Learning in doing: the social anthropology of innovation in a large UK organisation

Turner Simon J.W.

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Simon J.W. Turner

Ph.D.

University of Durham

Department of Geography

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For my brilliant father

Bill Turner

1942 – 2006

my greatest teacher and best friend

Simon J.W. Turner

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Abstract

In the face of increasingly dynamic market environments, firms are being urged to develop learning and innovation capabilities if they wish to secure competitive advantage and long-term growth. A bank of work written from numerous theoretical perspectives has converged on the view that knowledge underpins the formation of such capabilities. While much of this literature emphasises the importance of cognitive knowledge, a new approach grounded in techniques from social anthropology suggests that learning is a non-cognitive practice, drawing on embodied exploration, everyday sociality, and a communitarian infrastructure of human and non-human actants. This thesis aims to consolidate the current literature on 'possessed' knowledge by clarifying the relationship between cognition and learning, and to advance understanding of innovation practices within firms by examining the role of non-cognitive mechanisms in the development of organisational capabilities. Drawing on a nine-month period of ethnographic research, this thesis describes the on-the-ground processes of learning and innovation within the marketing department of a large UK organisation. This evidence is used to investigate critically the theoretical claims regarding the role of both cognitive and non-cognitive forms of knowledge. Based on the empirical findings, three interrelated arguments are proposed: the design and governance of strategic learning devices involve non-cognitive practices; informal mechanisms of learning underpin the formation of new capabilities; and communitarian theories of learning overemphasise the social construction of knowledge, while neglecting the agency of the materiality of context.

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Contents

List of Figures

List of Tables

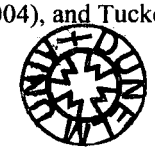
Chapter 1
Introduction

1.1 The innovation imperative

The imperative to innovate seems to be everywhere. It is in the plans of broadcasting schedulers; it is on the lips of educators, bankers, futurologists, CEOs, social commentators, advertisers, and fashion designers; it appears in the titles of hundreds of management, lifestyle, and self-help books; it is used rhetorically by political leaders to signal progressive change; dozens of awards have been created to reward those lucky enough to be judged as achievers of it; it is a recurrent theme within university research groups, MBA lecture courses, and online discussion forums; it is the raison d'être of R&D units, knowledge workers, entrepreneurs, and shed-based inventors; it is amplified by business support networks, incubation units, and business angels; it is embodied in wireless technologies, gadgets, and video games; and it is a strategic aim of countless organisations, including universities, regional development agencies, and business corporations of all sizes. Innovation is at once 'the new imperative', 'the missing dimension', and a 'driver of growth'[1]. It is no wonder then that innovation is being embraced in so many areas of social, political, and economic life.

Market deregulation, trade liberalisation, increasingly rapid scientific and technological advances, the rise of ICTs, and the advent of global product markets are all making innovation a critical capability for the competitiveness of organisations and countries alike (DTI 2003). It is because of the transformative potential of innovation (Schumpeter 1934) that CEOs, governments, and scores of economists and business commentators have taken a great interest in exploring the ways in which innovation is underpinned and how it may be encouraged. The UK government is, for instance, placing innovation at the centre of its industrial policy to raise productivity and economic growth in Britain over the next ten years. Defined as 'R&D intensity', a commitment to boosting the nation's level of innovation will involve supporting the creation of new knowledge in science, engineering, and technology. One strategy for exploiting the knowledge in these fields is to strengthen the linkages between the activities of R&D intensive universities and the particular challenges facing UK firms.

[1] These phrases are taken from the titles of three books recently written on the subject of innovation by Chesbrough (2003), Lester and Piore (2004), and Tucker (2002).



Organisations are being urged to develop innovation capabilities if they wish to secure competitive advantage and long-term growth in the context of increasingly dynamic market environments (Nonaka 1991). Leading firms are responding to this challenge by devising creative strategies to foster learning and innovation within their companies. A range of high-profile organisations, including Accenture, IBM, and Boeing, have invested in dislocated creative spaces dubbed 'innovation laboratories' that make use of collaborative software, workrooms with moveable furniture and graffiti walls for scribbling down ideas, and library and database facilities for research, all of which are designed to encourage experimentation, support creative behaviour, and facilitate reflexive, double-loop learning (Lewis and Moultrie 2005). The US technology manufacturer 3M has produced a string of successful new products that were dreamt up by its employees under an unofficial '15 Percent Rule' that allows the firm's technicians and scientists to spend 15 per cent of their time each day to experiment creatively with ideas that are unrelated to their official projects (Katz 2003). The telecommunications firm BT now invites children to an activity centre where they observe them at play and identify the most creative children as those who become bored with the tasks most quickly (Waters 2005). BT then aim to keep in touch with these children as potentially innovative recruits for the future.

The reported shifts in the nature of economic activity, and the diverse responses of various corporate stakeholders to these shifts, raise some critical questions about the management of innovation and change within organisations and economies. For example, what underlines an innovative or learning economy? Should innovation policy focus on investment in higher education, skills academies, life-long learning, or the cultivation of cultural capital? Should it target business R&D by identifying mechanisms for increasing the transmission of knowledge from the public science base into private organisations? Which skills underpin innovation and how can they be supported? Should policy centre on learning through collaborative networks, including international partnerships, inter-organisational secondments, and the encouragement of foreign-direct investment? Should these skills be embedded through regional knowledge partnerships and grass roots civic projects, or through business advisory services for SMEs and support for entrepreneurs?

Against this economic policy background, what should large organisations be doing to generate innovation? In particular, what is the architecture of an innovative firm?

Should firms set strategies to harness embodied know-how, to exploit codified knowledge, or to manage delicately the relationship between the two? Should they increase their intake of university graduates and PhDs or consolidate academic skills with apprenticeship programmes? Should they secure commitment of employees through charismatic leadership, outdoor management-training weekends, a rhythm of corporate events, or by installing bar facilities on every office floor? Must they develop an internal research capability or can they rely on external sources of expertise? Should they attempt to embed a learning ethos through investment in professional qualifications, reflexive practices, communities of practice, and cross-functional projects? What are the critical resources necessary for exploiting creativity? Should firms invest in knowledge databases, problem-solving heuristics, tacit knowledge, social capital, or strategic skills? Should they construct innovation hubs and creative spaces? Should they experiment with different styles of office design, such as open-plan offices, touchdown zones, or engineer collegiate spaces, including lounges with oversized armchairs? And, in the context of this strong imperative for innovation, what should traditionally slow-moving industries, public-sector organisations, and national monopolies do to increase their innovation capability, particularly when this involves breaking with the inward-facing governance approach that may have been adopted by these organisations over decades or more?

1.2 Competing perspectives on the generation of corporate innovation

In order to frame and examine some of these broad innovation governance questions, this thesis seeks to qualify the substantive value of two competing theories of corporate learning and innovation. The first claims that innovation and learning are the product of deliberately created cognitive mechanisms embedded in the strategic architecture of organisations, such as interfacing functional teams, knowledge routines, training programmes, mission statements of values, extrinsic incentives, and dedicated R&D and reflexive spaces. These organising devices are said to stimulate learning and innovation in the direction senior managers envisage by promoting the circulation and interaction of different forms of knowledge within the firm. These broadly cognitivist theories of innovation suggest that the development of cutting-edge products, radical service improvements, and groundbreaking project teams can all be engineered if the strategic architecture for mobilising knowledge is right.

An alternative, non-cognitivist theory suggests that the route to successful innovation is not confined to the top-down management of the firm's knowledge assets but is likely, instead, to be the product of the learning that occurs through the engagement of employees in different types of communities distributed across the firm. This unconventional view, which emerged in the business literature in the early 1990s, suggests that the locus of innovation is situated in the social practices of communities. Everyday sociality, supported by all manner of intermediaries, is theorised to explain both incremental and radical innovation. An example of incremental innovation through sociality is the interaction of employees in informal spaces of work, where office gossip and talk about work are combined, enacting novel collaborative practices, such as the lunchtime exchange of 'war stories' observed among Xerox service technicians that support the repair of client photocopiers (Orr 1996). Radical innovation is also supported by sociality, as demonstrated by research on the sociology of science which has revealed that the generation of groundbreaking laboratory knowledge is not a formulaic, linear process but an iterative one, involving an ensemble of human actors, technical devices, and rounds of formal and informal discourse (Latour and Woolgar 1986; Knorr Cetina 1999). From a social-anthropological perspective, innovation, rather than being tied to strategic interventions, appears to be an everyday socially grounded practice and, more specifically, an externality of community engagement and learning-in-doing.

The imperatives for governing innovation and learning suggested by these two theories emerge from two quite distinct conceptions of knowledge. Underpinning the managerial approach is the idea of knowledge as a self-contained entity which, having a degree of immutable mobility, may be learned by humans and stored within our minds. The governance focus is on the cognitive mechanisms necessary for such 'possessed' knowledge to be leveraged across the firm (acquired, shared, and recalled). In contrast, the social-anthropological approach is undergirded philosophically by the idea that knowledge is constructed in activity and is tied inseparably to everyday social practices. Learning and innovation are treated as socio-material practices, involving the use of situated resources and the successful alignment of heterogeneous human and non-human actants.

Against this theoretical and philosophical background, this thesis has two research objectives. First, it examines the architecture of cognitivist and non-cognitivist

conceptualisations of learning. Although the study of 'possessed' knowledge is well established in the fields of economics and business management, I believe, along with others (Easterby-Smith and Lyles 2003; Foss 2003), that future progress is hampered by a degree of conceptual ambiguity that stems from the unstable epistemological foundations of these and related disciplines. To illustrate the diversity of perspectives across the field consider Michael Polanyi's (1967) concept of tacit knowledge which has been interpreted in the business literature as knowledge that is both 'personal' (Nonaka and Takeuchi 1995), 'deeply held' (Mascitelli 2000), 'practical' (Ambrosini and Bowman 2001), 'ineffable' (Tsoukas 2003), and 'action oriented' (Lam 2002). In order to steer through the complexity produced by such examples of variation, this thesis seeks to clarify the relationship between cognition and different manifestations of knowledge and learning by examining critically the genealogy of cognitivism. For example, how is knowledge acquired through cognition? Can distinctions be drawn between the cognitive mechanisms that affect learning at the individual, group, and organisational level? Do specific cognitive activities underpin different stages in the process of innovation?

While addressing these questions will consolidate the epistemological footing of cognitive knowledge, this thesis aims to further understanding of learning practices within firms by exploring research from the social sciences and humanities that points towards the importance of non-cognitive forms of learning. By examining these emerging strands of work, which broadly conceptualise learning as an embodied and situated practice, this thesis challenges much of the writing in cognitive science and educational psychology, which links learning to information-processing goals and procedures, formal pedagogy, and behavioural intervention mechanisms. However, the controversial claims of this literature require thorough investigation and theoretical development in order to address a number of questions that are yet to be answered. For example, how is learning to be understood as an everyday practice? How is knowledge generated through sociality? How does the materiality of context support innovation?

Second, this thesis explores the relevance of theories of organisational learning that emphasise managerial cognition in relation to those that stress everyday communitarian practice. The insights drawn from the exposition of cognitivism need to be taken forward for examination in a corporate context. The vehicle for such an analysis is the competence-based approach to the firm, which treats knowledge as a possession and

argues that firms act on the basis of managerial and organisational cognition. The development of a cognitivist conceptualisation of learning, which includes an appreciation of the relationship between cognition and learning processes at different levels of the organisation, allows critical questions to be asked of this theory of the firm. For example, what are the consequences of cognitive proximity and distance for generating innovation through project groups? How do senior managers use cognition to create a strategic architecture for learning?

As well as shedding light on the role of cognitive knowledge in organisational learning, this thesis seeks to further understanding of the significance of non-cognitive mechanisms in the development of the capabilities of firms. In order to develop this line of thinking, the role of communities – and the socio-material practices of learning that they are theorised to engender – needs to be investigated rigorously in a commercial organisational environment. Specifically, ethnographic research is needed to identify: the conventions of interaction and participation that appear to underpin the formation of communities; the on-the-ground practices of engagement through which learning and innovation are produced; and the interrelationships between the managerial strategies of the formal hierarchy and the informal practices of communities. By testing the claims of both communitarian and competence-based theories of learning, this thesis will evaluate both schools of thought comparatively in order to develop a more refined understanding of learning and innovation practices within firms. In particular, are the claims of both theories of equal relevance to large, hierarchical companies that are not renowned for their innovation capabilities but are now facing an innovation imperative?

This thesis addresses these objectives using empirical research conducted within such an organisation. It is based on the findings of a nine-month ethnographic study of innovation practices within Royal Mail, the largest postal organisation in the UK. Access to Royal Mail presents a unique opportunity to assess the relevance of the competing claims about corporate learning and innovation through an exploration of the on-the-ground processes of learning within the marketing department of this firm (a justification for this choice of department is provided in the next section of this chapter).

1.3 Research context

Royal Mail is a large organisation with approximately 190,000 employees and an annual turnover in excess of £6.5 billion (Royal Mail Holdings plc 2004). The company provides a universal postal service to 27 million addresses across the UK at a uniform price and promotes the use of direct mail in the 'media mix' of the advertising strategies of business organisations. Royal Mail is one of the companies within Royal Mail Group, which also owns the brands of Parcelforce and Post Office Ltd. Parcelforce collects and delivers packages for businesses in the growing express market (time-guaranteed and next day delivery). The Post Office uses a national network of 14,000 branches to provide a variety of retail products, including postal, travel, and financial services, as well as government information. Royal Mail Group has provided postal services to consumers for over 370 years, under the names of General Post Office, Post Office Corporation and Consignia (the last, albeit briefly, 2001 – 2002) before being renamed Royal Mail Group. The organisation became a public limited company in 2001 after three centuries as a state-run organisation.

During its first year as a plc Royal Mail made a record loss of £1.1 billion. In order to increase the efficiency of the business and improve the quality of service, a more commercially oriented board embarked on a three-year renewal plan in 2002. However, further losses are anticipated as the postal market is opened up to competition with the issue of licences to private companies by the postal services regulator, Postcomm. In recent years, as we shall see in Chapter 4, Royal Mail has been investing in innovation as a formal strategy for corporate survival. The strategy was initiated in response to the challenges presented to the organisation by the proliferation of different forms of communication technology and the impending threat of competitive erosion of its core markets. As a result, the firm has begun to focus on the management of tacit knowledge; it has established an innovation fund, leading to the creation of an innovation laboratory; and it has pursued a strategy to become a 'media owner' in the direct advertising industry (Santoro 1996). All of these measures have been designed with the intention of establishing an 'innovative culture' across the organisation (Whitehead 1999a). In this period of radical change, can Royal Mail combine the need to increase efficiency in order to return to profitability with the aspiration to drive growth by repositioning as a 'media owner' and by cultivating an innovative culture within the company?

Within this corporate context, the marketing department was chosen as the setting for the research. This choice was made because the department was involved in innovation seeking activities in preparation for the impending liberalisation of the postal market, namely the development of new organisational capabilities and the repositioning of the firm as a 'media owner'. Furthermore, at the time of the research, the marketing department was being affected directly by an organisation-wide restructuring exercise that was designed to reduce costs as part of the three-year renewal plan. Although this exercise inhibited aspects of the research (see Chapter 4), it proved to be an ideal opportunity to assess the efficacy of a top-down managerial intervention mechanism: the restructuring of the functional architecture of Marketing. The consequences of this exercise in terms of organisational learning and innovation are discussed from managerial and communitarian perspectives in Chapter 5.

This ethnography of Royal Mail began in January 2004 coinciding with the second year of the renewal plan, when the company was in the midst of the largest restructuring exercise in its history, and on the brink of the liberalisation of the firm's postal markets. It explores the strategies and processes Royal Mail has been devising to stimulate innovation and describes the practices by which this organisation, knowingly or unknowingly, succeeds in being innovative or fails to unlock its creative potential.

1.4 Thesis structure

The next chapter examines the idea of learning and innovation as cognitive activities. The chapter proposes that cognitivism ties distinct stages in the processes of learning and innovation to different ontological units, the individual, group, and organisation. The source of *acquisition* is the individual. Drawing on research from artificial intelligence, educational psychology, and cognitive anthropology, I argue that the locus of both codified and tacit forms of knowledge should be situated within the mind. The revelation that cognitive learning is unconscious challenges the premises of traditional learning intervention mechanisms. The performance of such mechanisms, I infer, relies on the modification of practices, not cognition. The place of *propagation* is the group. I argue that this social structure can be conceptualised as a 'container' for the introduction, mobilisation, and combination of knowledge inputs. As such, the group's mode of learning (radical or incremental) is grounded in the variation of the cognitive schemas of the interacting agents. The site of *governance* is the organisation. Different

theoretical perspectives within the competence-based approach to the firm are delineated according to whether they choose to conceptualise knowledge governance as an individual or group capability, or a combination of the two. I argue that the relevance of all three competence-based perspectives is constrained by a cognitive paradox: the appeal to mental representations implies an unnecessary distinction between exploitation and exploration.

Chapter 3 develops an alternative perspective on learning and innovation, one which proposes that these processes should be conceptualised as embodied and situated practices. Stimulated by the proposition that cognitivism neglects the micro-practices of knowledge creation, this chapter ties the generation of knowledge to activity or practice and presents the case for a non-cognitivist ontology of learning. The presuppositions of cognitivism are challenged by thought in phenomenological philosophy, which situates learning in a world of familiar practices; performativity, which insists that knowledge is generated through sociality and dialogical practice; situated learning theory, which conceptualises learning as engagement in social practice; and actor-network theory, which proposes that knowledge and innovation are enacted in heterogeneous networks of human and non-human actants. I use this theoretical background to reconsider the processes of organisational learning and innovation, and suggest that everyday socio-material practice, circumscribed by the engagement of different types of organisational community, is the appropriate point of investigation for examining knowledge practices within firms. I argue that the effective governance of both epistemic communities and communities of practice involves the use of 'soft' managerial techniques that are sensitive to the conventions of participation and interaction that are already established in the practices of these groups.

Chapter 4 navigates the transition from the conceptual to the empirical phases of this thesis. In order to draw together the two broad theoretical perspectives developed in Chapters 2 and 3, the axiomatic claims regarding learning and innovation that are related to each are discussed and contrasted. The axis that divides the perspectives is identified as a conceptual dualism: cognitivism has an epistemological basis (the nature of knowledge) while non-cognitivist approaches are united by an ontological foundation (the nature of practices). I argue that this dualism collapses once the practical aspects of 'cognitive' knowledge are recognised, and the recapitulation of epistemological principles (such as coherence and logic) in 'non-cognitivist' accounts of practice is

acknowledged. As such, cognitive and non-cognitive theories of learning and innovation can be examined through an analysis of practice (although the entanglement of epistemology in such analyses cannot be discounted). In preparation for this analysis, the organisational practices to be investigated are catalogued, and the ethnographic methods that were used to interrogate these practices are described. Finally, the chapter describes the commercial activities and innovation strategies employed by the case-study organisation, Royal Mail, over the last thirty years. Often provoked by the threat of impending market liberalisation, Royal Mail's approach to innovation has tended to be underpinned by a concern with efficiency and implemented through top-down corporate change programmes, although I show that in recent years the strategies for innovation do appear to be changing.

Chapter 5 examines the efficacy of two approaches to organisational learning, strategic management and communities of practice, using ethnographic evidence gathered during the restructuring of Royal Mail's marketing department in March 2004. Understood as a top-down managerial intervention mechanism, the restructuring is described from the perspective of the project team who designed the new functional architecture of the department. While I argue that the normative principles of strategic management can be used to disclose the process as the product of managerial cognition, such an approach neglects the non-cognitive aspects of knowledge work and is not sensitive to the idiosyncrasies of organisational context. Through a second vignette, the restructuring is explored from the point of view of a team of marketers as they attend a 'welcome event', interpret organigrams and business processes, and try to make sense of their new organisational role. Using a communities of practice framework, I argue that informal social practices, including joint enterprise and the production of material resources, propel the learning of this team. I conclude the chapter by evaluating the role that both strategic management and communities of practice play in the fulfilment of the learning objectives of the restructuring exercise.

While Chapter 5 focuses on the accomplishment of the restructuring programme as a tool of corporate change, Chapter 6 examines another of Royal Mail's strategies for innovation, the exploitation of external knowledge through inter-firm alliances. This strategy is described in action through vignettes that are based on events from two contrasting marketing projects, both of which were undertaken in conjunction with external advertising agencies. Using a construct from the cognitive tradition, absorptive

capacity, I tie the divergent outcomes of the projects to the capabilities of the teams involved to exploit the knowledge possessed by the 'innovative partner'. Rather conventionally, I argue that the failure of the first project is due to a lack of formal mechanisms for bridging the cognitive distance between Royal Mail and the partner organisation. However, while the second project faced the same set of organisational conditions, I claim that its relative success is due to the team's ability to generate absorptive capacity by acting as a community of practice. I suggest that informal mechanisms of learning can underpin the formation of new capabilities, even in the absence of managerial investment in learning initiatives.

Chapter 7 is the concluding chapter of the thesis. This reflects on the practices of learning and innovation within Royal Mail. While the managerial mechanisms for generating learning within this organisation have been associated with mixed outcomes, I argue that examples of success can be linked to the informal enterprise and conventions of interaction of identifiable groups of employees. Following this review, the conceptual implications and policy recommendations stemming from the research are presented and discussed. I argue that the competence-based view of the firm needs to be embroidered with a recognition of the everyday and informal practices of learning that seem to underpin the formation of competences. Paradoxically, while appealing to non-cognitive mechanisms of learning, communitarian theories of the firm currently place too much emphasis on the micro-practices of cognition. I suggest that such theories should look beyond the social construction of knowledge and recognise the non-cognitive affordances of the materiality of context. The subsequent exploration of community-led learning reveals a series of micro-governance issues that need to be overcome.

Chapter 2

Cognitivism, Learning, and Innovation

2.1 Introduction

The majority of writing on organisational learning and innovation tends to privilege the role of cognitive mechanisms when accounting for the acquisition, propagation, and governance of these processes within firms. These three elements (acquisition, propagation, and governance) are associated with cognitive mechanisms working at the individual, group, and organisational level respectively. Innovation and learning may therefore be unpacked into cognitive activities (structures and processes) that occur at these different ontological levels and examined in a cognitivist framework (Table 2.1). This body of literature, which will be collectively termed the 'cognitivist perspective', forms the thematic focus of this chapter. Accordingly, this chapter has two main aims: to examine the nature of cognitivism by working through a cognitivist framework for making sense of this perspective and, with respect to the ontology of individual and group cognition specified in the upper two rows of this framework, to highlight a number of the ways in which cognitivism has influenced the conceptualisation of learning and innovation in organisation theory, particularly the competence-based approach to the firm (which warrants the addition of organisational cognition to the cognitivist framework).

