Leadership for Innovation

Summary Report from an AIM Management Research Forum in cooperation with the Chartered Management Institute

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1 Preface

On 27th October 2004 the fourth UK Management Research Forum was held at the Department of Trade and Industry's (DTI) offices in London. Building on previous work on inspirational leadership undertaken by the DTI and the Chartered Management Institute the focus of the Forum was 'inspirational leadership for innovation'. It is widely accepted that the UK is less productive than its major competitors – France, Germany and the US – in many sectors and it is widely argued that one way of overcoming the productivity gap is by promoting greater levels of innovation in the UK. Data suggests that the UK's science base is excellent, but all too often we fail to capitalise on the knowledge we create and develop high value products and services that can compete in the global economy.

Addressing these issues requires us to examine a host of subjects – investment, skills, institutional structures and regimes, as well as the crucial question of organisational management and leadership. What does leadership in the context of innovation mean? Is there such a thing as inspirational leadership for innovation? What do we know about leadership? How does leadership affect organisational context? What sort of organisational contexts are necessary to generate innovation?

This report explores these issues by drawing upon an open and insightful forum discussion and further desk research, undertaken by a team of AIM Scholars and a Chartered Manager. The AIM Scholars have sought to integrate the latest and best academic and practitioner thinking from around the world with the conversation and discussion that took place at the Management Research Forum. And in light of this they have developed specific policy recommendations and identified outstanding research questions that require investigation.

We hope you find the report of interest and that it will stimulate your thinking and encourage you to become involved with AIM Research and its future events.

Professor Andy Neely

Deputy Director
Advanced Institute of Management Research

Mary Chapman

Chief Executive
The Chartered Management Institute

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3 Executive Summary

This report builds on discussions that took place at the fourth UK Management Research Forum organised by AIM Research, the Chartered Institute of Management and the Department of Trade and Industry. In summary, the report contends that:

- **Leaders both motivate employees <u>and</u> design effective organisations:**

There are two broad conceptions of what leaders do – they motivate their followers and they design organisational contexts to enable their followers to function effectively. We explore these concepts using the extant body of literature on leadership. In doing so, we note that much of the literature sees the leader as an individual, rather than recognising the potential for distributed leadership.

- **The nature of innovation is contingent upon the organisational context:**

Innovations can be usefully thought of in terms of the type of innovation (product, service, process, organisational and/or market) and the degree of novelty required. These two dimensions – type of innovation and degree of novelty – determine which organisational contexts and strategic approaches are appropriate for different innovations. The role of leadership in the innovation process is less clear and research in this field still is in its infancy.

- **Organisational enablers of innovation provide a link between leadership and innovation:**

We propose that leadership can impact innovation through its influence on the organisational enablers of innovation. These include leadership systems, structures, processes, culture, competencies and networks.

To summarise, this report argues that leadership can affect innovation, but in more complex ways than would be implied by a focus solely on inspirational leadership. In particular we need to acknowledge that leaders can act through the design of organisations and that leadership itself can be distributed rather than individualised.

3.1 Policy Implications:

- The DTI is embarking on the process of developing an Inspirational Leadership Index. In preparing this Index it is important to consider the multiple facets of leadership, as embodied in the motivational and structuralist approaches, described in this report.
- It is recommended that the Inspirational Leadership Index draws on the widely used and well-established measures of the motivational aspects of leadership – such as the Multifactor Leadership Questionnaire (MLQ).
- If the Inspirational Leadership Index is to be more than simply an awareness enhancement exercise, it needs to be designed so that people can act on the results. In other words, the design of the Index should be complementary with steps towards providing appropriate leadership training.
- In linking policies for leadership and innovation it is important to recognise the need for different leadership approaches at different stages of the innovation process and at different levels of the organisation. The concept of ambidextrous organisational forms is important in this regard.

3.2 Organisational Implications:

The primary challenges for organisational leaders in promoting innovation are to:

*   Recognise and develop appropriate leadership for the different stages of the innovation process. How leaders are selected, supported, evaluated, motivated and developed is likely to differ depending upon which stage of the innovation process they are responsible for. For instance, transformational leadership skills may be more useful in early-stage innovative activity, such as R&D and product development, but transactional leadership skills are also essential to the smooth functioning of commercialisation.

*   Create organisational contexts that support complete innovation processes of different degrees of novelty. At this level, the challenge to leaders is to understand various ambidextrous organisational design options to enable coordination of activities across more and less novel innovation processes. Becoming an ambidextrous organisation is itself a task for transformational leadership.

3.3 Research Questions:

*   This report proposes a framework that links leadership to innovation outcomes through innovation enablers. Further research is required into the issue of innovation enablers as well as innovation barriers so that we can properly identify those processes and actions most appropriate for leaders to influence the innovation performance of their firms given the organisational context.

*   Further investigation into the complex relationship between leadership approaches and stages of innovation is required to objectively test the hypotheses proposed in this report.

*   Distributed leadership is an area of potential significance that is, as yet, under-explored.

4 Leadership for Innovation: Motivation and Conceptual Framework

4.1 Motivation

In October 2002, the Economic and Social Sciences Research Council (ESRC) appointed Professor Michael Porter to undertake a review of UK competitiveness. The research was jointly funded by the Department for Trade and Industry (DTI) and sponsored academically by the London School of Economics. 'UK Competitiveness: Moving to the Next Stage' was published in May 2003[1]. Porter and his team concluded that the UK had a productivity gap, which was increasing and needed a new conception of competitiveness focusing on improving skills, stimulating innovation and fostering enterprise. "[…the UK] needs to change from a location competing on low costs to a location competing on value and innovation". The questions raised in the report meant that further research into management was necessary, particularly into the key drivers of high-class infrastructure, creation of clusters of expertise and collaborative initiatives between businesses and universities to foster innovation and overcome skills shortages at junior and middle management levels. There was a suggestion that unless these government and business initiatives were addressed, improved management would not lead to improved UK competitiveness.

In December 2003, the DTI published a follow-up report, 'Competing in the global economy: the innovation challenge' – known as the Innovation Report[2]. In this report, the government was explicit in its aim to create conditions where all the UK's firms can put innovation at the centre of their strategies for the future and pledged to undertake a step-change improvement programme in its policies for increasing the UK's innovation performance and plug the productivity gap. One of the measures proposed was to establish an innovation taskforce to identify how the innovation agenda could be spread through Britain's workplaces. The report summarised that high-performance, innovative organisations required "inspirational leadership, stronger management skills, a highly-trained and motivated workforce, a flexible labour market that promotes diversity and fair treatment, and workplaces that recognise environmental issues and the need for greater resource productivity".

