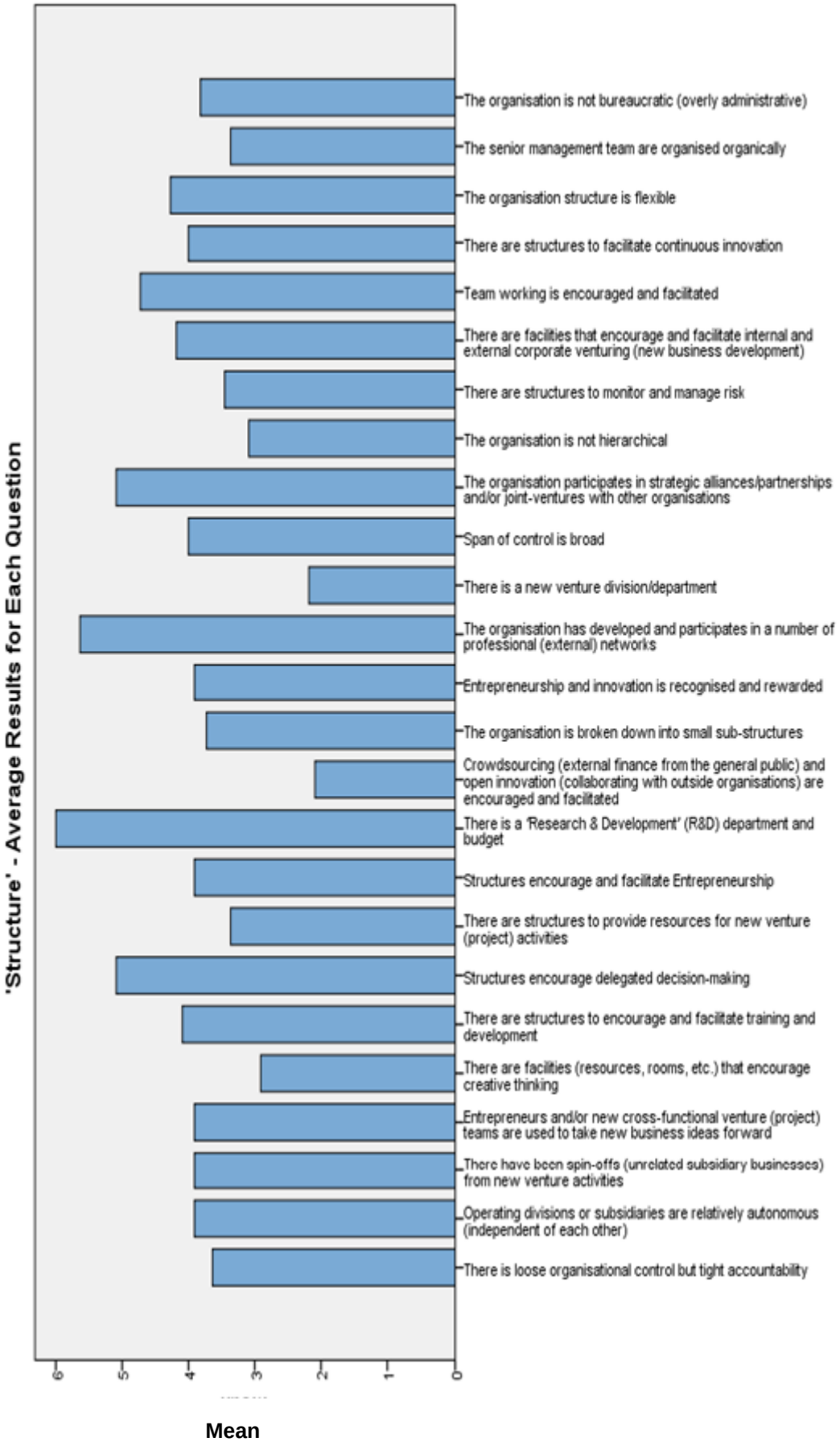
Leadership: Average results for each question



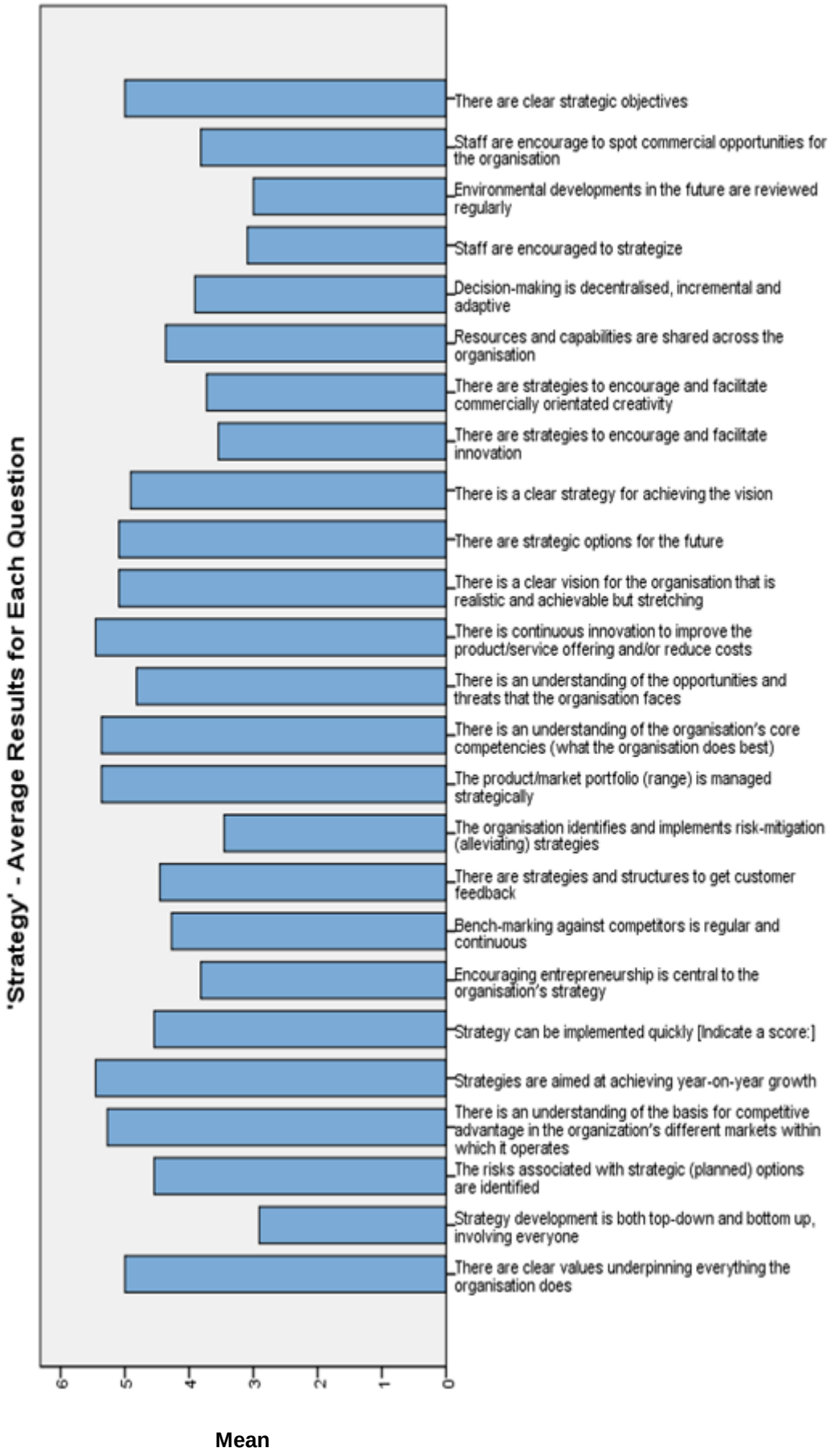
Culture: Average results for each question



Structure: Average results for each question

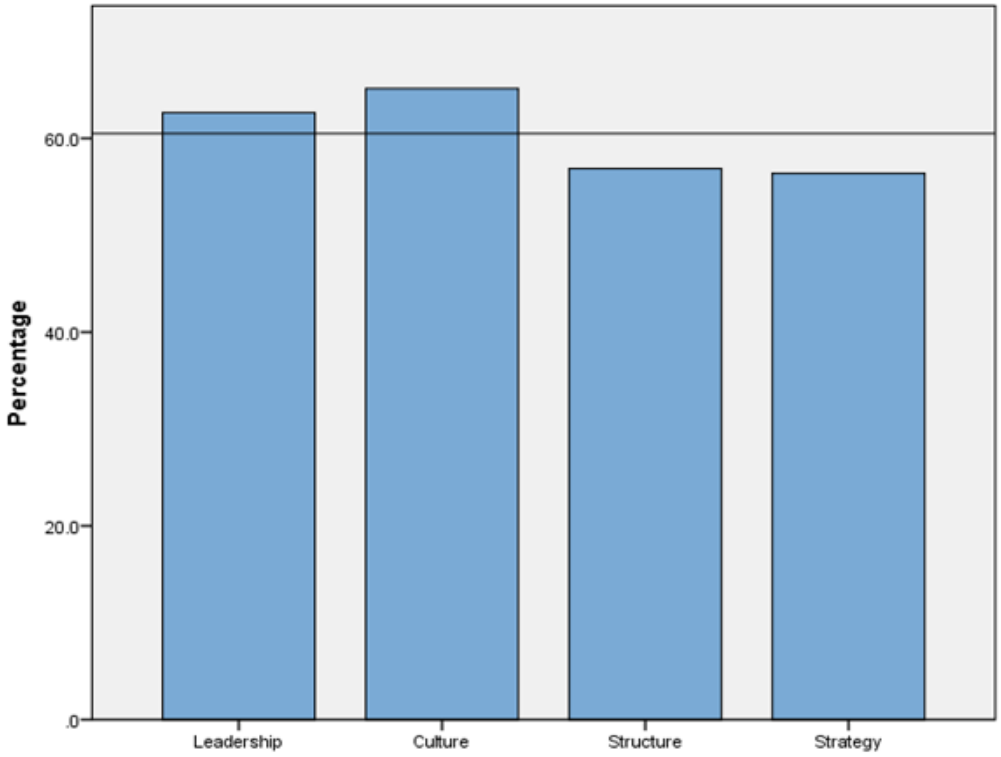


Strategy: Average results for each question



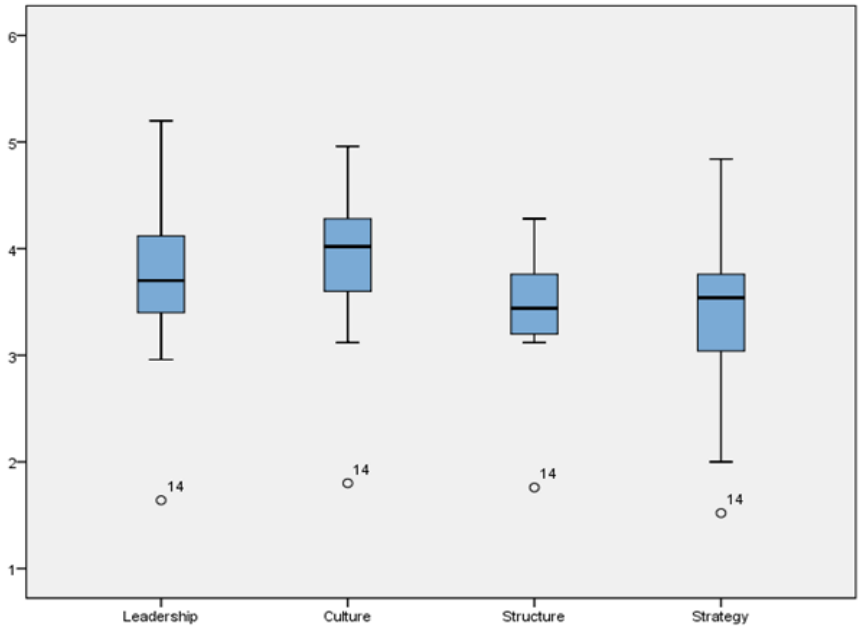
Appendix 2: Processed Juice Supplier Corporate Entrepreneurship Audit Results

Architecture Results (Percentage)



---------- = Average Combined Architecture Results = 60.3%

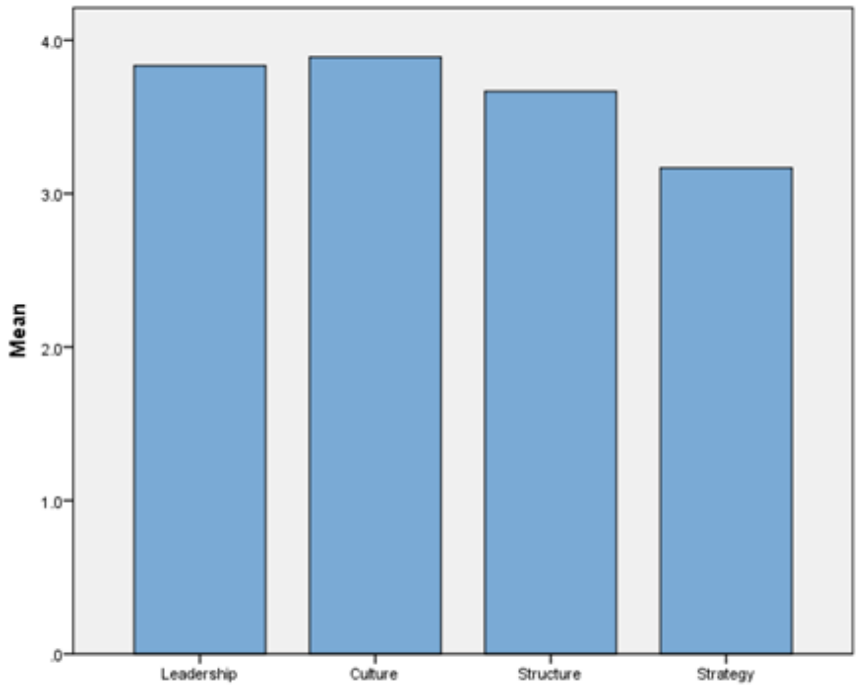
Cluster Analysis (Scores 0-6)



Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Leadership	18	1.6	5.2	3.760	.7856
Culture	18	1.8	5.0	3.909	.7292
Structure	18	1.8	4.3	3.413	.5174
Strategy	18	1.5	4.8	3.382	.8141
Valid N (listwise)	18				

Architecture Results (Mean)



Frequencies

Statistics

		Leadership	Culture	Structure	Strategy
N	Valid	18	18	18	18
	Missing	0	0	0	0

Frequency Table

Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	1	5.6	5.6	5.6
	3.0	5	27.8	27.8	33.3
	4.0	8	44.4	44.4	77.8
	5.0	4	22.2	22.2	100.0
	Total	18	100.0	100.0	

Culture

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	1	5.6	5.6	5.6
	3.0	3	16.7	16.7	22.2
	4.0	11	61.1	61.1	83.3
	5.0	3	16.7	16.7	100.0
	Total	18	100.0	100.0	

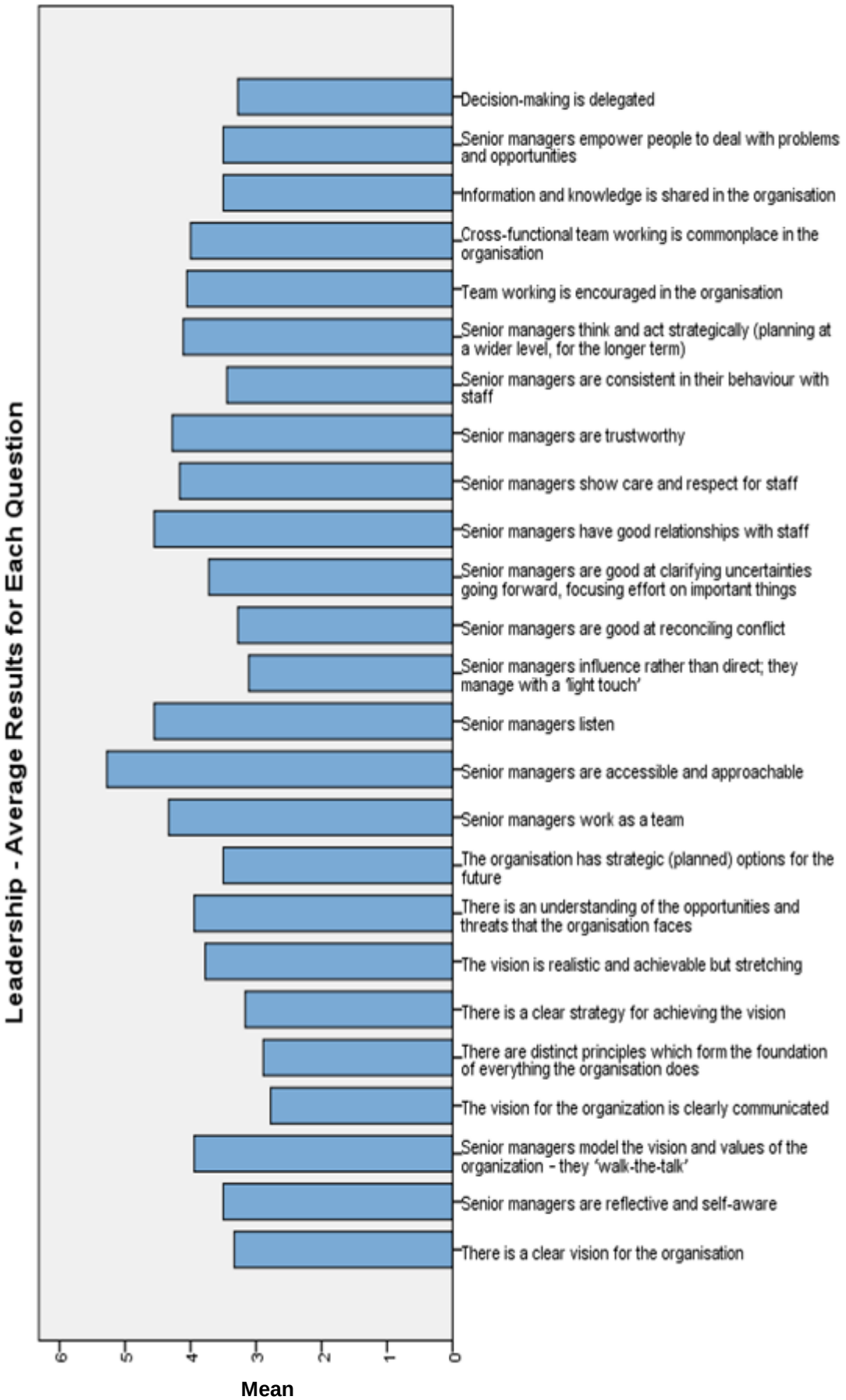
Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	1	5.6	5.6	5.6
	3.0	5	27.8	27.8	33.3
	4.0	11	61.1	61.1	94.4
	5.0	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

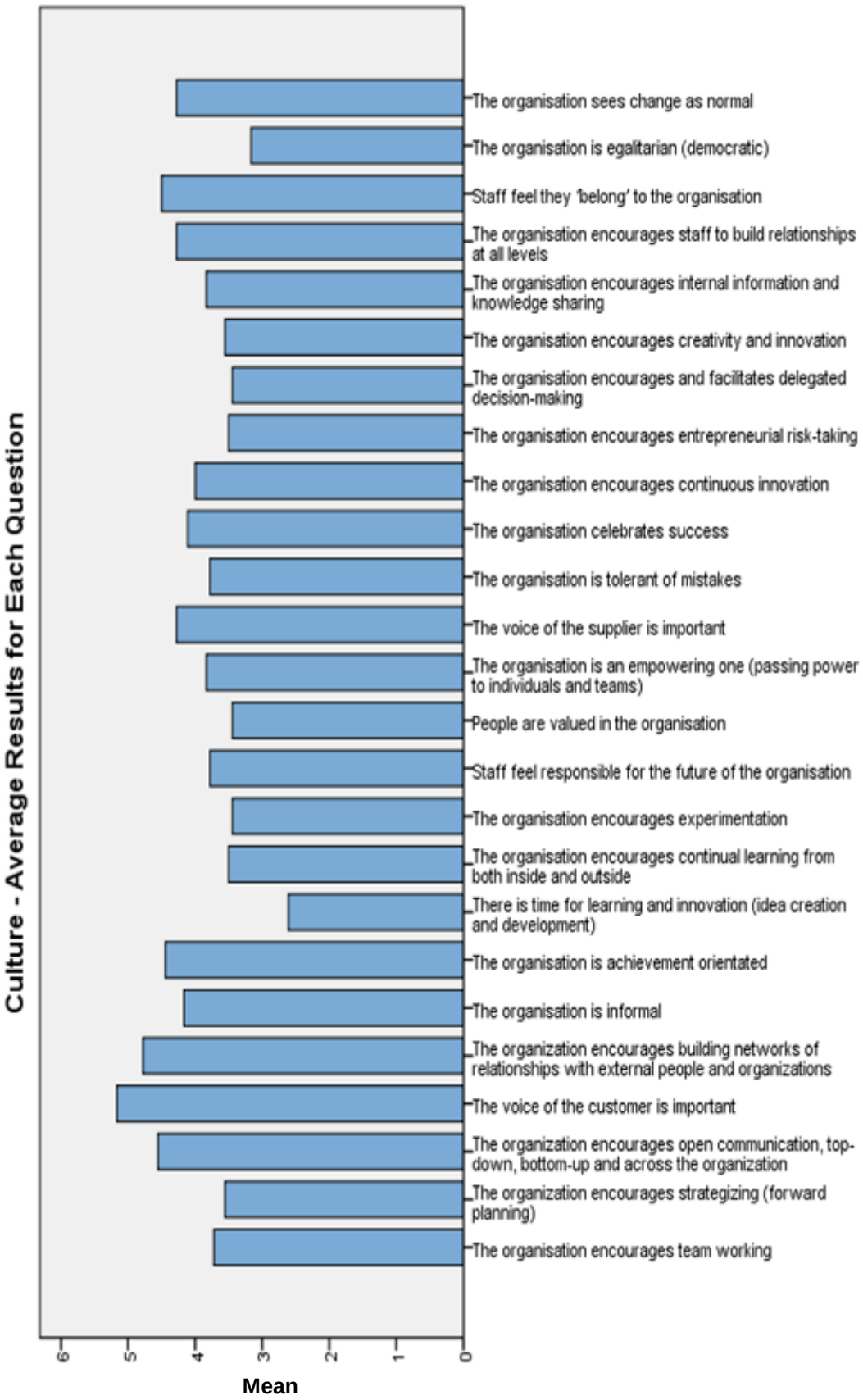
Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	1	5.6	5.6	5.6
	2.0	2	11.1	11.1	16.7
	3.0	9	50.0	50.0	66.7
	4.0	5	27.8	27.8	94.4
	5.0	1	5.6	5.6	100.0
	Total	18	100.0	100.0	