Individual cognitivism attributes the acquisition of learning and innovation to the cognitive capabilities of individuals. In business folklore, historical descriptions of the process of innovation often begin with a solitary, 'gifted' or entrepreneurial individual who generates a new idea or recognises a new opportunity by engaging in mental activities of one sort or another. This acquisitive cognitive process is often depicted in the romanticised image of the lone, contemplative thinker who sits aside the world in a chair with his arms folded, eyes closed, and head tilted upwards (see Johnstone 1981). It is in these moments, when liberated from the distractions of the everyday, that the innovator reasons about the world, rationalises his beliefs, and discovers a new insight as new knowledge of the world is revealed.

Group cognitivism suggests that the potential for learning and innovation is amplified as new ideas and opportunities are shared or propagated among individuals. When

individuals within a group possess similar cognitive structures they will tend to process new information in the same way and it is possible for new ideas to be shared readily among them. If one member of the group detects a significant opportunity this can be communicated to other members rapidly, enabling the group to explore the opportunity collectively and to construct a potentially innovative response. If a set of individuals possesses different cognitive structures (due, perhaps, to differing environmental conditioning) it will be more difficult for ideas and potential opportunities to be shared among them (due to differences in knowledge representations), although the variety of interpretations they are able to produce may be a source of novelty. The trade-off between the exploitation of the dominant interpretation of the environment and the exploration of novel interpretations is a central and recurrent cognitive paradox in cognitivist theories of organisational learning and innovation.

COGNITION	**Structure**	**Process**
Individual (Acquisition)	Serial computational systems (Newell and Simon) Dynamic representational system (Piaget) Tacit knowledge (Polanyi)	Information-processing (Simon); single and double-loop learning (Argyris and Schön) Learning as assimilation and accommodation (Piaget) Knowledge conversion (Nonaka and Takeuchi)
Group (Propagation)	Shared schema (D'Andrade) Routines (Nelson and Winter) Collective scripts (Nooteboom)	Pedagogical learning (Premack and Premack) Collective know-how, procedures, strategies Understanding (cognitive proximity) and novelty (cognitive distance)
Organisational (Governance)	Role systems (March and Simon) Strategic cognition (Schwenk) Cognitive system (Hedberg) Strategic routines (Teece and Pisano)	Collective representation of knowledge, beliefs, values Strategic management of competences (Simon; Prahalad and Hamel) Memory retained in world-view, ideology, norms, routines Common codes of communication and coordinated action

Table 2.1. Organisational learning and innovation: a cognitivist framework

In organisational cognitivism, the governance of learning and innovation is represented in the cognitive architecture of the firm (corporate mechanisms for knowledge recognition, interpretation, storage, and retrieval). Although cognitivists propose differing configurations of the cognitive architecture and modes of intervention to

provoke organisational learning and innovation, these proposals are all largely concerned with specifying the governance mechanisms necessary to resolve the cognitive paradox (Argyris and Schön 1978; Nelson and Winter 1982; Dosi 1988; Huber 1991; March and Simon 1958/1993; Fiol 1994; Nonaka and Takeuchi 1995; Teece, Pisano and Shuen 1997; Nooteboom 1999).

In the next part of this chapter (section 2.2), I tackle the first two ontological levels in the cognitivist framework, individual and group cognitivism, by providing an exposition of the development of these concepts within the 'cognitive tradition'. In section 2.3, I review the impact of individual and group cognitivism on conceptualisations of learning and innovation within the organisational literature, particularly business management. Then, in section 2.4, I unpack the final ontological level in the framework, organisational cognitivism, in the context of three strands of research within the competence-based approach to the firm – strategic management (2.4.1); evolutionary economics (2.4.2); and dynamic capabilities (2.4.3). These three perspectives are delineated according to where they sit in the exploitation/exploration spectrum (in attempting to resolve the cognitive paradox), which is determined by how they define and thus suggest how firms should govern knowledge competences. In the concluding part of this chapter (2.5), a comparative review of the three theoretical perspectives is presented. I evaluate the claim that learning and innovation are the product of cognitive knowledge and suggest that this proposition needs to be embellished with the consideration of an alternative conception of knowledge, that is presented in Chapter 3.

2.2 The cognitive tradition

2.2.1 Individual cognitivism

The traditional association of organisational learning and innovation with mental faculties and capabilities can be attributed to the influence of cognitivism. Cognitivism begins with the individual or, to be more precise, it starts with the mind of the individual. According to this tradition, the mind is the locus of all our knowledge: it is the mechanism through which we perceive the world around us; it generates our thoughts and is the instrument with which we reason, know, and understand what we are thinking about; and it is the source of the decisions, plans, and intentions that underpin our actions within the world. In turn, the competent performance of cognitive

skills tends to be associated with intelligent actions and distinguished from practical know-how or embodied skills on the basis of the relative cognitive complexity of executing the operations involved. As the foundational basis of human knowledge and intelligibility, the mind has become the dominant object of concern in cognitivist theories of knowledge and learning. In fact, it is not unreasonable to characterise the enterprise of cognitivism as one that is engaged in constructing increasingly sophisticated theories of mind[2].

How, then, does the mind produce intelligent behaviour? Cognitivists claim that the mind contains a cognitive structure that creates our sense of consciousness by generating representations of the external world within which we act. Put simply, cognition is representation: 'When a subject represents something, e.g., has a belief about it, such a representational state can be called a *cognition*, an awareness of something' (Kitchener 2002: 93). A representation brings together a perceived external object (real or imagined) and one or more propositions about that object that are retrieved from the stock of information held within the mind (in short or long-term memory). As the functionalist Jerry Fodor (1975: 27) argued, this information is retrieved and manipulated computationally: 'The only psychological model of cognitive processes that seems even remotely plausible represents such processes as computational. [...] Computation presupposes a medium of computation: a representational system' (Fodor 1975: 27). The experiencing of a given belief or mental state is related to the activation of a 'mental symbol' in the computational system. A belief exists in the relation between the mental symbol and the intentional content of the symbol i.e. the object to which the symbol refers. The subject utilises symbolic knowledge to generate beliefs about objects (including other individuals) to which attention is directed. This formal computational system is responsible for all of our mental processes:

> Assume that there are such things as mental symbols (mental representations) and that mental symbols have semantic properties. On this view having a belief involves being related to a mental symbol, and the belief inherits its semantic properties from the mental symbol that figures in the relation. Mental processes (thinking, perceiving, learning and so on) involve causal interactions among relational states such as having a belief.

[2] Cognitivism, rooted in Cartesian dualism, is a fundamental critique of behaviourism in positing that a mediating cognitive process must be taking place in the mind to account for the actions of human beings because the responsive behaviour of individuals had been demonstrated to be irreducible to the effect of stimuli in the environment (see Chomsky 1959).

> The semantic properties of the words and sentences we utter are in turn inherited from the semantic properties that language expresses.
>
> (Fodor 1981/2004: 180)

The computational-representational theory of cognition presupposes that the subject is able to store, retrieve, and manipulate a corpus of symbolic knowledge that is contained in the mind. This presupposition raises two immediate problems: how did this corpus of knowledge get into the mind and, once acquired, how is this knowledge then utilised to enable us make decisions, to solve problems, and to act competently within the world?

Over the last thirty years, the development of a set of computational modelling techniques in the field of artificial intelligence (AI) has been able to shed light on the problems raised by these questions. The techniques developed in this discipline assume that the cognitive structure of the brain is like the hardware of a digital computer (a device that stores and processes information) and that information is processed according to the commands received from a variable computational program[3]. These models provide a compelling answer to the first problem of how human beings appear to be able to acquire a corpus of information and internalise it within the mind for later recall. The 'hardware' of the mind enables the subject to detect and process information available in the immediate spatial environment. Applying this principle of learning, AI researchers have been able to model a range of cognitive functions using computational systems, the most influential one of these being:

> a serial system consisting of an active processor, input (sensory) and output (motor) systems, an internal LTM [long-term memory] and STM [short-term memory] and an EM [external memory or immediate visual field].
>
> (Koschmann 2001: 440)

Serial computational models, which interpret cognition as a sequential process, have been able to solve a range of mechanical problems that require inference or deduction of information such as those raised by chess or arithmetic. In anthropomorphic terms, information available in the environment is detected by the sensory system (as raw sense-data) and transmitted for processing in a series of stages: the visual field reveals

[3] One of the early influences in constructing this view of the mind was Alan Turing's theory of computation (Turing 1950/2004). Turing showed that complex problems could be solved by mechanical procedures if the precise steps involved in processing units of information were specified. The development of AI was spurred by the suggestion that 'the complex thought processes of the human mind might also be treated in a mechanical way' (McShane 1991: 6).

symbols to the short-term memory, which, in turn, triggers an appropriate response from the long-term memory. Thus, serial AI models account for learning by claiming that the accumulation and cognition (representation) of information is the sole source of knowledge. The cognitivist claim that learning is essentially about 'gaining possession over some commodity' (Sfard 1998:6) is hardly radical, having been central in much speculation about the nature of knowledge from the ancient Greeks (especially Plato) through to modern times (especially Rene Descartes)[4].

Nevertheless, the modern successes of serial systems in simulating a number of basic cognitive processes (such as reasoning, search, and problem solving) has popularised the view that the competent acts of human beings are underpinned by cognitive 'information processing' (Newell and Simon 1972). This idea has bearing on our second problem of defining the relationship between cognitive knowledge and competence. If mental representations are composed of symbolic informational structures, then this means that they can be expressed in codified language (formal calculus) and manipulated according to computational rules and sets of procedures or plans for rule use (or, after Descartes, processes of reasoning or logical deduction). It follows, therefore, that if an individual were allocated a set of goals to achieve, given access to the appropriate domain of information for attaining those goals, and a plan or procedure for manipulating the information in relation to those goals, then he or she could approach any activity so defined. On this view, competence stems from the relations among goals, codifiable information, and plans.

Despite the popularity of information-processing models in contemporary folk epistemology (Shanon 1993), by the late 1970s AI researchers were finding that merely providing a computational system with sets of rules and codified information was inadequate for performing a number of routine tasks. For example, in order for a computer to understand a story and answer relatively straightforward questions relating to plot and character, there seemed to be a requirement to know more than either the rules of grammar or dictionary definitions of words (D'Andrade 1995). A succession of

[4] Plato argued that in order for a belief to become knowledge it needed to be both true and justified. In the seventeenth century, using this definition of knowledge, Rene Descartes claimed that the reasoned evaluation of beliefs was the most reliable method of discovering 'true knowledge'. For Descartes (1641/2004: 46), the external senses are only able to reveal objects 'obscurely and confusedly', while true understanding is established internally, by the mind alone. Humans are primarily 'thinking selves': 'I am therefore not admitting that I am anything other than a thinking thing' (ibid 37-38).

failures led researchers to question whether it was reasonable to interpret learning as nothing more than the accumulation of codified information and procedures. Although the development of computational models revealed a great deal about how human beings may resolve an array of formalistic problems, they did not appear to account for systemic learning: relatively durable change that subsumes specific problems and cannot be linked directly to the subject's exposure to any particular piece of information. This unconscious domain of learning is conventionally dubbed subconscious or tacit knowledge to denote, after Michael Polanyi, that 'one can know more than one can tell' (Polanyi 1967: 8).

A novice can acquire tacit knowledge by processing cognitively the 'embodied' experience of witnessing an expert utilising the desired skills:

> Our body is the ultimate instrument of all our external knowledge, whether intellectual or practical. In all our waking moments we are *relying* on our awareness of contacts of our body with things outside for *attending* to these things.
>
> (Polanyi 1967: 15-16 original emphasis)

The novice observing is able to comprehend the skill by using his or her mind to 'combine mentally the movements which the performer [of the skill] combines practically' (Polanyi 1967: 30). The successful teaching of skills depends upon the novice's 'intelligent co-operation for catching the meaning of the demonstration' (ibid 5). The learner understands the performance of the expert by relying upon his or her cognitive capacity to represent mentally and assimilate the substantive elements of the skill in his or her mind. It is principally the mind of the learner that is engaged in observing the performance. Thus, Polanyi considers that cognitive capabilities both precede and enable the body to store tacit knowledge. In line with the cognitive tradition, Polanyi is suggesting that when the learner comes to use a newly acquired skill, 'all the creative work has been done in advance by human reason' (Ingold 2000: 343).

According to cognitivists, tacit knowledge is stored in the complex ontology of mental representations. Rather than being accumulated in unstructured hoards of information, the tacit dimension of knowledge utilised in cognition is retrieved from complex mental structures, termed 'schemas' (also referred to as 'scripts', 'heuristics', 'mental models', or 'frames'). A schema is a 'meta-representation' that subsists within the mind as 'an

organized framework of objects and relations that has yet to be filled in with concrete detail' (D'Andrade 1995: 122). Individuals tend to build up schematic scenes or pictures in relation to particular domains of activity. The content and degree of specificity of a schema vary from one individual to another because they are experientially and culturally encoded. For example, the use of the term *writing* tends to invoke different schemas for English and Japanese speakers:

> Both schemas include a scene in which somebody guides a pointed trace-leaving implement across a surface. Such a scene invokes a *writer*, an *implement*, a *surface* on which traces are left, and a *product*. However, the Japanese schema leaves the nature of the resulting trace more or less unspecified. To a question in Japanese "What did you *kaku*?" one can answer by identifying a word or sentence or character or even a sketch or doodle. The English verb *write*, unlike *kaku*, restrictively invokes the notion of *language*; the result of the act of *writing* cannot be a picture or doodle, but has to be something in some language.
>
> (D'Andrade 1995: 123 original emphasis)

Although both scenes share a number of essential features, the disparity between the 'writing' scene in English and Japanese indicates that the schema concept is sensitive to differences in local context:

> Such a scene is highly *schematic* – it leaves unspecified a number of "slots" which can be filled in by context or by additional information from the speaker. Furthermore, what is filled in for one slot may affect what can be filled in for other slots; if for the *writing* schema, if the thing written on is the sky, then the thing doing the writing would be an airplane. To the extent that no slot information is available, hearers tend to fill the slots with their normal expectations, sometimes called "default values".
>
> (ibid 123-124 original emphasis)

As schemas exhibit internal coherence, the discovery of one new piece of information tends to affect the organisation of the 'local' representational system. This affects profoundly how the subject perceives the surrounding world and learns. Positively, by linking the current scene with what has been learned and experienced in the past, schemas allow individuals to interpret experience in the absence of codified information, even on the basis of pragmatic norms or 'default values'. This undoubtedly contributes to 'intersubjectivity' (Garfinkel 1972) or joint understanding among individuals and groups (see section 2.2.2). Negatively, the internal consistency and durability of schemas tend to inhibit radical learning or exploration. The subject tends to perceive the environment in accordance with the structure of the schema that they

already possess, and they may therefore ignore or fail to recognise any information that does not readily 'slot into' those schematic structures. Thus, the prior learning of a subject informs and may in fact inhibit subsequent processes of learning. When tacit knowledge is at stake, radical learning takes place only when the cognitive organisation of the subject's schema undergoes change.

Structural schematic change normally occurs only when individuals find that for some reason they are unable to solve a routine problem, or a habitual activity has become difficult to accomplish. In this scenario, individuals recognise that their sets of representations have become inadequate for engaging in the task at hand. In other words, they realise that the environment must have changed and that they need to find out the cause of this change. By way of response, they gather any new codifiable information that they can (this could include consulting, observing, or imitating others) and use this information as the basis for reconfiguring their schematic or tacit models of the world. Having engaged in this search process successfully, the individual learns subconsciously as the assimilated information about the environment is accommodated in changes to the structure of his or her mental representations. Thus, the acquisition, usage and development of tacit knowledge assume a Piagetian conception of cognitive development as individuals are said to learn when relatively durable changes to their mental representations take place in response to a perceived need to accommodate new information from the environment[5].

The account of cognitive development presented above suggests that learning is an unconscious process. Although individuals may realise that they need to engage in a learning process to achieve a particular goal (such as passing an exam, maintaining social relationships, or driving a golf ball consistently onto the fairway), the process of cognitive development necessary to fulfil these goals is likely to take place without

[5] Jean Piaget (1896-1980), a Swiss educational psychologist, developed highly influential theories of cognitive development through his experimental research on children. Piaget observed that children of different ages seemed to approach logical reasoning tasks in distinctive ways. He suggested that older groups of children approached tasks in a more sophisticated manner than younger ones because the former group utilised more advanced mental representations. From these findings, Piaget developed a stage theory of childhood development which proposed that children move through four stages of cognitive development, each with a particular and increasingly advanced cognitive structure that controls the ways in which they are able to represent tasks (McShane 1991). The two continuous mechanisms of cognitive change which control the processing of information by the cognitive system are 'assimilation' and 'accommodation'. Assimilation is the mechanism by which existing cognitive structures dictate which information is selected from the environment and is governed by a tendency to 'interpret the world to fit existing knowledge structures' (McShane 1991: 24). Accommodation refers to the process by which mental representations are adjusted to take account of new information that could not be processed using the existing cognitive structure.

their conscious awareness. If the mechanisms motivating cognitive development escape articulation, then attempting to stimulate learning by provoking systemic change in the neurological circuitry of the brain appears problematic. Somehow the workings of the subconscious agent or 'hidden hand' (Lakoff and Johnson 1999) of cognitive learning need to be uncovered and given expression. One method of making the cognitive system speak is to establish a link between particular brain states and observable patterns of action. As the corporeal expression of cranial processes, behavioural change is indicative of cognitive change. If the relationship between cognition and practice can be defined and managed, this holds the promise of understanding the process of learning and intervening in its course.

One of the most influential attempts to articulate and manage the cognitive mechanisms underpinning learning is Argyris and Schön's (1978) distinction between single and double-loop modes of learning. An axiomatic assumption of this theory of learning is that individuals act in accordance with an identifiable 'theory-in-use':

> [...] the theory constructed to account for a person's actions by attributing him a complex intention consisting of *governing variables* or values, *strategies* for action, and *assumptions* that link the strategies to the governing variables.
>
> (Schön 1975: 6-7 emphasis added)

The *governing variables* or values are a set of tacit rules with which the individual acts in accordance. Using Schön's illustration of the theory-in-use of a classroom teacher, examples of these rules may include 'Control the class' and 'Keep cool'. The content of the rules is based upon *assumptions* about effective practice, so for Schön's teacher, the rule 'Control the class' is based upon the assumption that effective teaching is enabled when 'The role of "teacher" and "student" are clear and assigned in advance' (Schön 1975: 7). This assumption leads the teacher to employ the *strategy* of drawing up a lesson plan. Owing to Schön, we now have a theory of (aspects) of the teacher's behaviour which presumes a direct relationship between intentions in the mind (a good teacher controls the class) and particular practices (produce a lesson plan).

Learning can be defined as an 'experience-based change in theory-in-use' (Schön 1975: 7). In response to a changing environmental context, the theory-in-use can be changed in one of two ways: either the *strategies* for achieving the governing variables change (what Argyris and Schön refer to as single-loop learning), or the *governing variables*

themselves change (double-loop learning). Again, taking teaching as an example, the teacher may engage in single-loop learning by changing his or her strategy for controlling the class by devising lesson plans that increase the structure of the lesson time. Alternatively, the teacher may respond by changing the governing variable, which requires the teacher to control the class, and by working with different assumptions about effective teaching practice. It is in the process of changing his or her governing variables that the teacher is double-loop learning. Typically, a person will tend to favour single-loop learning and change their strategies for achieving the values that they hold rather than change the values themselves because of an 'even greater value placed on constancy' (Schön 1975: 7). Only an 'intolerable conflict' between the person's theory-in-use and the actual reaction to the environment that is needed for success will tend to trigger an introspective evaluation of core values and a double-loop learning process.

Argyris and Schön's work is important in two respects. First, by constructing a cognitive theory of action that links practices to specific cognitive processes, they are proposing that mental representations can be 'externalised' and translated into explicit values, assumptions, and strategies. This process of externalisation makes mental activity available through explicit statements (mental maps, for instance). This means that these statements can be manipulated and acted upon to produce behavioural change instead of the otherwise inaccessible cognitive subconscious. Second, and following on from the last point, in claiming that cognitive activity can be translated into material statements, Argyris and Schön pave the way for a variety of practice-based intervention mechanisms that aim to stimulate learning. However, any attempt to intervene in cognitive development to produce learning seems to face two significant obstacles. First, the degree of correspondence between the 'theory-in-use' that is constructed and the underlying cognitive subconscious can only ever be imputed and never directly qualified. As tacit knowledge is inexpressible (Polanyi 1967), the skill would seem to lie in the ability of the intervening agent to craft a credible account of practice, not cognition. Second, once a theory-in-use is attributed to an individual's actions, positive change depends on the intervening agent (either the introspective individual or an external observer) being able to propose more suitable strategies (single-loop learning) or preferable governing values (double-loop learning). Stimulating learning through intervention suggests an improbable burden of revelation that would weigh heavily on the knowledge of the intervening agent.

In summary, a cognitivist interpretation of intelligent behaviour suggests that the skills of individuals are linked to the cognitive mechanisms possessed within their minds. In this section, two distinct conceptualisations of competent behaviour have emerged. According to the first view, intelligence is linked to the information-processing capability of the individual agent. Cognition is a computational process involving the detection, representation, and manipulation of information. Intelligent behaviour consists in goal-directed activities. An individual approaches these activities by formulating a plan or procedure for processing information with the intention of fulfilling the goal. The learning capacity of individuals is related to the volume of information that they accumulate in memory over time and the efficiency with which they are able to formulate plans and process information (new and stored). Their level of competence is a function of the degree of correspondence between the information that they possess and the goals that they intend to realise. This suggests that the capabilities of individuals are tied to particular domains of activity and that the development of expertise is therefore path-dependent (Newell and Simon 1972). This view is corroborated by AI research, which has demonstrated through the development of expert systems that large volumes of codifiable information may be manipulated to solve a limited range of formal and well-specified problems.