Following on this theme, the DTI published a report in August 2004 that summarised the previous reports and included the results of two major surveys into leadership: one by the Council for Excellence in Management and Leadership (CEML) and the second by the Chartered Management Institute (CMI)[3]. The DTI report suggested that the single most important factor missing in Britain's business leadership was 'inspiration'. The DTI undertook to create an Inspired Leaders Index to identify and assess the key leadership behaviours and values that have a significant impact on inspiring 'followers' in their organisations. The key assumption that underlies this exercise is that 'inspirational leadership' is a pre-requisite for successful change and innovation.

AIM Research agreed to partner with the CMI and the DTI to review the process so far and explore how existing research might inform the creation of an Inspired Leaders Index.

In undertaking this project, AIM set up its fourth Management Research Forum and appointed five Scholars from academia and industry to explore key leadership behaviours and values that have the most impact on innovation and performance. The Scholars attended a forum meeting at the DTI and gathered empirical evidence from delegates in the fields of academia and practise. Presentations by Sir Paul Judge, President of the CMI; Nigel Crouch, Senior Industrialist in the Innovation Unit of the DTI and by Dr. Lynda Gratton, Associate Professor at the London Business School, Fellow of the Advanced Institute of Management Research (AIM), were followed by plenary and round table discussions. The findings were recorded and supplemented by the literature on leadership and innovation.

4.2 AIM's 'Leadership for Innovation' Conceptual Framework

Drawing from the Management Research Forum discussions and prior DTI publications, such as the report by Professor Michael Porter, the five AIM scholars under the lead of Professor Andy Neely, developed a conceptual framework to analyse critically the issues related to leadership and innovation in UK business. Grounded in cutting edge academic research on the subjects of leadership and innovation, this framework reflects current thinking in practice, public and academic sectors. Its main aim is to shed some light on the processes by which leadership can influence innovation in the public and private sectors of UK. Furthermore, it is also informed by the previous work of Michael Porter on the national competitiveness of the UK and DTI's innovation studies. Finally, examples from the practitioner world, as well as those that emerged from the Management Research Forum itself have been embedded within this document to provide a holistic perspective on this topic.
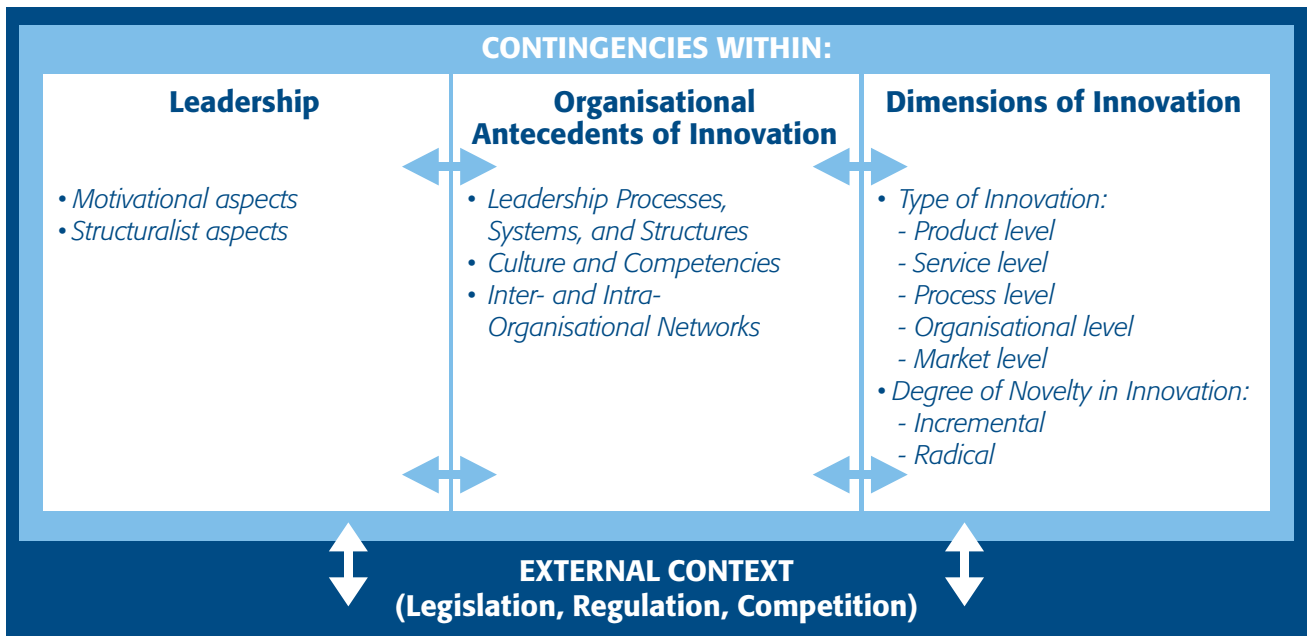
[1] Porter and Ketels (2003).
[2] DTI (2003).
[3] DTI (2004).

In order to best address the research question at hand, namely, how does leadership affect innovation within organisations, a review of existing academic literature as well as the discussions at the Management Research Forum was conducted. After reviewing the transcripts of this material, a consensus was achieved on the key patterns and themes to emerge out of the Management Research Forum, as well as the breadth of knowledge comprised within the AIM Scholar group. Through an iterative process, a conceptual framework emerged.

Figure 1: The 'Leadership for Innovation' Conceptual Framework

CONTINGENCIES WITHIN:

Leadership	**Organisational Antecedents of Innovation**	**Dimensions of Innovation**

• *Motivational aspects*
• *Structuralist aspects*
	• *Leadership Processes, Systems, and Structures*
	• *Culture and Competencies*
	• *Inter- and Intra-Organisational Networks*
		• *Type of Innovation:*
		  - Product level
		  - Service level
		  - Process level
		  - Organisational level
		  - Market level
		• *Degree of Novelty in Innovation:*
		  - Incremental
		  - Radical

EXTERNAL CONTEXT
(Legislation, Regulation, Competition)

During the initial iterations, the issue of leadership was addressed in the context of the DTI's work on the Inspirational Leadership Index and supplemented by the AIM Scholars' review of the academic literature. Our collective understanding suggested the need for being mindful of the following:

- *Leadership* can manifest itself at all levels in the organisation, not just at the top;
- *Leadership* need not be concentrated in the person of a single leader, but may act through distributed leadership systems and;
- *Leadership* sets the organisational context for follower's activities not only through its effect on the motivation of followers, but also on the administrative coordination systems that support innovative activity. Specifically leaders have a responsibility to design an appropriate organisational context for their followers.