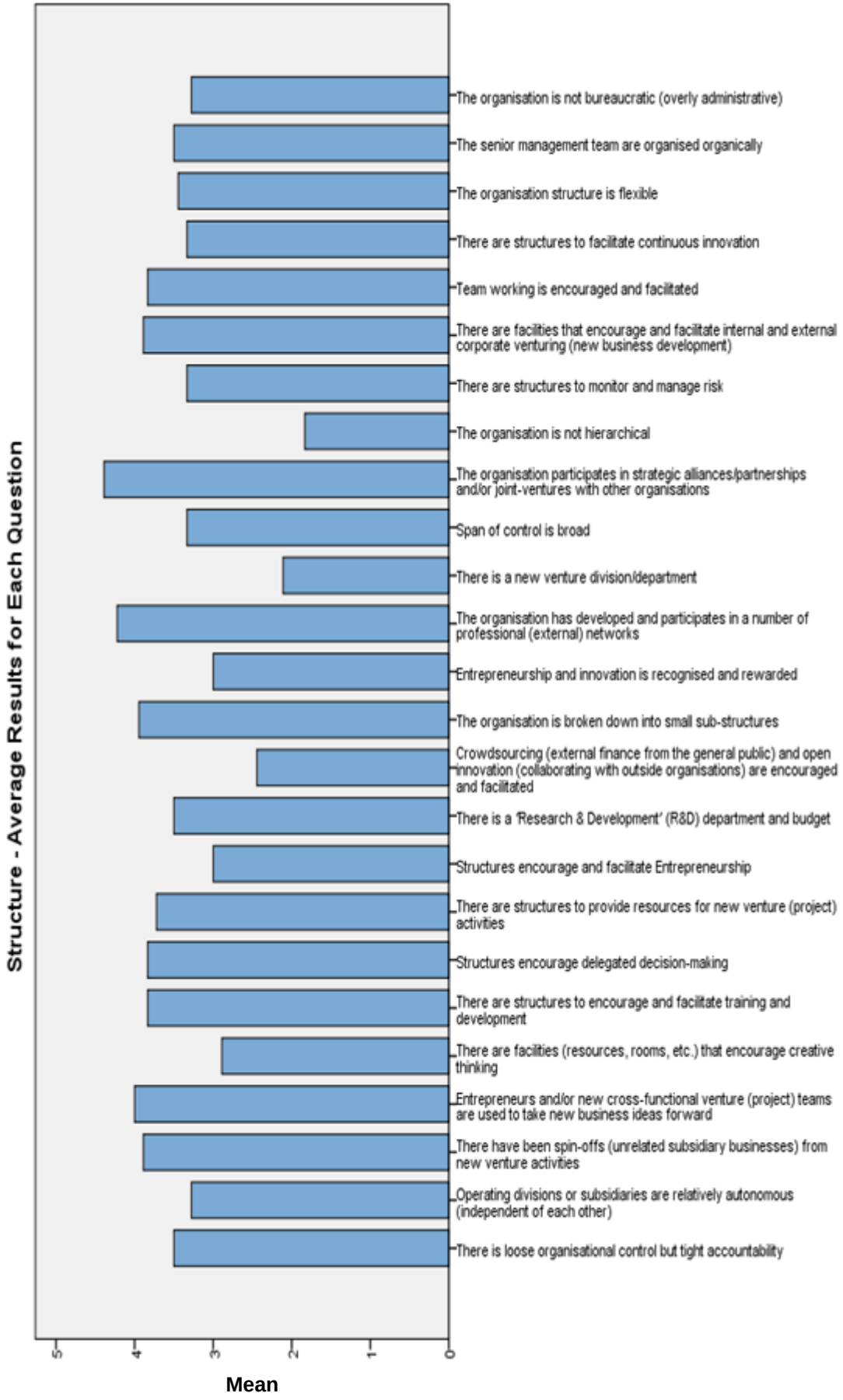
Leadership: Average results for each question



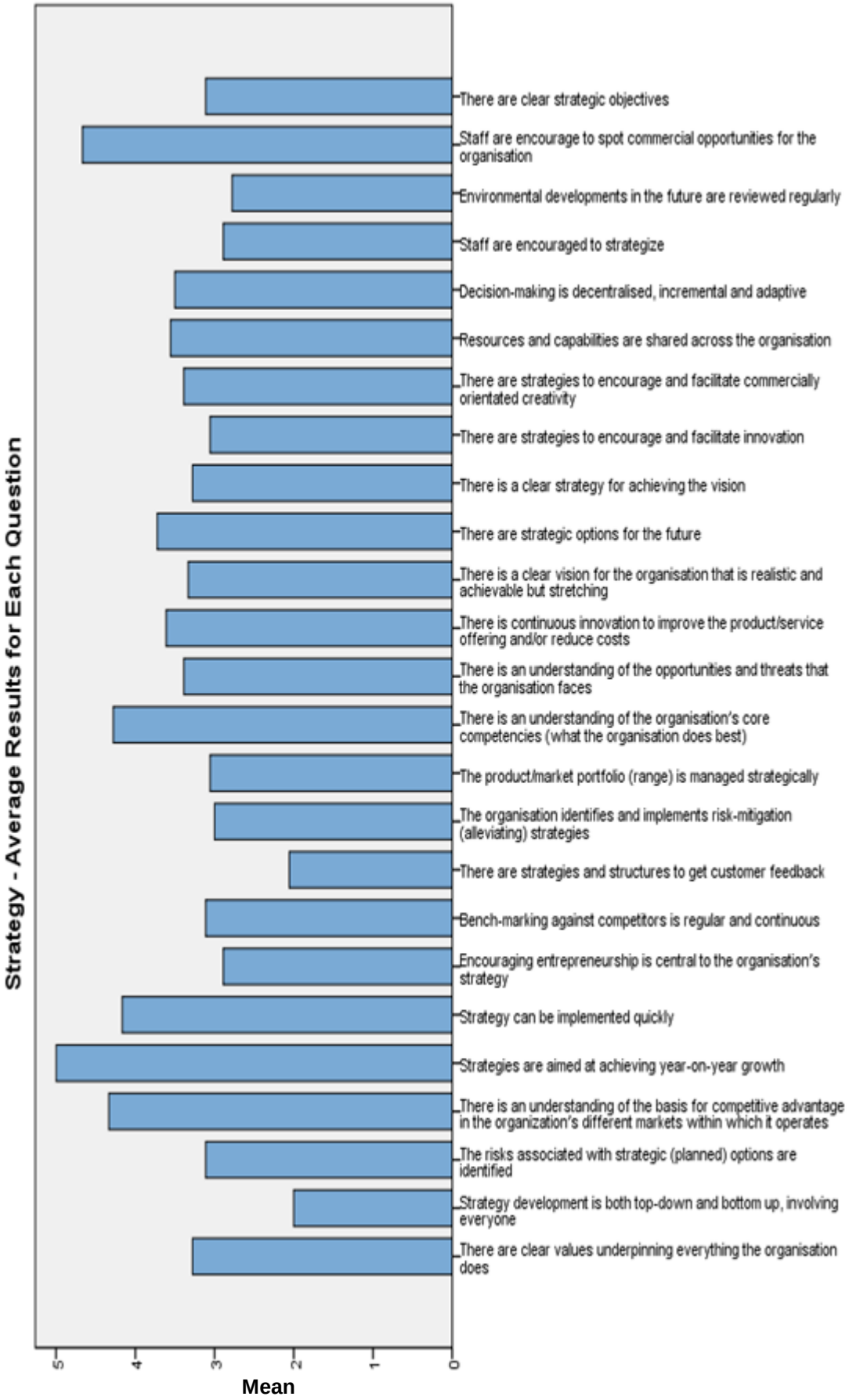
Culture: Average results for each question



Structure: Average results for each question

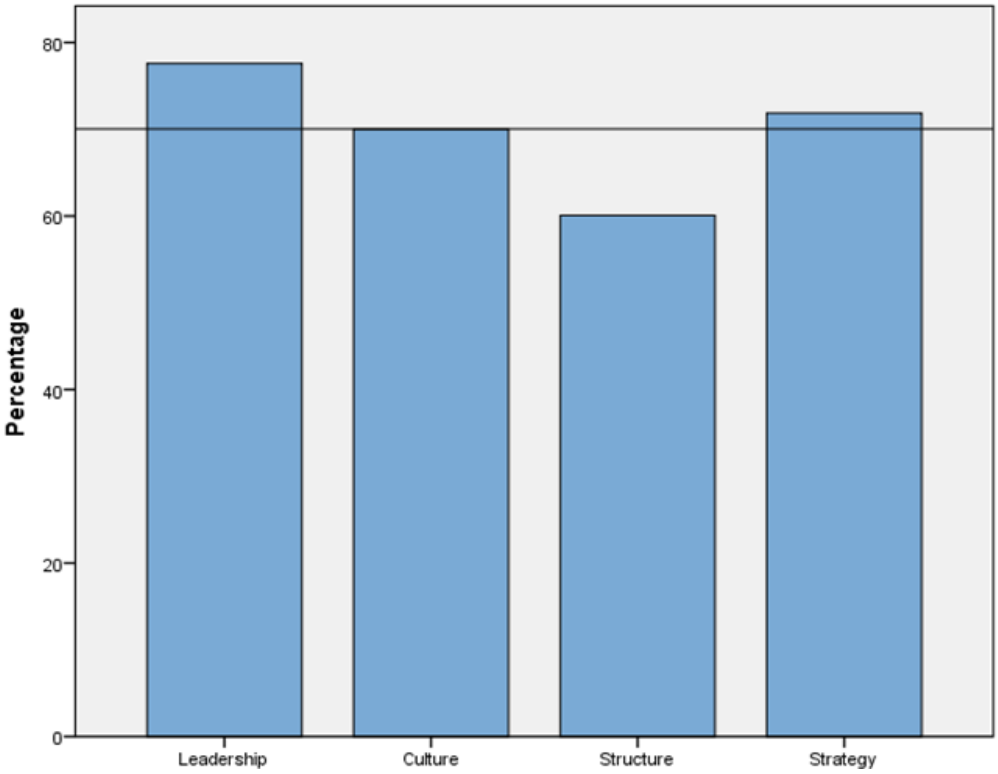


Strategy: Average results for each question



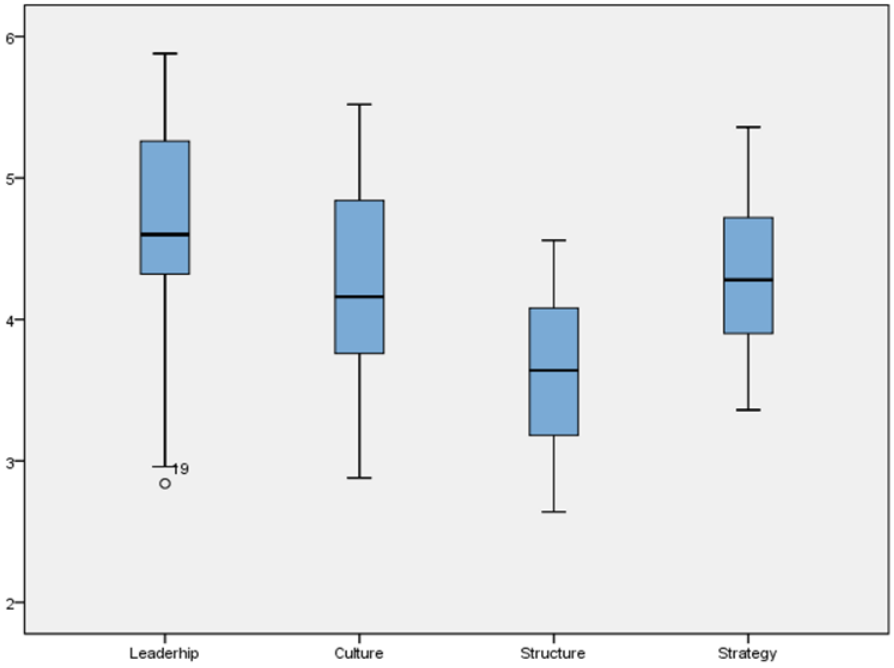
Appendix 3: Public House Operator Corporate Entrepreneurship Audit Results

Architecture Results (Percentage)



---------- = Average of the combined architecture results = 69.9%

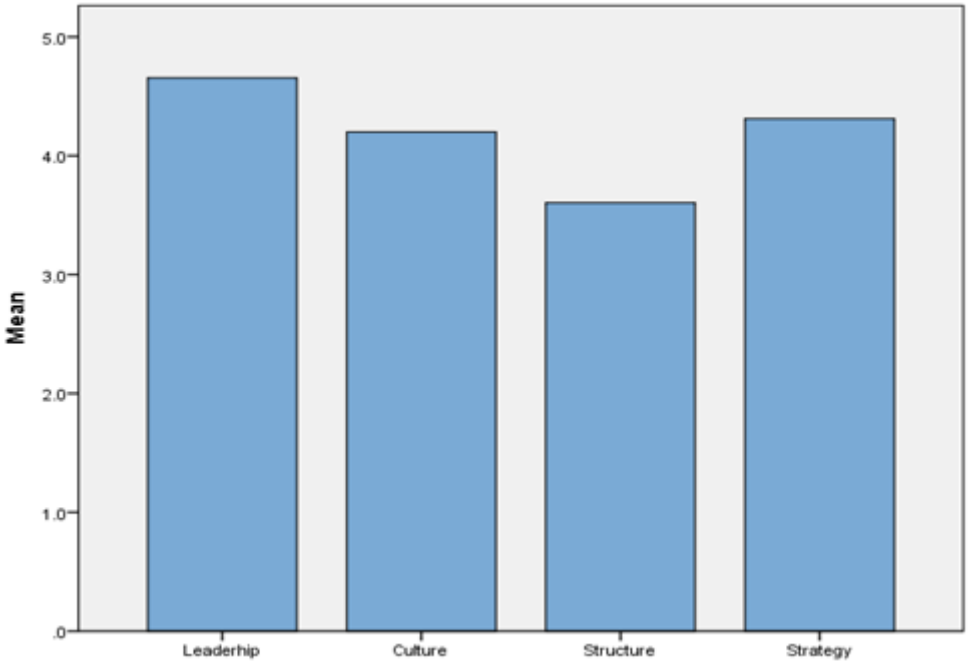
Cluster Analysis (Scores 0-6)



Descriptive Statistics (Architecture)

	N	Minimum	Maximum	Mean	Std. Deviation
Leadership	19	2.8	5.9	4.655	.8154
Culture	19	2.9	5.5	4.200	.7863
Structure	19	2.6	4.6	3.604	.5835
Strategy	19	3.4	5.4	4.312	.6225
Valid N (listwise)	19				

Architecture Results (Mean)



Frequencies

Statistics

		Leadership	Culture	Structure	Strategy
N	Valid	19	19	19	19
	Missing	0	0	0	0

Frequency Table

Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	2	10.5	10.5	10.5
	4	6	31.6	31.6	42.1
	5	9	47.4	47.4	89.5
	6	2	10.5	10.5	100.0
	Total	19	100.0	100.0	

Culture

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	4	21.1	21.1	21.1
	4	9	47.4	47.4	68.4
	5	5	26.3	26.3	94.7
	6	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

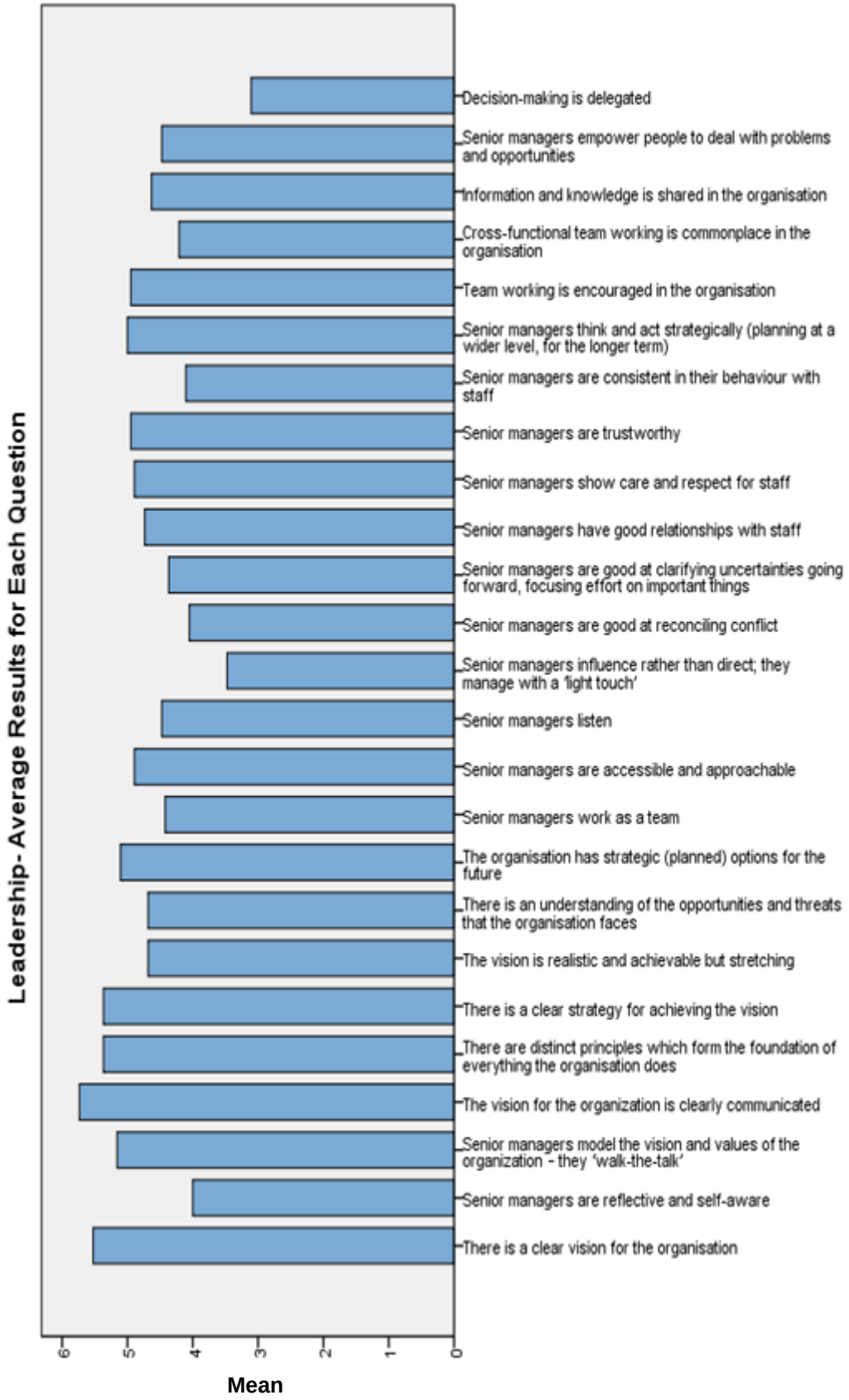
Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	8	42.1	42.1	42.1
	4	10	52.6	52.6	94.7
	5	1	5.3	5.3	100.0
	Total	19	100.0	100.0	

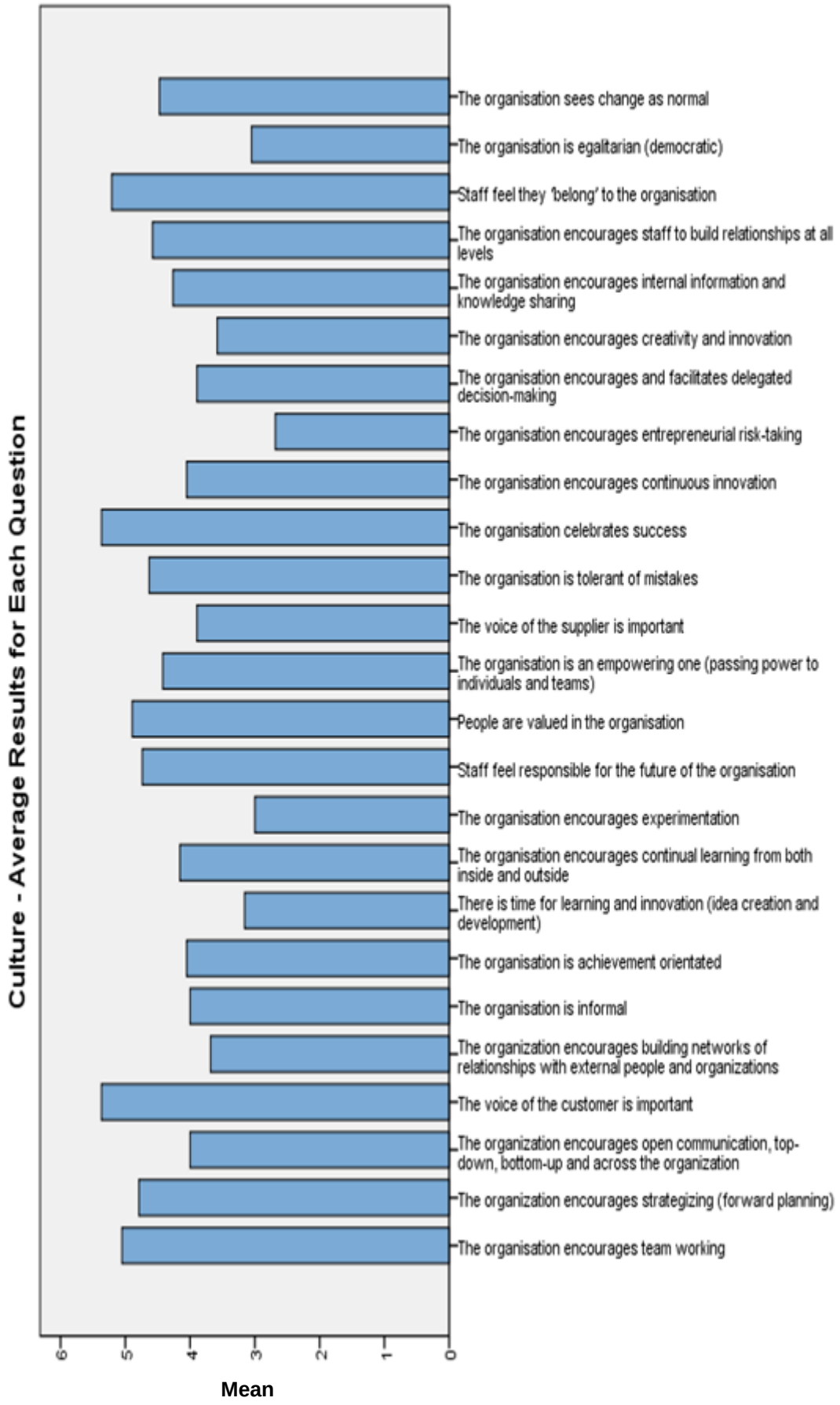
Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	3	15.8	15.8	15.8
	4	9	47.4	47.4	63.2
	5	7	36.8	36.8	100.0
	Total	19	100.0	100.0	

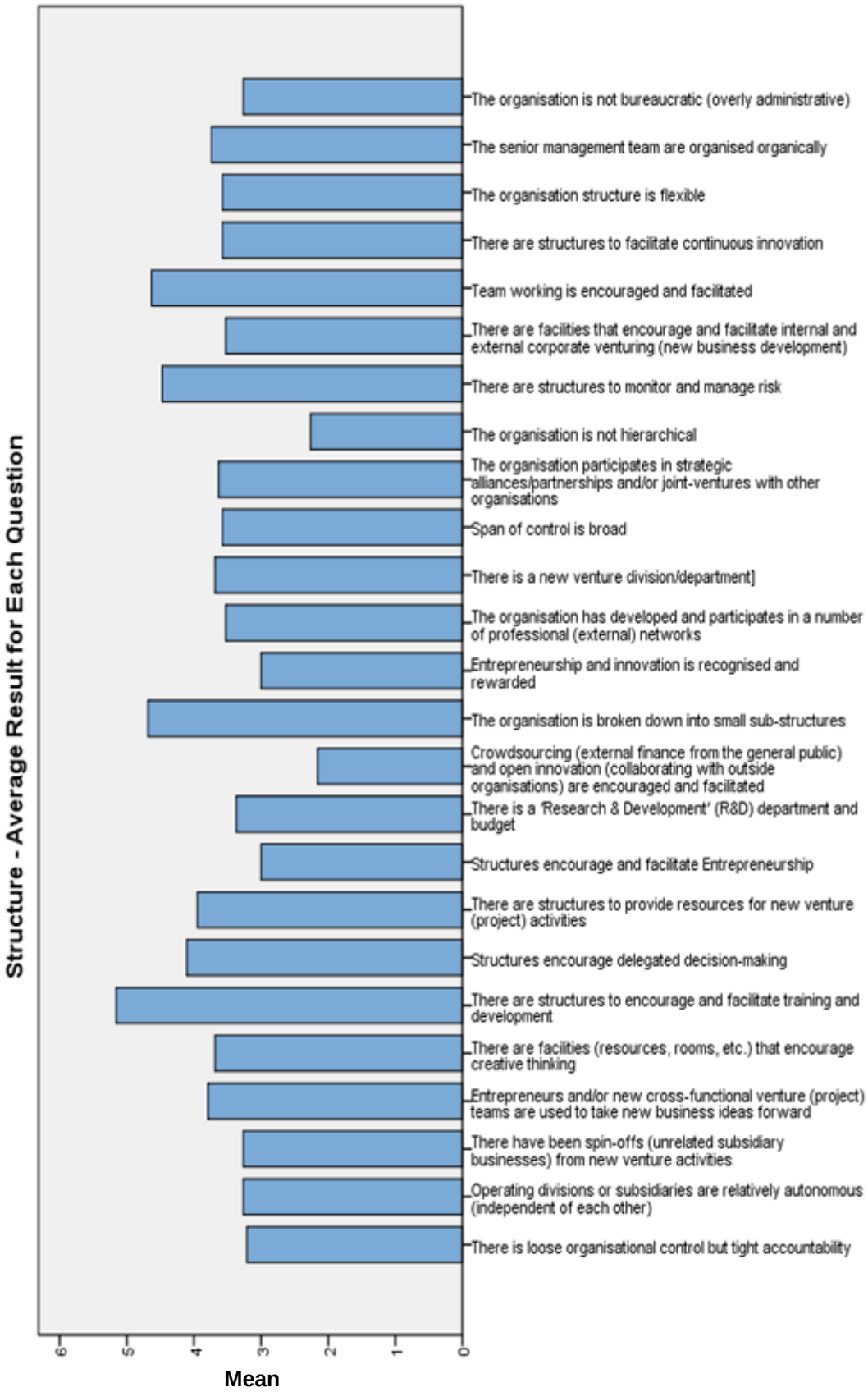
Leadership: Average results for each question