This evidence lends support to the hypothesis that human beings may accomplish a number of tasks by processing information. However, the information-processing perspective exhibits a major conceptual frailty in relation to learning. As competence is directly tied to the accumulation of information, learning is interpreted as being nothing more than the capability to process information with greater efficiency. This view of learning fails to consider other differences in the cognitive capabilities of individuals that may promote or inhibit learning (including, the specific architecture of the individual's cognitive system, their level of antecedent knowledge, and interaction between the individual's existing beliefs and new information). This limitation is reflected in the failure of AI to develop computational models that replicate the performance of human beings in a wider range of tasks. The successes of human beings appear to be irreducible to the manipulation of codified information. The second view, the tacit or schematic knowledge perspective, aims to address this limitation.

The schematic or tacit knowledge view recognises the significance of the individual agent in the learning process by acknowledging the role of cognitive capabilities in the

acquisition of knowledge. This perspective claims that knowledge, rather than being accumulated as a stock of information, subsists within the mind as an organised 'meta-representation' and that intelligence and skills emerge from the objects and relations constitutive of this cognitive framework. This framework governs the perceptual system (determining the detectable range of environmental stimuli) and conditions the behaviour of individuals (shaping the values, assumptions, and strategies they employ when approaching tasks). According to this view, learning is linked directly to cognitive change generated in specific contexts, in response to feedback from social and cultural experience, and this makes it possible to distinguish between learning experiences on the basis of the cognitive mechanisms at stake.

The less fortuitous revelation of the schematic knowledge approach is that the vast majority of the workings of the perceptual and cognitive systems are unconscious. As we have seen, the generation of learning may depend not as much on the accumulation of new information as on exposing the core values, assumptions, and strategies that emerge from and are conditioned by an individual's tacit cognitive framework. Incremental learning is the product of intervention that leads to the alteration of an individual's strategies for accomplishing a task, while radical learning is produced when the individual's core values are uncovered and modified. Interestingly, as cognitive processes tend to be unconscious, intervention aimed at changing an individual's tacit framework seems to depend on the production of codified knowledge (a mental map, for example). Thus, tacit and codified forms of knowledge act as complementary mechanisms in the process of learning.

One issue that remains unresolved in both the information-processing and schematic models of cognition is the status of other individuals and, more generally, the role of social processes in the structure of cognition and in the process of learning. This omission is addressed in the next section.

2.2.2 Group cognitivism

Although cognitivism is concerned with the conceptualisation of the cognitive activities taking place within individual minds, it would be unreasonable to suggest that this perspective does not provide an account of human interaction at a social level. In fact, a significant body of research within social psychology and cognitive anthropology

claims that the structure of social interaction is not only underpinned by cognitive mechanisms, but that social interaction is also able to stimulate cognitive learning and propagate innovations. With regard to the first of these claims, sociologists McCall and Simmons (1971) claim that the possibility of social interaction is underpinned by the cognitive activity of 'role taking':

> We can take another's role, then, if some components of our own 'inner forums' are at least generally similar to the identities that are salient in his actions. We temporarily and hypothetically 'stretch' our own hierarchies of identity-perspectives until the situation is viewed from a vantage point, opportunity structure, and motivations similar to those of alter. If we and alter are 'like-minded' or 'see eye to eye', role taking is relatively easy. But we shall never completely match alter's perspective, and the more dissimilar he is from us the more 'elastic' our own perspectives must be to catch even a glimpse of his own point of view.
>
> (McCall and Simmons 1971: 166)

Understood from a cognitive perspective, the interplay of social exchange is the product of the mindful imputation by the participating individuals of one another's cognitive states. Each participant ascribes such states to others through an introspective evaluation of his or her own mental state, anticipating that the perspectives of others are sufficiently similar to their own. Viewing the world from within his or her own 'inner forum', the Cartesian subject encounters others as, after Descartes, 'substances' or entities in possession of imputable mental attributes. Interaction unfolds in a mode of detachment as each participant takes up a 'vantage point' from which they can evaluate objectively the points of view of others.

Reliant on the detection and alignment of cognitive states, the process of successful interaction is a challenging one that may be promoted among a group that has a shared cultural and experiential background (recall from section 2.1.1 that cognitive schemas are configured contextually and may therefore be more or less shared). However, there is a degree of tension between the degree of intersubjectivity facilitated by shared schema ('cognitive proximity') and the creative potential of individuals with contrasting backgrounds and skills engaging in interaction ('cognitive distance'). To make sense of this tension, Nooteboom (1999) borrows the notion of a mental script from cognitive science to predict the effectiveness of the working relations among different groups of individuals. Similar to the concept of a mental schema, a script 'models the idea that to make sense of data (transform them into information) they need to be substituted into

nodes in the script that represent one's cognitive, categorical framework or 'absorptive capacity''(Nooteboom 1999: 134). The mind is interpreted as a set of scripts containing sequences of nodes (constituting a neural network). The scripts or cognitive structures of individuals will vary according to the interpretive contexts within which they have developed over time. This assumption is based on a constructivist epistemology that links the evolution of the cognitive structures of individuals to the environments in which the learning of those individuals has taken place[6]. This makes it possible to predict the effectiveness of the working relations between different individuals by paying attention to the social environments within which their cognitive structures were formed:

> If knowledge is contingent upon *categories of thought*, and these develop in interaction with the physical and social environment, then cognition is path-dependent and idiosyncratic. People will be able to understand each other only to the extent that they have developed their categories in a shared environment and in mutual interaction. It also entails that there are things that one simply cannot see and interpret in the way that others can. Therefore, in order not to miss out on the perception of the relevant opportunities and threats, one needs to tap into the complementary cognition of others.
>
> (Nooteboom 1999: 140 emphasis added)

While cognitive proximity promotes communicability and understanding between individuals, cognitive distance (which signals a qualitative difference in the interpretive structures of individuals) may be more likely to generate novelty because the idiosyncratic learning that each individual cognitive system has undertaken may be brought to bear on the issue at hand. The key advantage of cognitive distance (or the social interplay of differing cognitive structures) is the expansive effect on the domain of perception. The enactment or representation of the environment is enriched by complementary cognitions because a broader range of stimuli of potential relevance to problem solving may be detected and interpreted. Thus, within a group context, cognitive proximity tends to be associated with the propagation of incremental

[6] It is important to distinguish this version of constructivism from social constructionism, the latter perspective claiming that knowledge is the product of the social practices and pragmatic conventions of institutions and communities. Nooteboom's account of constructivism seems to be informed by social and developmental psychology, and the work of Piaget in particular. In this tradition, constructivism refers to the process by which knowledge is actively constructed in the mind of the subject. The role of the social setting or learning environment is limited to effecting changes in the cognitive system of the subject through the dual processes of assimilation and accommodation. The similarly named social constructionism underpins much (although not all) of the philosophy of knowing and doing presented in the next chapter. A 'non-cognitivist' equivalent to constructivism may be Bourdieu's (1990) concept of *habitus*. In this conception, learned categories are seen as being embodied in dispositions and enacted in practice rather than attributed to the path-dependency of cognitive interpretive schemes.

innovations while cognitive distance tends to be linked to the development of more radical innovations.

The perspective of cognitivism not only suggests that the structure of interactions is supported or constrained by cognitive processes, it also indicates that sociality is one of the main mechanisms through which new learning is formally shared. Cognitive anthropologists Premack and Premack (2002) argue that knowledge is socially transmitted between people via a three-tier hierarchy of dyadic (novice and model) learning mechanisms (conditioning, imitation, and pedagogy). The simplest transmission mechanism is conditioning or associative learning. This involves the unintentional exchange of information as the recipient is not in search of the information and the model does not intend to impart it. The intermediate form of transmission is imitation or observational learning. This consists in a novice observing a model and copying his or her behaviour. The most efficient form of social transmission is pedagogy. In pedagogy, the model observes the behaviour of the novice, judges his or her actions, and intervenes to modify his or her behaviour if necessary. In order to engage in pedagogy, the pedagogue must possess a cognitive capacity to understand the goal of the task the novice is attempting to accomplish and intervene in order to facilitate the successful attainment of the identified goal. In other words, pedagogy is only possible because 'the trainer has in mind a representation of a desired state of affairs consisting of the behaviour of the other, and carries out a highly deliberate set of planned acts to realise that representation' (Premack and Premack 2002: 358).

There are two reasons given for the uniquely human imperative for pedagogy (Premack and Premack 2002)[7]. First, humans have a strong desire to achieve standards of excellence. They therefore engage in the teaching of others (and the training of the self) in order to experience the intrinsic satisfaction of a skill or practice being mastered. Second, human beings possess a seemingly unique disposition for sharing experience[8]. This disposition seems to underpin the development of both language and pedagogy:

> The common code or sharing of symbols that language presupposes is unthinkable without a disposition to share experience. Such a disposition

[7] The capability to engage in pedagogic practices is thought to be confined to human beings, and other non-human primates when in captivity, due to the cognitive capabilities demanded of the pedagogue.
[8] Observations of infant behaviour seem to indicate that children will direct the attention of others towards an object they have identified in order that others may share in the excitement of the experience (see Gibson and Pick 2000).

> seems equally essential for the evolution of pedagogy, for pedagogy involves bringing others into conformity with the standards one applies to oneself.
>
> (Premack and Premack 2002: 360)

When combined, the desire for excellence and the disposition to share experience underpin the discovery and contagion of innovations. The variability in the experiences and cognitive capabilities of human beings means that specialised competences – in technology, fashion, cooking, sports, algebra, driving, and so forth – may be developed in some individuals and not in others. The learning of skills and experience by pedagogy mobilises and therefore preserves the innovations of cognitively 'gifted' individuals over time within a given cultural system (Premack and Premack 2002).

In summary, by admitting a role for social processes, the perspective of group cognitivism proposes that learning and innovation are propagated through social interaction and are expressed in the circulation of cultural knowledge. In this section, two main insights regarding the relationship between learning and sociality have emerged. First, the sociology of group interaction is grounded in the variation among the cognitive frameworks of the interacting individuals. When a group of individuals possesses similar interpretive schemes they will tend to process new information in the same way, making it possible for new ideas to be readily shared among the group and explored collectively (cognitive proximity). If a group of individuals possesses differing interpretive schemes it will be more difficult for ideas and potential opportunities to be shared among them, although the variety of interpretations the interacting group is able to produce may be a source of novelty (cognitive distance). The cognitive paradox is manifested in a spectrum of interaction defined at the one end by proximity and understanding and at the other by distance and novelty. Although a newly formed group may possess disparate interpretive schemes initially, as cognitive structures evolve through social experience, we can predict that repeated interaction will cause a group's categories of thought to tend towards alignment and that the level of understanding among a group will rise with maturity. On this basis, if the group's purpose is to produce continuous innovation, then the level of intervention necessary to maintain cognitive distance is likely to increase over time.

Second, sociality provides a context for the transmission of knowledge. Learning is maximised in a pedagogical relationship between a model and novice, in which the

model observes the novice's behaviour, judges his or her actions, and intervenes if necessary. Resonating with the information-processing theory of cognition discussed in section 2.1.1, pedagogy is treated as a problem solving process in which the pedagogue detects the intended behaviour of the novice and then carries out a deliberate plan of actions to realise that goal. Thus, as tacit knowledge tends to be utilised unconsciously, formal pedagogy would appear to be better suited to the transmission of codifiable knowledge.

2.3 Cognitivism in organisations

The majority of writing on learning and innovation within firms tends to privilege the role of cognitive mechanisms (understood as either individual or group) as outlined in the previous section[9]. The forging of the relationship between *individual cognitivism* and learning and innovation within the organisational literature is due in no small part to the influence of Herbert Simon, who was able to translate the empirical work he had conducted since the 1950s on individual rationality within cognitive science into substantive claims about the nature of learning within organisations (Newell and Simon 1972; March and Simon 1958/1993; Simon 1991). Persuaded by Newell and Simon's (1972) information-processing model of behaviour, the study of problem solving, decision-making, and other conventionally cognitive processes within the firm have become foundational aspects of the exploration of organisational learning and innovation. Research tends to focus on the way in which decisions are made, problems are comprehended, and other cerebral activities are accomplished under the constraint of limited information-processing capacity or bounded rationality[10].

[9] The cognitive approach to innovation is part of a broader tendency within organisation theory to focus on cognitive mechanisms. The editors of a special issue of *Organization Science*, published in 1994 and organised around the topic of organisational and managerial cognition, claim that there had been a decided 'cognitive turn' in organisation studies over the previous fifteen years (Meindl, Stubbart and Porac 1994: 289).

[10] Although this interpretation of organisational learning is decidedly cognitive, it does differ from the early computational models of cognition within AI discussed earlier in one important respect. Rather than possessing an unlimited computational capacity for processing information, individuals and their rationality, Simon claims, are bounded by information processing constraints. The concept of bounded rationality refers to 'the limits upon the ability of human beings to adapt optimally, or even satisfactorily, to complex environments' (Simon 1991: 132). Due to the constraints of bounded rationality, individuals tend to solve problems by employing a problem-solving heuristic, that is, 'by searching selectively through a problem space defined by a particular problem representation' (ibid). In recognising that human beings have limited computational capabilities, the foundation of the Simonian perspective can be understood, in part, as a reaction to the assumption of full rationality in classical economics. Due to these cognitive limitations, individuals tend to exhibit 'satisficing' behaviour rather than the 'optimising' behaviour assumed in the economics mainstream.

Guided by the cognitivist assumption that 'all learning takes place inside individual heads' (p.125), Simon (1991) claims that an organisation can learn in only one of two ways: either by acquiring new information about the environment through existing technical experts (who facilitate 'internal learning' if they transmit this information to others) or by appropriating novel information possessed by newly recruited members of the organisation (facilitating learning if this information is diffused to established managers)[11]. An organisation becomes effective at achieving its corporate goals when it possesses a comprehensive knowledge of the domain within which it is competing through the search and problem solving activities of employees working in R&D or market analysis departments. This knowledge is stored in the memories of individual 'expert' employees as vast stores of 'encyclopedic' information:

> expertise is based on extensive knowledge – no knowledge, no expertise. A world-class expert in any field [...] holds in memory some 50,000 chunks (familiar units) of relevant information. [...] This body of knowledge is stored in the form of an indexed encyclopedia, which is technically referred to as a *production system*. Associated with each chunk is a set of cues which, whenever evoked by a stimulus, will provide access to that in semantic memory. The memory content may be of many kinds: the name associated with the cue, information about the cued phenomenon, things to do about it, and so on. [...] Armed with knowledge stored in his or her production system, the expert is prepared (but only in the domain of expertise) to respond to many situations "intuitively" – that is, by recognizing the situation and evoking an appropriate response – and also to draw on the stored productions for more protracted and systematic analysis of difficult problems. [...] Against the background of this picture of expertise, the memories of an organization can be represented as a vast collection of production systems.
>
> (Simon 1991: 129 original emphasis)

The learning capability of firms is 'embrained' in the minds of problem-solving experts who acquire vast 'chunks' of information from a changing environment and store these until such time that this information needs to be deployed to solve a problem or frame a strategic issue. The most competitive organisations in any given market will consist of employees with 'expert' knowledge of the field within which they are working. The common genealogy of Simon's account of expertise and the individualist-cognitivist (information-processing) theory of mind should be clear. In both accounts, a rule-bound stock of codified information is acquired from the environment and then recalled in

[11] By 'transmit' Simon (1991) means information that is able to 'cross cognitive boundaries' (p.131).

memory in the form of mental representations when a given decision or problem calls for a response.

In line with the claim of *group cognitivism* that learning is propagated through social interaction, the business management literature is placing an increasing emphasis on collective forms of working for sharing and combining the cognitive knowledge possessed by different individuals. For example, functional and project teams, taskforces, collective brainstorming areas, and mentoring relationships are all commonly prescribed as effective learning mechanisms (Henry 2004). Much of the writing that approves of facilitating group interaction to produce creativity does so with the justification that interaction among individuals with differing backgrounds, know-how, and forms of experience can generate a 'requisite variety' of potentially innovative ideas as each contributes to the diversity of perspectives that a group is capable of producing. For example, Leonard and Sensiper (1998: 115) claim that when brought together as a group, social 'interplay among individuals appears essential to the innovation process'. The tacit mental schemas of different individuals are essential for creativity and insight because they underpin valuable articulated contributions:

> [...] individual's explicit statements or suggestions carry with them the weight of unspoken knowledge – mental models, life examples, perhaps physical skills, even unrecognized patterns of experience which people draw upon to increase the wealth of possible solutions to a problem. This experience, stored as tacit knowledge, often reaches consciousness in the form of insights, intuitions, and flashes of inspiration.
>
> (Leonard and Sensiper 1998: 117-118)

Most of the innovation capability of a group 'derives from the tacit dimension of the knowledge possessed by individuals in the group' (ibid 119). As the 'collective' tacit knowledge generated through interaction and acculturation 'exists more or less complete in the head of each group member who has been completely socialized into the group' (Leonard and Sensiper 1998: 121), the knowledge that a group is able to produce through interaction (for example, during a brainstorming session) is the result of the expression and combination of the tacit knowledge that each individual brings to the group[12].

[12] In the thematic context of the next chapter the *practice* of group interaction will take precedence over the cognitive knowledge that any *individual* member may bring to a group process or interaction. In this way, rather than being a 'container' to which existing knowledge is introduced and then combined, group processes become one in a range of generative mechanisms as knowledge creation is re-conceptualised as a recursive and circuitous practice.

From a similar cognitivist standpoint, the role of social relations in facilitating the propagation of innovations across organisations has also been examined in the business literature (which emphasises, in particular, the role of 'social capital' in supporting interaction). The term 'social capital' encompasses three attributes held in common by the members of a firm: structural (social interactional ties); relational (mutual trust); and cognitive (shared vision). Tsai and Ghoshal (1998) investigated the relationship between the distribution of social capital within a large multinational electronics firm and the rate of product innovation achieved by different business units. Following Schumpeter (1934), they hypothesised that social capital would contribute to the firm's ability to produce innovative products by facilitating the novel combination and exchange of resources (information, products, personnel, and support) among business units within the firm.

At the level of analysis of a network of business units, Tsai and Ghoshal claim that the innovativeness of a particular unit (understood as the probability of it being immersed in the exchange and combination of resources) depended on the existence of the three attributes of social capital: a high level of social connectivity with other units providing more opportunities for resource exchange; a trustworthy unit is more likely to be engaged in cooperative behaviour; and, with respect to cognition, units sharing a vision (represented in common goals and perceptions) are more likely to collaborate because they share the same aspirations and can see the value of combining resources in order to realise these[13]. On the basis of their findings, Tsai and Ghoshal suggest that corporate managers should invest in developing social capital to stimulate innovation as the attributes of this resource are linked to collaborative relations and innovation: 'social relations and tacit social arrangements encourage productive resource exchange and combination and thereby promote product innovations' (Tsai and Ghoshal 1998: 473).

Along with the broad 'cognitive turn' within business management in relation to individual and group learning, a growing band of organisation theorists is claiming that organisations *themselves* are able to behave as 'cognitive' learning entities that possess

[13] Tsai and Ghoshal did not find a direct relationship between shared vision and resource exchange and combination. They claim that a shared vision influences innovation only indirectly by encouraging the development of trusting relationships. Furthermore, a high level of social interaction among units was not necessary for creating a shared vision. Although Tsai and Ghoshal gloss over the weak association of a shared vision with both resource exchange and social interaction, this finding will take on greater significance in the thematic context of the next chapter of this thesis in which novelty is linked to the negotiation of pragmatic and situated meanings within and between communities rather than common adherence to an institutional set of cognitive goals or values.

and process knowledge. The competence-based approach to organisational learning argues that firms possess their own interpretive schemes and memory systems, constituting a cognitive architecture, which can be drawn upon for acquiring and processing knowledge. This stretches the metaphor of the representational view of the mind to its limit in suggesting that firms have 'become conscious of their performance as knowledge machines' (Amin and Cohendet 2004: 9).

The next part of this chapter evaluates this claim, exploring the linkages between different forms of cognitivism and the various theoretical perspectives on learning and innovation within the competence-based approach to the firm.

2.4 Cognitivism and competences

Within the competence-based approach to the firm, cognitive knowledge plays a central role in the conceptualisation of organisational learning and innovation. Teece, Pisano and Shuen (1990: 28) define competences as 'a set of differentiated skills, complementary assets, and routines that provide the basis for a firm's competitive capacities and sustainable advantage in a particular business' (quoted in Leonard-Barton 1992). A firm's competences can be understood from a cognitive perspective as emerging from the firm's knowledge structure. Although the competence-based approach encompasses a number of different theoretical perspectives (grounded predominantly in principles of either strategic management or evolutionary economics), it is possible to outline a number of fundamental assumptions about the nature of knowledge that are shared by these approaches.

First, competence-based approaches draw a necessary distinction between the nature of information and knowledge. Leonard and Sensiper (1998: 113), for example, distinguish utilisable knowledge from information on the grounds that the former is 'information that is relevant, actionable, and based at least partially on experience'. If explicit information is to become meaningful knowledge, it is dependent upon subjectivity – that is, it needs to be 'interpreted by individuals and given a context and anchored in the beliefs and commitments of individuals' (Nonaka, Toyama and Konno 2002: 43). The existence of meaningful knowledge is dependent then upon the situation of a subject in particular institutional contexts, which 'provide the basis for one to interpret information to create meanings' (ibid 49). Unlike the treatment of knowledge in

classical economic theory as information and therefore available to everyone as a 'given' resource, competence-based perspectives treat knowledge as a scarce resource that requires active exploitation, management, and cultivation if it is to generate competitive advantage. This approach therefore represents a significant attempt to address economist Friedrich Hayek's (1945: 520) organisational problem of finding 'the best way of utilizing knowledge initially dispersed among all the people'.

Second, competence-based approaches are underpinned by the cognitivist assumption that knowledge is *imprimis* something possessed in the minds of individuals. Individuals within organisations tend to be treated as cognitive agents, who acquire knowledge by interpreting information according to 'embrained' cognitive schemata and learn by making schematic adjustments to accommodate any significant yet incongruent information encountered. Taken from a highly cited article written by Marlene Fiol in 1994, the following account of the process by which an individual learns is typical of cognitivist organisation theorists: 'A person learns through developing different interpretations of new or existing information, that is, through developing (consciously or unconsciously) a new understanding of surrounding events' (Fiol 1994: 404). It should come as no surprise that learning is conceptualised in this way, as the hegemony of rationalist models of learning in western science and institutions, and the heavy investment in cognitivism in particular, has meant that competent performances are widely 'understood in terms of formal operations' (Taylor 1987: 470) taking place within the heads of individuals. In tying knowledge production to cognitive capabilities, the competence-based approach is concerned with the ways in which cognitive skills can be harnessed to acquire, share, and develop knowledge.