Next, a detailed examination of the topic of innovation revealed that innovation itself can be treated far too simplistically and as such, needed to be further 'unbundled' to gain a better perspective on how leadership could influence it. Understanding that there are many different types and categories of innovation was thought to be highly relevant to understanding how leadership could maximally impact the innovation process. Most importantly, this framework also addressed the black box that constituted the means by which leadership could influence the innovation process. Significantly, these processes included emergent themes such as networks, culture and competencies, as well as designed attributes such as structures and systems.

At the simplest level, it was concluded that these factors – the innovation enablers – were the mechanisms through which leadership could enable innovation within and between organisations. It was also concluded that context matters, especially since significant external contextual factors related to legislation, regulation, and competition, as well as the internal organisational context are bound to affect innovation as well.

5 A Brief Review of Leadership Research

Most durable definitions tend to view leadership as primarily a social process that takes place in a group context where the leader influences followers (both directly and through the design of the organisational context) to behave in a certain way so as to achieve organisational goals.

There are many leadership theories in the literature. Most emphasise the social psychological process that motivates followers. We refer to this perspective as 'motivational leadership'. Recent work on one theory of leadership – transformational leadership – is particularly important, as it appears to have a stronger research base and provides a more integrative perspective on effective leadership than earlier theories. As a result we devote significant attention to transformational leadership, but we also briefly mention other theories that require further testing, but none the less contribute to our overall understanding of leadership.

We also address the continuing controversy over the distinction between managers and leaders and definitions of leadership. Managers are usually depicted as planners, organisers and controllers while leaders are seen as inspiring, change-oriented visionaries. In practice these roles overlap. An increasingly widespread view holds that managers at all levels need to be leaders. We have adopted this view. Thus, in addition to the motivational effects of leadership, we also focus on the impact of leaders on organisational contexts through their roles as architects of the organisation. We refer to this as the 'structuralist' perspective on leadership.

The key leadership theories identified include:

*   Trait and style theories
*   Contingency theories
*   'New' leadership theories, including transformational theory
*   Distributed leadership, and
*   'Structuralist leadership' : Leaders as architects.

Each of these approaches will be discussed in the following sections.

5.1 Trait and Style Approaches to Leadership

The first stream of leadership research consists of theories which hold that there is one best way of exercising leadership. Such theories, as exemplified in trait and style approaches, are typically concerned with delimiting the particular characteristics or behaviours that good leaders should possess. The difference between trait and style approaches is that while trait approaches focus on what attributes or personality factors (e.g. introversion vs. extroversion) set leaders apart, style or behavioural approaches focus on what they do and thus assume that leaders can be nurtured, once the behaviours that comprise effective leadership are known (Bryman, 1992; Shackleton, 1995).

Both style and trait based approaches, however, have been criticised. Limitations of the trait approach include, inter alia, the difficulties involved in defining traits which have led to inaccurate questionnaire ratings and interpretations and consequently, inconsistent results (Bryman, 1992; 1999); and the failure to provide adequate explanations of how leadership traits are interrelated or how they interact to influence leadership behaviour and effectiveness given that most trait studies test for simple, linear relationships (Yukl, 2002). Recent years however, have seen a resurgence of interest in trait approaches.

Early style theories identified two independent clusters of effective leadership behaviour, people-centred and task-centred leadership. Numerous studies have been conducted to correlate these behavioural clusters to various outcome measures such as subordinate satisfaction, group performance and so on. Early findings show that a people orientation is associated with increased morale and job satisfaction, while a task focus tends to be associated with poorer morale but better performance (Bryman, 1992, 1999; Shackleton, 1995). Later findings, however, reveal that high levels of both dimensions are the best leadership style (Bryman, 1992, 1999; cf. Blake and Mouton, 1964).

Limitations associated with the style approach are that like trait theories, it ignores situational factors (Bryman, 1992). Also, while behavioural classifications tend to provide useful descriptive aids to help us analyse and understand complex events, they tend to ignore the ways in which specific behaviours interact (Yukl, 2002). However, the approach is still prevalent today, evident, for example, in the preoccupation with competencies and in more recent theories of leadership (including transformational leadership) that have been collectively dubbed the New Leadership by Bryman (1992; 1999).

The research on trait and style approaches should caution us that while some aspects of leadership may be teachable (styles), some may not (traits); therefore both training and selection may be important instruments of leadership development.

5.2 Contingency Theories

A second research stream asserts that leadership styles or behaviours depend on the context in which they are placed. Known as contingency theories, these reject the notion of a universal model of leadership and believe that leadership should be applied variously depending on prevailing situational factors.

The path-goal theory of leadership is one such model. It identifies four leadership styles: directive (focuses on clear task assignments), supportive (shows concern for employee well being and creates a good working environment), achievement-oriented (sets high expectations of employees) and participative (invites employee input into decisions) (House, 1971). The effectiveness of each leadership style depends on the characteristics of subordinates and the nature of the task. However, empirical tests of the theory have been inconclusive (Yukl, 2002).

Hersey and Blanchard's (1988) situational leadership theory is a well-known model, which asserts that leaders can adjust their style to the situation. The basic theory is that task and relationship behaviours on the part of the leader can be reduced as followers mature in their ability and technical competence and in their self-confidence. The appeal of this model is that like previous trait and style approaches, it seeks to simplify a complex and multi-faceted phenomenon such as leadership, but it also incorporates a developmental focus by identifying follower readiness (ability and willingness) as the main influencing factor in the choice of leadership style. However, the model has not been subjected to adequate empirical testing.

5.3 The Motivational Approach to Leadership:
Transformational and Transactional Leadership

A third trend has seen leadership research shift to a view of leadership as "the active promotion of values which provide shared meaning about the nature of the organisation." (Bryman, 1999:27). Many such expositions, however, tend to align themselves with earlier trait and style approaches. One of the better known and promising models is that of transformational/ transactional leadership by Bass and Avolio (1994) shown below.