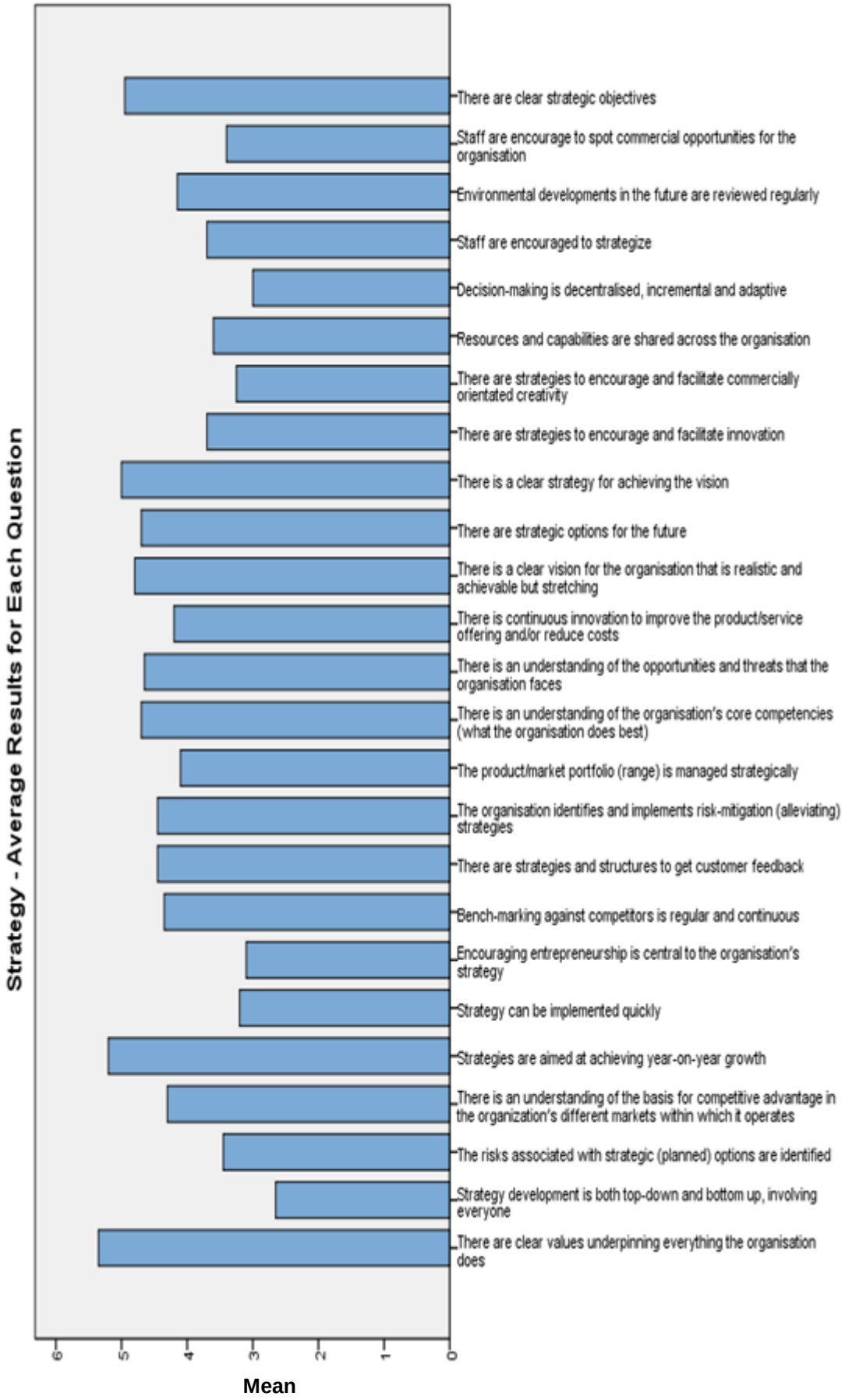
Culture: Average results for each question



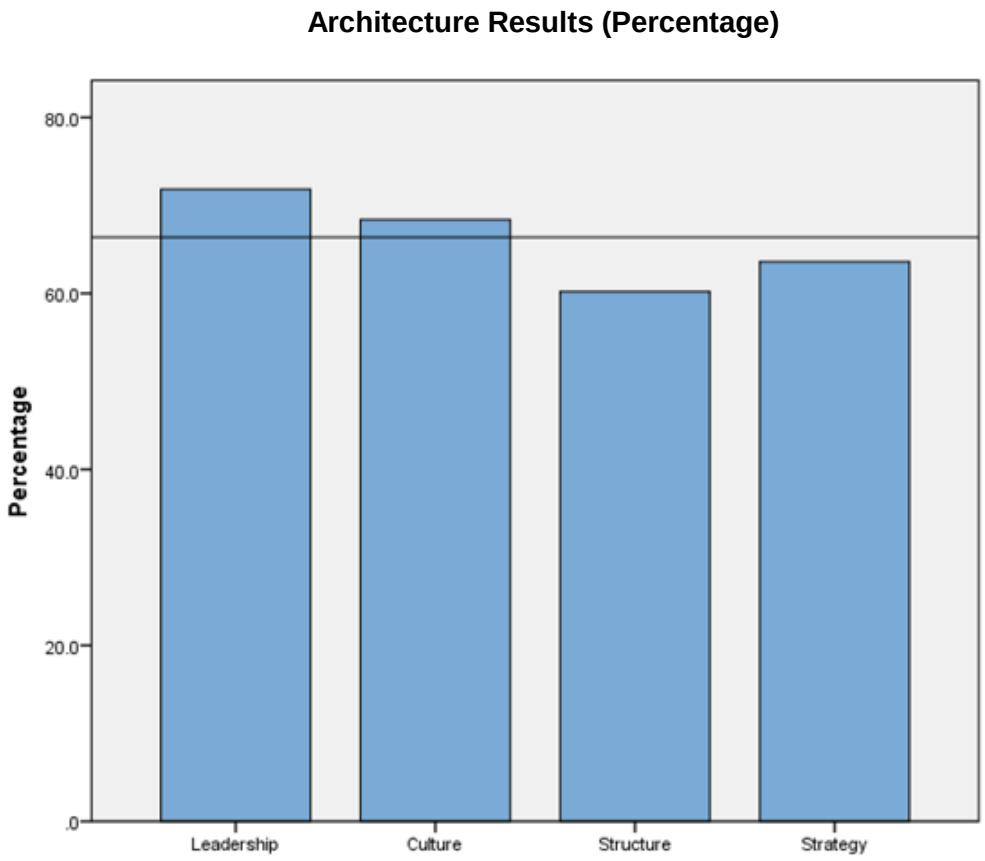
Structure: Average results for each question



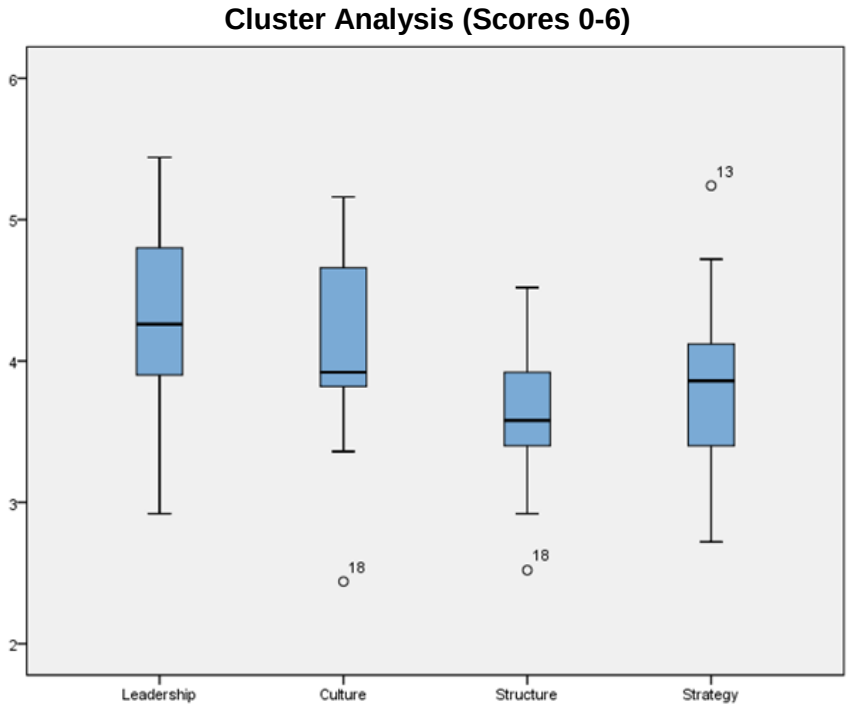
Strategy: Average results for each question



Appendix 4: Regional Wildlife Organisation Corporate Entrepreneurship Audit Results



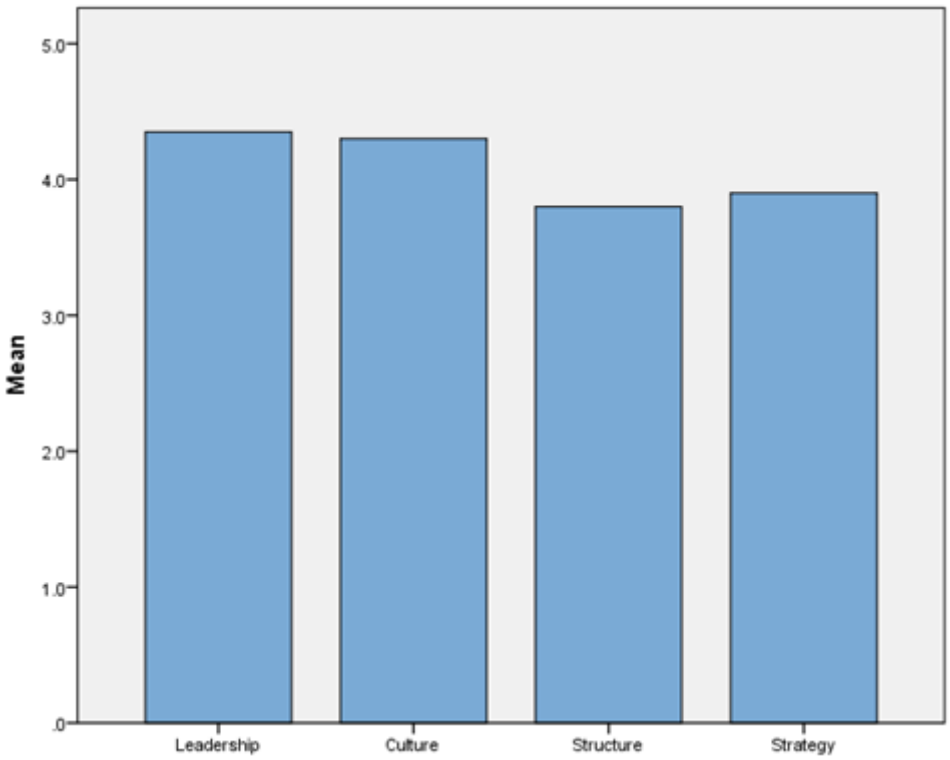
---------- = Average Combined Architecture Results = 66.0%



Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Leadership	20	2.9	5.4	4.310	.6726
Culture	20	2.4	5.2	4.104	.6496
Structure	20	2.5	4.5	3.612	.5051
Strategy	20	2.7	5.2	3.816	.5884
Valid N	20				

Architecture Results (Mean)



Frequencies

Statistics

		Leadership	Culture	Structure	Strategy
N	Valid	20	20	20	20
	Missing	0	0	0	0

Frequency Table

Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	2	10.0	10.0	10.0
	4.0	9	45.0	45.0	55.0
	5.0	9	45.0	45.0	100.0
	Total	20	100.0	100.0	

Culture

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	2	10.0	10.0	10.0
	4.0	10	50.0	50.0	60.0
	5.0	8	40.0	40.0	100.0
	Total	20	100.0	100.0	

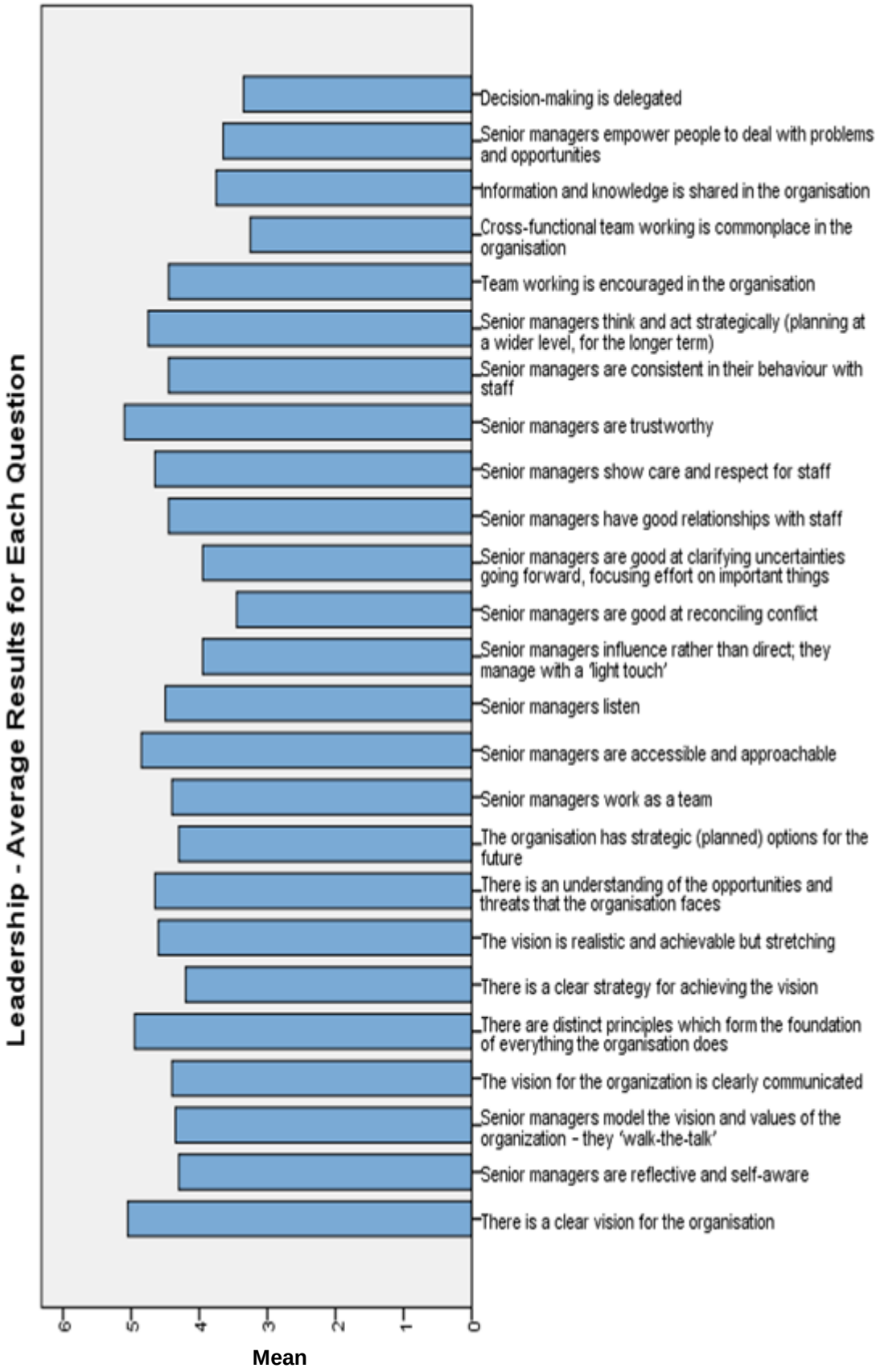
Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	6	30.0	30.0	30.0
	4.0	12	60.0	60.0	90.0
	5.0	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

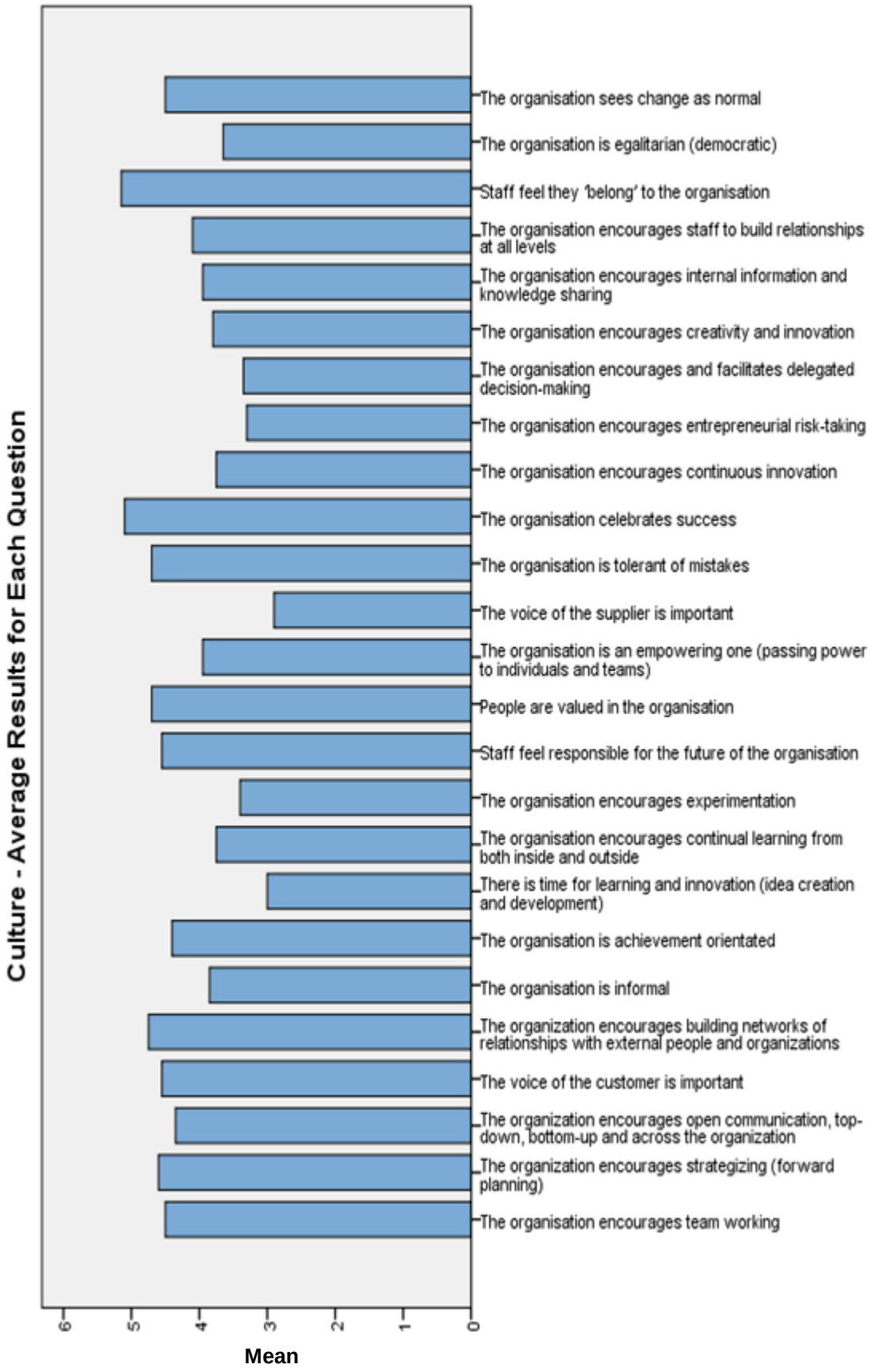
Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.0	4	20.0	20.0	20.0
	4.0	14	70.0	70.0	90.0
	5.0	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

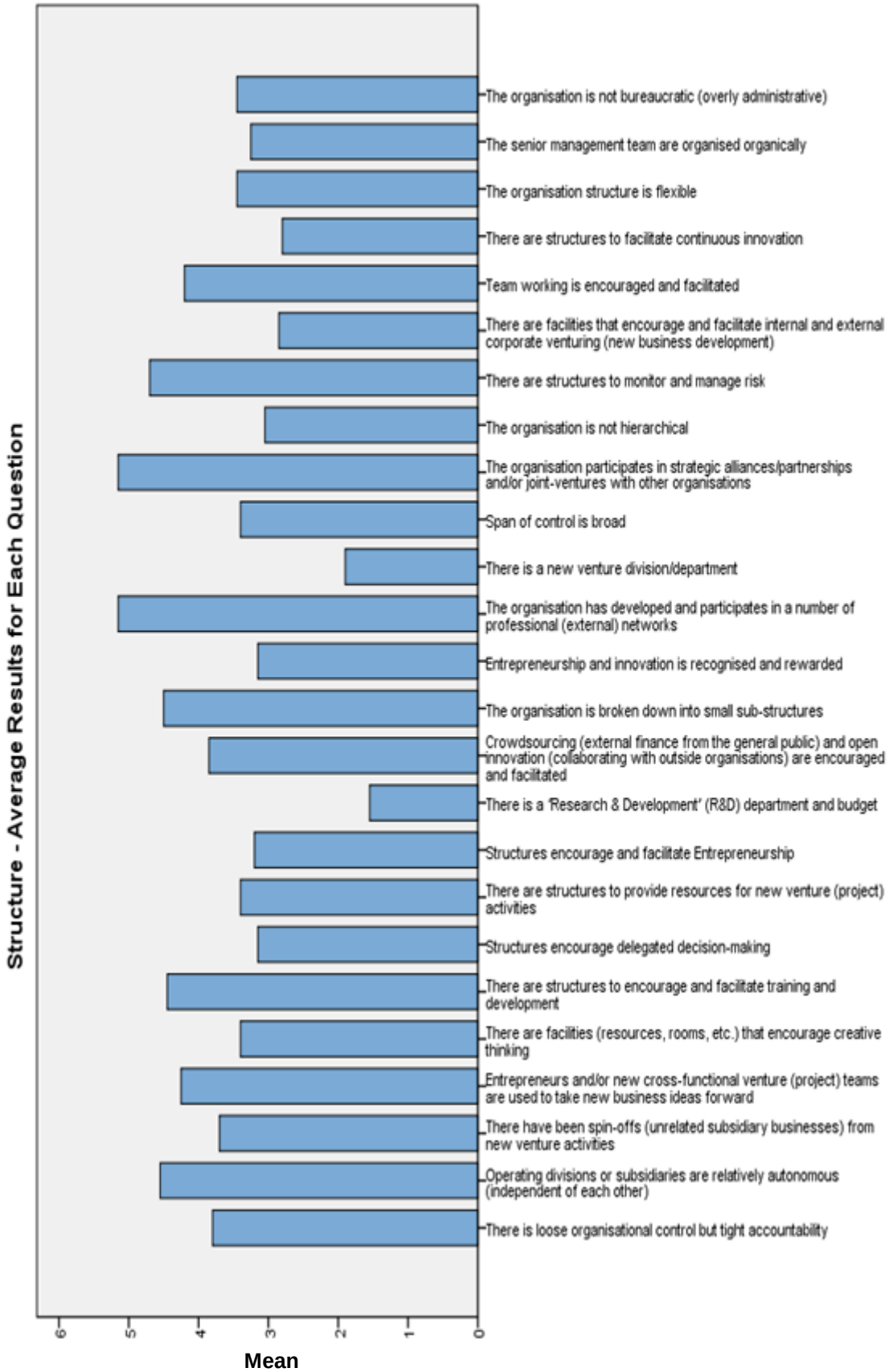
Leadership: Average results for each question