Third, competence-based theories distinguish between different forms of possessed knowledge (for example, codified versus tacit and individual versus group). An emerging ecology of knowledge is now recognised as being of critical importance in relation to the learning capabilities of organisations. The division between tacit and codified forms of knowledge has been particularly influential. The distinction is based on the principle that codifiable knowledge is commonly understood to be both expressible and explicit because it is available to the subject as knowledge which is 'formal, systematic and rooted in abstract reason' (Allen 2000: 17), while the concept of tacit knowledge is often invoked, as discussed earlier, to account for the unconscious framework of understanding and abilities utilised by human beings in the competent

performance of non-mechanical skills (Polanyi 1967). Learning and innovation are the product of the interaction of different forms of knowledge. According to one view, innovation may be regarded as a dynamic process involving the interaction of codified and tacit forms of knowledge (Nonaka 1991; Nonaka and Takeuchi 1995). Innovative organisations are able to mobilise the tacit knowledge of individual employees and amplify this at increasing ontological levels of the organisation, through the processes of socialisation, externalisation, combination and internalisation in a knowledge-creating spiral. Tacit knowledge is typically shared between individuals through the process of 'observation, imitation and practice' (Nonaka 1991: 99), which is facilitated by sharing experience in a social or group context (*socialisation*). In order to be shared at a wider level in the firm, tacit knowledge needs to be articulated as codified knowledge (*externalisation*). Codified knowledge is further standardised until it can be assembled as new knowledge in the form of a manual, codebook or database program, enabling wider access to this knowledge organisationally (*combination*). The systematic codified knowledge contained in these artefacts can be converted into tacit knowledge (*internalisation*) by new employees if they read manuals or documents about their jobs (Nonaka, Toyama and Konno 2002). From a competence-based perspective, innovative organisations are able to recognise and mobilise different forms of knowledge, amplifying these at increasing ontological levels of the organisation, through processes such as those just described.

Finally, organisational cognition is seen as a key mechanism of organisational learning and innovation in the competence-based approach. Organisations are regarded as processors of knowledge that compete on the basis of a set of knowledge-based competences. Organisations are able to accumulate knowledge over time through the maintenance of 'learning systems' (Fiol and Lyles 1985). These exist primarily as recollections of the firm's historical cognitive state – that is, an organisational understanding and interpretation of the environment which is transmitted into the minds of organisational members through documented corporate histories, folklore, and norms for behaviour. This system of memory influences the cognitive and behavioural development of new and established organisational members over time:

> 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 world views and ideologies. Members come and go, and leadership changes, but organizations' memories preserve certain behaviors, mental maps, norms, and values over time.
>
> (Hedberg 1981: 6)

The persistence of the memory of the organisation is attributed to the organisation possessing various representational 'entities' – the codified knowledge base of computer systems, digital archives, strategic reports and objectives, mission statements, corporate stories, and training documentation – as well as the tacit knowledge base for interpreting these in the form of norms for behaviour and organisational routines. Together these codified and tacit forms of knowledge reflect the past experience and history of the organisation and enable it to be preserved. Like the representational view of the human mind, in which memory exists as a stock of information stored in mental representations, the organisation has the equivalent of these in the form of filing cabinets, library shelves, and various data reservoirs. The tacit dimension to organisational memory that sustains forms of behaviour, routines, and ways of doing things is embedded in the cognitive structures (schemata) of employees.

However, in contrast to the cognitive schemata of individuals, it is important to note that the knowledge structure of organisations is socially constructed. In order to foster organisational commitment and social cooperation, a widespread consensus about the core beliefs, strategies, and goals of the firm needs to be established (Lyles and Schwenk 1992). Aligning the cognitive representations of employees with a broader organisational purpose regulates their behaviour by normalising their perceptual systems (enabling recognition of relevant environmental stimuli) and cognitive schemes (shaping modes of interpretation and expectations about behaviour). The tacit understanding of the organisational knowledge structure that employees acquire is influenced by the firm's codified knowledge base, but it is primarily transmitted across the firm and instilled in employees through different pedagogical mechanisms, including 'socialization, education, imitation, professionalization, personnel movement, mergers, and acquisitions' (Levitt and March 1988: 320).

At this stage we do begin to encounter differences between the different theoretical perspectives within the competence-based approach with respect to the claims that they make about the key ontological level with which processes of learning and innovation

can be most clearly associated and governed. The debate centres on the question of whether organisational knowledge and learning are manifested primarily in the cognitive activities of individuals or shared in the cognitive activities of groups of individuals. This is an important question because the ontological level with which knowledge is associated has some bearing on the appropriate choice of mechanisms for managing learning and innovation within firms. In this debate, the perspective of strategic management privileges individual cognition, while group cognition is emphasised in the evolutionary economics approach. A third perspective, the dynamic capabilities approach, attempts to combine elements of the first two theories in making the case for the requirement of firms to leverage both individual and group forms of cognition in the innovation-driven market environments that are characteristic of today. These three theoretical perspectives will be discussed in turn.

2.4.1 Strategic management

The strategic management approach privileges the exploitation of existing cognitive capabilities and knowledge assets and may therefore be situated in the exploitative side of the cognitive paradox. This perspective regards the individual cognitive agent as the fundamental ontological level at which differences between firms in terms of learning, innovation, and competitive advantage can be understood. It owes a great deal of its early theoretical development to Penrose's (1959) understanding of the firm as a resource-exploiting entity, competing on the basis of the services derived from its resources[14]. While the quality of the firm's resource position is prerequisite to competitive advantage, this theory argues that the distinctions between firms emerge as a function of their ability to establish competence or know-how in leveraging and combining these resources:

> [...] on their own, few resources are productive. Productive activity requires the co-operation and co-ordination of teams of resources. A capability is the capacity for a team of resources to perform some task or activity. While resources are the source of a firm's capabilities, capabilities are the main source of its competitive advantage.
>
> (Grant 1998: 183)

[14] A firm's resources are the inputs required to produce its repertoire of products or services. These include capital equipment, tacit skills, patents, brand names, market share, and reputation (Grant 1998).

In the long run, a firm cannot rely on the endowment of resources it has accumulated as a sustained source of advantage because resources will be subject to competitive erosion over time (as, for example, technological inputs may be replicated or surpassed and key human resources are hired away). Instead, the long-term profitability of firms depends on the ability of senior executives to identify and develop durable competences that combine the firm's resources in inimitable patterns of coordination. The competitive distinctions between firms can be traced back to the managerial strategies each devises for combining and leveraging its resources. The strategic management approach therefore emphasises the importance of the 'strategic cognition' of individuals for generating and sustaining competences (Schwenk 1988). As such, the cognitive capabilities of empowered individuals (notably technical experts, leading strategists, and senior managers) are critical for producing learning and innovation within firms. It is predominantly the top management team that is charged with devising strategies for managing learning and innovation competences and ensuring the corporate competitiveness of the firm.

An influential article written in this tradition by Prahalad and Hamel (1990) argues that organisations should focus their attention on developing five or six 'core competences', each representing a capability to generate 'collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies' (p.81). The senior executives of firms do this by creating a strategic architecture for combining 'resources that are typically scattered over the company's business units in order to build, develop, acquire (existing or new) core competencies' (Hamel and Heene 1994: 319). It is on the basis of the cognitive capabilities of the senior managers of organisations (typically the CEO) that these competences are developed and the architecture for exploiting them is produced. Thus, successful firms are those led by CEOs who are to out-think their counterparts in competing organisations and take the most appropriate strategic steps to facilitate collective learning.

The privileging of the role of senior managers, particularly that of CEO, is consistent with an individualist-cognitivist interpretation of knowledge[15]. At the top of the organisational hierarchy, the CEO occupies a space from which it is possible to bring

[15] This top-heavy focus may in part be explained by the historical influence of classical models of management in which senior managers are assumed to be the sole innovators and the rest of the organisation is designed to meet, rather than help define, managerial imperatives.

the whole of the organisation into view: budgetary reports, sales figures, market analyses, and executive meetings are all crafted to give the CEO the best possible understanding of the organisational environment and help him or her to (hopefully) make strategic decisions that will have positive consequences for the firm (Law and Hetherington 2000). The elevated position of CEO is an archetypal example of the Cartesian thinker who, by taking an objective and deliberative stance in relation to a domain of activity, is able to frame strategic issues, link together relevant pieces of knowledge, and consider them in detached and essential unity.

The development of an appropriate strategic architecture for cultivating core competences is the product of a series of managerial activities. Firstly, the top management team needs to define the scope of the capabilities that its organisation possesses. As the competitiveness of the firm is defined by what it knows how to do, an evaluation of the firm's resources should begin with an internal audit of the firm's production capabilities and tacit skills. In order to rationalise this inventory of skills, top managers should decide on the handful of core competences that the firm will require to establish or sustain leadership in its chosen domain. Secondly, once the strategic board has agreed on a common understanding of these competences, the strategic intent of the organisation should be articulated and communicated to the rest of the organisation. The Board communicates this world-view to the rest of the organisation (and the market) through mission statements, strategic plans, explicit business objectives, team meetings and events, annual reports and conferences, recruitment and training policies, cultural programmes and learning initiatives, staff intranet and email, and press releases and brand advertising. The key imperative is to harness the skills embedded within different organisational functions by ensuring that each unit has a shared understanding of the overarching purpose of the firm, and that the work within each function should make a direct contribution towards the set of core competences. Thirdly, the management team should design the governance mechanisms necessary to coordinate the learning capabilities, production skills, and raft of technologies distributed across the functions of the firm. Designed to establish norms of cooperation and communication, these measures could include: organisation-wide information systems; common career paths; managerial rewards; slack for team players; consultation on strategy development; competition for resources; cross-functional projects teams; and cultivation of trusting relations and social capital (Prahalad and Hamel 1990; Nohria and Ghoshal 1997).

The intention of all of these measures is to harness and exploit the core skills already held within the organisation. For example, there is an assortment of managerial intervention mechanisms that aim to stimulate organisational learning by exploiting the distinction between single and double-loop modes of learning[16]. The intervention of managers in learning practices is legitimised on the basis that many people within organisations tend to single-loop learn because they conceive of learning as being nothing more than a problem-solving process to find and correct errors in the external environment. In fact, the underlying problem of adaptation may only be solvable if individuals reflect on the way in which they define and approach the problems themselves (Argyris 1999). Effective organisational learning should combine both single and double-loop learning processes enabling the firm to engage in continual 'redesign in response to changing values and a changing context for action' (Schön 1975: 6).

Recent research has demonstrated how some organisations are attempting to encourage employees to engage in double-loop learning processes by introducing structural mechanisms that facilitate reflection on their daily working practices (Lipshitz, Popper and Friedman 2002). Motivated by the learning potential of getting front-line employees to evaluate critically their daily tasks, Lipshitz, Popper and Friedman found that a large manufacturing organisation had introduced 'Organizational Learning Mechanisms'. These intervention systems were championed by senior managers and aimed to exploit spaces in the daily flow of work by providing time for employees to reflect jointly on how tasks were accomplished and problems solved. By bringing together employees and allowing 'time for processing information' around work practices, mechanisms such as work review sessions enabled learning to become institutionalised by creating an inquisitive and open culture for sharing knowledge.

While learning may take place throughout the hierarchy, the senior management board has responsibility for setting the core beliefs, strategies, and goals of the cognitive structure of the firm. Indeed, it is likely that the characteristics of the organisational knowledge structure will reflect the system of beliefs, attitudes, and assumptions constitutive of the representation held by the managerial board. The function of organisations can be understood as consolidating for the bounded rationalities of their

[16] The epistemological assumptions underpinning Argyris and Schön's (1978) theory of cognitive learning were outlined in section 2.2.1.

members by defining the roles of employees in relation to established organisational goals (Simon 1991). The current goals and representation 'provides the basis for defining the roles of organizational members' (Simon 1991: 133). The organisational role of each individual tells them 'how to reason about the problems and decisions that face them' (ibid 126). An organisation's 'problem representation' expresses a distinctive corporate rationality that is internalised by employees as a particular set of 'knowledge, beliefs, and values' (Simon 1991: 132), enabling them to interpret and pursue established goals. With the satisfaction of these goals *in* mind, employees need only search for information within particular problem spaces or representations, according to the relevance of domains of information for satisfying wider organisational goals. Problem solving within organisations is reliant then upon a combination of the knowledge garnered by employees and a supporting corporate rationality. Incremental learning takes place as members of an organisation accumulate a stock of codified information and apply this in the pursuit of specific corporate goals. More radical learning is necessary when the corporate goals themselves need to be adapted in response to changes in the external market environment. This is the domain of organisational innovation.

While the day-to-day actions of individuals within organisations are made in accordance with the strategies and goals of the top management team, organisations only follow these goals as long as they '*satisfy* certain requirements or criteria' (March and Simon 1958/1993: 197 original emphasis) in relation to the current market environment, such as satisfying a particular profit level or market share. However, when a shock in the market environment, such as a change in regulatory conditions, makes an organisation's existing strategic architecture unsatisfactory, then the firm will attempt to innovate through the design of a new strategic architecture (March and Simon 1958/1993). Innovation depends upon senior managers processing new information regarding the market environment and accommodating this into a new organisational structure that is suitably adapted to that environment (for example, restructuring the functional architecture of the firm, to be discussed from managerial and communitarian perspectives in Chapter 5). There is a marked distinction in the innovation process between the role of senior managers who devise new goals and strategies, and the employees who execute them. This is linked to the hierarchical distinction between the cognitive capabilities of managers (who specialise in the production of cerebral knowledge) and workers (who specialise in the application of knowledge). Because the

new strategic architecture is communicated only subsequently to employees across the organisation, as a new set of corporate goals to be implemented by them, its execution relies upon radical learning on their part because they have to internalise the set of knowledge, beliefs and values that underpin the satisfaction of the new corporate goals. However, as the strategic management approach tends to focus on the efficacy of cognitive learning at the apex of the organisational hierarchy, the practices through which other employees internalise new knowledge and learn to pursue new goals have been neglected. As we shall see, this issue has been examined in more detail in the evolutionary economics approach.

In sum, the strategic management approach tends to privilege the exploitation of existing cognitive capabilities and knowledge competences. The process of innovation is treated as a systematic, formal process that is assumed to occur away from the day-to-day organisational activities that take place throughout the hierarchy. This resonates with the cognitivist assumption that the process of learning is separable from the stock of knowledge that individuals use in accomplishing their day-to-day activities (this also explains why innovation and learning have traditionally been thought of as discrete processes best accomplished in dedicated R&D units and class-based training programmes, respectively). Given such a view of the innovation process, and the importance attached to the role of 'expert' knowledge within this process, it is unsurprising then, as Dosi claims (1988: 1134), that 'large-scale corporate research has become the prevailing form of organization of innovation'.

2.4.2 Evolutionary economics

Evolutionary economics approaches attempt to resolve the cognitive paradox by emphasising the role of combining knowledge exploitation with the exploration of different interpretations of the environment to produce innovation, understood in evolutionary terms as the successful organisational adaptation of routines (Nelson and Winter 1982; Levitt and March 1988; Huber 1991; March 1991; Dosi and Nelson 1994; Nooteboom 1999). The evolutionary economics approach claims that the knowledge possessed by individual employees is only constitutive of an organisational capability when this knowledge is embedded within a collective organisational system. Rather than being the product of the knowledge possessed by senior managers, the knowledge of organisations subsists in sets of collective routines. The conceptualisation of

behaviour in terms of routines reflects the interpretation of organisational knowledge as a distributed cognitive asset.

Analogous to the role of genes in biological evolutionary theory, organisational routines describe organisational behaviour over time – that is, routines point towards the regularities in day-to-day organisational activities that tend to persist in spite of changes in resource endowments (employee turnover, for example). The seminal concept of routines was introduced by Nelson and Winter (1982: 14 original emphasis):

> Our general term for all regular and predictable behavioral patterns of firms is "routine." We use this term to include characteristics of firms that range from well-specified technical routines for producing things, through procedures for hiring and firing, ordering new inventory, or stepping up production of items in high demand, to policies regarding investment, research and development (R&D), or advertising, and business strategies about product diversification and overseas investment. In our evolutionary theory, these routines play the role that genes play in biological evolutionary theory. They are a persistent feature of the organism and determine its possible behavior (though *actual* behavior is determined also by the environment); they are heritable in the sense that tomorrow's organisms generated from today's (for example, by building a new plant) have many of the same characteristics, and they are selectable in the sense that organisms with certain routines may do better than others, and, if so, their relative importance in the population (industry) is augmented over time.

An organisation has a number of characteristics (regularities) that precede and therefore determine the possible forms of behaviour that the firm may exhibit. These routines describe the application of acquired knowledge to experience in order to produce regular patterns of behaviour. Routines are a source of sustained capabilities as long as the acquired knowledge that they embody (know-how, strategies, policies, and procedures) corresponds with the reality of experience at the moment of application. Accordingly, as the practical manifestation of acquired knowledge, routines function with optimum efficiency in environmental stasis. The stasis assumption would seem, therefore, to cast doubt on the efficacy of the concept of organisational routines in describing innovative behaviour and organisational change. How does the knowledge embedded in routines interact with experience?

The concept of organisational routines is derived from a theory of knowledge based on the skilful behaviour of individuals (Nelson and Winter 1982: 72-95). In order to evaluate the concept of organisational routines critically there is value in reviewing their

theory of skilled behaviour. Nelson and Winter (1982: 73) define a skill as 'a capability for a smooth sequence of coordinated behavior that is ordinarily effective relative to its objectives, given the context in which it normally occurs'. Skilled behaviour has three features. First, skills are analogous to computer programs – that is, 'they involve a sequence of steps with each successive step triggered by and following closely on the completion of the preceding one' (ibid). Second, the effective performance of a skill requires tacit (Polanyian) knowledge, 'in the sense that the performer is not fully aware of the details of the performance and finds it difficult or impossible to articulate a full account of those details' (ibid). As skilful performances rely on tacit knowledge, when attempting to teach a new skill to a novice, 'language is an imperfect tool for conveying the information they need [...] a great deal of filling-in remains to be done after the resources of language are exhausted; much of the filling-in involves laborious trial-and-error search' (Nelson and Winter 1982: 80). Finally, the lack of deliberation or 'smoothness' experienced in performing a skill effectively is due to the unconscious or 'automatic' selection of choices, which is 'performed entirely without attention or awareness' (ibid 82). The degree of 'automaticity' with which the skill is performed increases with the frequency with which the skill is executed. A skilful performance can be modified by deliberate choice (increasing the diversity and flexibility of behaviour) but these modifications are possible only at the opportunity cost of 'conscious attention', 'hesitation', and 'awkwardness'.

With respect to the knowledge underpinning competent organisational behaviour, 'Routines are the skills of the organization' (Nelson and Winter 1982: 124). As with the performance of individual skills, organisational routines are programmatic, tacit and, with frequent use, performed automatically. Each organisation member (defined as a unit able to accomplish something alone) possesses a repertoire of tacit skills or routines that they are able to perform, without deliberation, when required. However, the successful coordination of behaviour depends on each individual employee constitutive of an independent unit 'knowing what routines to perform and when to perform them' (Nelson and Winter 1982: 100).

Analogous to skills, the selection and the performance of the 'appropriate' routine require intentionality – that is, the coordination of behaviour is a function of the ability of each individual 'to receive and interpret a stream of incoming messages from other members and from the environment' (Nelson and Winter 1982: 100). The ability to

receive messages (from other members and the environment) depends on individuals making use of 'sensory capacities' that they possess upon joining the organisation and these remain invariant over time. Individuals need to *interpret* messages in order to 'make the link between the message and the performance that it calls for' (ibid 102). The ability to interpret messages is developed as individuals become familiar with the specificities of the organisational context (acquiring, in particular, a command of the organisational dialect to understand localised meanings). Thus, the successful performance of shared routines relies on two cognitive capabilities. First, organisation members need to have learned and internalised the relevant repertoire of routines. Second, they need to be familiar with the local interpretation scheme in order to select the appropriate routine and coordinate their behaviour with others. The internalisation of routines is an individual competence (signalling the possession of tacit knowledge) and the coordinated performance of routines is a shared competence (signalling the possession of a shared interpretation scheme).

As organisational knowledge is embedded in this system of interpretation and action, organisational memory is stored and exercised in 'the routinization of activity' (Nelson and Winter 1982: 99). While the role of codified memories (documented procedures or knowledge databases) cannot be discounted, collective routines are the predominant mechanism through which past experience (the embrained repertoire of routines) is remembered in the performance of current activities. The maintenance of a routine therefore relies on the successful reproduction of two mechanisms. First, as routines subsist in regular performance, routines must remain central to productive organisational activity in order to be retained. Routines that lack regular employment will become marginalised or be forgotten. Second, the acquired knowledge underpinning organisational routines needs to remain invariant in spite of changes in resource endowments. An intervention mechanism is therefore required to mobilise and reproduce the knowledge attached to the resources employed in the prevailing routines. Whether new members are joining the organisation or experienced personnel are leaving, the tacit knowledge underpinning the productive use of routines needs to be absorbed by new or existing members respectively.

As with the learning of tacit skills, the competent performance of the routine acts as 'the template' for the transfer of knowledge between expert and newcomer. Thus, learning takes place through the direct observation, imitation, and apprenticeship of an expert

engaged in performing the appropriate repertoire of routines. As capable performance is also dependent upon the newcomer learning the scheme of interpretation prevalent in the particular organisational setting (such as a functional group or project team), the maintenance of routines cannot be orchestrated by top-down managerial interventions (global training programmes or learning initiatives, for instance). Instead, routines are reproduced through engagement with the context in which the target behavioural routines are available for direct observation. This requirement of learning through engagement not only limits the ability of organisations to imitate the successful routines of rival firms, but the intra-organisational movement of knowledge and routines among differing functions and teams is similarly inhibited. As a distributed capability, organisational knowledge is most likely to be retained in a decentralised governance structure with local practices for the management of tacit knowledge and the maintenance of routines (at the very least, responsibility for the recruitment and training of new staff should be delegated). So far, the mechanisms associated with the routine operation of organisations have been outlined and, in particular, the need to mobilise tacit knowledge to replicate routines has been emphasised. However, in a dynamic environment, the desirability of a governance structure designed to foster regularities in behaviour must surely be questioned: what happens to organisational routines and corporate performance in a dynamic environment?