Table 1: Transformational and Transactional Leadership Behaviours

Key factor		Behaviours
Transformational behaviours	Idealised influence	Leaders act as role models, are admired, respected and trusted, consider the needs of others over their own; are consistent in their behaviours; share risks with others and conduct themselves ethically.
	Inspirational motivation	Leaders motivate and inspire others by providing meaning and challenge, they rouse team spirit; are enthusiastic and optimistic; communicate expectations and demonstrate commitment to shared visions.
	Intellectual stimulation	Leaders encourage innovation and creativity through questioning assumptions and reframing problems. They avoid public criticism.
	Individualised consideration	Leaders attend to individual needs for achievement and growth, engage in coaching and mentoring, create new learning opportunities, value diversity and avoid close supervision.
Transactional behaviours	Contingent rewards	Leaders provide rewards on the condition that followers conform with performance targets.
	Management by exception	Leaders take action when task related activity is not going according to plan.

Source: Bass and Avolio (1994)

Transformational leadership is concerned with binding people around a common purpose through self-reinforcing behaviours that followers gain from successfully achieving a task and from a reliance on intrinsic rewards (Avolio and Bass, 1988). In addition to responding positively to change, transformational leaders actively construct change, facilitate and teach followers and foster cultures of creative change and growth (Bass and Avolio, 1990; 1993). Transformational leadership builds and extends the notion of 'charismatic' leadership, which similarly emphasises inspirational behaviours by leaders and favourable attributions by followers (Conger and Kanungo, 1988; Shamir, House, and Arthur, 1993), but did not explicitly include consideration for employees and intellectual stimulation. Transactional leaders, by contrast, operate within the existing culture of the organisation to maintain the status quo (Bass and Avolio, 1993) and limit themselves to the exchange of extrinsic rewards that satisfy followers' needs in return for compliance and conformity with the leader's wishes (Bryman, 1992; 1999).

Transformational and transactional leadership are complements rather than polar opposites. Both are expected to have positive organisational consequences and both are necessary for organisational performance; yet they work in fundamentally different ways to motivate employees (Bass, 1985). Transactional leadership is likely to be effective in 'stable, predictable environments', while transformational leadership "is likely to seek new ways of working, seek opportunities in the face of risk, prefer effective answers to efficient answers, and (is) less likely to support the status quo" (Lowe, Kroek and Sivasubramaniam, 1996).

The above model is considered effective in any situation or culture and has also been replicated at different levels of authority in different organisations and in different countries (Bass, 1997; cf. Avolio et al., 1991; Hartog et al., 1999). Most survey studies using the Multifactor Leadership Questionnaire (MLQ), which measures the behaviours involved in transformational and transactional leadership, positively relate transactional and transformational leadership to indicators of leadership effectiveness such as subordinate satisfaction, motivation and performance (Bass, 1997). For example, a meta-analysis of 39 studies using the MLQ found a positive correlation between elements of both transactional and transformational leadership and subordinate satisfaction and performance (Lowe, Kroek and Sivasubramaniam, 1996). The transformational leadership effects were stronger and the strongest antecedent of performance and leadership effectiveness appears to be the charismatic component of transformational leadership.

Other points in its favour are that transformational leadership has been shown to positively impact on followers' development as well as indirect followers' performance (Dvir et al., 2002). It has also been shown to cascade from one organisational level to the next in a falling dominoes effect (Avolio et al., 1991), suggesting that transformational leaders either select and/or develop transformational followers or that followers imitate their leaders.

Transactional leaders are likely to be effective when followers should conform to pre-specified behaviours and achieve pre-ordained goals. Further, the locus of change is focused on the leader rather than follower, who steps in to manage by exception when things go wrong. This would suggest that transactional leaders are effective in efficiency rather than innovation oriented settings. However, since transactional leaders foster as well as thrive in more individualist cultures characterised by dissent and different opinions (Tourish and Pinnington, 2002), it is possible they may prove conducive to innovation in situations where individual dissent and departure from convention is the primary basis for innovation. This suggests that there are trade offs between transformational and transactional leadership and that either may be conducive to learning under different circumstances.

Critiques of the Transformational versus Transactional Leadership framework have been that constructs are similar or overlapping, the theory lacks sufficient description of explanatory processes and is narrowly focused on dyadic processes at the expense of group or organisational level processes, important behaviours are omitted and that there is an overemphasis on heroic conceptions of leadership (Yukl, 1999). Despite these weaknesses, the framework remains one that is relatively better grounded in empirical work, and provides an integrative yet parsimonious view of what leadership entails.

Based on his review of relevant theories and converging research findings, Yukl (2002) summarises how transformational leaders motivate their followers: For him, transformational leaders articulate a clear and appealing vision; explain how the vision can be attained; act confidently and optimistically; express confidence in followers; use dramatic, symbolic actions to emphasise key values; lead by example; and empower people to achieve the vision (ibid.). It has a reliable and robust measurement instrument (MLQ) as attested to in meta-analyses (e.g. Lowe and Galen Kroeck, 1996), and there is some evidence that elements of transformational leadership can be taught (Howell and Frost, 1989). However, this approach could be perceived as an overly voluntaristic view of leadership as it does not recognise the influence of broader institutional processes mediating these activities.

5.4 Distributed Leadership

Recent years have also seen the growth of distributed or 'dispersed leadership' theories which recognise that leadership can be found at all organisational levels and can be shared among multiple players at each level (Bryman, 1999). Chiefly including the notions of team-based leadership related to self-managed work teams (SMTs), these approaches advocate a greater sharing of power between leaders and followers (Bryman, 1999; Gordon, 2002). Operating as quasi-autonomous groups, the team members thus take on multiple leadership roles that include improving the team's environment, managing influence channels, horizontal networking and handling external relations, all of which demand strong interpersonal, negotiation and presentation skills (Belasen, 2000).

Although intuitive and promising, the notion of distributed leadership currently has a small research base and there is much scope for rigorous research on distributed forms of leadership at various levels in the organisation. Nonetheless, some scholars have questioned the utility of the distributed leadership approach and have argued that the traditional power relationships are too deeply embedded in organisations and that people will invariably be inhibited by the perception that it is in their best interests to comply with the expectations of their superiors to make such models truly viable (eg. Gordon, 2002).

5.5 The Structuralist Approach to Leadership: The Leader as Organisational Architect

While the four streams of literature we have reviewed above are largely concerned with leadership as a social psychological process that motivates followers, an alternate, 'structuralist' approach to leadership also exists in the strategy and organisation theory literature. In this stream of research, the focus is on the manner in which leaders undertake key administrative coordination tasks, such as organisation design, the integration of disparate activities, and the marshalling of resources.