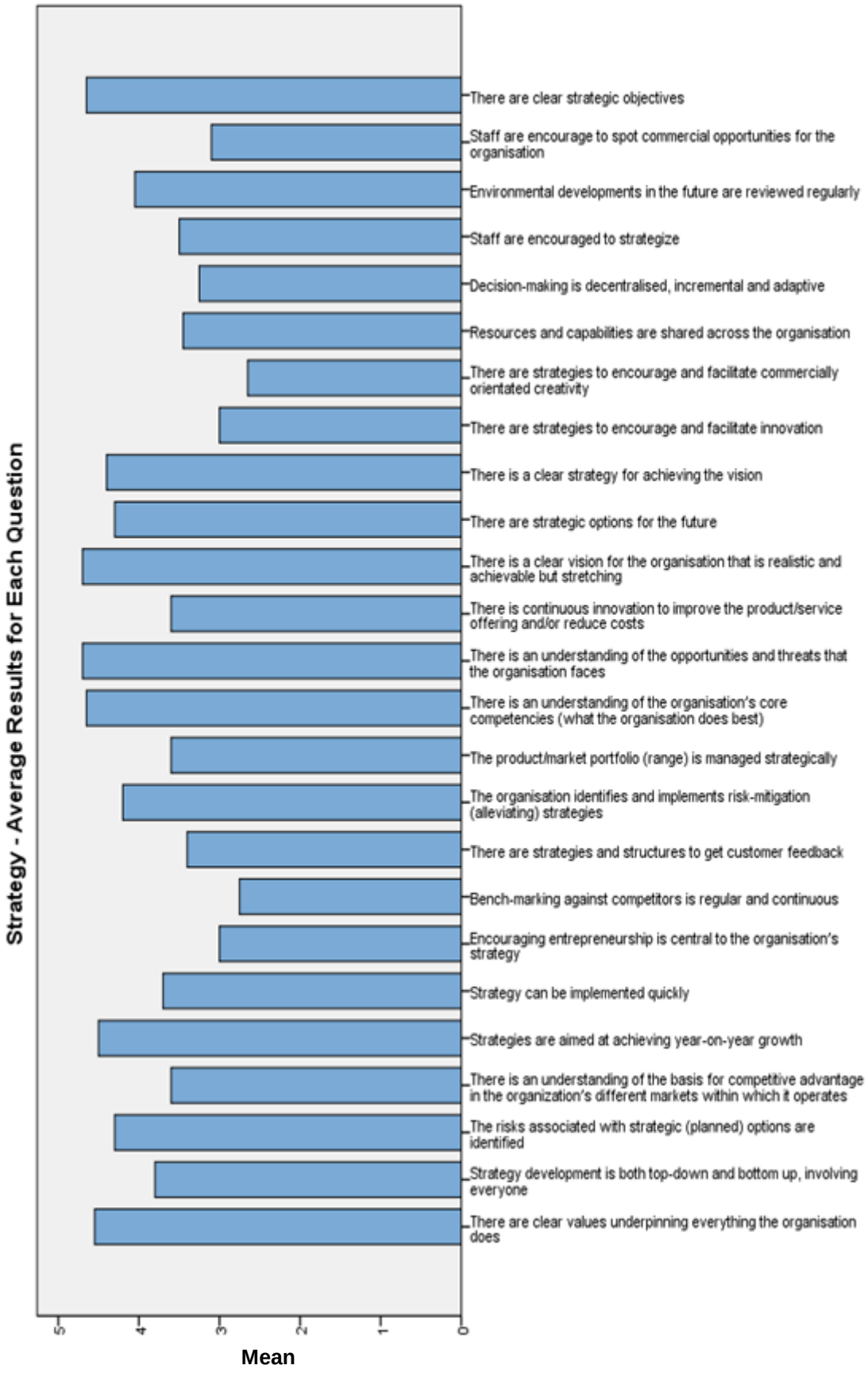
Culture: Average results for each question



Structure: Average results for each question

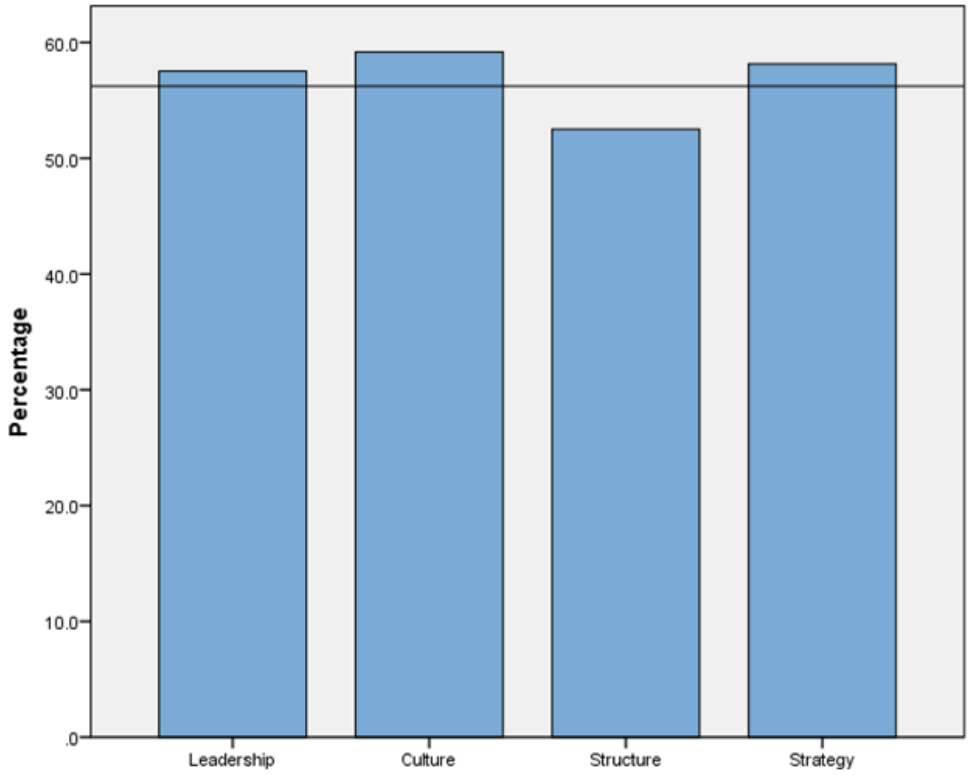


Strategy: Average results for each question



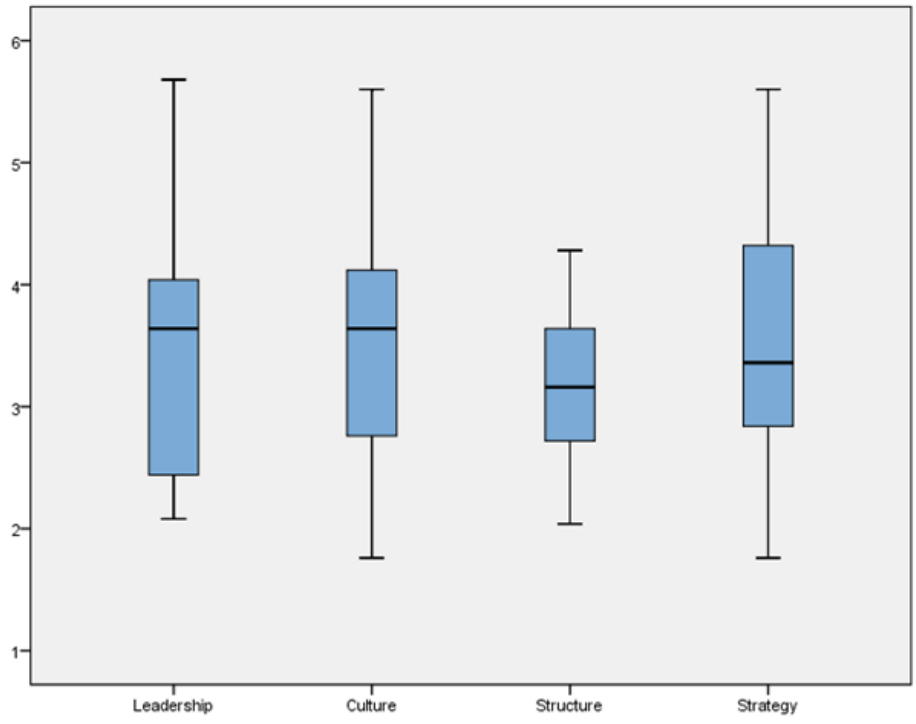
Appendix 5: Area Development Agency Corporate Entrepreneurship Audit Results

Architecture Results (Percentage)



---------- = Average of the combined architecture results = 56.8%

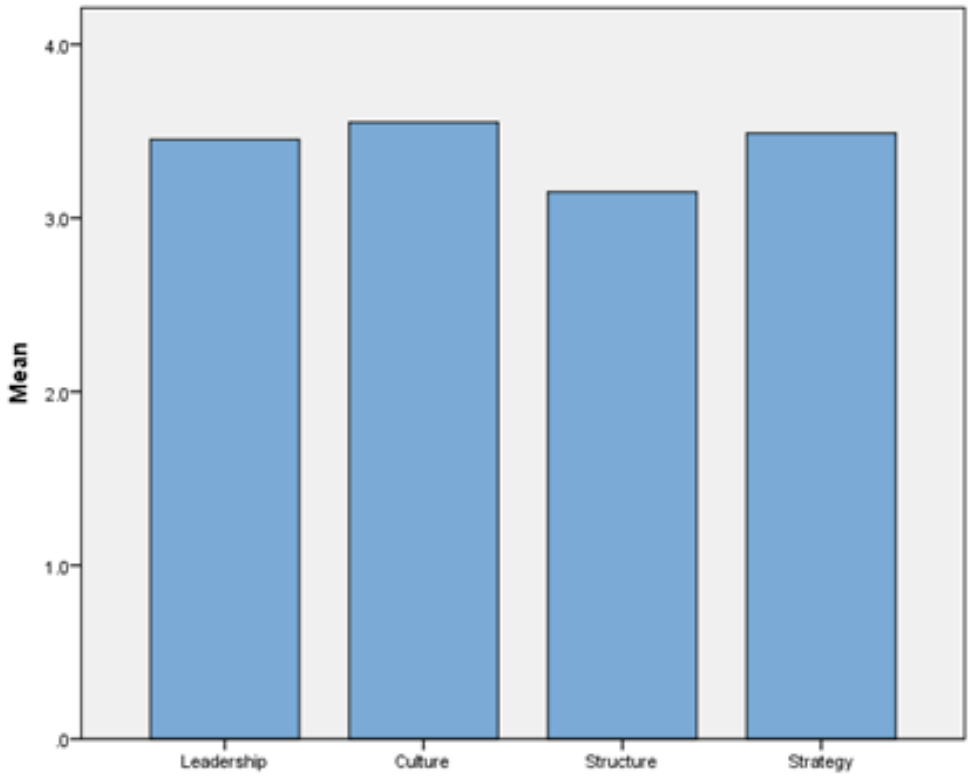
Cluster Analysis (Scores 0-6)



Descriptive Statistics (Architecture)

	N	Minimum	Maximum	Mean	Std. Deviation
Leadership	13	2.1	5.7	3.452	1.1252
Culture	13	1.8	5.6	3.551	1.0035
Structure	13	2.0	4.3	3.151	.7960
Strategy	13	1.8	5.6	3.489	1.1411
Valid N (listwise)	13				

Architecture Results (Mean)



Frequencies

Statistics

		Leadership	Culture	Structure	Strategy
N	Valid	13	13	13	13
	Missing	0	0	0	0

Frequency Table

Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	1	7.7	7.7	7.7
	2.0	3	23.1	23.1	30.8
	3.0	3	23.1	23.1	53.8
	4.0	3	23.1	23.1	76.9
	5.0	2	15.4	15.4	92.3
	6.0	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

Culture

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	1	7.7	7.7	7.7
	3.0	4	30.8	30.8	38.5
	4.0	6	46.2	46.2	84.6
	5.0	1	7.7	7.7	92.3
	6.0	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

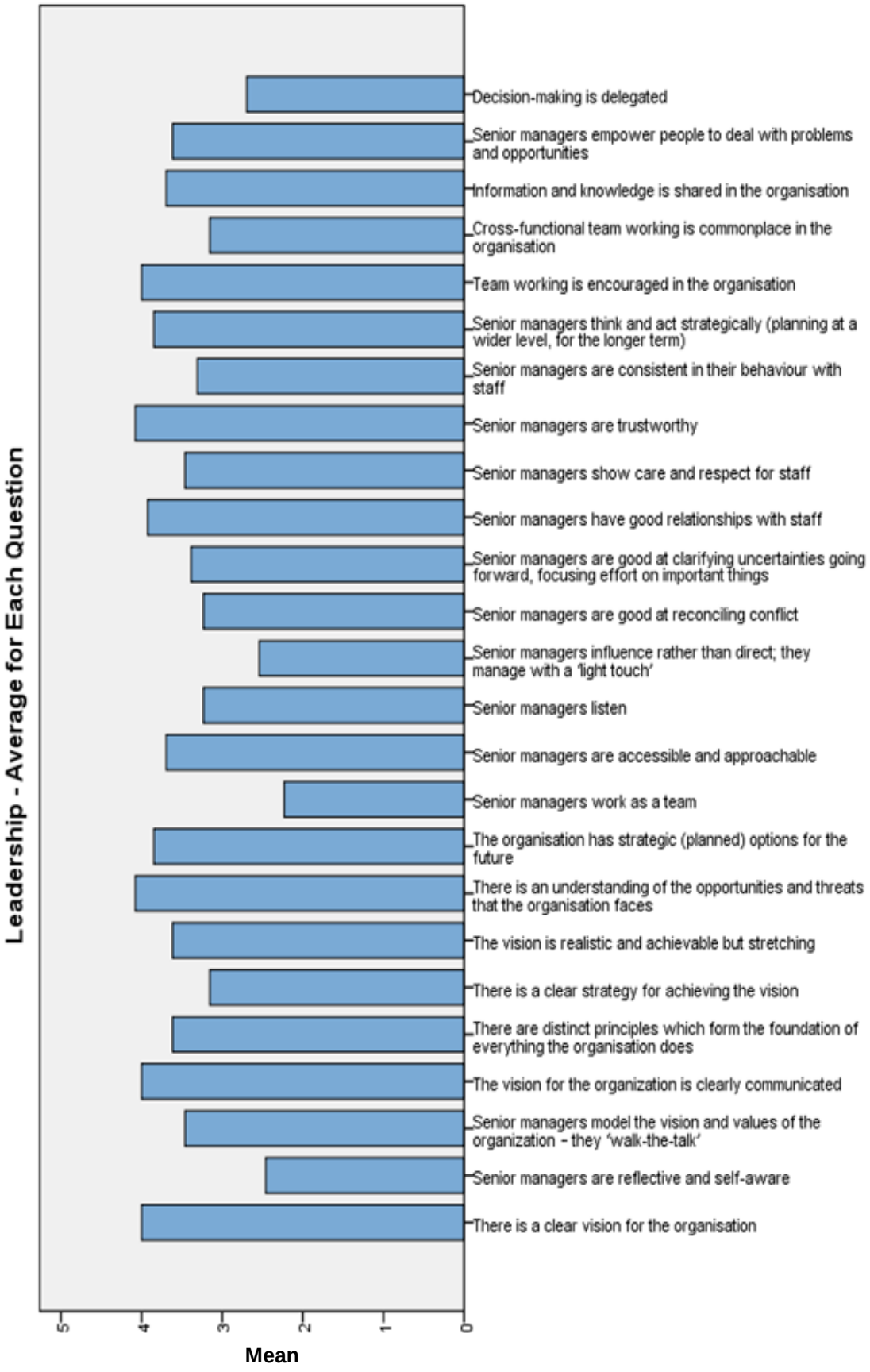
Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	1	7.7	7.7	7.7
	2.0	2	15.4	15.4	23.1
	3.0	4	30.8	30.8	53.8
	4.0	4	30.8	30.8	84.6
	5.0	1	7.7	7.7	92.3
	6.0	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

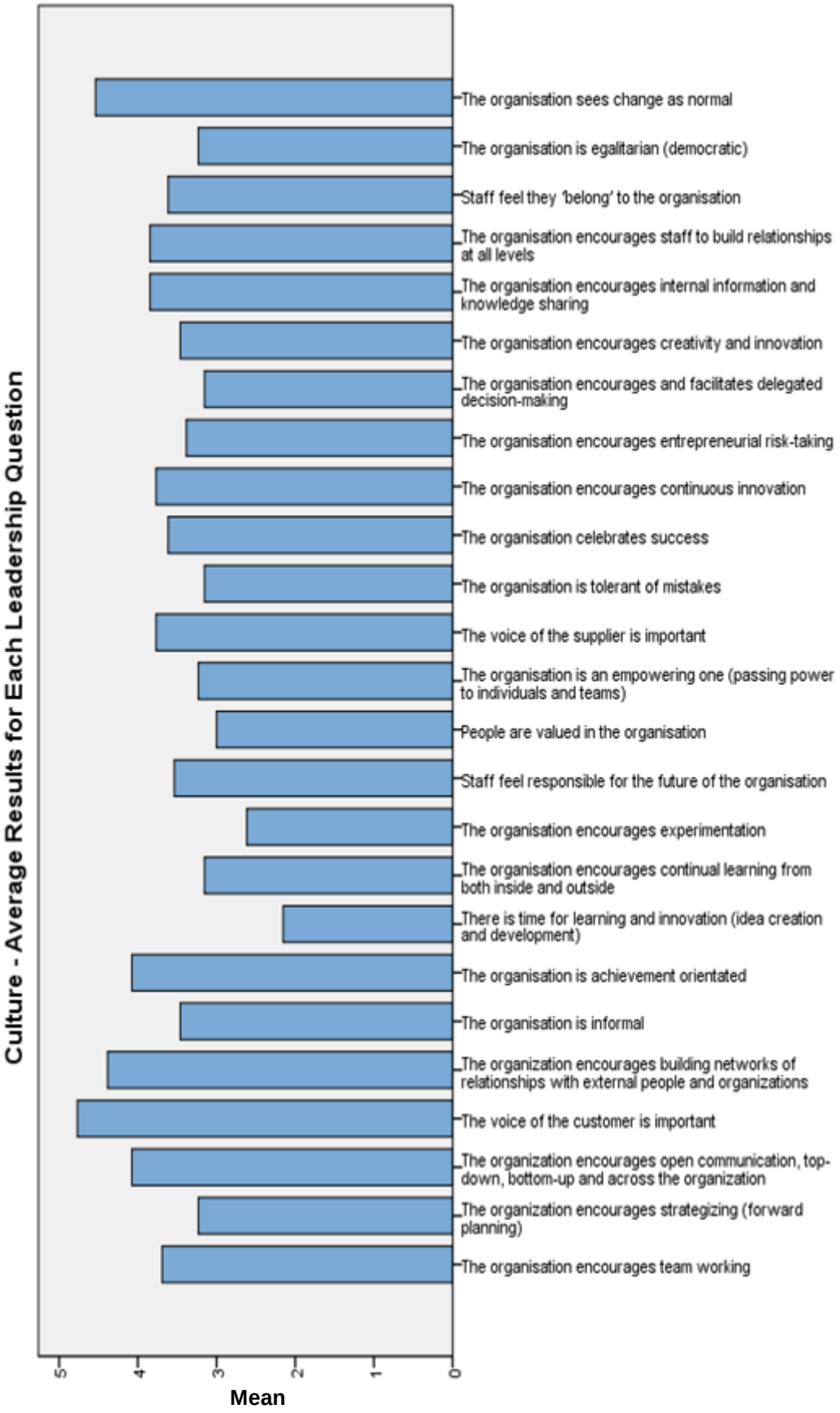
Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	2	15.4	15.4	15.4
	2.0	1	7.7	7.7	23.1
	3.0	3	23.1	23.1	46.2
	4.0	3	23.1	23.1	69.2
	5.0	3	23.1	23.1	92.3
	6.0	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

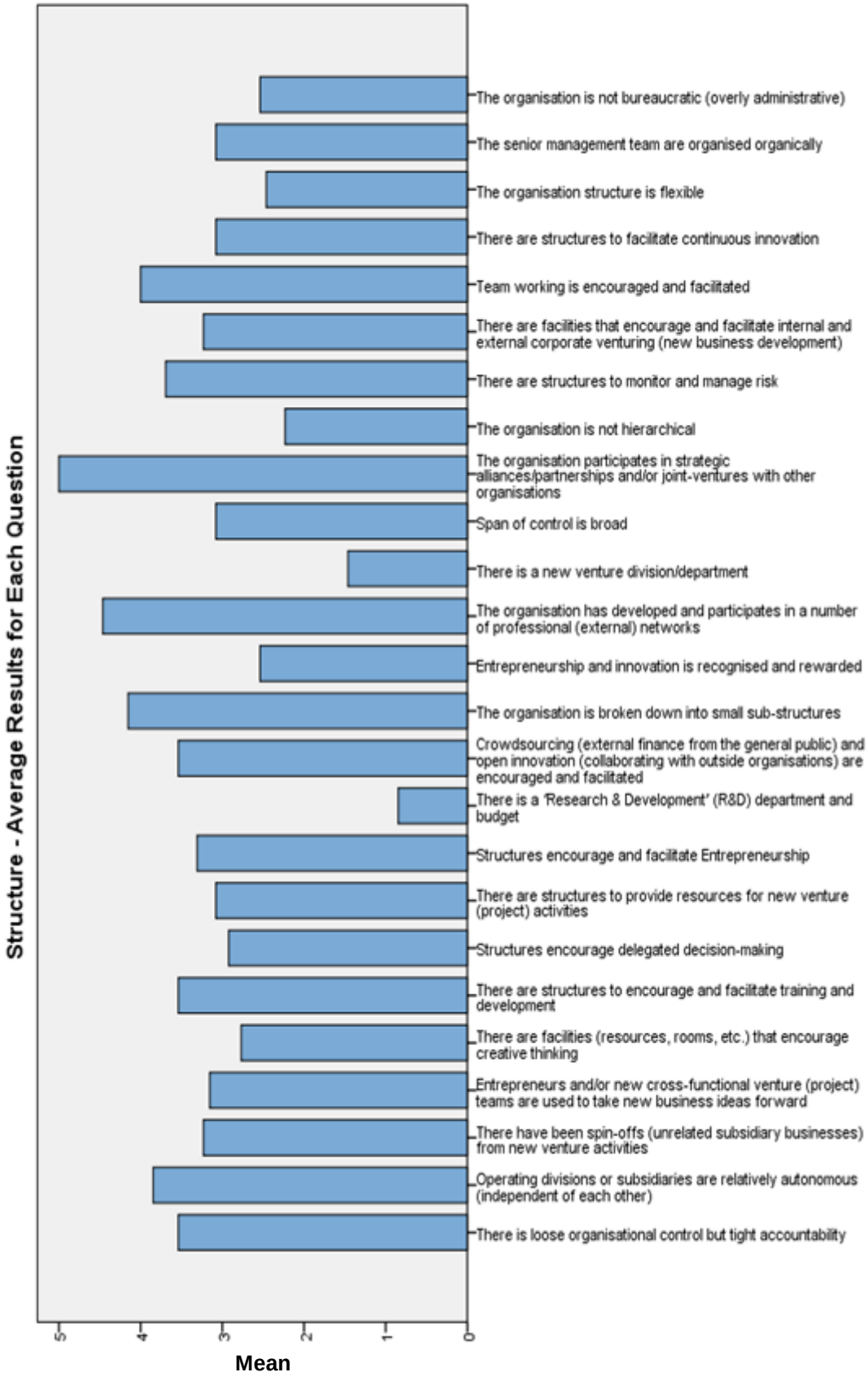
Leadership: Average results for each question