As intimated earlier, the negative corollary to the 'automaticity' of routine behaviour is the loss of diversity and flexibility in performance. If the environment changes, the acquired knowledge underpinning organisational routines diminishes in value. In order to innovate, rather than focus on the mobilisation of tacit knowledge, the firm needs to track the changes in the market environment and attempt to adapt its routines accordingly. An organisation can change its routines as a result of two major types of experiential learning: trial-and-error experimentation (reusing routines with favourable outcomes) and organisational search (employing better routines as they are found).

The first mode of learning is associated with the exploitation of current routines. For example, some organisations – typically those producing standardised goods and services – exhibit 'learning by doing' (Arrow 1962). This mechanism is termed the 'experience curve' effect: production costs tend to fall as experience increases; a factor usually attributed to increasing returns from production skills (Levitt and March 1988). Such a learning capacity may be accomplished informally by individuals distributed

across the firm who 'engage in scrutiny of what the firm is doing and why it is doing it, with the thought of revision or even radical change' (Nelson and Winter 1982: 17). However, as the performance of organisational routines is underpinned by tacit or unconscious knowledge, we can predict that such informal practices of learning will allow agents to make only incremental behavioural adjustments in the context of a changing environment.

The second mode of learning is adaptation through practices of search or exploration. Orchestrated through dedicated R&D or market analysis units, the organisation engages in this activity when it intends to adapt its behaviour through the employment of alternative and more efficient routines. Although the outcome of search practices tends to be 'stochastic', organisations may develop systematic problem-solving routines (patterned heuristics underpinned by tacit knowledge) for adapting their current repertoire of routines. Thus, while the day-to-day routines of organisations tend to be accomplished with a significant degree of 'automaticity', the adaptation of routines tends to be an intentional and systematic process.

The distinction between the automaticity of day-to-day operations and the intentionality of exploratory practices is unsurprising. While routine operations draw on acquired knowledge, exploratory activities are motivated by the redundancy of 'the routine' and are characterised by the search for the acquisition of new knowledge. In this context, the employees engaged in search processes are facing a similar task to the organisational newcomer attempting to comprehend an array of unfamiliar routines. However, the problem of search is compounded because there is no template from which the appropriate routine may be derived. Instead of observing and imitating an organisation in routine operation, the employee engaged in search has to *construct* a template by engaging in numerous activities, including: reading reports, consulting databases, attending trade shows and professional meetings, monitoring the performance of existing routines, incorporating best practices, and tracking rival organisations (Huber 1991). It is no wonder that evolutionary economists emphasise the importance of search rules and cognitive heuristics to exclude noise and stress the inherent ambiguity and difficulty involved in establishing new routines (Hodgson 1997; Lane and Maxfield 2005). What is clear, is that the intentional search for new routines does seem to resonate with the method by which top managers are presumed to adapt the strategic architecture of the firm in response to changes in the external market environment, as

understood from a strategic management perspective. Thus, in the context of radical change both the strategic management and evolutionary economics approaches suggest similar managerial responses (intentional search), although the latter perspective is rather more sceptical about the utility of the products of such activities.

In terms of innovation governance, one remaining point of contention is whether learning practices (search and trial-and-error experimentation) are more likely to produce success when undertaken in dedicated research facilities or when carried out by groups of individuals distributed across the organisation. Although, as we saw earlier, the maintenance of operational routines is favoured by a decentralised governance structure, should the governance of exploratory or innovation-seeking practices adopt a markedly different approach? This question can be evaluated by returning to the distinction between cognitive distance and proximity outlined in section 2.2.2. In a group context, cognitive proximity tends to be associated with the propagation and development of incremental innovations while cognitive distance tends to be linked to the contagion of more radical innovations. Transposing this distinction to the organisational level, the formal innovation units and R&D departments of large integrated firms are likely to manifest cognitive proximity. The accumulation of specialised knowledge in these organisational settings is likely to produce 'basic inventions' that may be translated into incremental product or service innovations as they are commercialised by the marketing department or similar function of the firm (Nooteboom 1999). Quite paradoxically, cognitive distance is only likely to exist outside of the formal innovation facilities. For example, competing perspectives are likely to emerge when members of spatially or functionally disintegrated structures of the firm work together on intra-organisational projects. This lends support to the widely held view that cross-functional project teams are a likely source of radical innovation (Leonard and Sensiper 1998; Sassenberg and Postmes 2002; Grabher 2002). The notion of cognitive distance also provides advocacy for using external partners as part of an innovation strategy when the firm faces a high degree of uncertainty. The 'non-redundancy' of cognition would be of value in interpreting effectively the features of the market environment to which the firm would need to adapt (Nooteboom 1999).

However, as suggested earlier, the difficulty associated with learning through cross-functional projects groups or partnering strategies lies in mobilising the tacit knowledge that sticks to the routines established in particular functions or organisations. As the

reproduction of tacit knowledge requires management within individual organisational units, some sort of intervention mechanism would also be required to facilitate the movement of knowledge across functions or between organisations. In this situation, Nooteboom (1999) admits that a joint 'community of practice' would be needed to create a learning context within which the tacit knowledge may be transferred from one partner to the other and thereby bridge the cognitive distance between the interpretive structures of the two partners. Spatial proximity and regular interaction of the two partners would therefore be important in facilitating learning in such a scenario.

Thus, with respect to the execution of exploratory practices, an examination of the evolutionary economics literature would seem to suggest that innovation is neither best accomplished through dedicated research or strategy units (stochastic results), nor is it likely to be viable within autonomous organisational functions, when the burden of revelation falls on the informal trial-and-error experiments of individual employees (tacit knowledge is inflexible). Instead, novelty appears to be the product of the strategic combination of the procedural knowledge embedded in a variety of routines. In order to mobilise such knowledge, some sort of intervention is required. One suggestion is the strategic creation of communities of practice (Nooteboom 1999). The theory of communities of practice is discussed in depth in the next chapter[17].

In summary, evolutionary approaches suggest that the cognitive structure of the firm is composed of distributed sets of organisational routines in which both the memory and competences of the firm (know-how, procedures, policies, and strategies) are embedded. The governance focus is on the coordination of the interaction of established routines (exploitation) with the detection and exploration of new opportunities in the market environment of the firm (exploration). As cognition is embodied in the firm's routines, innovation is conceptualised as a localised process that is regulated through the maintenance of exploitative and explorative routines. However, the facilitation of exploration would appear to demand the strategic combination of different sources of

[17] It is worth noting that Nooteboom evaluates the role of communities in terms of the cognitive learning opportunities they present for transferring between actors the unconscious procedural knowledge embedded in particular mental scripts (tacit knowledge). Nooteboom therefore suggests that 'newcomers' should learn from the 'masters' who possess the desired tacit knowledge by engaging in practices of mutual observation, apprenticeship, and imitation. The aim of these practices is not to create new knowledge but to transfer it from one context to another. This understanding of communities as a source of cognitive learning is reflected in a Piagetian constructivist epistemology. This position may be contrasted with the view presented in the next chapter that knowledge is actually *created* in the social practices of communities and not merely transferred or strategically combined.

procedural knowledge, in order to secure novelty through the propagation of cross-functional or inter-organisational knowledge. In the context of a dynamic market environment, there would appear to be a requirement for strategic management. This points towards a dimension along which the strategic management and evolutionary economics approaches may begin to converge. The final theoretical perspective within the competence-based approach to the firm, the dynamic capabilities approach, begins to specify some aspects of this relationship.

2.4.3 Dynamic capabilities

The dynamic capabilities approach starts with the assumption that the ability of the firm to be innovative is critical for sustaining competitive advantage in dynamic market environments. By integrating aspects of strategic management with an evolutionary-economic conceptualisation of knowledge, this approach suggests that firms should create a strategic framework appropriate for competing in 'a Schumpeterian world of innovation-based competition' (Teece, Pisano and Shuen 1997: 509). In such a demanding environment, this perspective is concerned with uncovering 'the foundations upon which distinctive and difficult-to-replicate advantages can be built, maintained, and enhanced' (ibid 516). This approach, therefore, privileges the exploratory side of the cognitive paradox, arguing the need for the firm to generate and maintain dynamic innovation capabilities (Leonard-Barton 1992; Teece, Pisano and Shuen 1997; Lawson and Samson 2001).

Dynamic capabilities are the source of inimitable and sustainable competitive advantage in innovative organisations. These are embedded in *strategic assets*, *firm-specific routines*, and *evolutionary paths*. Strategic assets refer to the difficult-to-trade (tacit) knowledge-based resources the firm currently possesses; these include 'specific endowments of technology, intellectual property, complementary assets, customer base, and its external relations with suppliers and customers' (Teece, Pisano and Shuen 1997: 518). These assets represent the knowledge base of the firm and therefore express its competitive position at any given point in time.

Firm-specific routines are conceptualised as distinctive activities that are constituted in the coordination of strategic assets that span individuals and groups. In contrast to the evolutionary approach, senior managers are responsible for the ways in which these

routines are coordinated and integrated within the firm. The suggested need for managerial intervention is justified on the basis that an existing capability is more likely to be the result of distinctive organisational routines that integrate interdependent assets, such as integrative 'lean production' routines, rather than being due to the functioning of these assets alone. The creation of new organisational routines expresses the existence of newly acquired organisational knowledge. Such knowledge is the product of the tacit procedural knowledge embedded in routines and strategic managerial intervention.

Organisational learning describes an evolutionary path. The choices available to a firm are conditioned by the current knowledge base and repertoire of routines it possesses. Thus, the opportunities for innovation that are revealed by the maintenance of dynamic capabilities are also constrained by the firm's past investments in capability development. This dynamic is attributable to the path dependence of organisational learning. Recognised problems are typically solved through a process of experimentation, feedback, and evaluation. If the firm attempts to engage in problem solving in areas that are remote from its current knowledge base, then its ability to learn successfully through experimentation will diminish. This maxim may be unpacked with reference to the cognitive structure of the firm: 'If many aspects of a firm's learning environment change simultaneously, the ability to ascertain cause-effect relationships is confounded because cognitive structures will not be formed and rates of learning diminish as a result' (Teece, Pisano and Shuen 1997: 523).

In a dynamic market environment, it is likely that reconfigurations to the firm's system of routines will be demanded regularly. An organisation's cognitive structure possesses an 'absorptive capacity' which denotes 'the ability of a firm to recognise the value of new, external information, assimilate it, and apply it to commercial ends' (Cohen and Levinthal 1990: 128). The ability to exploit external sources of knowledge is a function of the firm's existing state of knowledge (acquired through R&D investment, technical expertise, and operational experience). Absorptive capacity is path-dependent and cumulative in the sense that new external knowledge can only be exploited when the firm already possesses knowledge that is related to the emerging novelties in the target knowledge domain. As the constitutive structure of the learning capacity of the firm, the level of acquired knowledge allows the organisation to perceive the existence of new

knowledge, recognise its value to the firm, and integrate this knowledge with the firm's existing operations.

The exploitation of any new knowledge – including codified knowledge generated through consultancy or public research projects – is dependent upon the end-user of the research possessing a background of relevant tacit knowledge to interpret and utilise the findings. In other words, the end-user or firm needs to have developed an organised framework of knowledge or schematic representation in relation to the domain of activity from which the new knowledge emerges (D'Andrade 1995). At the level of strategy, the requirement of a relevant stock of tacit knowledge to recognise and exploit advances in the field casts doubt on the ability of the firm to enter product markets or establish competences in domains that are unrelated to the firm's core skills[18]. The use of consultancy knowledge, strategic acquisitions, or recruitment of thought leaders is only likely to remedy the problem if the learning capabilities associated with these ventures can be integrated with the current knowledge structure of the firm. While such integration may be feasible at the level of top management (with the use of appropriate cognitive bridging mechanisms), incorporating new knowledge into existing routines at lower levels of the hierarchy 'requires an existing internal staff of technologists and scientists who are both competent in their fields and are familiar with the firm's idiosyncratic needs, organizational procedures, routines, complementary capabilities, and extramural relationships' (Cohen and Levinthal 1990: 135). Thus, radical change is problematic in all areas of the hierarchy other than top management level.

In governance terms, the articulation of the notion of absorptive capacity highlights the trials organisations face when trying to innovate and exploit new knowledge. The firm needs to manage its internal and external interfaces with care to allow new knowledge to move across them. In order to exploit new technical knowledge at the external interface, organisations should employ central research 'gatekeepers' or wider teams of 'receptors' with the technical competence to interpret new knowledge and translate the findings into terms understandable by other internal staff. In terms of managing the internal interfaces, and the cross-functional linkages between different departmental units, the mechanisms necessary to translate and utilise knowledge are more complex.

[18] The path-dependence of the cognitive structures of leading managers is likely to channel innovation in particular directions as the past corporate experience of managers stimulates particular neurological schema, conditioning the opportunities for capability development that may be perceived. If the competitiveness of the firm is being compromised, the intervention mechanisms suggested by Argyris and Schön (1978) could be applied at a strategic level to facilitate double-loop learning.

Like the technical receptors, the internal employees require some background knowledge or absorptive capacity to interpret the intermediate research filtered through the outward-facing staff and assimilate it with their everyday working routines. Furthermore, in order for an organisation to leverage the knowledge capabilities held within each functional unit, the functions need to be able to communicate effectively with one another. However, Cohen and Levinthal (1990) suggest that a trade-off exists between the efficiency of communication internally (facilitated by cognitive alignment) and the ability of the firm to absorb outside sources of knowledge (an idiosyncratic conceptual scheme, esoteric language, or specialised body of expertise may all impede the translation of externally produced knowledge). In line with the distinction between cognitive proximity and distance outlined earlier, novelty is more likely to emerge when subunits have differing cognitive structures and variegated linkages with external sources of knowledge, while managerial effort should focus on ensuring the cohesion of the broader organisational system (through the tools of strategic management, including employee rotation, liaison managers, common procedures and strategies, cross-functional project teams, universal technological infrastructure, and investment in social capital).

In sum, the dynamic capabilities approach is an integrative perspective that combines elements of the other two approaches. Like the evolutionary economics approach, the cognitive structure of the firm is understood to be embedded in its routines. The assumption that the firm faces a dynamic market environment means that innovation is constantly demanded. There is therefore a strategic need for managerial cognition to reconfigure routines regularly to maintain competitive advantage. This theory seems to represent an appropriate vehicle for drawing together the knowledge claims associated with the subsets of the competence-based approach to the firm.

2.5 Comparative review

This chapter has focused on the role of cognitive mechanisms underpinning the acquisition, propagation, and governance of organisational learning and innovation. The three theoretical perspectives examined within the competence-based approach to the firm (strategic management, evolutionary economics, and dynamic capabilities) were delineated according to where they sit in the cognitive exploitation/exploration spectrum. In the remainder of this chapter, a comparative review of the three

perspectives will be constructed, organised according to the main points of distinction among the approaches (Table 2.2).

	Strategic Management	**Evolutionary Economics**	**Dynamic Capabilities**
Cognitive paradox	Exploitation	Exploitation and exploration	Exploration
Cognitive agent	Individual (top managers)	Group (routines)	Individual and group (strategic management of routines)
Governance imperative	Design strategic architecture for collective learning	Balance exploitation and exploration	Maximise absorptive capacity
Cognitive structure	Managerial beliefs, strategies and goals	Memory embedded in routines	Absorptive capacity
Competitive advantage	Combination of resources; facilitate cross-functional coordination	Correspondence between routines and market environment	Integration of strategic assets; manage internal and external interfaces

Table 2.2. Comparison of competence-based theories of the firm

First, all three perspectives differ according to how they resolve the cognitive paradox. In the strategic management perspective, the emphasis falls on the exploitation of the firm's current stock of knowledge. In the evolutionary economics perspective, the aim is to combine exploitation of current competences with the exploration of novel routines. In the dynamic capabilities perspective, the assumption that firms face highly dynamic market environments means that innovation is constantly demanded and the focus is therefore on exploration. Thus, while the strategic management approach focuses on the exploitation of *existing* knowledge, skills and capabilities, the dynamic capabilities approach suggests that the competitive advantage of firms lies in 'the capacity to *renew* competences so as to achieve congruence with the changing business environment' (Teece, Pisano and Shuen 1997: 515 emphasis added).

Second, the approaches differ according to the key ontological level with which they associate cognitive agency. In the strategic management perspective, top managers are identified as the leading cognitive agents. As such, top managers take responsibility for creating the intervention mechanisms necessary to stimulate learning throughout the

hierarchy. In the evolutionary economics perspective, cognition is distributed among groups of individuals and embedded in collective routines. Learning is expressed in the successful adaptation of organisational routines, accomplished through local practices of search and trial-and-error experimentation. In the dynamic capabilities perspective, while knowledge is embedded in routines, the innovation imperative places a cognitive demand on managers to coordinate and integrate routines successfully. Learning is considered a collective process that is coordinated by managers but shared in the search routines of all members of the firm.

Third, the perspectives differ according to the governance imperative that they recommend for achieving corporate success and profitability. In the strategic management perspective, top managers are advised to develop a strategic architecture for generating collective learning. This involves three top-down managerial activities: (1) choosing a domain of competences based on the firm's core skills; (2) communicating this vision to the rest of the organisation; and (3) designing governance mechanisms that leverage the skills distributed across organisational functions. In the evolutionary economics perspective, the reliance of the firm on tacit and distributed organisational routines means that corporate learning escapes orchestration through top-down governance initiatives. Instead, an effective balance between exploitative and explorative routines is more likely to be struck through a decentralised governance structure that draws on local practices for managing tacit knowledge and maintaining routines. In the dynamic capabilities perspective, as corporate success emerges from the organisational cohesion of the firm's routines and strategic assets, managers should devise a network system of governance that is responsive to environmental change as the search practices of individuals distributed across different business units are integrated.

Fourth, the perspectives vary according to the cognitive structure with which they associate the acquisition, storage, and production of knowledge. In the strategic management perspective, the cognitive structure of the firm reflects the beliefs, strategies, and goals constitutive of the representation held by the top managerial team. These managerial values condition knowledge acquisition throughout the hierarchy by conferring a 'corporate rationality' upon employees, allowing them to understand the purpose of the firm, interpret environmental stimuli, and accumulate knowledge with respect to specific organisational goals. The main threat to competitive advantage top-

down firms face is the development of a discrepancy between the prevailing managerial beliefs about the organisational environment and the true nature of external reality. One method of mitigation for this risk is to manage the relationship between the core organisational values and the beliefs embedded in other parts of the hierarchy to generate an adequate representation of the particular organisational environment faced. In the evolutionary economics perspective, as the organisation's knowledge is embedded in distributed sets of routines, there is no singular cognitive structure or corporate rationality. The conceptualisation of knowledge as tacit skills or routines rules out any managerial intention to integrate knowledge into an organised framework or corporate representation. The main mechanism of knowledge management is the distributed practices for mobilising and reproducing the tacit knowledge embedded in routines. While the evolutionary economics perspective denies the ability of management to intervene in organisational routines, the dynamic capabilities approach claims that tacit knowledge can be drawn out of specific routines to propel an organisational cycle of knowledge articulation and codification. The key point here is that the articulation and codification of tacit routines is not done with the intention of converting the value of tacit experience into codified sources of knowledge such as blueprints or manuals. Instead, tacit and codified forms of knowledge are complementary assets that prime one another in the generation of the absorptive capacity of the firm (Cohen and Levinthal 1990).

Finally, the approaches differ according to the fundamental competences they identify with competitive advantage and corporate innovation. In the strategic management perspective, competitive advantage arises from the managerial strategies that combine the firm's resources in complex patterns of coordination. All of the intervention measures proposed are designed to stimulate collective learning by establishing norms of cross-functional cooperation and communication. In the evolutionary economics approach, competitive advantage stems from the degree of correspondence between the organisation's routines and the selection mechanisms in the market environment. As the functioning of routines resists top-down intervention, cross-functional or inter-organisational knowledge initiatives should be supported by the strategic creation of communities of practice. In the dynamic capabilities perspective, the main source of competitive advantage is the managerial integration and coordination of routines and strategic assets. Similar to the strategic management approach, the intervention measures prescribed are designed to maximise the absorptive or learning capacity of the

firm by ensuring the cohesiveness of the linkages among its internal and external interfaces.

Despite the series of conceptual distinctions across the three perspectives, is it possible to draw out any complementarities among the approaches when they are used to examine learning and innovation practices within large organisations? In other words, irrespective of the different knowledge governance claims associated with each perspective, can aspects of all three theories be combined to produce a more meaningful understanding of knowledge practices within firms? As an integrative perspective, the dynamic capabilities approach appears to hold the most promise of reconciling the panoply of knowledge claims held across the different subsets of the competence-based theory of the firm. In order to move the debate forward, I will close this chapter by suggesting that the different perspectives do exhibit a degree of complementarity and can be drawn together to grasp the predominant mechanisms of learning within different types of organisations.

As established within the strategic management approach, senior executives set the core elements of the cognitive architecture of the firm and thereby manage the processes of learning and innovation. However, according to Lyles and Schwenk (1992), firms also possess peripheral knowledge structures that are enacted throughout the firm and may support or contradict the core beliefs. These peripheral structures reflect the organisational division of labour and subsist in the perspectives of functional departments such as those of sales or marketing. Visible in common heuristics and insights, these embedded beliefs guide the approach of employees in fulfilling functional sub-goals in service of the overall corporate mission. In contrast to the core values and beliefs that are imposed from above by the board, peripheral structures tend to be crafted through social interaction throughout the hierarchy. The existence of such structures is consistent with the conceptualisation of organisational knowledge as a distributed cognitive asset that subsists within collective routines. Whether or not senior managers recognise these peripheral structures or routines, it seems clear that they influence organisational behaviour at lower levels of the organisational hierarchy. However, by drawing on these structures, senior managers may be able to influence organisational learning. For example, Nonaka and Takeuchi (1995) argue that knowledge creation depends upon utilising the unique perspectives (mental schemas) of front-line employees that have been informed by their everyday dealings in the

organisation's business environment. The role of the organisation is to take 'the tacit and often highly subjective insights, intuitions, and hunches of individual employees and making those insights available for testing and use by the company as a whole' (Nonaka 1991: 97).