For instance, Peter Senge (1990; 1996) argues that the leader's task is designing the learning processes whereby people throughout the organisation can deal productively with the critical issues they face, and develop their mastery in the learning disciplines. These new leaders are designers, teachers and stewards that require a new range of skills. As designers of the 'social architecture', leaders are responsible for the governing ideas that underpin the policies, strategies and structures that inform business decisions and actions and which allow them to build shared vision. As teachers, they coach, guide or facilitate people towards achieving a more accurate, insightful and empowering view of reality through surfacing and challenging prevailing mental models. Finally, as stewards they harbour an attitude of wanting to serve the people they lead and hold a personal commitment to the organisation's mission. The three critical areas of skill that are necessary to undertake these roles include building shared visions, surfacing and challenging mental models and engaging in systems thinking (Senge, 1996). While intuitive and appealing, such ideas still remain to be verified in rigorous empirical analysis.

Ghoshal and Bartlett (1994) draw on case study data to discuss the role of leaders in creating an organisational context that encourages innovation through attributes such as stretch, flexibility, trust and discipline. Gibson and Birkinshaw explicitly test for the link between these organisational context attributes and innovation outcomes, and find strong links (Birkinshaw and Gibson, 2004; Gibson and Birkinshaw, 2004). Ghoshal and Gratton (2004) focus on the role of senior managers in designing 'signature processes'- key organisational integration mechanisms that are deeply rooted in and consistent with the existing values of the firm. Tushman and O'Reilly (1996) suggested that organisations can simultaneously pursue efficiency and innovation (i.e. achieve 'ambidexterity') if these activities are structurally segregated from each other, but integrated at the very top level of management. Leaders enable ambidexterity through their choices of organisation designs, and through their role as integrators of different business processes. Recent empirical research by O'Reilly, Tushman and colleagues broadly confirms these notions (Tushman et al., 2004; O'Reilly and Tushman, 2004).

6 A Brief Review of Innovation Research

Innovation is a multi-faceted concept. To unbundle the concept of innovation we draw on the relevant academic and practitioner literature to explore what innovation is and what its dimensions are.

6.1 Describing Innovation

Innovation has been the focus of researchers in fields as diverse as marketing, strategy, entrepreneurship and new product development. Although, there are terminological differences in these diverse bodies of literature (Garcia and Calantone, 2002), innovation can be generally described as the quest for finding new ways of doing things (Grant, 2002), not limited to technological change even though it is frequently described in this manner. Broadly defined, innovation refers to 'change' (Tidd, Bessant and Pavitt, 2001) and includes the creation and commercialisation of new knowledge. Furthermore, in terms of a firm's generic innovation strategies (Porter, 1980), it is important to mention that innovation is not incompatible with cost leadership strategies. In fact, innovation can equally result in either unit cost reductions (cost leadership) or enhanced willingness on the part of customers to pay a higher price (differentiation).

Innovation has become the subject of much interest among policy makers, business practitioners and academicians. In a recent DTI report, innovation is defined as 'the successful exploitation of new ideas' (Porter and Ketels, 2003). Its elevated status has much to do with the current emphasis on innovation as a means by which firms can secure a competitive advantage over their rivals in globally competitive environments (Porter and Ketels, 2003).

6.2 Dimensions of Innovation

6.2.1 Types of Innovation

The concept of innovation can be understood by considering two basic dimensions. Tushman and Nadler (1986) suggested that "innovation is the creation of any product, service or process that is new to the business unit" (p. 77). Thus, the first dimension that can be identified is regarding what is being changed, i.e., the types of innovation (Tidd et al., 2001). Here, four types of innovation are discussed namely: product/service, process, organisation and market innovation.

The most commonly identified type of innovation is related to changes in an organisation's product/service offerings. An example is that of the British Broadcasting Corporation (BBC), which is renowned worldwide for creating innovative new television series (Romaine, 2004). A second type of innovation is related to changes in the way the products/services are created and delivered, in other words process innovation. For example, a new way of putting together car parts at an automaker's plant would constitute such an innovation. Organisational innovation refers to innovation at the firm level rather than technological change. A well-known example is that of Shell's GameChanger initiative, which has revolutionised Shell's oil exploration and discovery division.

In addition to these types of innovation, there are those innovations that completely change the basis for competition and redefine the industry. Baden-Fuller and Stopford (1996) also refer to something similar, which they describe as strategic innovation in mature industries, which has to do with change related to markets and market segments. Thus, such market innovation could potentially combine product/service and process innovations, resulting in a complete redefinition of the industry space within which an organisation competes. An example of such market innovations is that of Swatch, the Swiss watch company, which arguably completely redefined the low-end market segment of the global watch industry and in the process rejuvenated the entire Swiss watch industry (Pitt, 1996).

6.2.2 Degree of Novelty Involved

The second dimension of innovation is 'the degree of novelty involved' (Tidd et al., 2001) or the extent to which change is perceived. Broadly described, the extent of perceived change could at one end of the spectrum be incremental while at the other end, it could be change that is perceived to be discontinuous or radical. Incremental or continuous change is often used to describe minor changes of existing products, services, or processes. Incremental change often leads to innovations that are based on exploitation of existing products and processes (Gatignon, Tushman, Smith, and Anderson, 2002). Incremental innovations are often responsible for the developing of standards within organisations or industries (Garcia and Calantone, 2002).

Discontinuous or radical innovation has been defined by Utterback (1996) as 'change that sweeps away much of the firm's existing investment in technical skills and knowledge, designs, production technique, plant and equipment' (p. 200). Thus, radical or discontinuous innovation can lead to the complete disruption at the firm's technological product or process level (Dosi, 1982).

> *Note that novelty need not only refer to technological innovation. Clayton Christensen (1997) uses the term sustaining innovation to describe technological changes that improve performance of products and services that are perceived to be of added benefit or value to mainstream customers. In contrast, he identifies disruptive innovations as those technological changes whose introduction result in a creation of a whole new market. He suggests that these disruptive innovations could initially be perceived as being of worse value than the existing products or services by mainstream customers. For example, compact discs were considered to be a disruptive innovation by mainstream users who were already accustomed to using cassettes, while the introduction of cassettes was a disruptive innovation for customers who bought vinyl records.*

7 The Enablers of Innovation

This section of the report reviews some of the contributions on the enablers of innovation.