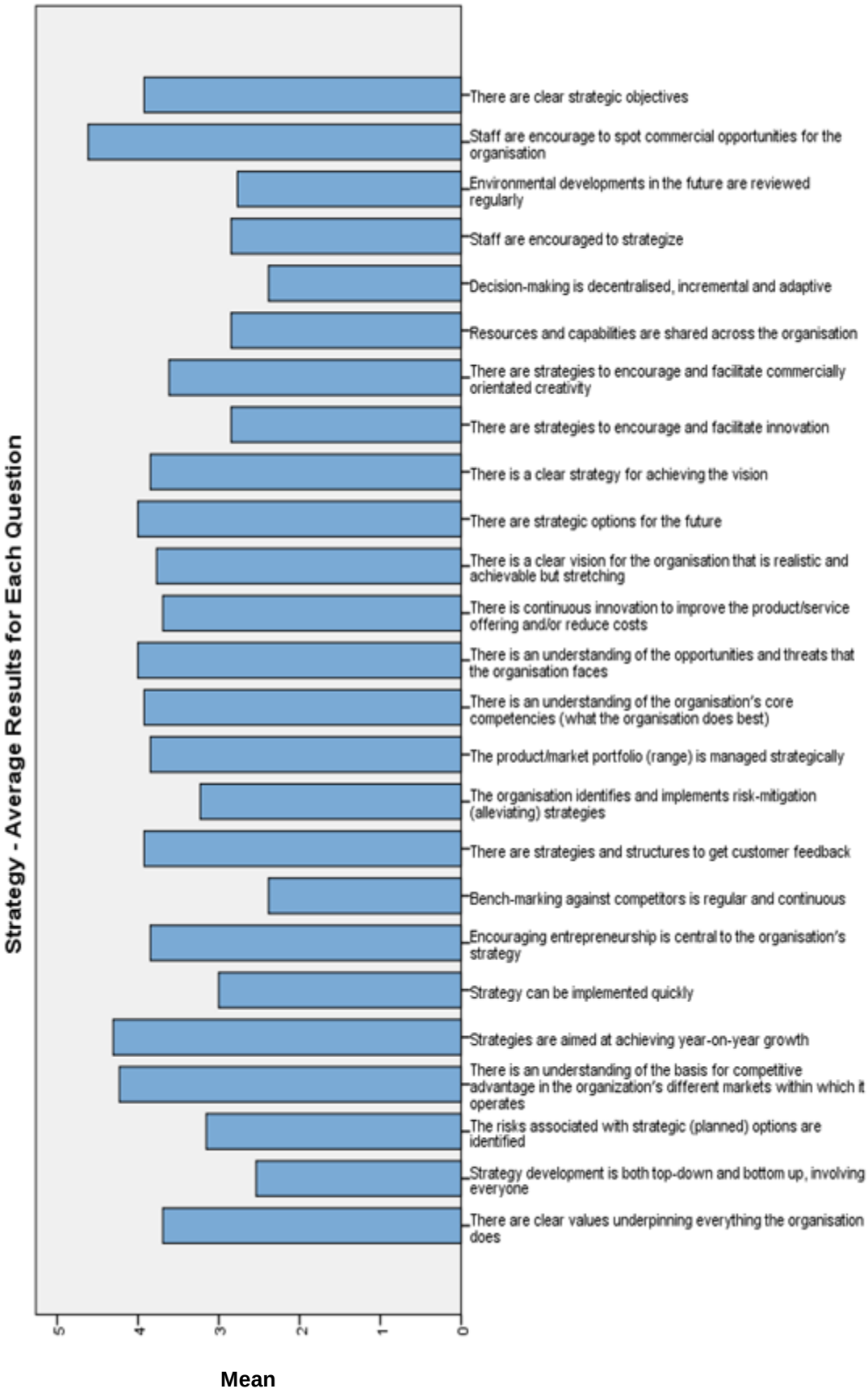
Culture: Average results for each question



Structure: Average results for each question

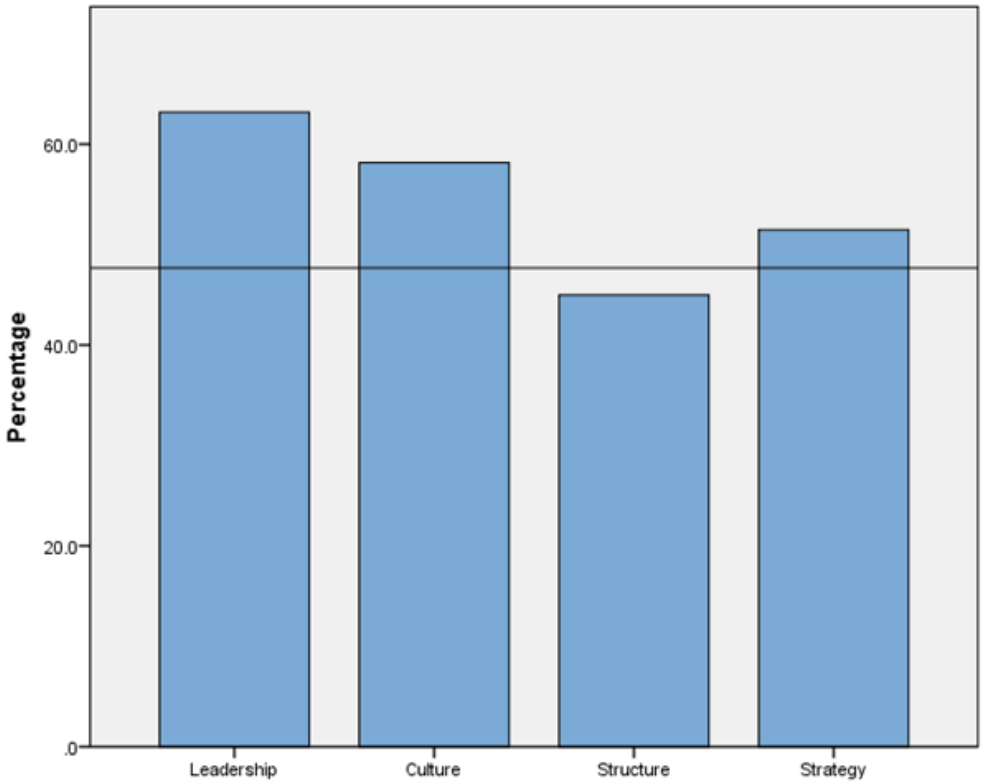


Strategy: Average results for each question



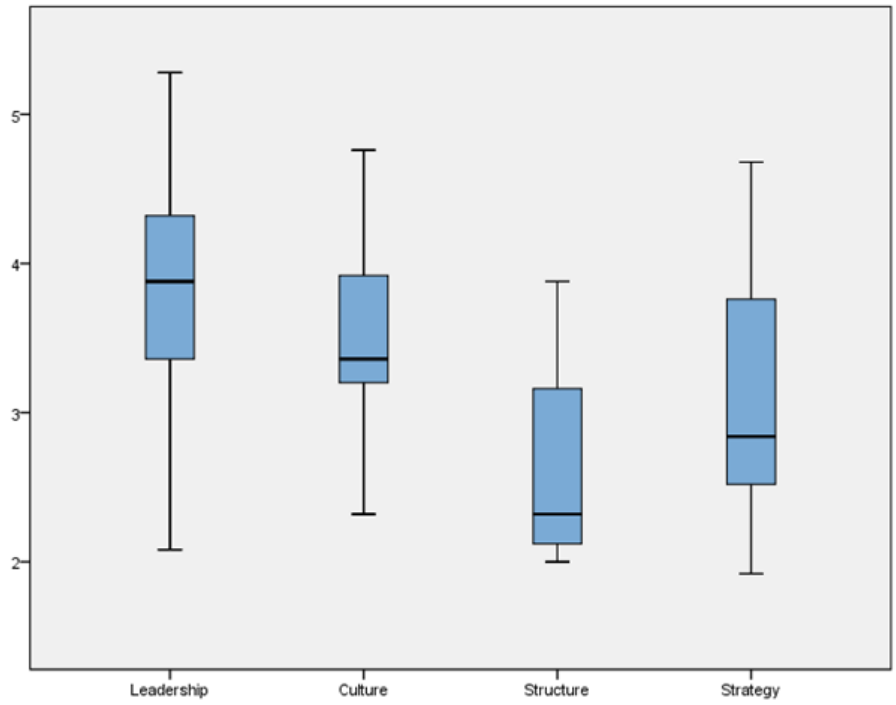
Appendix 6: An Area Division of a Government Department Corporate Entrepreneurship Audit Results

Architecture Results (Percentage)



---------- = Average of the combined architecture results = 54.4%

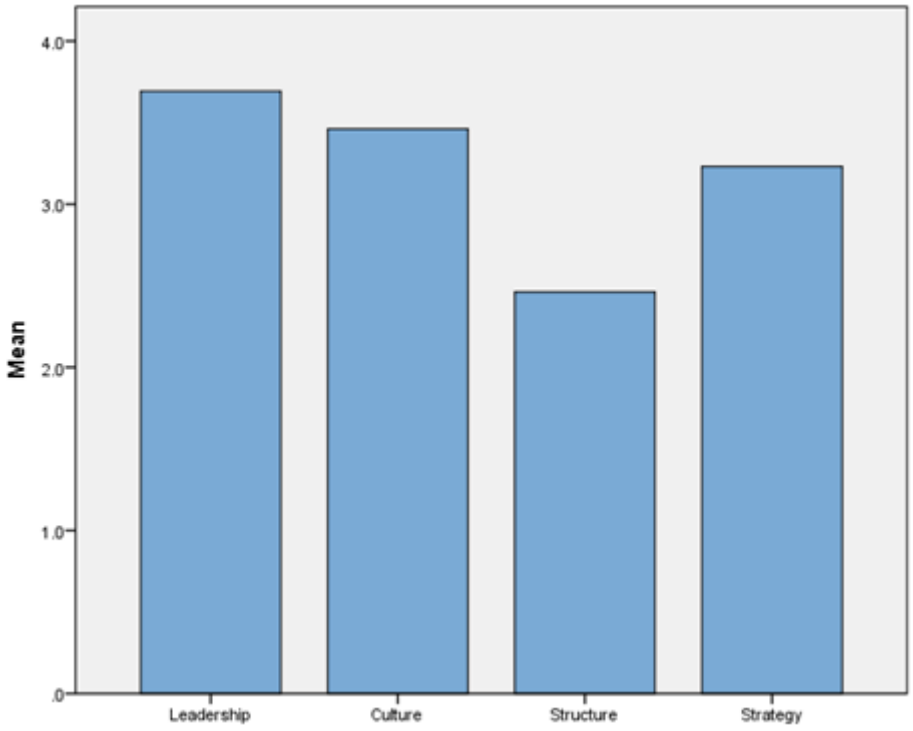
Cluster Analysis (Scores 0-6)



Descriptive Statistics (Architecture)

	N	Minimum	Maximum	Mean	Std. Deviation
Leadership	13	2.1	5.3	3.791	.8660
Culture	13	2.3	4.8	3.489	.7243
Structure	13	2.0	3.9	2.698	.6850
Strategy	13	1.9	4.7	3.089	.7982
Valid N (listwise)	13				

Architecture Results (Mean)



Frequencies

Statistics

		Leadership	Culture	Structure	Strategy
N	Valid	13	13	13	13
	Missing	0	0	0	0

Frequency Table

Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	2	15.4	15.4	15.4
	3.0	2	15.4	15.4	30.8
	4.0	7	53.8	53.8	84.6
	5.0	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

Culture

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	2	15.4	15.4	15.4
	3.0	5	38.5	38.5	53.8
	4.0	4	30.8	30.8	84.6
	5.0	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

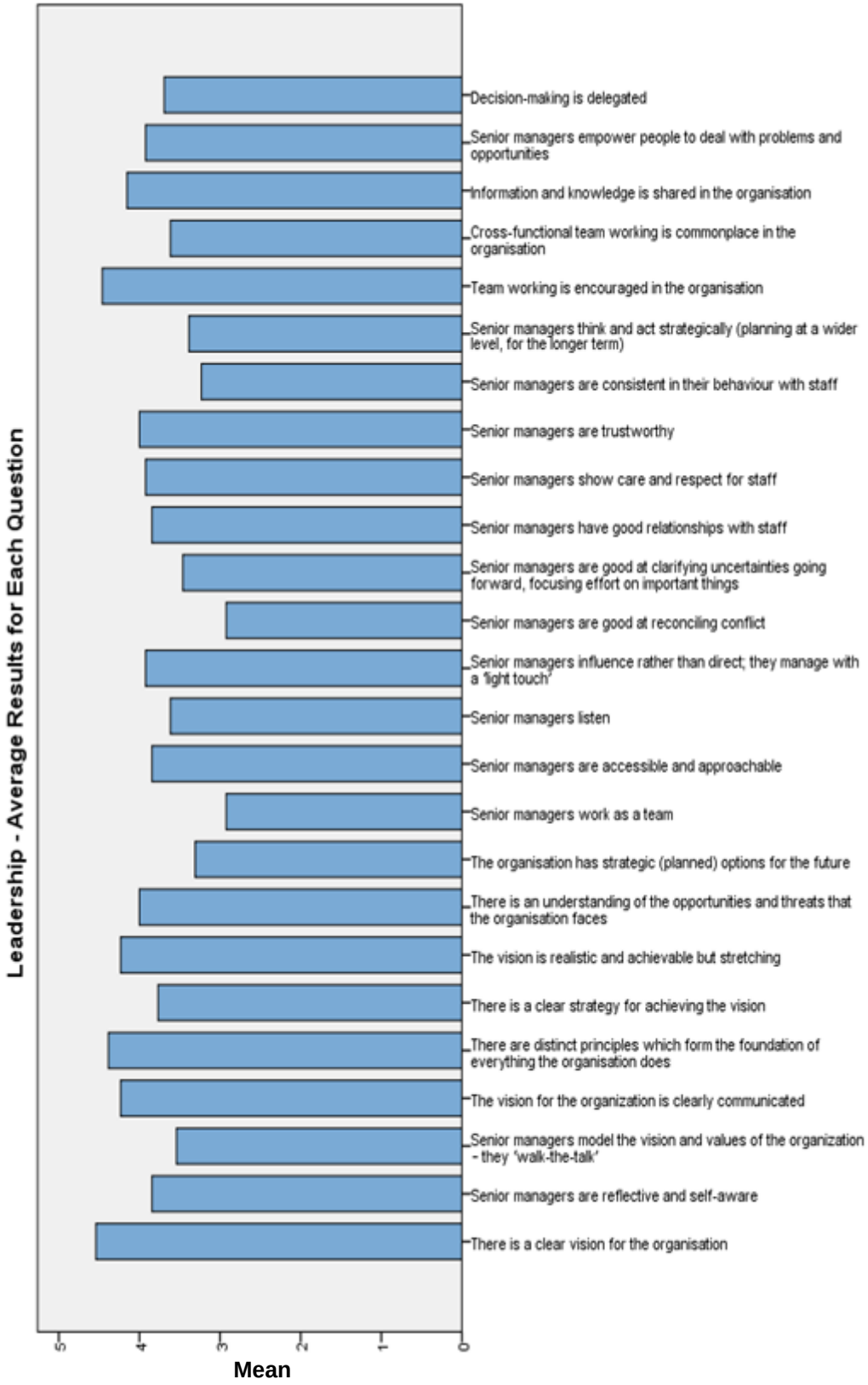
Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.0	2	15.4	15.4	15.4
	2.0	5	38.5	38.5	53.8
	3.0	4	30.8	30.8	84.6
	4.0	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

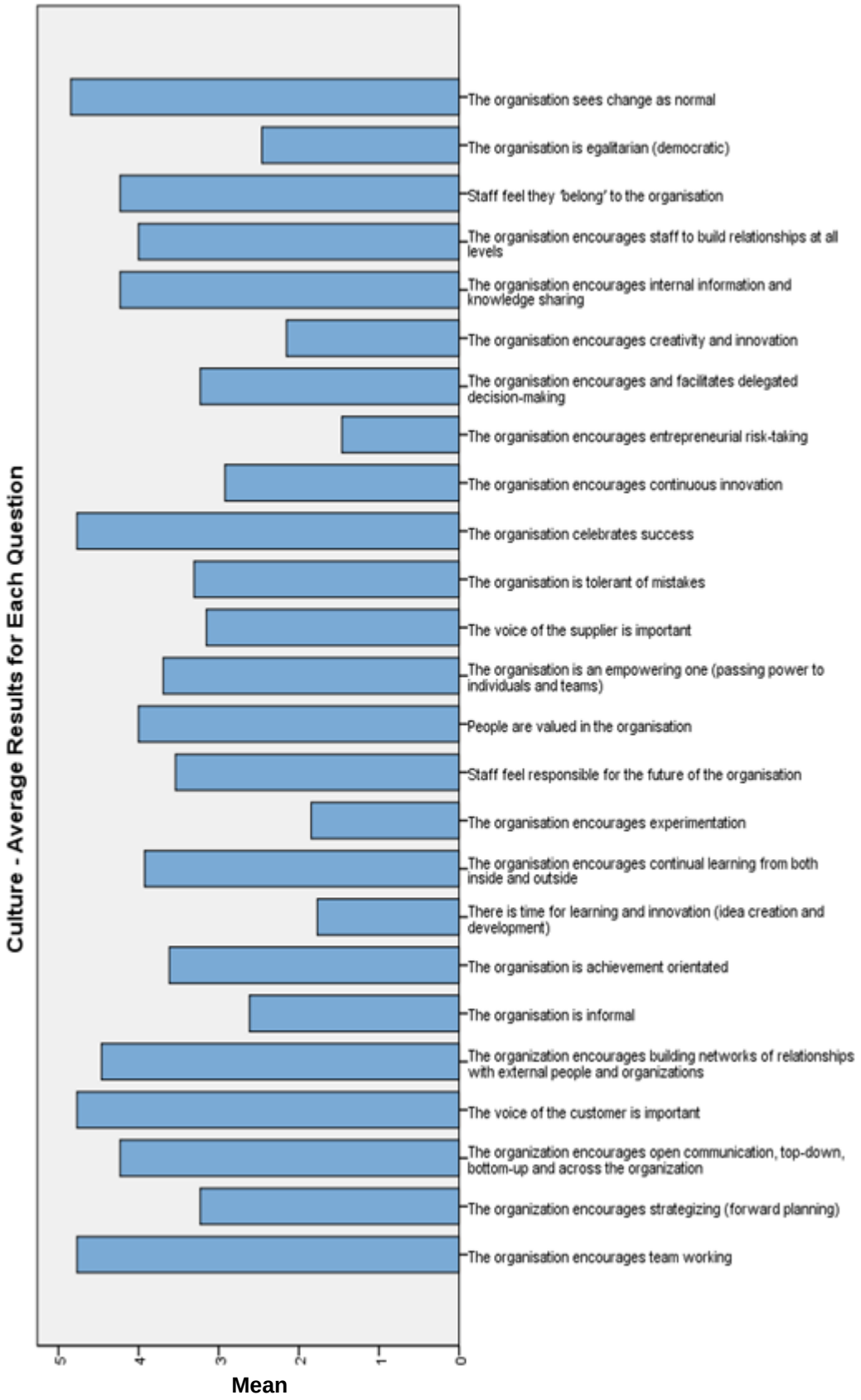
Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.0	2	15.4	15.4	15.4
	3.0	7	53.8	53.8	69.2
	4.0	3	23.1	23.1	92.3
	5.0	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

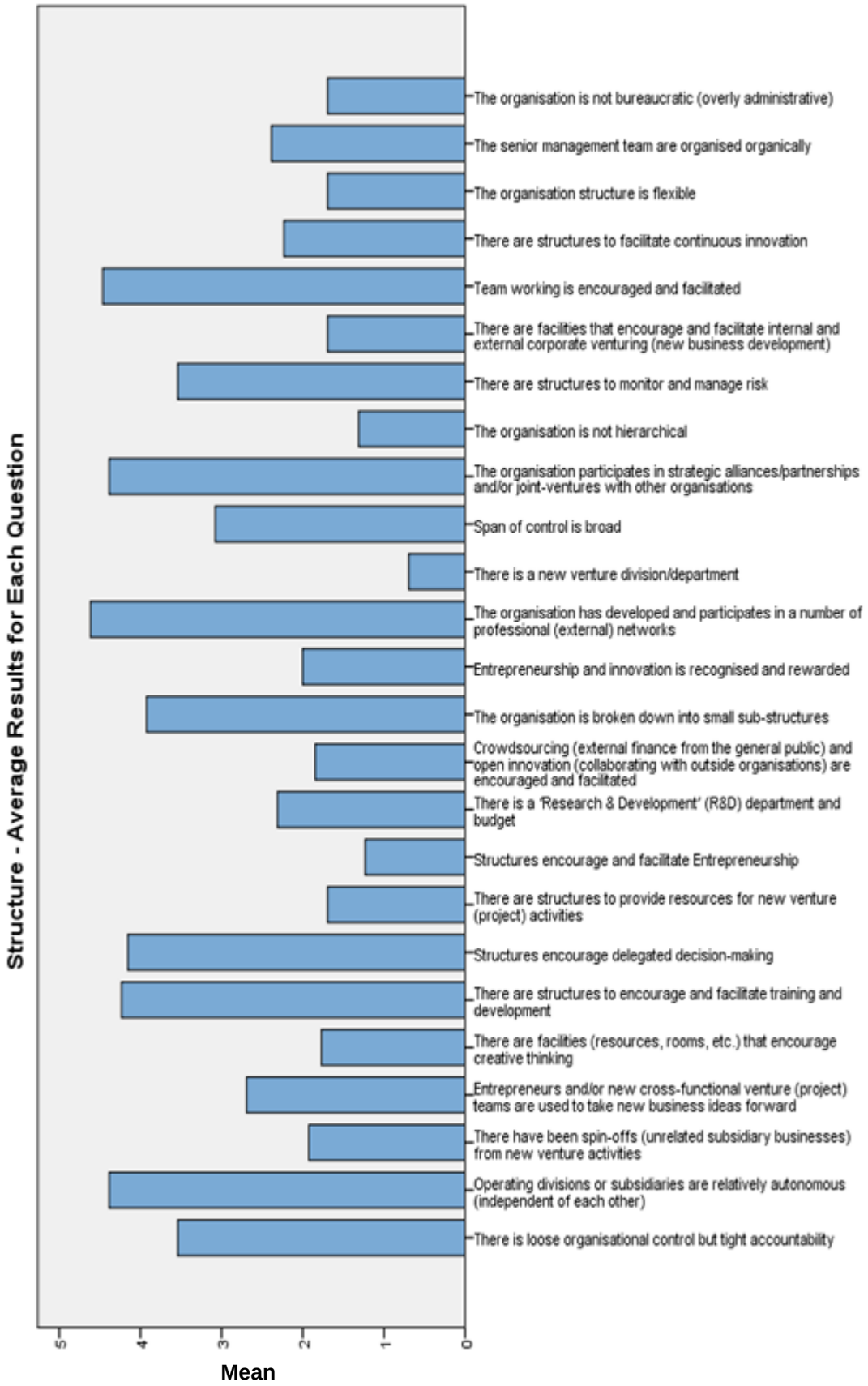
Leadership: Average results for each question



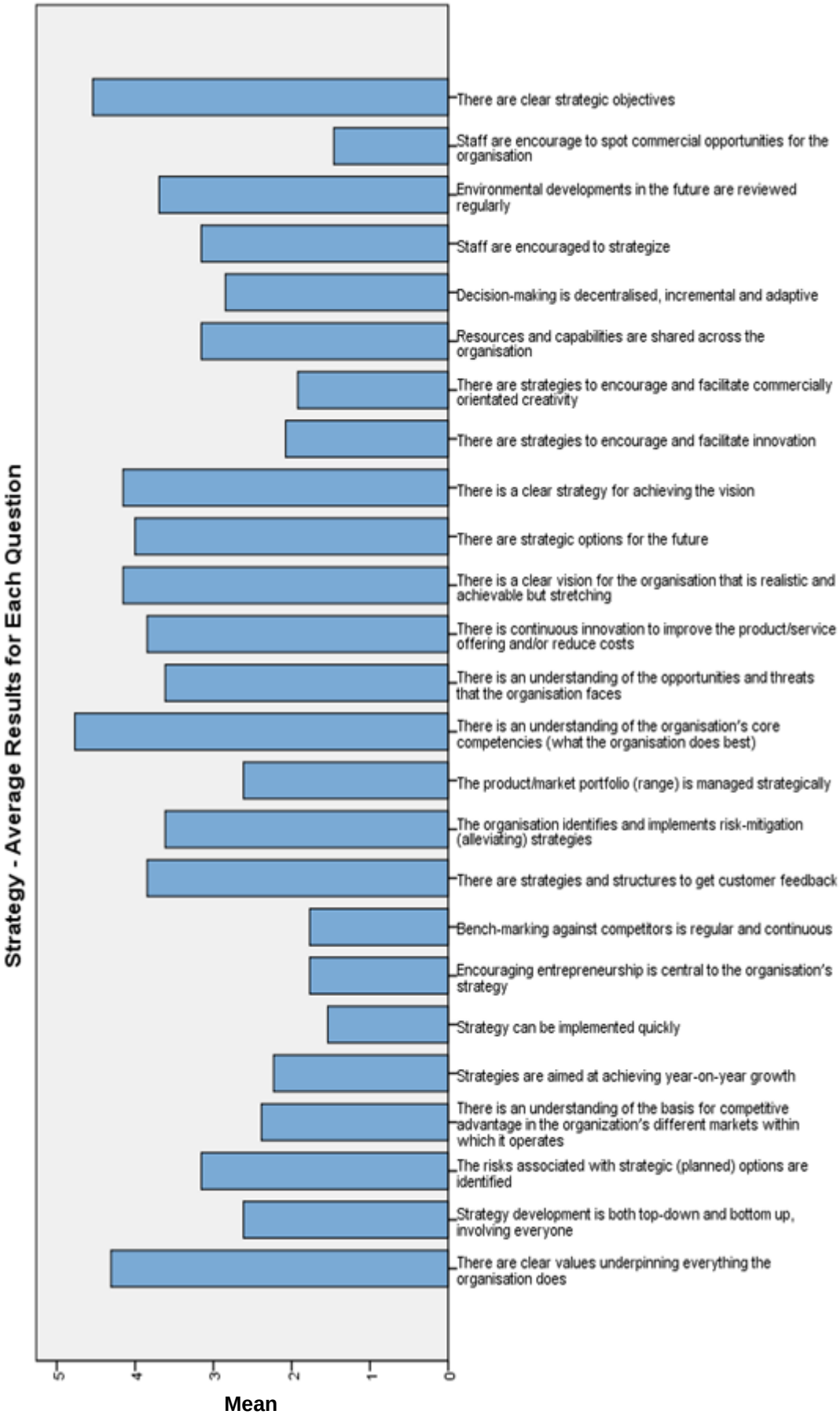
Culture: Average results for each question



Structure: Average results for each question



Strategy: Average results for each question



Appendix 7: The Corporate Entrepreneurship Audit (CEA)

Welcome to the Corporate Entrepreneurship Audit and thank you for taking part in this questionnaire.