Distinctions between organisations can be identified on the basis of the degree of congruence between their core and peripheral knowledge structures (Lyles and Schwenk 1992). Organisations can be differentiated into tightly or loosely coupled systems of governance according to the degree of alignment between their core and peripheral beliefs. In tightly coupled systems, the majority of members of the firm are cognitively aligned – they agree on the purpose of the firm, the approach necessary to meet that purpose, and the interpretation of environmental stimuli. These firms tend to avoid learning: rather than adapting their schemas to the environment, senior management may attempt to change or enact the environment in order to maintain correspondence between the cognitive structure of the firm and the environment. The firm does not need to invest heavily in the acquisition of new knowledge, and the same business methods and planning tools may be used over extended periods of time. As these firms tend to respond poorly to environmental change, the governance imperative lies in maintaining stability, controlling disputes, and preserving the alignment of the core and peripheral knowledge structures. This type of organisation would appear to rely on top-down strategic management (epitomising individual cognitivism), while neglecting the learning capability associated with organisational routines.

In loosely coupled systems, disparities between the core and peripheral structures are tolerated. Senior managers may attempt to promote debate about the firm's values and purpose throughout the hierarchy and seek to incorporate the insights generated in differing interpretations of the environment into the global strategies and policies of the organisation. As these firms tend to be configured for social exchange and learning through adaptation, environmental changes are less likely to pose a threat to the operational capacity of the firm and may in fact serve as sources of innovation. Embracing an evolutionary-economic conceptualisation of knowledge (exemplifying group cognitivism), these organisations draw on peripheral routines to devise emergent strategies, policies, and processes.

While loosely coupled structures do appear to be the preferable mode of governance, prescriptions for strategic management cannot be generated without due consideration of the market context within which the firm is competing. Highly successful organisations may utilise a tightly coupled governance structure when competing in an appropriate market environment. Organisations, that occupy niche markets, possess monopolistic power, or control inimitable resources, can remain committed to entrenched beliefs and standardised processes without concern for the environmental stimuli that their centralised managerial logic excludes. However, should the market environment of a tightly coupled organisation experience a shock, then the autocratic and top-down orientation of these firms renders a timely response improbable. In contrast, loosely coupled organisations are more suited to dynamic or highly contested market environments. The polyphony of voices these organisations foster allows a broad domain of environmental events to be recognised and the cognitive structure of the firm is adaptable enough to accommodate these changes. In terms of strategy, these firms are more likely to be experimental and innovative than their tightly coupled counterparts.

While the articulation of this typology of organisational knowledge structures has been useful in clarifying the relationship between strategic management and organisational routines, the prevailing mechanisms of learning will vary from firm to firm. Thus, in order to further understanding of the incidence and effectiveness of these different mechanisms, there is a need to qualify these theoretical claims using substantive empirical research conducted within a corporate context. Such research would need to address a number of questions. How do firms acquire cognitive knowledge? How does cognitive proximity or distance influence learning within functional teams and project groups? How do senior managers create a strategic architecture, and with what consequences for learning? Which managerial practices produce absorptive capacity? In the empirical chapters of this thesis, I focus on these questions by examining the on-the-ground mechanisms of learning prevalent within Royal Mail, the largest postal administration in the UK.

Although the comparative review of the three competence-based approaches – as well as the attempt to reconcile their theoretical claims – has revealed a series of insights regarding the governance of learning and innovation within firms, the competence-based literature is also deficient in a number of respects. In the strategic management

approach, the assumption that the top management team (particularly the CEO) possesses an overview of all of the firm's activities and can make successful strategic interventions accordingly is questionable. As Lyles and Schwenk (1992) suggest, it is likely that senior managers will only be able to govern in accordance with such a top-down vision of the firm when the organisation concerned possesses a relatively simple knowledge structure (reliant on one or two core competences) and the market environment is stable (the firm enjoys monopolistic power or controls inimitable resources).

While the evolutionary economics approach is rightly sceptical about the orchestration of learning through a top-down vision of the firm, it is deficient in other respects. First, it is not clear how the tacit knowledge utilised in organisational routines was acquired initially. The focus of this approach is on the transmission of genetic code (tacit knowledge) from one generation to the next, and yet there is no account of how this knowledge was originally acquired and encoded in organisational routines. As such, the evolutionary economics approach is constrained by the tautology of the argument that organisations with selectable routines are successful. Second, like any evolutionary theory, this perspective is unable to account for behaviour outside of cause-and-effect relationships: such activities appear to be, by definition, unpredictable and 'stochastic' (Nelson and Winter 1982: 15). Paradoxically, evolutionary theories appear to be ill-suited to the study of change and innovation. This theory cannot recognise creativity as manifest in the practices of improvisation, non-cognitive engagement, situated action, and everyday sociality. These practices become recognisable in a non-cognitivist ontology of learning, and that is presented in the next chapter.

In combining elements of the strategic management and evolutionary economics approaches, the dynamic capabilities perspective reveals an uneasy synthesis of deliberate (codified) and non-deliberate (tacit) learning mechanisms. Learning outcomes are differentiated according to the scale of cognitive investment (exploitation for incremental learning and exploration for radical learning). As we have seen, this hierarchy of knowledge inputs is based on a Cartesian conception of knowledge and learning from the cognitivist tradition. The Cartesian position provides an inadequate account of knowledgeability not least because, as will be shown in the next chapter, the processes of 'doing' (typically regarded as behaviour or exploitation) and 'learning' (reflective cognition or exploration) cannot be so readily distinguished in practice.

The next chapter draws upon phenomenological and pragmatist philosophy, ecological psychology, theories of situated learning, and actor-network theory to show that the formation of knowledge in firms is not limited to the capabilities of 'expert' minds working in R&D, the efficacy of procedural routines, or top managers configuring the organisation for innovation, but that workers throughout the firm are knowledgeable and innovative in their everyday practices as they co-produce a socio-material infrastructure for learning in communities distributed across the firm.

Chapter 3
Learning and Innovation Practices

3.1 Introduction

This chapter presents an alternative perspective on organisational learning and innovation which suggests that, rather than being purely cognitive activities, these processes are more accurately described as embodied and situated practices. The last chapter illustrated how the competence-based approach is grounded in a cognitivist interpretation of knowledge and therefore frames the processes of learning and innovation in terms of the ability of the firm to acquire and leverage different types of knowledge (tacit and codified or individual and group). In each of these manifestations, knowledge is understood as an 'entity' that provides those able to take possession of it (the individual, group, or organisation) with specific capabilities. While the governance focus centres on the acquisition, utilisation, and propagation of knowledge, the existence of knowledge available for acquisition was never in question.

While the competence-based approach is sensitive to the ways in which knowledge may be acquired and leveraged, this process of managing knowledge presupposes that an 'entity' dubbed knowledge already exists. As a consequence of this, the micro-practices of knowledge creation have been neglected. For example, Nonaka and Takeuchi (1995) outline a theory of knowledge creation predicated on the interaction of tacit and explicit forms of knowledge at different ontological levels within the firm (as referred to in the previous chapter). Contrasting tacit knowledge with the uniform nature of explicit information, Nonaka and Takeuchi claim that the former is an (idiosyncratic) entity that is 'anchored in the beliefs and commitment of its holder' (Nonaka and Takeuchi 1995: 58). Thus, learning depends on the relationship between objective codifiable knowledge and a subjective cognitive agent. As such, Nonaka and Takeuchi's theory relies on the repeated separation and integration of knowledge and agent in a cyclical process of knowledge creation. However, this model of knowledge 'creation' must always begin with the tacit knowledge already in the possession of an individual. Similarly, while recognising that the social environment affects learning, Nooteboom (1999) still regards knowledge as something that may be acquired by being transferred from one context to another if the appropriate cognitive 'bridging' mechanisms are in place. Both Nooteboom and Nonaka and Takeuchi invoke cognitive mechanisms to specify how

new knowledge may be transferred but provide an inadequate account of the micro-practices of knowledge creation (innovation).

The aim of this chapter is to return to the practice of knowledge creation. This shift in perspective is underpinned by a commitment to account for learning and innovation in non-cognitivist terms. This means moving to a position from where the need to privilege cognitive mechanisms to account for learning dissolves[19]. Rather than begin with the individual cognising subject, this chapter will argue that non-representational practices perform a central role in the production of knowledge and that learning and innovation are distributed throughout the socio-material infrastructure of different organisational communities.

This chapter is in five parts. In the first part, I outline four strands of a 'non-cognitivist' ontology of learning – Being-in-the-world (3.2.1); shared practice (3.2.2); situated learning (3.2.3); and actor-network theory (3.2.4). The first two strands emphasise the embodied and shared aspects of learning and innovation. The final two strands, by shifting our attention away from the subject and towards the material context through which the subject is acting, recognise that 'the subject' and 'object' enable one another as actants in the practice of learning. In the second section of this chapter (3.3), I illustrate some of the ways in which a non-cognitivist approach to learning and innovation is being used to reinterpret these processes within business organisations. In the third part (3.4), I review an emerging theory within the business literature that links learning and innovation to the practices of communities distributed across the firm. In the fourth part (3.5), I present the knowledge governance implications of a non-cognitivist theory of learning. The chapter concludes with a summary of a non-cognitivist approach to organisational learning and innovation and a set of questions for empirical investigation (section 3.6).

[19] This aim resonates with aspects of the turn towards the performative or 'non-representational' aspects of practice in the social sciences over the last decade or so (Bourdieu 1990; Shotter 1993; Dreyfus 1995; Lave 1996; Thrift 1997; Ingold 2000; Law 2004). Academics contributing to non-representational theory are united by 'a commitment to an understanding of practice and performance that refuses to privilege mental representations' (Hinchliffe 2000: 576).

3.2 The ontological structure of learning

3.2.1 Being-in-the-world

The traditional association of learning and cognition is the product of a Cartesian conception of being in which mind is separated from body and world, and learning is situated in the former while the role of the latter is neglected. The phenomenologist Martin Heidegger (1962) challenged this dualism by arguing that the basic, everyday state of being is not cognitive detachment but absorbed 'Being-in-the-world'. Heidegger uses this compound phrase to indicate that our everyday existence is characterised by non-cognitive engagement in a familiar world of practices. Rather than being governed by deliberate thought (decisions, plans, or intentions), these practices absorb us in numerous forms of *concern*: 'having to do with something, producing something, attending to something and looking after it, making use of something, giving something up and letting it go, undertaking, accomplishing, evincing, interrogating, considering, discussing, determining' (Heidegger 1962: 83). It is through our concerned engagement in practices or everyday 'dealings' that we learn and become accustomed to our world:

> The Being of those entities which we encounter as closest to us can be exhibited phenomenologically if we take as our clue our everyday Being-in-the-world, which we also call our "*dealings*" *in* the world and *with* entities within-the-world. Such dealings have already dispersed themselves into manifold ways of concern. The kind of dealing which is closest to us is as we have shown, not a bare perceptual cognition, but rather that kind of concern which manipulates things and puts them to use; and this has its own kind of 'knowledge'.
>
> (Heidegger 1962: 95 original emphasis)

This familiar 'knowledge' that guides our everyday existence is not acquired through theoretical thinking or retained in mental representations but is enacted instead when we use and manipulate 'entities' *as equipment* in concern. For example, a hammer is understood as equipment when it is grasped by the hand 'in-order-to' secure something rather than in attempts to 'grasp' the hammer with the mind as an 'entity' by assessing its size or properties. Deliberative thinking only occurs against this background of engagement in activity – that is, when an equipmental problem occurs and the tool being used is encountered thematically as conspicuous (unusable), obtrusive (missing), or obstinate (disturbing) in relation to the task at hand (Heidegger 1962). Only in this

context, when 'non-thematic circumspective absorption in references or assignments' (Heidegger 1962: 107) has been disrupted by our thoughts, do we experience anything like the Cartesian separation of subject from object, mind from body, mental from manual, and so on. Spaces for objective reasoning or detached theorising can only ever be opened up by our ongoing non-cognitive absorption in everyday practice.

The case for recognising the close mutuality of the individual and the materiality of the environment also has a biological basis. In the field of ecological psychology, James Gibson (1979) developed the theory of 'affordances' to describe the reciprocal relationship between the everyday practices that an individual engages in and the possibilities for action afforded by the environment. Affordances for action are perceived in relation to the embodied capacities of individuals:

> Substances have biochemical offerings and afford manufacture. Surfaces afford posture, locomotion, collision, manipulation, and in general behavior. Special forms of layout afford shelter and concealment. Fires afford warming and burning. Detached objects – tools, utensils, weapons – afford special types of behavior to primates and humans.
>
> (Gibson 1979: 137)

The affordances of the environment are recognised through embodied perceptual learning (exploring, grasping, pushing, walking, feeling, listening, tasting, and so on). Consistent with Heideggerian philosophy, Gibson suggests that infants discover objects in terms of the possibilities for action they afford *before* the categorical properties of the objects (such as substance, form, and colour) are noticed. This is because an affordance has a persistent and *invariant* identity in relation to the activity in which the observer is engaged. As the sensory system is more attuned to these persistent affordances in the ambient optic array, it is easier to perceive these action-oriented structures than it is to perceive all of the variables of an object separately (such as substance, form, and colour). Recognition of the affordances of the environment precedes and enables any other attributes the environment possesses to be ascribed and constructed.

The theory of affordances is at odds with cognitivist theories of learning, particularly the representational view of the mind, in which raw sense-data is detected by the sensory system then decoded by the mind according to the symbolic information already stored in the long-term memory (either in basic representations or structured schemas as discussed in Chapter 2). In the traditional view, for an object to be

perceived, the sensory input has to be matched up with the stored images (representations) or assigned to a domain of related concepts or ideas (schemas). The new sensory information has to be categorised in order for a link to the appropriate representation or schema in memory to be established. Gibson (1979: 252) rejects this system because its very existence involves circular reasoning: 'categories cannot become established until enough items have been classified but [...] items cannot be classified until categories have been established'. The alternative theory that this system operates because the human mind is 'hard-wired' with classificatory rules or innate knowledge of the world 'will not do' either, as invoking cognitive processes of any kind is not necessary to explain perception:

> The fallacy is to assume that because inputs convey no knowledge they can somehow be made to yield knowledge by "processing" them. Knowledge of the world must come from somewhere; the debate is over whether it comes from stored knowledge, from innate knowledge, or from reason. But all three doctrines beg the question. Knowledge of the world cannot be explained by supposing that knowledge of the world already exists. All forms of cognitive processing imply cognition so as to account for cognition.
>
> (Gibson 1979: 253)

Rather than being the product of mental processes, Gibson claims that knowledge is the product of embodied exploration and sensory learning:

> Knowledge of the environment, surely, develops as perception develops, extends as the observers travel, gets finer as they learn to scutinize, gets longer as they apprehend more events, gets fuller as they see more objects, and gets richer as they notice more affordances. Knowledge of this sort does not "come from" anywhere, it is got by looking, along with listening, feeling, smelling, and tasting.
>
> (ibid)

This brings us back to the reciprocity of the individual and the environment, the centrality of the affordances made available by the environment, and the significance of learning through embodiment for revealing them, as 'to see things is to see how to get about among them and what to do or not do with them' (Gibson 1979: 223).

Using the concept of affordances, we can begin to reinterpret a range of activities traditionally considered cognitive skills as embodied and materially embedded accomplishments. For example, the performance of creative skills often involves the

sensuous engagement of the individual and the environment. In order to illustrate this, consider the creative process involved in weaving a basket (Ingold 2000). A basket is woven together through the repetitious technique of bending and interweaving fibres into an emergent and recognisable form. The particular form of the basket emerges out of the action of the hands of the weaver as they turn and twist the tensile fibres into a rigid patterned structure. A product of these dextrous movements, 'the form unfolds within a kind of force field, in which the weaver is caught up in a reciprocal and quite muscular dialogue with the material' (Ingold 2000: 342). The final form of the basket emerges out of the extended dialogue between the hand movements of the weaver and the tensile strength of the fibres as they are interwoven.

This account of creativity is at odds with the interpretation of skilful performance in cognitivism, which traces the source of competent performance back to the generation of a mental representation in the mind of the performer before the skill is executed. This representation specifies the series of actions to be performed and the subsequent performance of the skill is therefore not considered to play any part in the act of creativity. The assumption that skilful behaviour is undergirded by a cognitive capability is found in both Polanyi's theory of tacit knowledge and the concept of organisational routines in evolutionary economics. However, Ingold challenges the idea that a mental representation could specify in advance all of the nimble movements of the weaver's digits necessary to control the countervailing force of the tensile fibres during the task:

> Now I do not deny that the basket-maker may begin work with a pretty clear idea of the form she wishes to create. The actual concrete form of the basket, however, does not issue from the idea. It rather comes into being through the gradual unfolding of that field of forces set up through the active and sensuous engagement of practitioner and material. This field is neither internal to the material nor internal to the practitioner (hence external to the material); rather, it cuts across the emergent interface between them. Effectively, the form of the basket emerges through a pattern of *skilled movement*, and it is the rhythmic repetition of that movement that gives rise to the regularity of form.
>
> (Ingold 2000: 342 original emphasis)

The repetitive motion necessary to produce the basket is produced in the sensuous interaction of the material and the hands of the weaver. It is movement rather than reason that produces the form of the basket. The active role that the material plays as a forceful agent in the process of weaving means that the form of the basket cannot be

attributed, as Polanyi or Nelson and Winter would claim, to a cognitive version of the basket having already been made in the mind. Acts of creativity cannot be considered as mere cognitive activities; instead they emerge in a process of practical engagement in the world. This embodied and sensuous activity is the critical practice through which intended products are fleshed out or given form.

Embodied practices do not only play a central role in the accomplishment of ostensibly practical tasks, such as the performance of craftwork, because the production of scientific knowledge also has a pragmatic basis. The pragmatist John Dewey saw no reason why the knowledge advances made by modern science, an enterprise commonly regarded as a self-enclosed entity with a 'special mode of knowing' (Dewey 1942: 33), should be attributed to a sophisticated cognitive realm and distinguished from the 'common sense' knowledge constituted in 'everyday affairs'. Dewey argued that the generation of scientific knowledge and the formation of everyday 'common sense' both draw on the same practice of learning: 'participation in an extensive body of transactions – to which a given human being may contribute and which he modifies, but only in virtue of being a partaker in them' (Dewey 1948: 198).

The concept of transactions moves us away from the picture of the passive Cartesian thinker by recognising 'the multitude of cultural and non-human factors that take part in all we do, say, and think, even in soliloquies and dreams' (Dewey 1948: 198). It is through active participation in transactions involving human beings and 'non-human partakers' (defined as transacting 'things' in a culturally-conditioned environment) that knowledge is produced. Being constituted in transactions, scientific practice should be understood as an everyday human concern rather than as a detached mental process. For example, Dewey noted that science was a vocation, much like any other professional occupation, that required practitioners to undergo highly specialised training to 'fit them' to the job. Moreover, the work took place in a special kind of workshop, '*labor*-atories', in which scientists extend and refine their *sense* through the use of apparatus or equipment and by making finely attuned hand movements to perform technical operations or experiments. Like the development of practical knowledge, scientific knowledge draws on the doing and knowing that belong to 'the state and course of life as a body of transactions' (Dewey 1948: 208).

Dewey's pragmatic reading of scientific activity is corroborated by a wealth of evidence from research studies on the sociology of scientific knowledge. With respect to embodied transactions, Knorr Cetina (1999) found in her ethnographic study of a molecular biology laboratory that the 'sensory body' of the scientists she studied was heavily implicated in the formation of knowledge. Scientific work was characterised by continual bodily interactions with materials as various laboratory 'objects' were manipulated by scientists in the performance of experiments. For example, the manipulation of laboratory animals could include, somewhat emotively, animals being 'infused with solutions, injected with diverse materials, cut open to extract parts and tissues, weighed, cleaned, controlled, superovulated, vasectomized, and mated' (Knorr Cetina 1999: 86). In terms of the laboratory's recruitment practices, there was a preference for hands-on 'experiential knowledge' of this kind as scientists engaged in close relationships with biological materials in advance of producing symbolic representations of them. As a significant part of the work done by molecular biologists is skilled manual labour, Knorr Cetina (1999: 97) claims that in carrying out this work it is the scientist's body and not the mind that 'is an information-processing machinery that learns and works without conscious reflection or codified instructions'.

Cognitivist models of thinking which argue that intelligence is the product of the rule-driven manipulation of mental representations are deficient because, 'no set of rules can ever be self-contained, complete' (Tsoukas 1996: 16) to account for the knowledge practices constitutive of 'the familiar common sense world of everyday life' (Garfinkel 1972: 2). To illustrate this claim, consider a $50 million project at MIT that began in 1984, attempting to create a computer, CYC (short for 'encyclopaedia') with a 'commonsense understanding' of the world. This was hoped to be achieved by providing CYC with one million items of explicit knowledge, at which point it was hoped 'to reach a point where it could directly read and assimilate written texts and hence "self program" the remainder of its knowledge base' (Clark 1997: 2). However, no matter how much general knowledge is inputted into CYC, it will always lack 'the most basic kinds of adaptive responses to an environment', which 'is attributable to the lack of any fluent coupling between the system and a real-world environment posing real-world problems of acting and sensing' (ibid 3). What the computer lacks, and can never acquire, is the practical sense that develops as embodied beings act in the environment.

3.2.2 Shared practice

Although the cognitivist assumption that learning is situated in the mind has been contested by philosophical and biological theories that displace learning into the world, and into the active transactions between individuals and the world, we have been assuming up to now that learning is still an achievement of individuals, albeit an embodied and environmentally embedded one. Heidegger focused primarily on the ontology of individual experience. While Gibson (1979: 135) did recognise that 'behavior affords behavior' in human interaction, he failed to elaborate on this insight. The shared dimension of practice has been neglected and needs to be addressed.

Although cognitivism provides an account of social practice this is, as we saw in Chapter 2, grounded in a Cartesian conception of interaction. Social actors view the world from within their own 'inner forums' and encounter others as 'entities' in possession of imputable mental attributes (McCall and Simmons 1971). Social interaction unfolds in a mode of detachment as each participant takes up a 'vantage point' from where they can evaluate and react objectively to the points of view of others. This dualistic interpretation of social action, which depends on self and other interacting across two distinct worlds, is debatable.