7.1 Leadership Processes, Systems and Structures

The importance of leadership processes to innovation is illustrated by work of numerous authors. Cooper (1994) recommended a 'stage gate' approach for managing the process of innovation. The 'stage gate' model is an approach that enables firms to manage, direct, and control their innovation efforts and has been adopted by many firms (Cooper, 1998). According to the PDMA's 1997 best practice study, "nearly 60% of the firms surveyed use some form of 'stage-gate' process" (Griffin, 1997). The survey also revealed that "the best companies are more likely to use some type of formal development process than the rest". Boag and Rinholm (1989) found that companies with formal processes for managing innovation were more satisfied with their innovation performance than companies that did not have formal processes. Adler et al. (1996) highlight the importance of a process management approach to developing new products. They argue that since many tasks are the same in product development, standardisation through process management exploits those similarities without destroying creativity. Several other studies have argued that firms with a high performance in innovation usually have in place a formal process for developing new products and services (Cooper et al., 1994; Cooper and Kleinschmidt, 1995, Griffin, 1997).

However, having a formal process alone will not necessarily lead to improved innovation performance. This may especially be true when considering radical innovation. This is a major critique of the Cooper's stage-gate approach. There is also a need to consider the other organisational factors that impact on innovation performance. The 'Pentathlon' model (Goffin and Pfeiffer, 1999) is a simple framework that addresses some of the soft organisational and process issues (Figure 2). The key message of the framework is that being good in one area is not enough. Just like in a Pentathlon, good performance in all five areas is more important than exceptional performance in one area (Oke and Goffin, 2001).

Figure 2: The 'Pentathlon' model (Oke and Goffin, 2001)

The middle portion of the framework consists of the process for carrying out or developing an innovation. This includes the process of generating, selecting and developing ideas into commercially viable new products and services. While an effective process for carrying out an innovation task is important, this is not sufficient. Both the top and the bottom parts of the framework deal with the organisational factors that help to create the climate to enhance innovation performance.

Leadership is required to create a climate where innovation thrives. It has been suggested that more successful firms have more tangible and visible signs of top management commitment to innovation, especially in terms of providing adequate funding and resources than less successful firms (Kuczmarski & Associates, 1994; Mercer Management Consulting, 1994). It would thus appear that it is important for leadership to function as architects and designers in creating an innovative organisation. This is, however, not enough. A 2001 CMI survey reported that 55% of employees surveyed want inspirational leadership that is based on knowledge and strategic thinking and includes the leaders' ability to influence and motivate their subordinates (Judge, 2004).

7.2 Culture and Competencies

The competencies and motivation of people working on innovation projects are important. The leaders of innovation projects require particular skills in motivating the team and in managing communications both within and externally (Barczak and Wilemon, 1989). However, the culture of an organisation could help or hinder its innovative efforts. Having an effective human resource policy that supports innovation is a key practice that firms need to employ to manage innovation. If innovation involves creativity and implementation, then to build an innovative organisation, firms need to encourage norms that support creative and exploratory efforts including support for risk taking and change and tolerance of mistakes (O'Reilly and Tushman, 1997). In addition, firms need to encourage norms that support implementation and exploitation of ideas including effective group functioning and encouraging speed of action. However, this may require different organisational contexts or structures and will also have implications for leadership types. IBM's Thomas Watson, Sr., once said that the fastest way to succeed "is to double your failure rate". Failure is a prerequisite for innovation. Farson and Keyes (2002) discuss how companies can reduce their fear of miscues. They argue for the presence of failure-tolerant leaders who through their words and actions, help employees overcome their anxieties about making mistakes and, in the process, create a culture of intelligent risk-taking that leads to sustained innovation.

The results of a 2001 survey suggested that unlearning is a key driver of innovation (Crouch, 2004). Although learning is crucial, it is equally important to be able to unlearn because things learned can become outdated. Also, rewarding employees for their innovation efforts has been found to relate to innovation performance (Page, 1993; Kuczmarski & Associates, 1994; Feldman, 1996 and Griffin, 1997).

7.3 Networks

Networks play a crucial role in promoting innovation within and across firms and they also assist the diffusion of innovations across and within sectors (Pittaway et al., 2004)[4]. Inter-firm networking is based on trust. Increasingly, sustainable innovation requires the need to gain access into insights and capabilities of other companies. When insights, technologies and capabilities are shared with competitors early in the innovation process, costs, risks and the benefits of bringing ideas to the market are also shared. One way of achieving this is through the use of independent intermediaries to facilitate the exchange of sensitive information among companies without revealing the principals' identities or motives (Wolpert, 2002). Wolpert argues that a network of innovation intermediaries would be in a unique position to visualise new opportunities synthesised from insights and technologies provided by several companies. Ideas that might never occur to businesses working on their own can be sourced, for example, from customers and even competitors.

The concept of search parties suggests that some companies are better at scouting out new market opportunities than others are. Those organisations that lack the time or the talent for this work should consider outsourcing it to reconnaissance experts (Meyer and Ruggles, 2002). In the pharmaceutical industry it is common for large established companies to outsource early stages of the discovery process to biotech firms (Kale and Puranam, 2004). Many companies are increasingly globalising their innovation processes. For example, in the fast-food industry, Starbucks Corp., has combined "diverse pools of knowledge – including Italian technology for espresso coffee roasting; the European concept of the café; and the US expertise in retail chains, fast-food service routines, logistics, and staff training and incentive systems – to reinvent the selling of cups of coffee in the United States" (Santos et al., 2004).

For some innovations, joint ventures, alliances, and outsourcing can play a useful role. But for others, they are inappropriate and strategically dangerous. (Chesbrough and Teece, 2002). They argue that the issue of whether to collaborate or not is contextual and that there is a need to match organisational strategy to the type of innovation being pursued. Finally, the relationship between social capital and innovation has also been investigated. It is argued that regions where social ties are tight are the worst places to put innovation operations as opposed to communities that promote tolerance, diversity, and creativity (Florida et al., 2002).

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[4] For a detailed literature review and analysis of networking and innovation in the UK, see AIM Research Report (Pittaway et al., 2004).

AIM Research – Leadership for Innovation

8 Linking Leadership, Organisational Context and Innovation Outcomes

In this section, we consider how leadership influences innovation outcomes by building on our understanding of leadership, its effects on organisational context, and the relationship between organisational context and innovation outcomes. We begin by briefly summarising the key points that we will build on from our review of the current state of knowledge about leadership, organisational context, and innovation outcomes.