It is anticipated that the questionnaire will take around 30 minutes to complete; there are 100 questions. When starting the questionnaire, the first few questions may take a while however, as you become accustomed to the format, response times may significantly shorten. Please complete the questionnaire in one sitting.

Your survey responses are anonymous.

Indicate a score: 0 = not true at all 6 = very true

1. There are clear values underpinning everything the organization does

2. The organization encourages team working

3. There is a clear vision for the organization

4. There is loose organisational control but tight accountability

5. Senior managers are reflective and self-aware

6. Strategy development is both top-down and bottom up, involving everyone

7. The risks associated with strategic (planned) options are identified

8. The organization encourages strategizing (forward planning)

9. Operating divisions or subsidiaries are relatively autonomous (independent of each other)

10. The organization encourages open communication, top-down, bottom-up and across the organization

11. The voice of the customer is important

12. There is an understanding of the basis for competitive advantage in the organization's different markets within which it operates

13. There have been spin-offs (unrelated subsidiary businesses) from new venture activities

14. Senior managers model the vision and values of the organization – they 'walk-the-talk'

15. Strategies are aimed at achieving year-on-year growth

16. Strategy can be implemented quickly

17. Entrepreneurs and/or new cross-functional venture (project) teams are used to take new business ideas forward

18. There are facilities (resources, rooms, etc.) that encourage creative thinking

19. The organization encourages building networks of relationships with external people and organizations

20. Encouraging entrepreneurship is central to the organisation's strategy

21. The vision for the organization is clearly communicated

22. There are distinct principles which form the foundation of everything the organisation does

23. There are structures to encourage and facilitate training and development

24. The organisation is informal

25. Bench-marking against competitors is regular and continuous

26. There is a clear strategy for achieving the vision

27. Structures encourage delegated decision-making

28. The organisation is achievement orientated

29. The vision is realistic and achievable but stretching

30. There is an understanding of the opportunities and threats that the organisation faces

31. There are structures to provide resources for new venture (project) activities

32. There is time for learning and innovation (idea creation and development)

33. The organisation encourages continual learning from both inside and outside

34. There are strategies and structures to get customer feedback

35. The organisation has strategic (planned) options for the future

36. Structures encourage and facilitate Entrepreneurship

37. The organisation encourages experimentation

38. Senior managers work as a team

39. There is a 'Research & Development' (R&D) department and budget

40. Staff feel responsible for the future of the organisation

41. People are valued in the organisation

42. The organisation identifies and implements risk-mitigation (alleviating) strategies

43. Crowdsourcing (external finance from the general public) and open innovation (collaborating with outside organisations) are encouraged and facilitated

44. Senior managers are accessible and approachable

45. Senior managers listen

46. The organisation is an empowering one (passing power to individuals and teams)

47. The voice of the supplier is important

48. The organisation is broken down into small sub-structures

49. The product/market portfolio (range) is managed strategically

50. There is an understanding of the organisation's core competencies (what the organisation does best)

51. Senior managers influence rather than direct; they manage with a ‘light touch’

52. Senior managers are good at reconciling conflict

53. Entrepreneurship and innovation is recognised and rewarded

54. There is an understanding of the opportunities and threats that the organisation faces

55. The organisation is tolerant of mistakes

56. The organisation celebrates success

57. There is continuous innovation to improve the product/service offering and/or reduce costs

58. Senior managers are good at clarifying uncertainties going forward, focusing effort on important things

59. There is a clear vision for the organisation that is realistic and achievable but stretching

60. The organisation has developed and participates in a number of professional (external) networks

61. There are strategic options for the future

62. The organisation encourages continuous innovation

63. Senior managers have good relationships with staff

64. Senior managers show care and respect for staff

65. There is a clear strategy for achieving the vision

66. The organisation encourages entrepreneurial risk-taking

67. There is a new venture division/department

68. Span of control is broad

69. There are strategies to encourage and facilitate innovation

70. The organisation encourages and facilitates delegated decision-making

71. Senior managers are trustworthy

72. The organisation participates in strategic alliances/partnerships and/or joint-ventures with other organisations

73. The organisation is not hierarchical

74. There are strategies to encourage and facilitate commercially orientated creativity

75. Senior managers are consistent in their behaviour with staff

76. The organisation encourages creativity and innovation

77. There are structures to monitor and manage risk

78. Senior managers think and act strategically (planning at a wider level, for the longer term)

79. Resources and capabilities are shared across the organisation

80. There are facilities that encourage and facilitate internal and external corporate venturing (new business development)

81. The organisation encourages internal information and knowledge sharing

82. Team working is encouraged and facilitated

83. Team working is encouraged in the organisation

84. Cross-functional team working is commonplace in the organisation

85. The organisation encourages staff to build relationships at all levels

86. Information and knowledge is shared in the organisation

87. There are structures to facilitate continuous innovation

88. The organisation structure is flexible

90. Decision-making is decentralised, incremental and adaptive

91. Staff are encouraged to strategize

92. Senior managers empower people to deal with problems and opportunities

93. The senior management team are organised organically

94. Environmental developments in the future are reviewed regularly

95. Staff are encourage to spot commercial opportunities for the organisation

96. The organisation is egalitarian (democratic)

97. The organisation sees change as normal

98. The organisation is not bureaucratic (overly administrative)

99. There are clear strategic objectives

100. Decision-making is delegated

Appendix 8: Semi- Structured Interview Questions

How do organisations manage intelligent failure?

Introduction

- Tell me about your role and what you enjoy

- When it comes to developing your own ideas, do you have the time, resources and support to do so? Can you give me an example?

- In what ways is your organisation entrepreneurial?

- How frequent are entrepreneurial initiatives?

- How big are the ideas?

- How does entrepreneurship work in the organisation, how do entrepreneurial ideas end up as a reality?

- Has there been a situation where someone (who is not part of the senior team) has taken an initiative that impacts at an organisational level and made it a reality? Was this a one off or does this happen regularly?

- How is experimentation encouraged?

- Can you think of an entrepreneurial initiative (or the last entrepreneurial initiative) that became a reality and resulted in success? How did the organisation react to that success? What happened?

- Can you think of an idea that ended in failure (or the last failure)? What happened? What went wrong? Reactions here?

- What about general failures? When is it ok to fail - Random failure or constrained failure?

The process of managing intelligent failure

- How do you/the organisation identify or detect failures? What is the process? Who is involved? And what are the positives in this process? What would you like to change in this process? How come? (Is there a lot of covering up?)

- How do you/people analyse events precluding failure? – What is the process? Who is involved? What are the positives in this process? What would you like to change in this process? How come?

- How do you/people learn from failure? Can you think of the last entrepreneurial failure? What lessons were learnt?(Academy, 2013)

- How is new knowledge distributed within the organisation? What is helpful about it? What would you change about it? What would you like the organisation to do differently?

- What are the barriers to knowledge being distributed?

- What does the organisation do to create an environment that supports learning?

- How important is learning from failure to the organisation?

If there is no form of after action review…

- Why is there no after action review?

- Why is it so difficult to manage the process of review and learning?

- What happens instead?

- What happens to the learning that has occurred?

Intelligent failure and the individual

- What is it like to fail in this organisation?

- Do you/people have a fear of failure? Does it stop people from coming up with initiatives and making them happen? Do you feel encouraged to take risks?

- What might put you off or even scare you about pursuing an entrepreneurial initiative?

- How are you/people supported when entrepreneurial initiatives fail?

- How does the organisation make it more ok to fail? Consider different micro-environments within the organisation

- How does the organisational environment reduce the fear of failure for individuals (entrepreneurs) who might wish to pursue an initiative? And how does the organisation make it more ok to take risks?

How does the management of intelligent failure affect an organisations entrepreneurial capability?

- In regard to the particular example you talked about before, when an initiative went well, what were your thoughts, feelings and specific behaviours afterwards? (Self-efficacy, risk propensity, need for achievement, internal locus of control, autonomy).

- In regard to the particular example you talked about before, when an initiative went wrong, what were your thoughts, feelings and specific behaviours afterwards? (Self-efficacy, risk propensity, need for achievement, internal locus of control, autonomy)

- In the way the failure is managed how does it affect the organisation? (In what way?) And micro-environments within the organisation.

- In the way the failure is managed how does it affect the organisations overall ability to be entrepreneurial? (In what way?)

- In the way the failure is managed how does it affect your ability to learn? (In what way?) What are the positives? What would you change?

- In the way the failure is managed how does it affect the organisations overall ability to learn? (In what way?)

- In the way the failure is managed how does it affect the size of future initiatives?

- And the frequency?

Any final thoughts or reflections about any areas we have been talking about?

Appendix 9: Case study protocol

CASE STUDY PROTOCOL: "INTELLIGENT FAILURE"

Yin (2013) argues that having a case study protocol is essential in conducting a multiple case study, positing that as a mechanism to guide the investigator, it offers a major way of increasing the reliability of the research project.

1) Background

a) An overview of the case study

Corporate entrepreneurial failure rates are high and the lessons from such failure episodes, as an organisational resource, are far too expensive to waste (Corbett et al., 2007). Therefore learning from failure is important. Yet despite this recognition by organisations, it would appear to be more common in management exhortation than in practice (Cannon and Edmondson, 2001). Indeed, "Organisations that systematically learn from failure are rare" (Cannon and Edmondson, 2005 p.299).

b) Previous research

The domain of learning from failure is identified as being significantly under explored:

- Baumard and Starbuck (2005) assert that "there has been so few studies of learning from failure" (p.282).
- "Despite the recent upsurge in interest, organisational learning from failures has received only scant attention by management investigators despite its avowedly pivotal role in prevention of escalation into ineffective systems" (Carmeli and Sheaffer, 2008, p.468)

However, Cannon and Edmondson ("Failing to learn and learning to fail (Intelligently)", 2005) offer the most focused discussion on learning from failure.

Cannon and Edmondson (2005)

What is failure

- The benefits of small failures
- Why do organisations fail to learn from failure
- Learning processes and barriers: Identifying, analysing, experimentation
- Reframing the traditional framework
- Psychological safety.

Additionally Jason Cope authors a number of papers on entrepreneurial learning

Jason Cope 2000, 2003, 2005, 2011:

- Single loop, double loop learning – superficial or deeper.
- Learning by doing. Gradual change in a person's orientation as a result of continuous information gained from experience.
- The importance of reflective learning. Entrepreneurs standing back from the 'thick of it'.
- Both forms of learning can happen at the same time (reflective and experiential learning).
- Learning through crises. 'Critical incidents' accelerate learning, particularly by those that you attribute failure to themselves.
- Dynamic learning perspective; Reflection, learning, and action
- Generative learning: Adaptive = cumulative store, or stock of knowledge. Proactive = cognitive early warning

c) Main research question

How do organisations manage the process of intelligent failure?

d) Supporting aims of the research

To explore and develop understanding as to:

- The processes that organisations use to learn from failure.
- The importance of a process for managing intelligent failure to the organisation.
- How failures are recognised and how they are analysed
- How individuals and organisations learn from failure.
- How lessons learned are disseminated across the organisation.
- The nature of the outcomes of the process of learning from failure.
- How environments can support learning from failure.
- Why organisations do not learn from failure.

2) Design

Intelligent failure lies within a highly emotional and complex phenomenon immersed in psychological and sociological influences. Perception of Intelligent Failure may be highly contextual. Obscure, and indistinct components.

Social construction

Managing Intelligent failure is a socially constructed phenomenon (humans make meaning through engagement with the world they live, making sense of it based on their historical and social perspectives, and that meaning is generated by social interaction).

Interpretivist approach

The research takes an interpretivist view of what may establish acceptable knowledge in this domain and focuses on reality as a human construct which can only be understood subjectively.

Inductive approach

Research will take an inductive approach with the predominant use of a qualitative methodology and, as part of a multiple case study strategy with embedded design, research is carried out in six organisations operating in differing sectors within the UK.

The multiple case study strategy allows the case researcher to increase the robustness of a finding by replicating it across cases. Multiple case studies with a variety of data collection can improve the validity of the study. As the subject of the research is underexplored, it is argued that a broader, rather than a narrower approach, be used. A case study strategy is an appropriate research strategy to support the enquiry of such a highly complex domain (Piekkari et al., 2008).

Qualitative research

The qualitative research design is able to provide rich descriptions and has the ability to tackle complexity, providing “thick descriptions”. Intelligent failure domain is in its infancy and therefore appropriate for qualitative research as there is less theory to test.

Convenience sampling using the researcher’s network of high quality research vehicles. Whilst convenience sampling is applied, six organisations from a variety of industries, and with a mix of entrepreneurial environments (polar opposites of the entrepreneurial spectrum) are researched.

Semi-structured interviews.

Within the semi-structured interviews, a balance between constraining openness and enhancing ability of case comparison should be applied. Not all the questions have to be used to enable flexibility of questioning to reflect responses from the interviewee (including follow up questions in order to probe and build upon responses).

Preparation time to be given before each interview to compose and focus on the intricacies of interviewing taking consideration of the organisational context, and reflecting on how to be structuring, clear, gentle, sensitive, open, steering, critical,

remembering, interpreting, balanced, and ethically sensitive. The researcher should centre attention on these facets as a means to face the inherent challenges within the interview process.

Questions to be drafted, peer reviewed, and test answered by the researcher, before being accepted. More questions were prepared than could be answered with the aim of offering some flexibility to theme enquiry. Questions are available as appendix 8. A 'spine' of reference to the principle themes of the research to be maintained. 12 interviews per organisation to take place, for around 1 hour. Liaising with the organisational coordinator, pre-arrange individual interview and interviewees to include 2 Senior Managers, 4 Middle Managers, 6 Staff from a mix of departments from R&D and Sales through to HR and Accounts, to ensure a wide mix of data. Questions to centre on the core themes from the conceptual framework.

Interviews to be recorded, transcribed, and imported to NVIVO software for coding. Codes that match the themes (used for questioning and in alignment with literature review) to be created and sub codes that emerge from responses. On completion of coding, findings to be analysed in detail by code and sub code at individual organisational level across the cases. Each case to be written up independently before cross case analysis pursue combined themes. In order to manage the detail, a summary spreadsheet was prepared to offer a structured holistic overview of the data for each organisation.

Quantitative research

Corporate entrepreneurship audit by Burns (2013) to be utilised: self-assessment survey of 100 questions relating to facets that may support entrepreneurial activity under four headings: Leadership, culture, strategy, structure. Respondents score 0-6, 0 = not true, 6 = very true.

Up to 20 respondents per company (Ratio of 2 Senior Managers, 3 Middle Managers, 5 Staff) assisted by organisational coordinator (agreed with organisation MD/CEO).

Survey uploaded to 'Lime survey', where respondents completed the audit in one sitting, on line, at their place of work. All responses were anonymous, voluntary

and given over a 3 week period. Data was transferred from LimeSurvey to SPSS (Statistical Package for the Social Sciences) software for analysis. Analysis should centre on each architecture response focusing on the minimum, maximum, mean, and percentage scores, as well as producing a cluster analysis and a frequency table. Additionally, the mean score should be established for each statement within each architecture, and then averaged to provide an overall score.

Results to be used only as indicative data as they represent low level statistical significance.

Research to be used to gain initial understanding of the nature of the organisation, and support qualitative data on the entrepreneurial environment.

Ethics

In consideration of the ethics related to this research, reference to the principles and expectations for ethical research demanded by the Economic and Social Research Council (ESRC) to be adhered. Specifically the “ESRC Framework for research ethics - Updated January 2015” is to be used as a form of reference, reflection and compliance (ESRC, 2015).

Research to be carefully designed to ensure recognised standards of integrity, objectivity, and quality. Potential risk of harm to participants and researchers is to be mitigated by reflection, planning and action throughout the process.

An overview of the research project highlights the potential psychological risk related to the research subject of organisational failure. Fear of failure, association with failure, and the revisiting of negative emotions due to failure were identified as a potential reason why individuals may not wish to participate or withdraw from the research. The issue is to be made clear and assurances to be given before each interview that participants can withdraw at any stage.

At each stage of the research process thought and action is to be given to research participants. At the earliest stages of contact with participating organisations, assurances are to made in writing as to the ethical framework to be used, that being the “ESRC Framework for research ethics”. Within the written communication to organisational leads (in the main CEOs) included should be

the “six key principles of ethical research”. During discussions with organisational coordinators with regard to respondent selection, reference is to be further made to ensure voluntary participation, free from undue influence. At the beginning of each interview, confirmation is to be taken of their voluntary participation and informed consent.

Throughout the interview the rights, dignity and autonomy were respected and appropriately protected. As a follow up to the pre-interview written communication and to ensure understanding, at the beginning of each interview, interviewees are to be given information about the research including the purpose, methods and its intended use. Discussion should also centre on what was required from themselves, the confidentiality through the qualitative research process and their anonymity through the quantitative research process. Permission is to be requested for the recording of the interview. Interviewees to be informed that the recordings will be anonymously labelled and transcribed. The recordings will only be accessible to the researcher and be stored safely for up to 5 years when they will be deleted. It should be emphasised that no one in their organisation would ever know of the details of their personal contribution. The researcher should offer complete transparency to research work protocols at all times throughout the data gathering, analysis, and feedback processes.

Appendix 10: Entrepreneurial environment – enhanced review of findings

The Epos Systems Supplier

Findings suggest a number of organisational climates that may be supportive to entrepreneurship and give an understanding to the nature of the organisation. To enhance the understanding of the environment findings in the areas of leadership, strategy, and structure are also represented.

Culture:

- *Innovation*

The organisation is innovative by nature, as the CEO puts it, “I think it (innovation) is in our DNA”. The innovative culture shows itself through the organisation’s propensity to be constantly prepared to try new things and accept failure when it occurs. One of the top scoring statements in the survey was ‘the organisation encourages continuous innovation.’ A quasi-formal creative process to capture ideas that is known as the “Muppet Show” provides a space for corporate entrepreneurs to present their ideas to colleagues and the senior team. With this kind of organisational approach, the entrepreneur is encouraged to be creative and has the opportunity to develop an initiative.

- *Experimentation*

There is significant and wide breadth of evidence that experimentation is encouraged and indeed, it is recognised as being part of the culture of the business. Experimentation is particularly important to research and development where teams are given new technology and asked to play with it in order to suggest how the organisation “could blend and adapt that technology with our product sets to offer, you know, a rich solution and a richer offering to our customers” (Technical and Marketing Communication Manager).

- *Client centricity*

The organisation recognises the importance of the customer and has high 'client centric' values, obsessing over client relationships. This focus is driven from the top and is recognised and generally shared throughout the business. Another top scoring statement in the survey is 'the voice of the customer is important',

- *Vibrancy / fast pace of change*

There is a vibrant working atmosphere where the pace of change is fast which generates positivity and employee engagement across most departments. The organisation sees change as normal.

- *Informality and collaboration*

The new premises have made a significant impact on the working environment of the organisation. The new space is wide, open, light, and on one level, which encourages people from differing sections to engage in casual conversation. This supports informality and a collaborative culture.

- *Autonomy*

The culture generally supports work autonomy at most levels of the organisation. The COO comments, "I love the fact that Stuart (CEO) created that space for me to make that commitment". Senior managers allow managers significant levels of autonomy and encourage innovative work, indeed, individuals are given space to work and are encouraged to use it. Autonomy also exists within core functions such as Human Resources.

- *Learning*

The organisation has a well-developed learning culture that supports a number of different mechanisms for individuals to learn. A coaching culture centres on 'one to one', on the job development. Encouragement, practical support and advice is used to develop individual thinking when problems or opportunities arise; significant tolerance is applied in the coaching process. Additionally learning comes about through informal conversations with colleagues that occur as part of an individual's daily work. Coaching is the most common method from which individuals can learn. The commitment to learning is reinforced by the provision of a dedicated internal training manager. Learning is important to the organisation.

- *Openness and trust*

The family values promote an openness within the organisation. Senior managers are approachable and people are able to project their personality. Individuals openly offer candid discussion without fear of retribution. There is significant evidence of openness and trust within the workforce. With a mind-set of challenging the norm, individuals in open and informal surroundings constantly discuss opportunities with each other on an ad hoc basis.

- *Managed risk-taking*

Risk-taking is prevalent within the senior management team and the core of the organisation, which engages in innovative activities. Indeed the organisation behaves impulsively at times. However, generally the risks inherent within new initiative development are well considered and significant effort is applied to manage the risk in order to minimise exposure.

- *Tolerance of failure and low fear of failure*

The organisation generally demonstrates a culture where individuals have a low fear of failure. Members of the senior management team are understand the personal implications of failure that are minimised by the organisations tolerance of failure in development spaces. In the R&D departments constant experimentation is encouraged and failure is perceived as part of the entrepreneurial process.

Leadership:

- *Informal, non-hierarchal, friendly and approachable*

Senior management have an informal demeanour and are approachable, friendly and supportive in the main, reflecting the family values of the organisational culture. One of the most supported survey statements was ‘Senior managers are accessible and approachable’

- *Leadership based on trust and clear principles*

There are distinct principles which form the foundation of everything the organisation does and evidence suggest that senior managers are perceived as trustworthy.

- *CEO and COO driving force*

There is a significant driving force within organisation which comes from the founder (and CEO) and the COO.

- *Innovation focused*

The COO is visionary in approach and highly focused on driving innovation as he talks of “looking into the future with a view to redefining the product in its totality with a view to finding the ‘perfect solution’”. The CEO suggests that the COO, “has a vision, boom, and he’ll go ahead and he’ll want to do it.” In this respect, the senior team lead by example.

- *Strongly based on a clear and guiding ‘vision’*

They have put forward a challenging and evocative vision that has caught the imagination and engagement of the employees. The survey statements that was most supported was ‘there is a clear vision for the organisation’. The senior management team leads from the front with a strong entrepreneurial vision.

- *Dynamic and passionate*

The COO offers a charismatic persona that draws much support. The vision and the senior leaders combined provides strong direction for the organisation.

- *Highly supportive of entrepreneurial activity and opportunity focused*

The CEO and COO lead the innovation and entrepreneurship processes from the front. They are constantly looking for opportunities, whether that is through innovation or market exploitation.