The phenomenologist Alfred Schutz (1971) claimed that the knowledge used in everyday life is socialised from the outset in three respects. First, knowledge is structurally socialised, since two co-present individuals could switch places and experience the surrounding world in largely the same way – that is, they share 'the reciprocity of perspectives' (Schutz 1971: 497). Second, knowledge is genetically socialised, since the vast majority of knowledge acquired from birth is socially derived and this is already organised into established categories, constructs, facts, conventions, models of the world, and ideas. We can learn to act in accordance with these representations even if the rules for using them are situated neither in our minds nor the world (Wittgenstein 1958). Third, knowledge is socially distributed, since every individual can only engage in a finite number of practices and knowledge of these practices is shared with other individuals according to the degree of acquaintance they have with these practices. Together, these socialised forms of knowledge constitute the intersubjective background of everyday life. To interact, and engage in shared practice,

we do not need to impute the mental states of one another but act instead on the basis of this everyday practical knowledge that we already more or less share.

Despite the advance made in revealing the common context against which social practice unfolds, the nature of this 'background' needs further articulation. In the hands of Schutz, the background is a common resource that accounts for the possibility of shared action – that is, for the possibility of one person knowing the intentions behind the actions of another – but it does not reveal anything about how they subsequently 'go on' together (Wittgenstein 1958). Shared practice is not limited to a reciprocal *state* of knowing because, as Shotter (1997) insists, at the moment 'when a second human being responds to the acts of a first' (p.349) their encounter becomes a spontaneous 'dialogical' practice. Such activity does not emerge from the knowledge that participants have acquired prior to their encounter, but depends instead on a non-cognitive response to the affordances of the encounter itself. Often, in the dialogic of practice –

> though we may be loathe to admit it – we all remain deeply ignorant as to what we are doing, or why we are doing it. Not because the 'ideas' or whatever, supposedly in us somewhere informing our actions, are too deeply buried to bring out into the light of day, but because the formative influences shaping our conduct are not wholly there, in our individual heads, to be brought out. Activity of this kind occurs in response to what others have already done, and we act just as much 'into' the opportunities and invitations, or 'against' the barriers and restrictions they offer or afford us, as 'out of' any plans or desires of our own. Thus, the stony looks, the nods of agreement, the failures of interest, the asking of questions, these all go towards what it is one feels one can, or cannot, do or say in such situations. This is joint action; it is spontaneous, unselfconscious, unknowing (although not unknowledgeable) kind of activity.
>
> (Shotter 1993: 47)

Joint action has three main characteristics: firstly, it produces unintended consequences – that is, the outcome of the activity cannot be attributed to the desires, intentions, or plans of any one of the participants involved; secondly, as a human practice, joint action does have intentionality – in that, the immanent situation produced by the participants determines the appropriateness of the next actions; thirdly, and related to the previous point, responding appropriately in these 'rationally invisible moments' (p.38), relies on non-cognitive 'feelings' rather than any sort of response that could be retrieved from mental-representational states. If, as Shotter claims, joint action is organised dialogically then comparing the interpretive schemes of individuals – and assessing, for

instance, the cognitive proximity or distance of those schemes (Nooteboom 1999) – is only going to establish the antecedent conditions for interaction but reveal nothing of the non-cognitive 'relational-responsive' kind of knowledge the process of interaction affords. The concept of joint action allows us to look beyond the mere distribution of knowledge (inside/outside cognitive schemes) and towards the immanent production of knowledge in the act of interaction.

Although, through the work of Shotter, we have been able to put the cognitive basis of shared action into question, the resultant shift towards non-cognitive 'feelings' seems, at the moment, unsatisfactory. Nagging questions remain. Why do we experience these 'feelings'? From where do they emerge? Have they been learnt? Can they be learned? To some extent, these questions are misplaced because these feelings cannot be spoken of as 'ours' as such. Instead, these feelings emerge from the practice of interaction – that is, the socio-material affordances of the encounter itself – whether these be the intimate circle of people, the modest furnishings, and the silent worship of a Quaker meeting that afford 'inner' meditative experiences (Law 2004); the well-ordered tiers of seats, the overhead projection of ideas, the podium for lending authority, and the microphone for carrying speech contained within a lecture theatre that together afford, on occasion, the intersubjective relation of teacher and student (Latour 2005); and, in terms of the body, every facial expression, movement of the head, inflection of the voice, adjustment of posture, and glance of the eye that can afford feelings of submission or dominance (Johnstone 1981).

None of these socio-material affordances can fully determine the practice of action any more than the desires, intentions, or plans of any one of the actors involved can orchestrate proceedings. However, the point is that the 'representation' that any one individual brings to a situation is 'less relevant than the situated actions [...] one constructs in action' (Salomon 1993: 118).

3.2.3 Situated learning

Situated learning theory, which began to emerge in educational psychology in the late 1980s (Suchman 1987; Lave 1988; Rogoff 1990), takes seriously the idea that if learning is to be understood as an everyday practice then the traditional focus on the cognitive psychology of individual learners needs to be widened to bring into view the

social and material context of learning. Rather than being conceptualised as an individual cognitive process, involving the acquisition of specific pieces of information or the accumulation of bodies of knowledge, learning can be regarded as a socially situated activity and an integral aspect of social practice. Situated theories of learning specify the 'relations among person, activity, and situation' (Lave 1996: 5) constitutive of a given learning context. The learner and therefore any learning achieved are situated in the material context of practice (Barab and Plucker 2002).

In recognising the importance of the social and material relations involved in the process of learning, situated learning theory resonates with the embodied and social aspects of learning already outlined in this chapter. This section will be used to illustrate some of the ways in which the adoption of a situated approach to learning can be used to alleviate three problematics associated with traditional cognitive learning theory: first, learning is assumed to be a distinct process, separable from other human activities; second, learning is traditionally understood as a process of acquiring and transferring existing knowledge, while the micro-practices of knowledge creation (innovation) have tended to be neglected; and third, learning is assumed to be limited to human actors. The methods by which each of these issues may be resolved by the adoption of a situated learning perspective will be described in turn.

The first problematic of traditional cognitive theory is the assumption that learning is a distinct process that is separable from ongoing practice. Learning is traditionally viewed as being limited to specific moments when people internalise identifiable pieces of knowledge, typically codifiable information or tacit skills. As we have seen in Chapter 2, knowledge of this sort is thought to be transmitted most efficiently through intentional pedagogical mechanisms, such as training programmes or taught lessons (Premack and Premack 2002). By contrast, in situated learning theory, knowing and learning are integral aspects of ongoing practice and reflected in 'engagement in changing processes of human activity' (Lave 1996: 12). The identification of social practice as a source of learning means that learning will neither be limited to, nor necessarily coincide with, achievement in relation to the formal learning curricula of training or educational institutions. Indeed, social anthropology has amassed a wealth of evidence of 'cognitive' skills being practised in a range of contexts in the absence of formal teaching: the on-the-spot use of arithmetical skills by grocery shoppers as they budget in the aisles of supermarkets (Lave 1988); the 'umbrella' plans of blacksmiths

for producing artefacts that include aesthetic, stylistic, functional, procedural, and financial considerations (Keller and Keller 1996); the appreciation of ball mechanics exhibited by snooker players (McCormick 2000); and the remarkable lay ethnographies of organisational culture constructed by employees at a bank (Weeks 2004). In all of these contexts, the incentive of capable engagement in social practice is at once both the spur for the learning of knowledgeable skills and the context for their practice and development.

The second problematic is the focus on the mobilisation and transfer of existing knowledge while the micro-practices of innovation tend to be neglected. A situated learning perspective recognises and tries to account for learning and creativity in practice. Contrary to cognitivism, situated learning theory does not claim that our knowledge stems from pedagogical transmission mechanisms or detached reasoning about the world. Instead, knowledge and learning are rooted in active participation in the world: 'what we call cognition is in fact a complex social phenomenon' (Lave 1988: 1). Support for this claim is provided by a piece of experimental research with children in developmental psychology (Doise, Mugny and Perret-Clermont 1975). Children of different ages were asked to take part in a number of spatial and verbal reasoning tasks. The research indicated that children who worked together were able to accomplish tasks which other children of the same age, when working individually, could not complete. The explanation for this finding is that the children working in groups needed to adjust their own individual approaches to the task in order to coordinate them with the actions and strategies of others. This process of alignment did not involve some children teaching or imitating others. On the contrary, strategic change was the result of a long process of negotiation and debate, in which social conflict, accusations, stubbornness, playacting, shuffling around the task objects, giggles, questions, confusion, and exasperation all played their part in leading the group to eventual agreement, which signalled, for the experimenters, progressive reasoning change.

On the basis of these findings, the researchers concluded that 'subjects who did not possess certain cognitive operations [...] acquire these operations after having actualized them in a social coordination task' (Doise, Mugny and Perret-Clermont 1975: 367). Furthermore, progress was found to be greater among collaborating children who began the tasks with differing cognitive strategies and had to coordinate

these through recursive practices than among those children who employed similar strategies initially. Commenting on these results, Damon (1983: 132) is able to make the following claim:

> This suggests a model of development with social interaction as an intrinsic feature, rather than as an additional, external factor. [...] developmental progress is achieved through the coordinating of a child's perspective and actions with those of another, rather than through the simple transmission of information and ideas from one child to another. Basic mechanisms of change are shown to be coordination and social conflict, rather than learning or imitation.

The interpretation of innovation and creativity as recursive and circuitous social practices has identifiable consequences for the ways in which learning and change have been conceptualised in the cognitive tradition. For example, information-processing theories of cognition, and the Piagetian model in particular, suggest that cognitive development (advances in concept acquisition or reasoning skills, for instance) is the product of the subject's use of progressively sophisticated mental representations. As we saw in Chapter 2, the dual mechanisms of cognition are assimilation (shaping of experience caused by current representational system) and accommodation (adaptation of representational system caused by experience). Traditionally, the subject's representational system develops when the cognitive structure is reorganised in order to accommodate the information immanent in 'perturbing experiences' (Piaget 1932). However, as Damon (1983) notes, this theory of cognitive development raises a fundamental question: 'how do new experiences become perturbing, given the model's position that all experience is known only through the subject's existing structures?' (p.130). In other words, the model fails to explain how path-breaking knowledge of the external environment is discovered by the subject, when this environment is perceived only in terms of the subject's current interpretive framework.

Cognitivism's solution to this paradox is to suggest that path-breaking learning is stimulated by a number of social mechanisms: pedagogy (Premack and Premack 2002); the acquisition of cultural representations (Simon 1991; D'Andrade 1995); or behavioural intervention (Argyris and Schön 1978). However, as the source of each of these mechanisms is external to the subject, these theories merely displace Damon's original question: how do *social* experiences become perturbing, given that all *social* experience is known only through the subject's existing cognitive framework? Rather

than attempting to shift from individual to social explanations of learning, the dissolution of the paradox stems from the suggestion that knowledge is constructed in the process of social interaction through the recursive practice of debate, negotiation, and conflict, as described above. In this alternative approach, rather than being represented by the subject's cognitive system (through individual inquiry or social acquisition mechanisms), all 'knowledge is from the start motivated, organized, and communicated in the course of social interaction. It is co-constructed, rather than unilaterally constructed' (Damon 1983: 131). On this view, useful descriptions of learning and creativity should be sensitive to the generative practice of interaction.

The final problematic of traditional cognitive theory is the assumption that the individual is the locus of learning and prime repository of knowledge. Instead, driven by the suggestion that learning is an integral aspect of social practice, situated learning theory argues that in the materiality of context:

> knowledge and learning will be found distributed throughout the complex structure of persons-acting-in-setting. They cannot be pinned down to the head of the individual or to assigned tasks or to external tools or to the environment, but lie instead in the relations among them.
>
> (Lave 1996: 9)

Rather than residing in individual minds, cognition can be understood as being *distributed* throughout the system of activity constitutive of a given context. The notion of distributed cognition may be defined as 'the propagation of a representational state across a series of representational media. Each representation brings a different sort of information into the foreground' (Hutchins and Klausen 1996: 19).

To give an example of a distributed cognitive system, one may consider the constituent elements of an airport ground operations room (Suchman 1996). Suchman focuses on how a particular problem, an aeroplane arriving at a gate and the difficulty in deplaning the passengers, is negotiated creatively by workers in the control room. The diagnosis of the problem involves numerous participants and pieces of equipment: not only are there intense relationships between operators, pilot, plane, and ground maintenance – which are mediated by telephone, radio technologies and video monitors to get a view of the plane and its predicament – but Suchman also demonstrates how the bodily orientations of the participants in the shared workspace help to account for the process by which the

problem was negotiated. The problem was manageable only because a number of different participants and pieces of equipment were involved in its resolution. In effect it was 'dissolved' as the supervisor forged relationships with people and equipment distributed across the setting. Thus, rather than being pre-determined in representations or plans, cognition in practice involves 'open-ended processes of improvisation with the social, material, and experiential resources at hand' (Lave 1996: 13).

3.2.4 Actor-network theory

The constitutive elements of a particular setting need not be limited to the knowledge distributed among the various actors, dialogical relationships, or pieces of equipment situated together in a given context. Sites of innovation or learning are also constituted by the enrolment and alignment of myriad and heterogeneous elements into networks of activity that need not be spatially bound. This is in concordance with the claim of actor-network theory that the creation of knowledge 'may be seen as a product or an effect of a network of heterogeneous materials' (Law 1992: 2). From an actor-network perspective, innovation can be thought of in terms of 'a coordinated set of heterogeneous actors which interact more or less successfully to develop, produce, distribute and diffuse methods for generating goods and services' (Callon 1991: 133).

The process of innovation depends upon the alignment of the relationships between these actors (both human and non-human) which can be described using the concepts of 'intermediaries', 'actors' and 'translation'. Intermediaries are the '*things* that draw actors into relationship with one another' (Callon 1991 134). These 'things' that link actors may include literary inscriptions (such as the text of a journal article), technical artefacts (non-human entities such as consumer goods and machines), and the embodied know-how of human beings. As an illustration of how these intermediaries may make connections between actors, consider a journal article as a textual intermediary. As an inscription device, a journal article not only represents the work of the author(s) and defines the relationship with a particular audience but it is also linked to other texts through citations of related work in the text. These linkages extend the journal article into a network 'object' able to 'define the skills, actions and relations of heterogeneous entities' (ibid 138).

An actor may be described as follows:

> [...] an actor is an entity that takes the last generation of intermediaries and transforms (combines, mixes, concatenates, degrades, computes, anticipates) these to create the next generation. Scientists transform texts, experimental apparatus and grants into new texts. Companies combine machines and embodied skills into goods and consumers. In general then, actors are those who conceive, elaborate, circulate, emit, or pension off intermediaries, and the division between actors and intermediaries is a purely practical matter.
>
> (Callon 1991: 141)

The process of translation 'involves a translator, something that is translated, and a medium in which that translation is inscribed' (Callon 1991: 143).

The relationship between these concepts can be illustrated using the example of the office of a managing director of a laboratory. Law and Hetherington (2000) demonstrate how the arrangement and interaction of material connections – namely objects, bodies and media – act together to produce knowledge. While working at a computer in his office, Law and Hetherington describe how 'Andrew', the managing director of the laboratory, is able to know that a large-scale research project is behind schedule because a number of materially heterogeneous elements have acted together to produce a computerised system for monitoring the progress of projects remotely from Andrew's office – which has become a 'knowing location' – defined by a network of actants. The capability to know in this case depends upon the enrolment into Andrew's network of:

> his computer; its software; the figures typed into the spreadsheet; the process of collating those figures carried out by people in the finance department; the work of filling in the time sheets that is done (or supposedly done) on a monthly basis by all employees; the decisions that those employees have made about how to allocate their time (for in practice most work doesn't come in half-day blocks which is all the timesheets allow). And then we can extend the network: into the power company (no electricity, no surveillance), the work of the programmers both locally and at Microsoft, the decisions by previous directors to implement a time-booking system, the production of the time sheets; and then the car that Andrew drove to work; the fact that he and the other employees are paid; the telephone and the email that allow him to summon the other senior managers to an emergency meeting. [...] So Andrew is a managing director not because this is given in the order of things, but because he is at the centre of a network.
>
> (Law and Hetherington 2000: 37-8)

Acting from the centre, Andrew is able to perform his role as a managing director so long as all of these material elements hold stable in the network. If one of the elements ceases to converge with the network and translate activity through the system then Andrew ceases to be an effective managing director. Hence, actor-network analysis reveals that rather than being possessed by any one individual, '*knowing is a relational effect*' (Law and Hetherington 2000: 38) that depends upon the successful alignment of innumerable human and non-human actants along a chain of translation.

In summary, the aim of this section has been to show that the processes of learning and innovation can be conceptualised as embodied, socially constructed, and materially situated practices. Rather than having an epistemological basis, learning has an ontological structure that is constructed in everyday practice. Through Heidegger, we have seen that our everyday state of being is not primarily cognitive but absorbed engagement in a familiar world of practices. These practices tend to be habitual, transparent even, in so far as the world affords familiar possibilities for action. As Gibson demonstrated, developmental learning involves the attuning of the sensory system to these persistent, habitual, affordances. Learning continues throughout life as individuals explore the environment, witness new events, use new tools, disclose new affordances, and see the world with increasing scrutiny. Not one of these activities is underpinned by cognitive mechanisms (such as thinking, remembering, conceiving, inferring, rationalising, or imagining); instead, learning is nothing more complex than 'the improvement of perceiving with practice and the education of attention' (Gibson 1979: 254). This allows us to claim that formal knowledge work (laboratory science, classroom pedagogy, or monitoring aeroplanes) and 'everyday' or practical skills (grocery shopping, basket weaving, or playing snooker) draw on the same sensuous practice, 'learning to be affected' (Latour 2004: 206).

While the capability to learn is tied to the attentiveness of the subject, the learning environment or context needs to be recognised as affording particular possibilities for action. The prevalent social practices constitutive of a particular learning environment or context afford specific opportunities for learning. For example, through engagement in social practice, human beings come to appropriate a background of 'commonsense' taken-for-granted knowledge from the very first weeks after they are born (Schutz 1971; Dreyfus 1995). However, by adopting a situated learning perspective, the connection between social practice and learning can be given further articulation, so

that the influence of the socio-material affordances of specific learning environments can be recognised. The material infrastructure constitutive of a learning environment aids perception and facilitates knowing (Gibson 1979). This infrastructure includes: the use of instruments to bring objects into perceptual awareness (for example, the use of microscopes to enlarge objects or the use of spreadsheet systems to monitor projects); the use of communication to share awareness of the world and stimulate learning (for example, the use of written language to convey concepts and information and the use of speech, conflict and debate to negotiate meanings and stabilise truths); and the use of pictures and everyday artefactual resources (for example, the use of televisual media, various drawings, furnishings, and architectural design) to preserve awareness and arouse the imagination in similar ways to direct perception. As we have seen, the production of knowledge and the generation of innovation depend on the successful management and alignment of these material intermediaries along a network of relations constitutive of particular contexts (Callon 1991; Suchman 1996; Hutchins and Klausen 1996; Law and Hetherington 2000).

3.3 Organisations as sites of pragmatic learning

The articulation of the embodied and materially distributed nature of cognition, as well as the recognition of the central role of social practices in generating knowledge and conditioning learning, means that we are now in a position to reconsider the processes of learning and innovation within organisations from a non-cognitivist perspective. Conceiving of organisational knowledge as an embodied and situated practice means that we should no longer consider that the sources of learning within firms are limited to the capabilities of 'expert' minds working in R&D or strategic thinkers configuring the organisation for innovation, but that workers throughout the firm may produce knowledge in the course of their engagement in distributed and locally negotiated social practices. Within the strategies of business organisations, 'what we now see is a much greater attention being paid to fostering the powers of creativity that will lead to innovation, most particularly through models which eschew the black-boxed model of information processing' (Thrift 2005: 133). Increasingly, managers of large firms seem to be recognising the role of pragmatic knowledge: 'alongside the abstract coupling of knowledge and innovation that takes place within R&D centres, we have the practical know-how and reason learnt from experience at the workplace' (Allen 2000: 17).

The business literature is now interpreting organisations as sites of distributed learning as employees throughout the hierarchy are made to take on new responsibilities as 'knowledge workers' (Drucker 1985). One strand of this literature is recognising that the creation of new knowledge is highly dependent upon the sociality of groups of individuals throughout the firm. The firm can be described in terms of the various interactional spaces it affords for sharing knowledge among employees. For example, Nonaka, Toyama and Konno (2002: 49) use the Japanese concept of *ba* (approximating to 'place' in English) to draw attention to 'a shared context in which knowledge is shared, created and utilized'. Within the shared context of *ba* there are four types of interaction associated with the mobilisation of knowledge: originating *ba*, dialoguing *ba*, systematising *ba*, and exercising *ba*. Originating *ba* is the place of socialization as it involves the sharing of experiences, feelings, emotions and mental models in face-to-face interactions between individuals. The co-presence of individuals makes possible the 'love, care, trust and commitment' (ibid 51) necessary for knowledge sharing that comes when the boundaries between individuals are transcended. Dialoguing *ba* is a place where the mental models or tacit knowledge of individuals are 'converted into common terms, and articulated through concepts' (ibid 52) during group face-to-face dialogue. Systematising *ba* is a place for collective virtual interactions where explicit knowledge is transmitted to a large group of people through a variety of virtual collaborative media, such as electronic mailing lists and online databases. Exercising *ba* refers to the embodying of explicit knowledge made available to individuals through virtual interactions as it 'synthesizes the transcendence and reflection through action' (Nonaka, Toyama and Konno 2002: 52). In all of these knowledge spaces, whether or not the commitment, beliefs, and values of individual workers are of crucial importance to the creative process, the point is that they are thought to be best mobilised through different forms of sociality.

Reflecting this sensibility, the day-to-day office environments of many business organisations have become sites of everyday invention and creativity where innovation is demanded of managers and employees alike. In the creative and professional service industries in particular, recognition of the significance of social practices in the generation of knowledge has led to the deliberate engineering of those social practices in and through particular spaces. Since the mid-1990s, *The Wall Street Journal* has produced profiles of business leaders and senior executives with unique and inspiring office environments. On the basis of visiting the offices of forty successful firms, a

leading expert on workplace design, Marilyn Zelinsky, divides the workspaces into three notable styles based on the particular philosophy of creative working that they are designed to inspire. The first type she distinguishes is the 'nurturing' office: a 'joyful workplace where everyone feels safe enough to be who they are and create what they want' (Zelinsky 2002: 11). These offices have a 'residential' feel and include communal features such as kitchens, living rooms, libraries, and bedrooms. One of the nurturing offices profiled belongs to Accenture, the multinational consulting services firm. The firm's offices are designed in accordance with a global 'hoteling' model in which the provision of workstations, telephone booths, and project rooms – along with comfortable lobbies and lounges for informal chats and cosy fireplace meetings – reflect the social-environmental needs of mobile consultants who routinely move between offices to serve clients.