8.1 What do We Know About Leadership?

Current understanding of leadership supports two distinct but complementary views of how leaders influence their organisational contexts. The first views leaders primarily as motivators and distinguishes between leaders who primarily motivate through transformational actions, versus those who take a more transactional approach. The second emphasises the coordination and organisational tasks that leaders undertake which significantly affect the manner in which the organisation functions. We have referred to these two perspectives on leadership as 'motivational' and 'structuralist' respectively. While neither perspective completely excludes the other, the key distinction between these perspectives is the emphasis on motivation and administrative coordination respectively. Our current state of knowledge does not allow us to assign relative importance to these two categories of leadership actions.

8.2 What Sort of Organisational Contexts are Necessary to Generate Innovation?

Innovation may be seen as an organisational process that is itself composed of sub-processes of varying degrees of novelty. Early stage activities such as product definition, design, prototyping and pre-testing involve exploration – a wide-ranging search for technological improvements that includes a possible re-evaluation of key design parameters (March, 1991). Once the basic product design is 'frozen', the focus is on efficiently translating it into a saleable product (Baldwin and Clark, 2000; Iansiti, 1998). At this stage, the emphasis shifts to exploitation – the search for optimal solutions within a fixed set of parameters (March, 1991; Ghemawat and Ricart I Costa, 1993). Thus, innovations involve both exploration and exploitation. Such ideas are implicit in the stage-gate type models, where they are often referred to as creativity and commercialisation.

Perhaps more important than the simple conceptual distinction between exploration and exploitation, is the proposition that the organisational contexts that are appropriate to these two sub-processes are fundamentally dissimilar. For instance, the earliest stages of product development require creative inputs from diverse sources, tolerance for ambiguity, and scope for unstructured communication (Iansiti 1998). Later stages, such as prototyping, manufacturing and distribution, depend on the existence of formal processes, incentives and systems to enable coordination across various organisational units such as R&D, manufacturing and marketing, and to ensure efficient and timely commercialisation (Brown and Eisenhardt, 1995; Iansiti, 1998; Zahra and Nielsen, 2002). Thus, organising for exploration is different from organising for exploitation (Benner and Tushman, 2002; Burns and Stalker, 1961).

Innovations themselves differ in the degree of novelty. This (in terms of incremental or radical innovation) emerges in the literature as being one of the principal dimensions along which to array innovations, along with the locus of innovation activity (at the product/service, process, organisational or market level). Given what we know about differences in organising for exploration and exploitation, this suggests that the organisational context may need to match the nature of innovation itself (and not just its sub-processes).

8.3 How does Leadership Affect Organisational Context?

The common thread that links these ideas is the proposition that certain organisational contexts are more conducive to innovation with high degrees of novelty, and that certain leadership actions are more conducive to creating such organisational contexts. In the rest of the section we explore these linkages. The following tables distinguish motivational and structuralist leadership actions at the level of product / service / process (Table 2) and at the level of the organisation (Table 3) as a function of the extent of novelty in the innovation process.

Table 2: The Effects of Leadership on Innovation at the Product/Service/Process Level

	Incremental innovation	Radical innovation
'Motivational' aspects of leadership	Balance between transformational and transactional leadership	Emphasis on transformational leadership
'Structuralist' aspects of leadership	Emphasis on structure, systems, processes	Emphasis on values, norms, beliefs, informal networks

At the product/service/process level the leadership challenge is one of creating and maintaining the appropriate organisational context for a particular stage and type of innovation. We refer to this as the 'stages of innovation' problem. At the product level, for instance, in the early stages of innovation activity, such as product design development, the focus should be on creating an organisational context that encourages tolerance for ambiguity, experimentation and rich communication. We suggest that leadership can achieve such an organisational context through the exercise of primarily transformational leadership. Such forms of leadership are known to have significant effects on performance under conditions of uncertainty and ambiguity (Waldman, Ramirez, House, and Puranam, 2001).

In contrast, during the implementation phases of innovation, there is a clear shift of emphasis from wide-ranging exploration, to the relatively incremental exploitation of an existing novel idea, through refinement, scaling up and commercialisation. At this stage we propose that the appropriate organisational context is one characterised by relatively formal structure and accountability. Therefore leadership styles that emphasise transactional behaviour may be relatively more appropriate than those that emphasise transformational leadership. The challenge for any given innovation is to maintain distinct sets of organisational contexts for exploration and exploitation intensive stages, and provide a mechanism linking the two (such as cross functional teams, design-for-manufacture processes etc.)

Table 3: The Effects of Leadership on Innovation at the Organisational Level

	Balancing innovation processes of varying degrees of novelty ('ambidexterity')
'Motivational' aspects of leadership	Emphasis on transformational leadership to achieve 'ambidexterity'
'Structuralist' aspects of leadership	Emphasis on organisation design (structural separation and integration, creating contextual ambidexterity through systems and culture, building external and internal networks)

At the organisational level the leadership challenge is one of maintaining and integrating dual organisational contexts. Successful organisations need to balance a steady stream of incremental innovations against the occasional radical innovation – often referred to as ambidexterity. This problem is fundamentally similar to the 'stages-of-innovation' problem discussed previously, in that in both cases leaders must create and maintain organisational contexts that emphasise incremental as well as radical forms of innovation.

The success of the innovation programme in AXA Insurance shows how the CEO John O'Neil's motivational and structuralist leadership behaviours interact to deliver innovation (Figures 3, 4). For example, he created a common goal for innovation, inspired his followers to buy into this goal and designed a process for delivering different types of innovation in the organisation. The case study and key actions taken are described below.