Essentially leadership is proactive, dynamic, passionate, and leaders are prepared to take risks when driving the front end of the entrepreneurial process. Significant also, is that within many of the departments in the company there is a more distributive approach to leadership, where individuals lead with ideas and create teams to support and actualise these initiatives. Entrepreneurship is supported and encouraged.

Strategy:

- *Encased in a strong 'vision'*

The organisational vision is an important tool and at the core of strategy. A strong mental protocol ensures that there is alignment between the initiative and the organisations vision. "Well, we have our vision. So we've got our vision and we want things to fit into that vision, and if they fit into that vision then they're a goer, and if they're not, then we'll stand back." (CEO).

- *Partly formal and structured*

Organisational strategy is partly generated through a formal mechanism. The formal strategy process engages the senior team for two days of discussion away from the business where the existing strategy and vision is reviewed to ensure it is relevant and accurate.

- *Largely emergent and centred on opportunity seeking actions, sometimes impulsive and often instigated by external sources (suppliers/customers)*

Reflecting the opportunity seeking nature of the senior team, strategy is often emergent and the preferred method of strategising. Opportunities create an emerging strategy and come from differing locations. External stimulation, such as supplier meetings, can deliver instinctive responses and new directions for the organisation. Similarly, meetings with clients can lead to ad hoc strategy development. Additionally, the CEO spends considerable time researching the world market on line, through networking, and by traveling to tradeshows in the U.S.A. He prides himself on knowing the market, which the organisation operates in, and constantly seeks out opportunities that may be suitable for the company, and which reflect world market realities

- *Considered with a long term approach*

Strategy is significantly influenced by the fact that the organisation is family owned and prefers taking a long-term approach to decision making. Importantly also, the family takes a long-term approach to return on investment.

In essence, the organisation has a strong strategic approach, all be it mainly driven from the senior team. As the survey and the interview findings suggest strategy is more top-down rather than a shared and inclusive activity.

Structure:

- *Non hierarchal*

The organisation operates a management structure with three layers that allows quick decision-making: “if we’re making a decision, we’ll make it quickly, so we’re not stuck in 47 layers, you have to get sign-off from 19 people – we don’t have any of that” (CEO). Generally, structures encourage delegated decision making.

- *Open*

Physical open space and open communication streams across the departments, and up and down the organisation, supported by significant psychological safety, enable open communication.

- *Collaborative*

The organisation is divided into functional departments however, there is significant collaboration outside of departments.

- *Unstructured and informal*

Meetings are generally ad hoc and informal rather than following a pattern of structure and regularity. The fluid structures support agility, flexibility and the ability to move fast on an entrepreneurial opportunity.

- *Flexible to the needs of the individual initiative*

Project teams are created based on the needs of the initiative and individuals move from project to project, as the Production Assistant puts it, “there’s a lot of inter-departmental moving….progressing into different teams because of their skill sets and the ideas they have presented.”

Summary of the findings relating to the entrepreneurial environment:

Epos supplier entrepreneurial environment summary

Epos Supplier		
Culture and manifested climates		• Innovation • Experimentation • Client centricity • Vibrancy / fast pace of change • Informality and collaboration • Autonomy • Learning • Openness and trust • Managed risk-taking • Tolerance of failure and low fear of failure
Leadership		• Informal, non-hierarchal, friendly and approachable • Leadership based on trust and clear principles • CEO and COO driving force • Innovation focused • Strongly based on a clear and guiding 'vision' • Dynamic and passionate • Highly supportive of entrepreneurial activity and opportunity focused
Strategy		• Encased in a strong 'vision' • Partly formal and structured • Largely emergent and centred on opportunity seeking actions, sometimes impulsive and often instigated by external sources (suppliers/customers) • Considered with a long term approach
Structure		• Non hierarchal • Open • Collaborative • Unstructured and informal • Flexible to the needs of the individual initiative

The Processed juice supplier

Findings suggest a number of organisational climates that may be supportive to entrepreneurship and give an understanding to the nature of the organisation. To enhance the understanding of the environment findings in the areas of leadership, strategy, and structure are also represented.

Culture

- *Opportunity seeking and impulsive*

The organisation has a culture that is heavily influenced by the founder and current chairman. As a start-up entrepreneur, his mindset is constantly centred on opportunity seeking activity. This passionate and direct influence is recognised across the organisation.

- *Innovation*

The organisation perceives that there are many opportunities in its sector and encourages entrepreneurial activity. Entrepreneurs are encouraged to put forward ideas at every level and these ideas are positively received. The organisation, therefore, has constant and continuous flow of entrepreneurial initiatives. Ideas also emerge from scheduled meetings across the calendar year. Differing fruits are, by their very nature, available at different times of the year and findings suggest that the seasonality of the business acts as a foil for innovation.

- *Client centric*

Distinct in the culture of the organisation is the customer centricity of its approach. There is a high level of importance placed on the customer relationship. Customers engage in co-creation of product which also develops the long term nature of the relationship. The customer centric nature of the organisation is highly prominent.

- *Family values*

The culture reflects close warm family values where management look after the employees in a more considerate way as if they were part of the family. Looking after staff is important. There is significant loyalty to the founder and his family and those senior team members who joined in the early years of the organisation. As the company has expanded, it has largely maintained a family feel which creates a closely-knit community.

- *Informality and collaboration*

By nature the organisation is informal with a low level of structure. Staff are generally at ease and open discussion is constant. Idea generation occurs at an individual level but more often within the group setting as ideas are often generated informally by team discussion in their pods (team desks are arranged together) on a day-by-day basis. Collaboration is instinctive.

- *Autonomy*

The nature of the organisation is earthed in entrepreneurship and fluidity where bureaucracy is minimal. Individuals largely experience autonomy within their job roles offering significant freedom to explore and develop initiatives.

- *Learning*

The organisation positively supports personal and team learning. Learning occurs in a mix of structured and unstructured, formal and informal channels. The strong learning paradigm promotes learning through experimentation and there is open encouragement of learning by doing and learning from others..

- *Openness & trust*

The organisation offers open channels of communication that are supported by an open office layout and by the approach of management. Open communication transcends departments and management levels and a high level of transparency exists. Generally, mistakes are not hidden and this in part reflects the trust in the response from the senior team. The openness of the organisation to ideas makes it a natural and comfortable environment in which to develop products.

- *Risk taking*

The culture is inclusive of norms relating to risk-taking. Within boundaries risk-taking is encouraged by the organisation, however, management of any risk is a priority and a norm. Within the sub cultures of the organisation, some are more, or less, risk averse depending on the nature of work.

- *Tolerance of failure and low fear of failure*

Generally, there is little evidence of fear of failure by people and teams. Individuals are not fearful of negative repercussions from the organisation as management view intelligent failure as part of the entrepreneurial process. There is no blame: “I think people can take a little bit of time to actually get

used to the fact that there isn't going to be a blame placed on you" (Financial Controller). Tolerance of failure is based on the premise that individuals are learning from the experience. The nature of the organisation is such that collective responsibility rides over individual responsibility when failures occur.

Leadership

- *Entrepreneurial mindset*

The entrepreneurial nature of the organisation is due in a large part to the leadership of the founder and chairman who has a significant influence on the organisation. He leads an entrepreneurial culture and, with the newly formed senior team, they lead with an entrepreneurial paradigm.

- *Leadership by example*

The founder's influence on the culture is important as value sets are closely aligned to his entrepreneurial paradigm. As the leader of a much larger organisation today, many of these values continue to be promoted passionately. With these strong natural beliefs, he leads the organisation forward challenging the status quo and constantly looking to develop the business.

- *Supports individual entrepreneurial activity*

Individual idea generation is supported by an advanced openness to senior managers and resources who are highly approachable. Leadership champion and support initiatives with practical advice, allocation of specific resources, and encouragement.

- *Close working relationships with staff*

The leaders communicate openly with the organisation and are open to individual communication at all levels that creates significant engagement with team members. Staff are free to knock on managers doors and discuss what is on their mind. Leaders generally have a close connection to employees offering few barriers to communication. The statements in the survey that were supported the most were 'senior managers are accessible and approachable', 'senior managers listen', 'senior managers have good relationship with staff', and 'senior managers work as a team'.

- *Strong team ethos*

The Managing Director offers strong overall leadership operating a teamwork ethos: “I don’t like it the fact that people say they work for me. As far as I’m concerned they work with me to give an end result.”

- *On occasion can overpower organisation*

The passion and entrepreneurial mind-set of the Founder and Chairman affects the organisation both positively and negatively. With a high need for achievement, he personally drives the business forward with a constant flow of differing ideas; however, this can also cause significant operational challenge to the business

Strategy

- *Highly emergent*

Evidence suggests that entrepreneurship is at the centre of the organisation’s long and short-term strategy; however, this is not something that is communicated. Entrepreneurship and strategy are entwined and the two exist together and are accepted as such. Whilst the company recognises the need to adjust to its growth and increase in size, entrepreneurship remains the core approach to the future and an emerging strategy.

- *Predominantly unstructured*

Essentially, the strategy process is unstructured and mainly emergent based on the development of initiatives as they arise. However, ideas are managed to ensure they sit within the overall framework of the concentrate juice sector.

- *Mainly short term focus and dependant on the next venture, however, long term goals drive a vision*

The organisation mainly visualises strategy in the short term over the long term, but has a long-term ambition to be doubling turnover and has recruited a senior team accordingly.

Structure

- Low levels of structure - non hierarchal management structure

The organisation has low levels of structure in terms of management hierarchy and the way in which it organises itself. Communication channels are largely

unstructured. Meetings are few and ongoing discussion in a collaborative fashion is the norm.

- Predominantly informal structures

Whilst the company has a management structure, the structure is shallow and relatively informal by nature, which means that generally, communication flows are unimpeded through the soft hierarchy.

- Open communication channels

Communication structures are open and largely informal across the organisation.

- Increasing level of structure as the organisation grows

Whilst the organisation is largely unstructured, it is going through a period of change as it recognises the need for structure to be brought about by the increasing size of the company. These changes are deemed as necessary for the future success of the company.

- Flexible and adaptable

Generally, however, structures within the organisation are flexible, adaptable and supportive of idea generation and entrepreneurial activity.

Summary of the findings relating to the entrepreneurial environment

Juice supplier entrepreneurial environment summary

Juice Supplier		
Culture and manifested climates		• Opportunity seeking and impulsive • Innovation • Client centric • Family values • Informality and collaboration • Autonomy • Learning • Openness & trust • Risk taking • Tolerance of failure and low fear of failure
Leadership		• Entrepreneurial mindset • Leadership by example • Supports individual entrepreneurial activity • Close working relationships with staff • Strong team ethos • On occasion can overpower organisation
Strategy		• Highly emergent • Predominantly unstructured • Mainly short term focus and dependant on the next venture, however, long term goals drive a vision
Structure		• Low levels of structure - non hierarchal management structure • Predominantly informal structures • Open communication channels • Increasing level of structure as the organisation grows • Flexible and adaptable

Public House Operator

Findings suggest a number of organisational climates that may be supportive to entrepreneurship and give an understanding to the nature of the organisation. To enhance the understanding of the environment findings in the areas of leadership, strategy, and structure are also represented.

Culture

- Family values

The overarching culture relates to the family ownership of the organisation. Whilst the business has been established for over 238 years and has grown into a sizeable operation, the family values remain strong and draws significant loyalty from across most areas of the business. Whilst the family values may overarch the organisation, there are differing sub cultures in the two divisions within the study: Head Office and the branches (public houses).

- Entrepreneurship (with some innovation)

Experimentation is encouraged and engaged with in the central functions of Head Office. There is significant trialling of new ideas at the company level, whether it be a new approach to the way business partnerships are managed, or a new ‘cluster’ management approach to replace a departing Regional Manager. New public house concepts are constantly being tested as experimentation is deemed important

- Mostly informal

Whilst the organisation has a more traditional feel about it (based on its family history), informality is evident in most areas of the business. Whilst it would be inaccurate to suggest that the organisation is a relaxed, highly innovative, and informal place, it does have significant informal tones. Informality is encouraged.

- Client centric

There is a heavy focus on the customer and the customer experience. This was emphasised across the organisation. The top scoring statement in the survey was, ‘the voice of the customer is important’.

- Autonomy

An important part of the culture is the freedom for individuals to carry out their work. There is evidence of higher levels of autonomy in Head Office and lower levels within the branches. The levels of autonomy allow the time and space for entrepreneurial thought and action.

- Often collaborative

The openness encourages collaboration and working parties are common. The collaborative approach means change to products are made early, quickly and there is a level of team ownership. Separate to any individual role, ideas flow from across the functions and many of the entrepreneurial initiatives arise from collaboration. The organisation encourages team working.

- Moderate levels of bureaucracy

The branches are driven by targets, especially sales targets, where they are focused on beating last year’s numbers and budget. With energy and emphasis on the processes that lead to sales there is less time and resource available for entrepreneurship. Managers are given specific operational guidelines or as the GM of location T puts it, “it’s almost like an ABC guide as to how to run your day”. In this entrepreneurially restricted space, there was evidence of individuals using their own time to progress an entrepreneurial initiative.

- Moderate hierarchal approach

There is evidence of some hierarchy based on culture that is affected by its substantial history. Therefore, whilst a modern approach to organisational management exists, it resides within a backdrop of traditional influences, which promotes a hierarchal context.

- Learning

There is a strong learning culture throughout the organisation and this is very much an aim of the CEO, “We’re trying to create a real culture of learning and development.” Training and development comes in the form of a wide montage of formal and informal learning activities.

- Openness & trust

The culture encompasses a significant amount of trust and openness that comes from the very top of the organisation. As a priority for the CEO, the current leadership training programme centres on developing the values of trust and openness to further enhance the aims of the business.

- Managed risk taking

The culture is supportive of risk taking albeit in a controlled manner. Again, this emanates from the top of the organisation; “I think one of my particular skills is risk management……so I feel very comfortable with analysing risk and mitigating it…..I just think there are ways that you can get 90% of the opportunity whilst mitigating some of those risks”(CEO). Significantly, risk in the centre is minimised by placing significant emphasis on the early stages of the entrepreneurial process.

- Tolerance of failure and low fear of failure

Across the organisation, there is little evidence of a fear of failure in the context of entrepreneurial activity. In the centre and in the branches consistent interview response detailed that there was no fear of failure. The lack of fear of failure is preeminent. This culture is promoted from the top where the CEO talks of team responsibility over individual responsibility. There is no evidence of a blame culture in the centre or in the branches where the environment is supportive of the individual.

Leadership

- Non hierarchal approach

Whilst there is a strong reporting line within the management structure, there is little evidence of a hierarchal approach to leadership of the organisation.

- "Custodian" leadership style (CEO)

The CEO perceives himself as the custodian of the family business and he leads with the organisation with this emphasis.

- Through a strong vision

The most supported survey statements were 'the vision for the organisation is clearly communicated', 'there is a clear vision for the organisation', 'there are distinct principles which form the foundation of everything the organisation does', 'There is a clear strategy for achieving the vision'.

- Visible, open and approachable

He leads the organisation by being in and amongst it, always visible and approachable. He puts emphasis on people first: "There's a bit that I suppose I love most, which is in terms of leading people, leading individuals, and working with individuals, for them to really work to their full potential" (CEO).

- Centred on supporting staff to fulfil their own potential

The CEO enjoys "creating an environment for exceptional people to excel – as simple as that". With the aim of achieving this goal, the CEO leads the drive towards personal fulfilment through the placing emphasis on individual development and training within the culture of the organisation.

- Centred on creating entrepreneurial environment

Whilst there is a significantly entrepreneurial culture, there is little evidence to suggest that he is an entrepreneur himself. Through his leadership he demonstrates a clear understanding of the potential of entrepreneurship, and has shaped the business to be entrepreneurial. At a senior level the Retail Director fronts up innovation and entrepreneurship activity.

Strategy

- Strong direct approach

There is evidence of a clear strategic approach towards supporting and sustaining entrepreneurship. Strategy focuses on entrepreneurship within the central functions and high quality execution of a rigid set of procedures in the branches, all-be-it within a set of values that encompass the whole organisation.

- Mainly top down

The strong, direct approach offers a “directive helping people and making sure that we have a properly constructed and thought out strategy that everyone can work towards and focus towards” (CEO). There is particular emphasis in creating an environment supportive of entrepreneurship.

- Long term approach

Organisational strategy is considered on a long-term basis, as the short term is of less interest. The custodian approach promotes a longer term perspective.

- Structured and emergent strategy

Whilst the business is comfortable with encompassing an ‘emerging strategy’ approach when strategizing, it also has a formal and traditional approach to creating strategy. Significantly, there is a large emphasis put on the ‘vision and values’ of the organisation which also creates a longer term focus.

- Vison and values align both emergent and structured strategy

The vision and values are communicated extensively throughout the organisation and were referred to regularly at all levels by the interviewees. The prominent vision and values creates alignment with both structured and emergent strategy.

Structure

- Traditional management structure (softened by management approach)

There is evidence of a traditional reporting management structure within the organisation; however, the structure is reduced by the open nature of the organisation.

- Cross functional collaboration mainly at HO

Within the Head Office, an open environment promotes teamwork and cross function collaboration where emphasis rests on teamwork, individual support and flexibility of approach. In the branches there is also teamwork, however,

there is less flexibility as there is more structure required to implement tight operating procedures. These protocols define the customer experience.

- Open communication structures generally

Communication structures vary. Whilst both Head Office and the branches experience open communication within their own operational space, external communication is significantly less open. There is little collaboration between Head Office and the branches, as is also the case between one branch and another.

- Branches have significant procedural structure

Whilst the centre experience less bureaucratic systems, the branches have clear and specific procedures to follow, allowing limited interpretations. Tight operational processes and standards are important to the organisation's aim to achieve success.

Essentially, the organisation is shaped to accommodate entrepreneurial activity, and to accommodate tight operational procedures as is deemed appropriate to maximise business performance.

Summary of the findings relating to the entrepreneurial environment

Public house operator entrepreneurial environment summary

Public House Operator		
Culture and manifested climates		• Family values • Entrepreneurship (with some innovation) • Mostly informal • Client centric • Autonomy • Often collaborative • Moderate levels of bureaucracy • Moderate hierarchal approach • Learning • Openness & trust • Managed risk taking • Tolerance of failure and low fear of failure
Leadership		• Non hierarchal approach • "Custodian" leadership style (CEO) • Through a strong vision • Visible, open and approachable • Centred on supporting staff to fulfil their own potential • Centred on creating entrepreneurial environment
Strategy		• Strong direct approach • Mainly top down • Long term approach • Structured and emergent strategy • Vison and values align both emergent and structured strategy
Structure		• Traditional management structure (softened by management approach) • Cross functional collaboration mainly at HO • Open communication structures generally • Branches have significant procedural structure

The Regional wildlife organisation

Findings suggest a number of organisational climates that may be supportive to entrepreneurship and give an understanding to the nature of the organisation. To enhance the understanding of the environment findings in the areas of leadership, strategy, and structure are also represented.

Culture

- Innovative

There is evidence of a culture that is supportive of innovation and entrepreneurship generally. A new CEO has been challenging working practices and championing a number of areas with the aim of enhancing the level of entrepreneurship in the organisation. He has initiated a significant change in the working culture towards innovation and entrepreneurship that has been well received in the main.

- Experimental

There is a positive attitude within the organisation towards experimentation, "there is a culture of saying let's try this" (Communications Officer). Ideas and experimentation are encouraged in the search for new income streams.

- Informal

Informality and collegiality is evidenced throughout the organisation.

- Autonomy

The culture supports significant levels of autonomy and a varying workload for the individual, yet it also supports a strong sense of togetherness.

- Collaboration

There is significant evidence of collaboration across most levels of the organisation that also extends beyond the organisation. High levels of teamwork are demonstrated within a positive atmosphere where people work together in an environment of trust.

- Moderate levels of bureaucracy

There is evidence also that the organisation is target driven and whilst some people see this as restrictive, for others they are guides to achievement which when not achieved, will not bring heavy sanctions. The centre has a process lead approach to managing operations.

- Low hierarchy

The emphasis on hierarchy is low. The organisation operate within a high values paradigm and there is shared approach to working and managing. The organisations status as a charity affects the culture and the approach taken by individuals. “A lot of people that work here, work here because they believe in what the charity does, so for that reason you can feel confident that people are going to give their best, very few people are just here to take home a salary at the end of the day” (Communications Officer).

- Learning culture

There is evidence of a learning culture that goes beyond formalised training where experiential learning is significant. Respondents referred to the ‘learning curve’ of taking on some of the sizeable projects. Internally individuals learn from each other and, externally, collaboration with other agencies provides a format for learning. There is also a supportive approach to formal training.

- Openness & trust

The organisation operates within an open environment where trust is very evident. Management and staff freely interact on most matters leading to a safe environment for individuals’ to engage.

- Risk taking

With this increased propensity to be innovative, there is evidence of a culture that is bolder and less risk averse: more ambitious. The CEO has instigated a number of projects with significant risk (of which two are large in scale). The approach to risk taking is replicated across the entrepreneurial departments of the organisation.

- Tolerance of failure and low fear of failure

In the main, there was very little evidence of fear of failure. There is no evidence of blaming or dressing down: it is a safe place to fail. Generally, there

is a tolerance of intelligent failure. The Trustees of the organisation also share this tolerance.

Leadership

- Leadership with an entrepreneurial mindset

The current CEO is pivotal in the transformation of the charity to becoming a entrepreneurial organisation: “I think we have an entrepreneurial spirit at the head. I think the Chief Executive is very entrepreneurial and that’s very inspiring. You know, he is very clearly and very openly willing to do new exciting stuff; he is a safe pair of hands in that he runs the place very well – I think H is great – but I think also he is prepared to do things like S (project), which is huge, and, you know, has clearly got a risk of skewing the organisation and everyone’s aware of it and so we work with it” (NIA Project Manager.)

- Values driven

His disposition is more centred on new projects and shaping the values, and the vision of the organisation.

- Through a strong vision

Leadership puts forward a strong and defining vision for the organisation.

- Encourages experimentation

Corporate entrepreneurs are supported by a management approach that actively and openly encourages experimentation. “We would absolutely encourage you to have a go at it. And there is a tolerance and a supportive nature – I can’t emphasise how supportive it is, in terms of the individual. There’s no ‘big stick’. Nothing like that. We would offer, ‘is there anything we can do?’” (Commercial Director). The energy towards experimenting is also shared by some of the external clients creating an opportunity for significant collaborative innovation.

- Visible, open and approachable and non hierarchal

In the main leadership is open and engaging, and ignores organisational hierarchy. However, there was evidence that communication can be ‘top down’

in some instances. There is significant support from leadership who are comfortable sharing success and taking personal responsibility for team failure.

- Leadership by example

Entrepreneurial behaviour is fully encouraged, verbally and in action with leaders ‘leading by example’.

Strategy

- The organisational vision and values provide strong and clear direction

Within the organisation, there is less focus on structured corporate strategy and more on the vision and the values. The strength of the vision draws significant support and allows space for individuals and teams to move the organisation forward.

- Predominantly emergent strategy as opportunities arise

Whilst there is some structured strategy formulated at Board level, most forward direction emerges as opportunities arise. The emergent strategy always has to be in line with the vision. However, separate to that caveat, the organisation is flexible to change and keen to take advantage of new directions.

- Long and short term approach

Whilst reactive to emerging propositions as they occur, a long-term approach is taken in evaluation of the opportunity.

Structure

- Informal

In the main, the organisation has informal structures that reflect its entrepreneurial nature. Project teams vary and collaboration across departments is constant.

- Structures to monitor and manage risk

However, there is a significant amount of processes within the centre to enhance operational efficiency and manage risk. Projects are more likely to have defined parameters and goals.

- Shallow management structure

The management structure has three layers, which creates a shallow non-hierarchal platform for the organisation to operate.

- Open communication channels

Communication channels are designed to be open to encourage flow of information up and down and across functions within the organisation.

- Matrix structure engaged in project (field) work

In the project delivery end of the organisation there is a matrix structure allowing individuals to take core responsibilities but also be pulled into a number of different projects.

Summary of the findings relating to the entrepreneurial environment

Regional wildlife body entrepreneurial environment summary

Regional Wildlife Body		
Culture and manifested climates		• Innovative • Experimental • Informal • Autonomy • Collaboration • Moderate levels of bureaucracy • Low hierarchy • Learning culture • Openness & trust • Risk taking • Tolerance of failure and low fear of failure
Leadership		• Leadership with an entrepreneurial mindset • Values driven • Through a strong vision • Encourages experimentation • Visible, open and approachable and non-hierarchal • Charismatic • Leadership by example
Strategy		• The organisational vision provides strong and clear direction • Predominantly emergent as opportunities arise • Long and short term approaches
Structure		• Informal • Structures to monitor and manage risk • Shallow management structure • Open communication channels • Matrix structure engaged in project (field) work

The Area development agency

Findings suggest a number of organisational climates that may be supportive to entrepreneurship and give an understanding to the nature of the organisation. To enhance the understanding of the environment findings in the areas of leadership, strategy, and structure are also represented.

Culture

- Bureaucratic nature and reduced autonomy for the individual

The overall culture is predominantly influenced by values that might be associated with being a local government organisation (a focus on process, procedure, transparency and politics). There is also evidence to suggest that the organisation is looking to develop a culture more in line with that of the private sector. Autonomy is constrained by the existing protocols, structures and volume of workload.

- Focus is on the process over the client

The organisation is centred on continuity of existing operations over entrepreneurship. “Rather than focusing on the end product and the relationship with the client, there is a lot of time spent in the process and ultimately it’s not the end product that’s examined or tested or measured” (Contracts Manager). Engagement with innovation and entrepreneurship largely rests with senior management. The public sector ways, ethics, and attitudes are proving hard to change. Whilst there is a wish for a more innovative position, the culture is adapting slowly.

- Hierarchal

The organisation has a hierarchical culture despite current change activities from Senior Management.

- Quasi informality

The informal environment promotes some informality, as does management, however, the formal verbal protocols of bureaucracy are evident. Informality is similar to politeness rather than an open and relaxed state.

- Subdued atmosphere in open plan offices

The working environment is quite transactional with many staff only prepared to put in appropriate effort and hours to reflect the amount they are paid.

- Less open, less trust

There is a level of openness within the organisation however, openness closely relates to organisational transparency rather than at a deeper personal level that might promote psychological safety and trust.

- Less collaboration

Some collaboration occurs in the open plan offices, which actively facilitates the informal sharing of information, mainly by colleagues talking with each other. There is freedom to share thoughts and ideas. However, in most areas of the organisation there is little evidence of collaboration in idea generation or execution. Whilst there are open plan offices, there is little communication outside of immediate teams. The atmosphere in the open spaces is subdued. With the aim of developing a collaborative approach, management organise a compulsory 'Away Day' each year.

- Less learning

There is evidence of a mix of ways in which learning occurs however, in the main, it is more structured than unstructured. Learning and development is encouraged and offered, however, it is up to the individual to proactively sign up on relevant training courses. Some learning occurs via experience within work and from colleagues. However, with less experimenting there is less learning. Learning is a function of HR and not a significant part of the overall culture.

- Political

As the main supply of funds derives from the council, there is evidence of a significant level of internal and external politics that influences the way the organisation behaves.

- Low risk taking

The culture is generally risk averse however; where risk is taken, it is informed and considered against the market. The main financial resource being 'tax payer's money', there is heightened awareness of managing risk as the

organisation is publically accountable and has to offer information openly and freely.

- Slow pace of change

The organisation demonstrates signs of being change averse, and when change is instigated, the organisation is slow to effect the change.

- Low failure tolerance and fear of failure

Fear of failure does exist for some and this is dependent on the department and/or the manager. The impact of this fear of failure leads to stemming of the flow of ideas for some but not for all. Whilst there is general warmth towards the senior team there is significant fear of being on the 'wrong side' of important individuals

- Blame culture

There is evidence of a blame culture where successes are recognised as a group responsibility and failures as an individual responsibility.

4.5.2.2 Leadership

- Hierarchal

There is evidence of a hierarchal approach to leadership within the organisation. This being the most predominant paradigm, there is also a mix of other styles of leadership reflecting a more democratic approach.

- Vision statement lead

Management have put forward a clear vision for the organisation that seeks to change the way leadership and decision-making happens. The vision includes a significant element of being entrepreneurial. Paradoxically, the vision is 'top – down' in its creation and communication.

- Leads 'surface' innovation

Whilst senior management aspire for the organisation to be innovative, the approach is quite shallow. More words are spoken than actions taken conducive to innovate workplace. Whilst at times senior management generally encourages entrepreneurship, there is no close engagement with the development of ideas.

- Focus on compliance

Experimenting is encouraged to a degree however, the workload is prohibitive, there is lack of freedom, and more evidently, time is in short supply. Essentially leadership is focused on the regularity nature of the organisation and this is the dominant focus.

- Risk averse

Leadership is generally risk averse and this is reflected in the organisation.

- Well-liked and respected

Leadership engage in an open and transparent communication and are generally liked and respected.

- Lack visibility

However, communication is mainly top down and, generally; the senior team are less visible to business.

- Partial tolerance of failure

There is a moderate tolerance of failure and failing on a small scale is perceived to be acceptable. However, leadership does create a level of fear when it comes to non-delivery of established standards.

Strategy

- Structured and formal

Strategy is essentially 'top - down' and driven by a structured process. There is a formal process for creating strategy delivered by the senior management team. There is little evidence of emergent strategy.

- Transparent to external stakeholders

Due to the transparency of the strategical approach to stakeholders and external parties, it is rigid by nature.

- Focused on core compliance operations

The predominant focus of the strategy relates to the core of its operations, which rest within its function of compliance.

- However aims towards a new entrepreneurial platform

The strategy of the organisation centres on a gradual movement from local government finance to private finance. Within this strategy, there is a focus on driving innovation and, whilst this is recognised in the organisation's vision statement, it remains largely separate from most employees working lives. Senior management, however, have a more entrepreneurial focus and are moving towards the organisational aim.

- Long and short approach

The vision guides a strategy that is considerate of the short and long term.

Structure

- Hierarchal management structure

There is a hierarchal management structure within the organisation and responsibilities are clearly defined. There is evidence of layers of processes and procedures. The level of bureaucracy is quite evident: "The problem with this organisation is it is hamstrung by process – procedure." (Building Surveyor). Essentially, the structures are bureaucratic; however, management are trying to reduce some of these bureaucratic structures.

- Clearly defined roles and responsibilities

There are formal communication structures and there are significant channels for informal communication driven by the open plan workspace. However, there is no evidence of a structure to support entrepreneurship: "I'm not convinced our structure is conducive to creativity, innovation, uniqueness. I don't think it is" (Contracts Manager).

- Tight processes and heavily target driven

It takes a long time and significant effort to promote ideas and the bureaucracy stifles entrepreneurship. The organisation is heavily reliant on targets to drive performance and focus, and therefore, centres on very tight controls of

resource. This is demonstrated by the new 'staff time' system that means every hour of every individual is documented and charged to an activity.

- Mainly informal communication channels

Whilst there is evidence of structure in many facets of the organisation, when it comes to communication channels, there is little structure and open office offers a foil for continuous communication within teams and across functions.

Summary of the findings relating to the entrepreneurial environment

Table: Area development agency entrepreneurial environment summary

Area Development Agency		
Culture and manifested climates		• Bureaucratic nature and reduced autonomy for the individual • Focus is on the process over the client • Hierarchal • Quasi informality • Subdued atmosphere in open plan offices • Less open, less trust • Less collaboration • Less learning • Political • Low risk taking • Slow pace of change • Low failure tolerance and fear of failure • Blame culture
Leadership		• Hierarchal • Vision statement lead • Leads 'surface' innovation • Focus on compliance • Risk averse • Well-liked and respected • Lack visibility • Partial tolerance of failure
Strategy		• Structured and formal • Transparent to external stakeholders • Focused on core compliance operations • However aims towards a new entrepreneurial platform • Long and short approach
Structure		• Hierarchal management structure • Clearly defined roles and responsibilities • Tight processes and heavily target driven • Mainly informal communication channels

Area division of government agency

Findings suggest a number of organisational climates that may be supportive to entrepreneurship and give an understanding to the nature of the organisation. To enhance the understanding of the environment findings in the areas of leadership, strategy, and structure are also represented.

Culture

- Bureaucratic and conformist

The culture within the agency centres on bureaucratic values as opposed to entrepreneurial values: “One of the things they do get hung up on is process and methodology. So the agency gets caught up in the process rather than looking at the result and the outcome.....all the jargon says we’re outcome driven, but really we’re not” (Scientific Technical Specialist). ‘Consistency’ is an important word for management and “therefore the business has quite rightly set some procedures and processes within which we need to work” (Deputy Regional Director).

- More formal than informal

The organisation is more formal than informal by nature. Whilst there is friendly and positive working environment, with the bureaucratic structures bring a level of formality. This is reinforced by the hierarchal management structure.

- Limited autonomy

For most people there is limited autonomy in their job roles; however, this was not the case in all areas. Some roles allow for some discretion and autonomy, and further up the hierarchy there is increased evidence of role autonomy.

- Inflexibility

With the advanced levels of structure comes a rigidity within the organisation, which leads to reduced flexibility.

- Hierarchal

The organisational culture is hierarchal: “National talk to Region; Region talk to Area; very rarely did area talk to National. You always had to go up and down the chain” (PA to the Area Manager). The hierarchy and institutionalisation is evidenced by the heavy use of jargon by individuals, reaching such a high level that the organisation launched a scheme to specifically reduce jargon and promote plain English.

- Resistant to change

There is a significant level of evidence indicating a general resistance to change. This is a prominent part of the overall culture. Many organisational members are comfortable just carrying out their prescribed work, which is core to the operation.

- Highly political

Individuals articulated the political nature of the organisation and the problems for idea development that arise. The organisational environment is affected by internal and external politics.

- Limited openness/trust/collaboration

Findings suggest that there is a level of openness within some teams but, in line with the hierarchal nature of the organisation, this is somewhat restricted in the main. Generally, there is little collaboration within the organisation. Indeed, some of the functions are “very insulated” (Analyst, Evidence Team).

- Risk averse

The agency is predominantly risk averse. The organisation is part of a government department that has to ensure the delivery of their core activities efficiently and effectively. There is little room to manoeuvre and therefore people are less comfortable with taking risks.

- Non-experimental

Learning is a not a prominent part of the culture of the organisation. The emphasis of learning is centred on training individuals to be able to effectively carry out their role. Whilst there is learning that occurs during the organisation's normal activities, it is at a less in-depth level as the lack of experimentation restricts new learning.

- Slow pace of change

As the organisation prefers to plan activities extensively leaving little to chance, the pace of change is slow. Indeed, a constant theme from the interviews related to the very aged technology used within the organisation.

- Blame culture

Whilst senior management do not believe there is a blame culture, evidence further down the management structure suggests otherwise. If initiatives go wrong then the blame is attached to an individual as opposed to the team taking ownership of the outcome. However, there is another perspective that suggests blaming is avoided because the organisation is very conscious of bullying, harassment, and dignity of work. In this way, there is a "no blame culture" (PA to the Area Manager).

- Low tolerance of failure and fear of failure

Evidence suggests that there is a fear of failure that is widespread across the organisation. Whilst there is evidence that failure is acceptable in some circumstances it is not built into the culture: "….intelligent failure, whether they're intelligent or not, the word failure is still in there, and some people will only see that bit of… those two words" (ABPPBP). Fear of failure can affect an individual's:

- Personal reputation
- Personal capability
- Job security
- Draw ridicule from colleagues

Essentially, the tolerance of failure is limited within the organisation and the concept of intelligent failure is not promoted. However, depending on the job

role and/or position in the management hierarchy, there are some areas of the business where there is less, or no fear of failure, but this is not the norm.

The least supported survey statements are ‘the organisation encourages entrepreneurial risk taking’, ‘there is time for learning and innovation’, ‘the organisation encourages experimentation’, and ‘the organisation encourages creativity and innovation’.

Leadership

- Hierarchal

Leadership is centred within a management system that is hierarchal by nature. The Deputy Regional Director articulates that the organisation is in a situation where they are “working within the envelope of what we’re required to deliver by the government and by our sponsoring department, as well as then constraining that further through the policies and procedures and processes that we put in place.”

- Focuses on continuity and compliance

Leadership centres on continuity over discontinuity and thus leadership focuses on the disciplines and practices supporting operations, processes and procedures.

- Entrepreneurship is a minor activity

Corporate entrepreneurship is not a priority for leadership, even though their senior management would like to explore new ideas and can see value in doing so. Essentially, many initiatives never gain the relevant exposure and entrepreneurs give up putting ideas forward. Leadership does not actively strive for an entrepreneurial culture.

- Can be a block to idea generation

Indeed, there is frustration that leaders may on occasion encourage entrepreneurial activities but actually form the administrative block to idea progression. As the Team Leader, T (at location B) puts it “people used to say

‘I wish I could do that’ and he (the line manager) always said ‘well what’s stopping you?’ And of course everybody used to want to say ‘well you, actually’”.

- Professional, approachable, friendly, and inclusive

Leaders are generally approachable, friendly and inclusive in discussion on topics within their activity domain.

- Inflexible

However, the rigidity of the bureaucracy means they can offer less flexibility and support than perhaps they might like.

In essence. leadership centres on highly efficient compliance of existing protocols and systems.

Strategy

- Mainly structured, but some emergent strategy

Strategy is a structured process and is driven by the government and, at a local level, by the senior team. Essentially, it is a ‘top down’ exercise. However, the strategy can be affected by significant external factors that cannot be planned. This can create some emerging strategy. Nevertheless, strategy generally is not a free flowing and emergent practice.

- Encased in a strong organisational vision

Significantly, strategy is heavily influenced by the vision of the agency, which forms the values and bedrock of future planning.

- Long term approach

The organisational strategy centres on delivering its core responsibilities set out by the government and takes a long-term approach.

- Centred on compliance and operations, efficiencies and effectiveness

In order to deliver a closely defined target on a consistent basis, organisational strategy principally focuses on operational efficiencies and effectiveness.

Focused on delivery of a strict criterion, there is little evidence of innovation or entrepreneurship being part of that strategy. However, at a local level leadership does discretely encourage new idea creation and acknowledge it as important in the future plans and development of the business.

Structure

- Hierarchal management structure

The organisation has a hierarchal management structure with extensive and specific job roles and responsibilities.

- Large volume of prescriptive policies and procedures

The organisation has a detailed operational structure including a large volume of policies and procedures that are prescriptive.

- High levels of operational structure

The organisation is bureaucratic by nature and the structure is supportive of detail, consistency, and compliance. It is much less supportive of entrepreneurial activities.

- Predominantly structured internal communication systems

Communication structures are both formal and informal. There is a significant number of formal communication structures which are regular, inclusive and thorough: “The area manager has a monthly meeting with all of his manager level and business partners, the managers would have a meeting which includes all the team leaders, the team leaders would meet with their team and sometimes the area manager would join it, sometimes the local manager would join in. So there are regular meetings” (PA to the Area Manager). Informal communication occurs within their teams in their natural workspaces on an ad hoc basis and on an ongoing basis.

- Informal communications within 'specialist' departments

Additionally, an informal communication network forms around the specialisms, or ‘business units’ in the organisation. These ‘communities of practice’ cross-area boundaries to be inclusive across the UK.

Summary of the findings relating to the entrepreneurial environment

Area division of a government agency entrepreneurial environment summary

		Area division of a government agency
Culture and manifested climates		• Bureaucratic and conformist • More formal than informal • Limited autonomy • Inflexibility • Hierarchal • Resistant to change • Highly political • Limited openness/trust/collaboration • Risk averse • Non-experimental • Slow pace of change • Blame culture • Low tolerance of failure and fear of failure
Leadership		• Hierarchal • Focuses on continuity and compliance • Entrepreneurship is a minor activity • Can be a block to idea generation • Professional, approachable, friendly, and inclusive • Inflexible
Strategy		• Mainly structured, but some emergent strategy • Encased in a strong organisational vision • Long term approach • Centred on compliance and operations, efficiencies and effectiveness
Structure		• Hierarchal management structure • Large volume of prescriptive policies and procedures • High levels of operational structure • Predominantly structured internal communication systems • Informal communications within 'specialist' departments

Appendix 11: Managing intelligent failure: Cross case matrix

Appendix 11: Managing Intelligent Failure Summary: Cross Case Matrix				
	Organisation	**Epos Systems Supplier**	**Processed Juice Supplier**	**Public House Operator**
Managing Intelligent Failure				
	Significance of managing intelligent failure (M	Not prevalent (in formal sense) or a priority	Not prevalent (in formal sense) or a priority	Not prevalent (in formal sense) or a priority
	Recognition of intelligent failure	By support functions	By production dept.	By the branches
	Non recognition of intelligent failure	Project drift and focus is on moving on to the next initiative	Focus on making it work in the future	"didn't work but possibly could", not working is just stage in an entrepreneurial process that lead to success
	Identifying failure	Low level; customers principally but also software, sales & profit numbers.	Customer feedback, supplier feedback, continuous "picking up messages", email chatter, informal discussion, ongoing monitoring .	MIS system, customer feedback, experience and feel, ongoing general discussion
	Use of 'failure' word	No. Instead: "It didn't work let's move on"	No.	No.
	Analysing Failure	Little analysis, very informal, can include the customer, little documentation	Informal meetings and discussion and mainly on an ad hoc basis. Or very informal 'down the pub' . One formal SMT monthly meeting Unstructured after action reviews with very little documentation.	Little analysis, generally informal accept quarterly review where qual and quant findings explored
	Structure	Unstructured and informal	Unstructured and informal	Unstructured and informal
	Learning from failure	Yes	Yes	Yes (the branches would say 'no'!)
	Deep learning from failure	Senior Team	No	ST only
	Cross dept. learning from failure	No	Some	No
	Personal reflection/learning	Yes	Yes	Yes
	Managing the after action review	"Shouty" and "non shouty" versions	Casual and ad hoc	unstructured and unfocused
	Communications of lessons learnt	No structure - ad hoc and informal	Informal, ad hoc, with team and other depts.	No structure - ad hoc and informal
	Emotional management	Little structure, informal friendly 'family' support	No (not required -no recognition of failure!)	Yes
	Localised MIF (at dept level)	Yes, differing levels in differing depts.	Yes	Yes
	Challenges to MIF process	Time and lack of emphasis	Lack of emphasis and structure	Lack of emphasis
Entrepreneurial Environment				
Culture	**Client Centric**	Yes (Very)	Yes (very)	Yes
	Innovative nature	More 'yes' but some 'no' depending on function	Yes	Yes (in HO but not branches)
	Experimenting	More 'yes' but some 'no' depending on function	Yes	Yes (but 'no' in the branches)
	Vibrant working atmosphere	Yes	Yes	Yes
	Family values	Yes	Yes	Yes
	Informality	Yes	Yes	Yes (but traditional)
	Autonomy	Yes - significant	Yes	Yes (in HO but not branches)
	Collaboration	Yes	Yes	Yes (in HO but not branches)
	Bureaucratic	No	No (but some in Production)	No (but some in the branches)
	Hierarchy	No	No (very un hierarchal)	No
	Learning Culture	Yes - very well developed	Yes (Strong)	Yes (very strong)
	Openness	Yes	Yes (very)	Yes (very)
	Trust	Yes	Yes (very)	Yes (very)
	Politics	No	No	No (except between HO and branches)
	Risk taking	Yes - particularly the ST	Yes	Yes (in HO but not branches)
	Pace of change	Fast	Fast	Steady
	Impulsive	Yes	Yes	No
	Fear of Failure	Generally 'No' (also 'Yes' depending on function)	No (Strong)	No (Strong)
	Blame	Generally 'No' (also 'Yes' depending on function)	No (Strong)	No (Strong)
	Tolerance of failure	Generally 'Yes' (also 'No' depending on function)	High	High
Leadership		Non hierarchal, CEO + COO driving force, leading innovation from the front.	Strong entrepreneurial leadership	Non hierarchal, "Custodian" approach centring or creating an environment for self actualisation
Strategy		Long term approach encased in clear vision, some formal but principally emergent strategy centred around opportunity seeking actions, strategical awareness of culture	Short and long term focus on entrepreneurship to deliver emerging strategy	Long term approach focused on developing environment to support people development and entrepreneurship. Mix of 'emerging' and formal approaches towards strategising all which sits within strong emphasis on vision and values.
Structure		Moderately flat management structure, wariness of bureaucracy, open unstructured communication flows, project teams created, not target driven, structure in Support depts.	Very flat management structure, open informal channels of communication. Flexible and adaptable.	Moderately flat management structure, open and less structured in the centre, cross dept. collaboration. Branches have significant procedural structure and are target driven

Appendix 11 continued….

Appendix 11: Managing Intelligent Failure Summary: Cross Case Matrix continued				
	Organisation	**Regional Wildlife Organisation**	**Area Development Agency**	**Area Division of Government**
Managing Intelligent Failure				
	Significance of managing intelligent failure (MIF)	Not prevalent (in formal sense) or a priority	Low	Low
	Recognition of intelligent failure	By core support functions	By building functions	By 'Field' teams only
	Non recognition of intelligent failure	"that didn't work" and then "totally consumed by the next thing"	"just move on" + "no such thing as a failure, there's just an alternative solution"	Failure forgotten and org moves on
	Identifying failure	Project milestones, continuous monitoring, informal discussion in teams, or 1 to 1 meetings	Informal discussion, regulate ops reviews	Very limited or no formal/informal process, milestones and targets.
	Use of 'failure' word	No	No. Instead: "it didn't work"	No. Instead: "it doesn't work"
	Analysing Failure	Little evidence. Individual and team analysis informal (no agendas) ad hoc, no fixed process. Projects - more structured approach	Very limited - Informal, ad hoc. Limited documentation	Very limited and little documentation
	Structure	Unstructured and informal	Structured and less informal (ex building projects)	Structured and less informal
	Learning from failure	Yes	Limited	Limited
	Deep learning from failure	ST only	No	No
	Cross dept. learning from failure	No	No	No
	Personal reflection/learning	Yes	Yes (main learning)	Yes
	Managing the after action review	Informal + manly ad hoc (projects more structured)	No evidence	No evidence
	Communications of lessons learnt	limited, local, informal, ltd documentation	Limited + close to individual/team	No targeted communication - ad hoc and informal
	Emotional management	General authentic support	No	Peer group mainly - informal
	Localised MIF (at dept level)	Yes	Yes	Yes
	Challenges to MIF process	Lack of emphasis	Lack of emphasis and processes	Time (reduced staffing), lack of emphasis, lack
Entrepreneurial Environment				
Culture	**Client Centric**	Moderately	No	No
	Innovative nature	Yes	No (but innovation encouraged	No (but some ' yes' in the field)
	Experimenting	Yes	No	No
	Vibrant working atmosphere	Yes (calm vibrance!)	No	No
	Family values	No	No	No
	Informality	Yes	No	No (but some ' yes' in the field)
	Autonomy	Yes	No	No
	Collaboration	Yes	Mainly No	Mainly 'no' but also 'yes' (dependent on dept.)
	Bureaucratic	No (some in Support depts.)	Yes	Yes
	Hierarchy	Very little	Yes	Yes
	Learning Culture	Yes	No	No
	Openness	Yes	Some	No
	Trust	Yes	Some	Not mentioned
	Politics	No	Yes	Yes
	Risk taking	Yes	No	No
	Pace of change	Quick	Very Slow (Org is resistant to change)	Very Slow (Org is resistant to change)
	Impulsive	Yes	No	No
	Fear of Failure	No (Strong)	Yes	Yes (high)
	Blame	No (Strong)	Yes	Yes (high)
	Tolerance of failure	High	Generally No	No
Leadership		Strong entrepreneurial leadership, creating environment to promote initiatives. Non hierarchal charismatic and very open leadership style. Leads by example	Hierarchal, enacts 'surface' innovation, risk adverse, focus on compliance, well liked and respected	Very hierarchal, centres on detail, consistency, and compliance. Speak but don't act innovation. Friendly and inclusive.
Strategy		More focus on short term and reactive to emerging opportunities. However strategy for long and short term entwined with strong vision and values.	Short and long term approaches focused on developing private culture and being more entrepreneurial.	Long term approach focused on effective compliance; operational effectiveness
Structure		Shallow management structure and informal structures. Open communication channels and individual autonomy. Matrix structure engaged engaged in project (field) work.	Hierarchal management structure, heavily target driven, lack of structured communication channels	Hierarchal management structure, detailed operational structure made up of large volume of prescriptive policies and procedures. Very structured internal communication systems, informal communications within org 'specialisms'.

11 Continued….

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