Figure 3: The Case of AXA Insurance

AXA INSURANCE, IRELAND

AXA is the largest insurance company in the world. AXA Ireland is the leading Motor and Household insurer in the Irish market. The appointment of a new CEO in 1999 was a key driver in relation to the innovation improvement initiatives that the company implemented. The actions that AXA took can be summarised as follows (Oke, 2002):

- *Making innovation a strategic objective: on being appointed the CEO 1999, John O'Neil created an innovation department, appointed an innovation manager and charged the department with the responsibility "to raise the innovative capability of the organisation through staff involvement and shared knowledge".*

- *Clarifying the definition of innovation: What does innovation really mean in AXA? AXA developed what it referred to as the 'Innovation Quadrant' (see below) which explains the meaning of innovation in its business. The Quadrant formed part of the communication strategy and helped to promote the understanding and meaning of innovation among staff. The Quadrant is also used to audit the company's innovation performance. For example, at the end of year 2000, of all the ideas that were successfully implemented, only 10% fell within the 'create' or radical innovation quadrant. Thus innovation efforts could be re-focused or sustained depending on what the outcome is in comparison to the company strategy. The four elements of the quadrant are:*
  - *Create new customer-focused opportunities (radical innovations)*
  - *Improve existing products, services and processes (incremental innovations)*
  - *Eliminate non-value adding activities (process or cost-reduction innovations)*
  - *Re-use AXA Global success stories ('me-too' innovations)*

- *Developing and implementing innovation initiatives: With the help of the innovation department the CEO, John introduced an innovation initiative which he coined the 'MadHouse'. The MadHouse was a highly successful team-based innovation programme that brought seven employees together from across different grades and functions for a period of two months to work together, brainstorm, select and develop two customer-focused innovation proposals. These ideas are presented as business cases to a team of assessors that include some members of the originating 'MadHouse' team. The selected ideas are then passed on to a Project team for implementation. This Project team would also comprise some members of the originating 'MadHouse' team.*

The key actions taken to improve innovation performance at AXA under the leadership of John O'Neil ensure that there is a continuous flow of innovative ideas in the organisation. The organisation has been transformed from a traditional non-innovative insurance company into one where innovation thrives. The structure of the innovation process is shown in Figure 4.
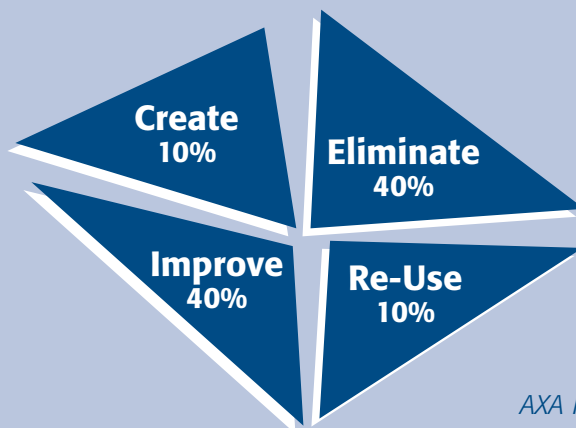
AXA Innovation Quadrant (Oke, 2002)

Figure 4: The AXA Innovation Process (Oke, 2002)
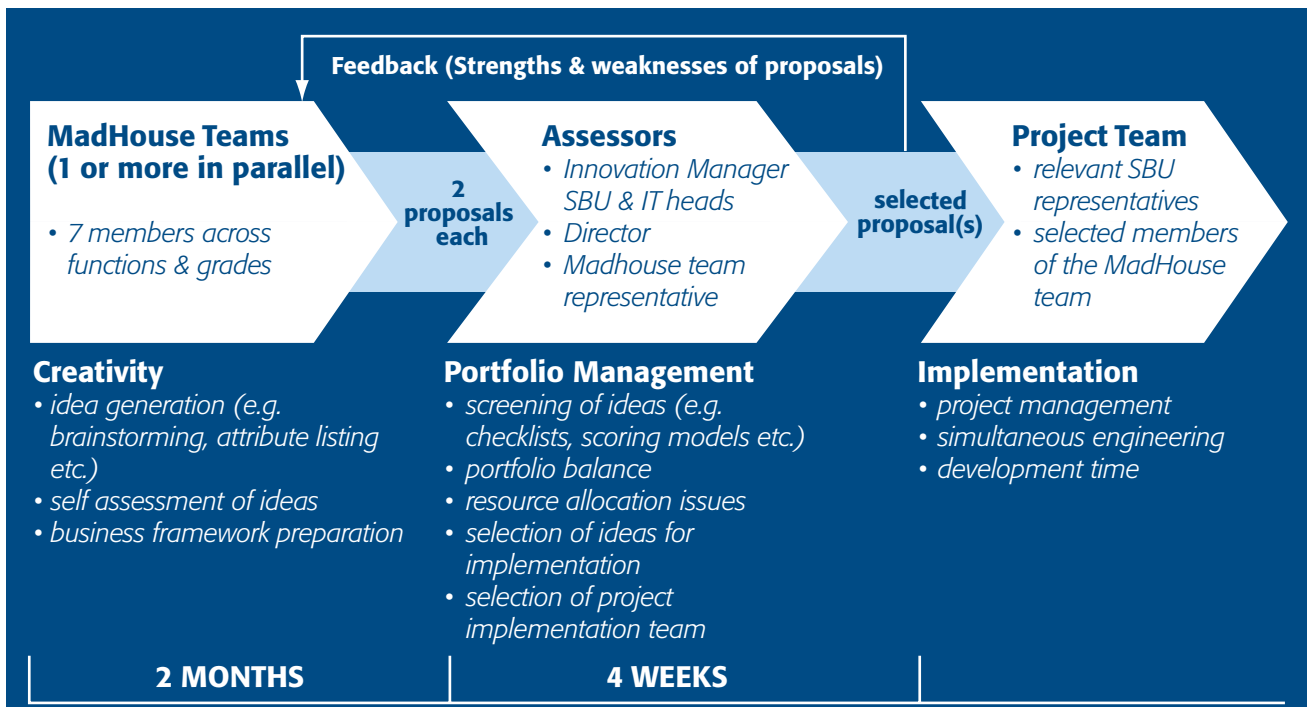
8.4 The Leadership Challenge for Innovation

In sum we see two key leadership challenges for innovation

1.   To recognise and develop appropriate leadership for the different stages of the innovation process. How leaders are selected, supported, evaluated, motivated and developed is likely to differ depending upon which stage of the innovation process they are responsible for. For instance transformational leadership skills may be more useful in early-stage innovative activity, such as R&D and product development. Conversely, transactional leadership skills are essential to the smooth functioning of commercialisation. In order to maintain separate organisational contexts with their own innovation enablers for the different stages of the innovation process structuralist leadership is required. Structuralist leadership is also essential for the key linking function between these two sub-processes of innovation.

2.   To create organisational contexts that support complete innovation processes of different degrees of novelty. At this level, the challenge to leaders is to understand various ambidextrous organisational design options to enable coordination of activities across more and less novel innovation processes. Becoming an ambidextrous organisation is itself a task for transformational leadership.

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