The second type of office is the 'playful' workspace: 'designed to help bring out the child within, to awaken employees' lighthearted nature, to help them recover their experiences of playtime' (ibid 100). In this creative vein, the headquarters of the online recruitment firm Monster.com was designed to encourage a 'work-hard, play-hard' atmosphere. All of the organisation's functions (finance, human resources, engineering, administration, and product management) are housed on a single floor to enable all of the firm's employees to meet one another frequently. Informality is encouraged while employees are both working (meetings take place on oversized armchairs in 'the Monster Den') and taking breaks (workers are encouraged to 'hang out' in the games room and café area).

Finally, the 'artistic' office is a space 'filled with symbols, color, and images meant to stimulate and engage the imagination and the senses' (Zelinsky 2002: 121). In an attempt to create a 'synergistic hub' for commercial and fine art, the head office of the US advertising agency Wieden + Kennedy (whose portfolio of clients includes Nike) was relocated to Portland's Pearl district, an industrial area that attracted artists, galleries, and boutiques. The founders of the agency invited Portland's contemporary art institute to occupy the second floor of the office and make use of the amphitheatre for daily lunchtime and after-work performances as well as a gallery for exhibiting work. The perceived value of having 'artists in residence', with whom the agency's employees could interact in the atrium of the building, was to 'foster creativity by building in easy opportunities for employees and community members to interact with the arts on a

daily, if not hourly basis' (ibid 130). What each of these styles of office design has in common is a desire to use space as a mechanism for inspiring employees, promoting everyday sociality, and introducing novel interactions.

While the devices noted above are being used to encourage informal learning and serendipity, the formal learning strategies of firms are also beginning to shift in order to exploit the non-cognitive aspects of knowledge. For example, firms are no longer relying solely on pedagogical routines and technical examinations to inculcate expertise among employees. In the management professions, at least, there is a shift away from cognitive knowledge and towards the embodied and performative aspects of knowledge in the training methodologies that they employ: 'modes of experiential learning are increasingly being turned to as a result of their ability to offer the kinds of affective learning that can help to develop a workforce with the stance, style, and capacity to 'learn-to-learn'' (Hinchliffe 2000: 592). Using outdoor management training as a case study for examining these shifts, Hinchliffe (2000) followed eight middle managers from a large private utility organisation as they worked through a two-day outdoor management-training course designed to prepare participants for 'the world of competition, private enterprise, and flexibility' (p.583). The course utilised and promoted embodied learning and learning through experimentation. Taking these two themes in turn, firstly, 'explicit embodiment was part of the deal' during the course as:

> people were invited to use their bodies in ways that would probably be unfamiliar to them. They included climbing, abseiling, taking other people's weight, allowing other people to take your weight, performing tasks with your hands tied behind your back, moving around blindfolded, having your hearing impaired, not being allowed to talk, balancing on narrow poles, building and using rafts, and so on.
>
> (Hinchliffe 2000: 585)

The course facilitators claimed that these activities embedded learning in memory because to perform with 'explicit embodiment is to learn something in a way that continues to have effects for a long time to come' (ibid). Secondly, experimental learning in a simulated environment generates more than cognitive learning by inculcating new styles of management which disrupt the normal routines of managers. Course directors seem to justify this disruption by maintaining that: 'if managers and organisations are keen to advance in a world of change then they will require more than representational forms of knowledge' (Hinchliffe 2000: 585). Thus, this change in

sensibility from casting effective management in terms of rules, routine, and bureaucratic order, to empowerment, creativity, and risking-taking seems to be underpinned by an equivalent shift in the conceptualisation of knowledge from cognition-driven, representational, and accumulative to recognition of the performative aspects of knowledge that are provisional, embodied, and enacted in practice.

The corollary to the interpretation of the firm as a site of distributed and pragmatic learning is that the work that goes on in R&D laboratories, the traditional cornerstone of innovation in business theory, can now be re-evaluated as a social practice involving inputs of both cognitive and non-cognitive knowledge. To represent the work of research we need to move away from seeing the knowledge produced as an 'intellectual or technological product' and more towards seeing knowledge as 'practiced – within structures, processes, and environments that make up *specific* epistemic settings' (Knorr Cetina 1999: 8 original emphasis). Not only is scientific knowledge produced through embodied transactions, the context of an epistemic setting is constituted in a 'realm of instruments, devices, machines, and substances that act, perform, and do things in the material world' (Pickering 1993: 563). Rather than being the product of cognitive knowledge, the 'discoveries' that research scientists and managerial strategists present in discussion papers and seminars are the product of a lengthy and turbulent process, during which trial and error, assumptions, technical discourse, informal conversations, technological devices and problems all have a contributory role in the construction of new knowledge (Latour and Woolgar 1986). By 'systematically concealing the nature of the activity which typically gives rise to their research reports', scientists present a misleading picture of their everyday working practices (Latour and Woolgar 1986: 36):

> a body of practices widely regarded by outsiders as well organised, logical, and coherent, in fact consists of a disordered array of observations with which scientists struggle to produce order [...] scientists and observers are routinely confronted by a seething mass of alternative interpretations. Despite participants' well-ordered reconstructions and rationalisations, actual scientific practice entails the confrontation and negotiation of utter confusion.

On the basis of their research, Latour and Woolgar (1986) suggest that there are 'no a priori reasons for supposing that scientists' practice is any more rational than that of outsiders' (p.29-30). Thus, instead of depicting them as lone, reasoning Cartesian subjects, we may conceive of 'scientists and other experts as enfolded in construction machineries, in entire conjunctions of conventions and devices that are organized,

dynamic, thought about (at least partially), but not governed by single actors' (Knorr Cetina 1999: 11).

In sum, through changes in corporate strategy, firms are attempting to engineer social practices in and through carefully designed office spaces; inculcate expertise through outdoor management training courses, embodied learning, and experimental practices; and configure learning organisations that draw on the formal knowledge produced through R&D and the pragmatic know-how learned through everyday operational routines. In fact, given that social practice underpins the creation of all forms of knowledge we can begin to decipher a blurring of the boundaries between exploitative practices (traditionally associated with operational units) and exploratory routines (traditionally linked to R&D and strategic domains).

Influenced by these embodied, situated, and performative approaches to knowledge and creativity, a new line of research has emerged in business studies which claims that organisational learning and innovation are not primarily cognitive activities but are instead a product of the social practices of different types of communities distributed across the firm. The next section of this chapter fleshes out this claim by outlining the main characteristics of the different communities that have been distinguished in the literature.

3.4 The social anthropology of learning in communities

The situated perspective on learning that emerged in educational psychology in the 1980s, which, as we saw earlier, embraces a practice-based conception of knowledge, has been translated into the business literature as the basis of a theory of organisational learning (Brown and Duguid 1991; Orr 1996; Wenger 1998; Wenger, McDermott and Snyder 2002; Amin and Cohendet 2004). This theory suggests that organisations should be conceived of as 'constellations of communities' (Brown and Duguid 1991). Rather than being tied to the strategic architecture of the organisation, this approach argues that the knowledge capability of the firm is embedded in a range of distributed communities. Within organisations, communities can emerge in a variety of forms across the firm (for example, cross-functional teams, informal work groups, and inter-organisational networks). They are not constrained by any formal managerial structure but negotiate their own enterprise and knowledge competence. In line with the non-

cognitivist ontology of learning described in this chapter, the social practices of organisational communities seem to be the locus of embodied and situated knowledge. In particular, two types of community have received attention in the business literature, 'epistemic communities' and 'communities of practice', and these will be discussed in turn.

3.4.1 Epistemic communities

Epistemic communities are groups of individuals who specialise in the creation and validation of knowledge in relation to a recognised issue or field. Economists Cowan, David and Foray (2000: 234) characterise epistemic communities in the following way:

> Such communities, which may be small working groups, comprise knowledge-creating agents who are engaged on a mutually recognized subset of questions, and who (at the very least) accept some commonly understood procedural authority as essential to the success of their collective activities.

As intentional knowledge-producing groups, these communities have to devise explicit mechanisms for the creation and validation of knowledge. By acting as a common procedural authority, such mechanisms align the activities of the community. In line with the ontological structure of learning outlined earlier, this 'governing' authority may be traced to the socio-material affordances constitutive of specific epistemic contexts. In order to facilitate engagement in common knowledge practices (particularly in virtual or distanciated communities), a key activity of the community is to increase the visibility of this material infrastructure for knowing (namely, the perceptual instruments, communicative conventions, and artefactual resources used to produce knowledge).

Epistemic communities are organised differently according to the elements of the material infrastructure they choose to rely on to produce knowledge collectively. One notable distinction is between those communities that rely on the circulation of *articulated* or *unarticulated* knowledge to order their activities (Cowan, David and Foray 2000). The circulation of articulated knowledge within an epistemic community presupposes that the community has codified this knowledge. Codified knowledge is recorded in a 'codebook' that belongs to the epistemic community. In turn, the existence of a codebook presupposes that the community has created a 'specialized

dictionary' of rules for interpreting the code (Cowan, David and Foray 2000). This consists in the development of a set of models and a shared vocabulary for expressing those models. Once this initial codification activity has taken place then new knowledge can be codified in accordance with the rules expressed in the codebook.

In the course of the work of the community, the creation of new knowledge draws upon the rules and standards encoded in the existing knowledge that is documented and stored in the codebook. Thus, the codebook is the material expression of the current 'absorptive capacity' (Cohen and Levinthal 1990) of the epistemic community because new knowledge can only be encoded in accordance with the knowledge already specified in the code. In turn, the membership of an epistemic community relying on articulated knowledge will be limited to those individuals who possess the acquired experience or absorptive capacity to learn and act in accordance with the code. By regulating the production of new knowledge, the codebook defines the trajectory of knowledge creation and acts as a procedural authority to which the entire community is hierarchically subordinate.

An illustration of the working practices of an epistemic community that relies on the circulation of articulated knowledge comes from Alex Preda's (2002) ethnographic study of several European banks. Preda examined the complex representational practices by which economic research reports and country analyses were produced by the economic analysts within these organisations. These analysts were charged with the task of constructing stable economic knowledge that would create a meaningful 'financial world' that would afford continuity in the financial activities of the banks. The content of new research reports had to be standardised so that it was compatible with previous studies. As such, much of the analyst's work involved redrafting reports until the 'vocabulary employed, the rhetorical procedures of representation, and the ordering of the representation's key elements' (Preda 2002: 202) were consistent with the corporation's style. To this end, rather than presenting raw data or information, the reports underwent a great deal of interpretative work or 'epistemic tinkering' to create cognitively standardised reports in which market descriptions were 'reshuffled' to enable very different countries and markets to be compared using a few economic criteria (i.e. the interbank market, competition, and prices in each country). The procedural authority embedded in past reports and analyses (the codebook) enabled documentarists to produce relevant analyses that could be used to inform future

investment decisions on behalf of the bank. In sum, the role of financial documentarists in these communities was not to convert objective information into financial reports but to produce valid or epistemic knowledge: knowledge that fashioned a financial world that fitted with the previous studies of the banks and provided 'a meaningful background against which various financial activities (like investments or credits) unfolded' (Preda 2002: 236).

The practices of an epistemic community may otherwise depend on the circulation of *unarticulated* knowledge, that is, 'knowledge that is not invoked explicitly in the typical course of knowledge activities' (Cowan, David and Foray 2000: 230). This scenario is the product of one of two possibilities: the community possesses a codebook but the group rarely refers to it explicitly, or the knowledge the community relies on is 'tacit' (knowledge that has not been recorded in language or artefacts) and therefore no codebook exists. In the first case, the members of the community have absorbed the contents of the codebook and are therefore able to produce new knowledge in accordance with the code without making explicit reference to it. In the second case, where no codebook exists, the group may act on the basis of uncodified knowledge, embedded in sets of conventions and the collective memory of the group. However, in the case of a dispute arising regarding the validity of new knowledge, a decision-making body will need to intervene to resolve the conflict and realign the activities of the community. This arbitration process takes place at the 'meta-level' of procedures for creating and sharing knowledge rather than the 'cognitive' level of a codebook which regulates the content of knowledge.

An example of an epistemic community that relies on a material infrastructure for knowing that combines articulated and unarticulated forms of knowledge comes from laboratory science. In an ethnographic study of the epistemic cultures of high-energy physics and molecular biology laboratories, Knorr Cetina (1999) demonstrates that the cutting-edge knowledge produced by these communities is, on the one hand, dependent on particular codes, formal processes, and technological devices for constructing knowledge but, on the other hand, this knowledge is also the product of informal rounds of discourse that are symptomatic of the 'narrative culture' of the laboratory. All of this knowledge, whether technical or more informal, circulated in the course of interaction among collaborating scientists. On the technical side, successions of meetings accompanied experiments and acted as a forum for passing knowledge from

the group directly engaged in a given experiment to a wider research group for discussion and comment. More informally, in most situations where participants were together they would engage in technical talk, from jogging in the fields surrounding the laboratory to taking a bus into town, or when standing around apparatus and equipment. The circulation of stories among collaborating scientists re-enacted the past experiences of the community, and acted as 'reference scenarios' as they were typically told to shed light on problematic experiments. As they were told and retold during the course of long-duration experimental research projects, they kept the 'relevant experience alive, turning it into a sort of communal stock of knowledge' (Knorr Cetina 1999: 106).

In summary, the creation of new knowledge within epistemic communities depends on the deliberate search for new knowledge in accordance with the procedural authority prevalent within particular epistemic contexts (this being, for example, the use of an explicit codebook or the use of unarticulated, informal conventions). In an organisational context, we can assume that:

> Epistemic communities are leading actors in the searching activities. They have an important capacity to replicate the relevant routines, to evaluate the new experiments, to capitalize them, creating new knowledge blocks. Epistemic communities develop 'codified' knowledge and codebooks. The hierarchies can try to monitor and control them but leaving them some degree of freedom to allow for dynamic flexibility.
>
> (Cohendet and Llerena 2003: 288)

As such, epistemic communities within an organisation may include employees working in R&D, knowledge management units, strategy divisions, or project teams created to address specific knowledge issues. The work of these organisational groups may also intersect with broader epistemic communities such as university research departments, public science laboratories, management consultancies, and business support networks. In all of these manifestations, the notable conceptual distinction between epistemic communities and the knowledge-seeking groups outlined in Chapter 2 is that, for epistemic communities, a locally negotiated procedural authority is seen as central to the success of their collective practices. As such, the practices of epistemic communities would seem to elude top-down or cognitivist strategic governance mechanisms.

3.4.2 Communities of practice

Anthropologists Jean Lave and Etienne Wenger first used the term 'communities of practice' in the early 1990s. They explain their use of the term as follows:

> In using the term community, we do not imply some primordial culture-sharing entity. We assume that members have different interests, make diverse contributions to activity and hold varied viewpoints. In our view, participation at multiple levels is entailed in membership in a *community of practice*. Nor does the term imply necessarily co-presence, a well-defined, identifiable group, or socially visible boundaries. It does imply participation in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and their communities.
>
> (Lave and Wenger 1999: 23 original emphasis)

Clearly, membership in a community of practice does not imply homogeneity of participation either in terms of the identities of participants or in the role that they play in contributing to the activities of any given community. Nor are communities of practice defined in territorial terms: they can subsist in sets of connections that may be predominantly closely bound (for instance, youth gangs congregating in village streets or office computer users negotiating technical problems) or stretch very far (for example, internet groups pursuing similar interests or globally-communicating citizen radio enthusiasts). Community membership is not necessarily signalled by the possession of a membership card or inclusion on an email list but does imply the joint engagement of a group of individuals who regularly share understandings of what they do (Wenger 1998).

For a given community of practice, learning is dependent upon participants 'refining their practice and ensuring new generations of members' (Wenger 1998: 7). Newcomers to a community of practice learn through increasing participation in the community: 'intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a sociocultural practice' (Lave and Wenger 1991: 29). New possibilities for engaging in the enterprise are revealed to newcomers as they become absorbed in the relations of a practice. Over time, newcomers develop an appreciation of what is meaningful to a community by getting a grasp of:

> who is involved; what they do; what everyday life is like; how masters talk, walk, work, and generally conduct their lives; how people who are not part

> of the community of practice interact with it; what other learners are doing; and what learners need to do to become full practitioners.
>
> (Lave and Wenger 1991: 95)

Learning as 'legitimate peripheral participation' is quite different from traditional conceptions of learning as a pedagogic practice. Little formal teaching is necessary in a community of practice as learning takes place as 'an integral and inseparable aspect of social practice' (Lave and Wenger 1991: 31). In order to make the transition to full participants, newcomers require access to the 'learning curriculum' of a community of practice: 'a wide range of ongoing activity, old-timers, and other members of the community; and to information, resources, and opportunities for participation' (ibid 101). Newcomers learn to be practitioners as their level of participation increases and they ultimately move to full participation in the practices of a community. Echoing Heidegger, it is only when newcomers become 'transparent' to the community through absorbed engagement in its practices that they could be said to have become 'old-timers'.

According to Wenger (1998), a social practice may be interpreted as a 'community of practice' when three dimensions of interaction that support the negotiation of meaning[20] are in evidence (Table 3.1). First, participants should be engaged mutually in a domain of activities through a dense set of relations of interaction. Regular engagement in shared activities is the context within which participants negotiate the meaning of what they do. Second, the sustained enterprise of a community of practice produces a heterogeneous repertoire of shared resources. This is the reified material infrastructure around which the negotiation of meaning is focused. These include a variety of resources that the community has absorbed into its practice to negotiate the meaning of its enterprise – tools, ways of doing things, stories, gestures, symbols, genres, and concepts. By reflecting a history of mutual engagement while yielding ambiguity in interpretation when used in new situations, the repertoire of resources of a community is productive of dynamic and emergent meanings. The shared repertoire of a community maintains the possibility of coordinated and coherent activity while presenting

[20] A community of practice provides a context in 'which we can experience the world and our engagement with it as meaningful' (Wenger 1998: 51). Within the context of a community, meaning is negotiated through the dual processes of participation and reification. Participation refers to a process of actively engaging in practices as shared enterprises. Participation is profoundly mutual and social because of the ability of participants to 'shape each other's experiences of meaning' (ibid 56). The concept of reification refers to a process in which 'aspects of our human experience and practice are congealed into fixed forms and given the status of object' (Wenger 1998: 59). Reified objects shape our experience by 'focusing our attention in a particular way and enabling new kinds of understanding' (ibid 60).

opportunities for novel interpretations, dynamic modes of engagement, and new experiences of learning. Third, the coherence of a community is sustained in the joint negotiation of an enterprise. Through joint enterprise, the members of a community of practice negotiate what they understand their enterprise to be. As a locally organised, collective endeavour, the enterprise is ultimately the product of the practices of the community. The local negotiation of the enterprise generates relations of mutual accountability among the members of the community. Competent engagement is defined in relation to the enterprise of the community and recognised members therefore develop an aesthetic sense of their accountability to the enterprise.

Dimension of Practice	**Sources of Meaning**	**Process of Learning**
Mutual Engagement	Engaged diversity, doing things together, sustained interpersonal relationships, community maintenance	Developing ability to engage in practice – discovering how to engage, what helps and what hinders; developing mutual relationships.
Shared Repertoire	Stories, styles, artefacts, tools, actions, historical events, discourses, concepts	Developing resources to engage in practice – producing tools, artefacts, representations; recording and recalling events; telling and retelling stories.
Joint Enterprise	Negotiated enterprise, mutual accountability, interpretations, local response	Developing understanding of why the enterprise is engaged in – aligning engagement, and holding each other accountable to it.

Table 3.1. The three dimensions of communities of practice
Source: Based on Wenger (1998)

An illustration of these informal modes of interaction, characteristic of a community of practice, can be seen in the occupation of photocopier servicing (Orr 1996). In his ethnography of this profession, Julian Orr found that the community of Xerox technicians he observed in their daily work would regularly find that the 'institutional knowledge' they had been given – the formal training and documentation – was inadequate for the majority of photocopier problems that they faced. Although technicians tended to work individually servicing photocopiers at the offices of clients, from time to time they would work together on maintenance jobs that proved to be too

technically demanding for a technician working alone. Furthermore, the photocopying machine itself, through the service history record encoded within it and its physical condition as revealed by visual inspection, acted as an 'inscription device' (Latour and Woolgar 1986) that connected different technicians through their work on the machine over time. When technicians were not engaged on service visits, Orr found that they would spend time together, engaging in meetings, talking about work, and exchanging experiences (*mutual engagement*). As the job involved extended periods of time driving from one client to another, informal settings along the route, such as bars or restaurants, would act as meeting points where technicians could socialise and 'hang out' together. These were also opportunities to share expertise and circulate informally among themselves otherwise unobtainable photocopier components as the reps traded in an infrastructure of communal resources (*shared repertoire*). In particular, the telling of 'war stories' develops the identity of technicians by providing evidence of the 'repositories of accumulated wisdom' (Brown and Duguid 1991: 45), and also passes on the improvisational skills necessary for doing the job to other members of the community. Becoming an expert technician is defined in relation to the community as a whole as the best technicians become reputable by being able to help get photocopiers back online no matter how unusual the problem faced (*joint enterprise*).

Drawing upon these modes of repeated interaction, communities of practice foster three distinct forms of learning: engagement, imagination, and alignment. Competent engagement in a practice 'requires the ability to take part in meaningful activities and interactions, in the production of shareable artifacts, in community-building conversations, and in the negotiation of new situations' (Wenger 1998: 184). Imagination enables participants to reflect on their practice, orienting themselves to the history of the community of which they have become a part, enabling them to recognise that their experience 'reflects broader patterns, connections, and configurations. It is through imagination that we see our own practices as continuing histories that reach far into the past, and it is through imagination that we conceive of new developments, explore alternatives, and envision possible futures' (ibid 178). Alignment represents the processes through which 'participants become connected through the coordination of their energies, actions, and practices' (Wenger 1998: 179). When people's actions are harmonised through alignment, this 'amplifies the ramifications of our actions by coordinating multiple localities, competencies, and viewpoints. It expands the scope of our effects on the world. We can contribute to producing actions and artifacts that no

specialized practice can produce. We can manage levels of scale and complexity that give new dimensions to our belonging. Alignment can thus amplify our power and our sense of the possible' (ibid 180). The community develops and adapts as a system as these three modes of learning evolve in the ongoing practice of the enterprise.

In summary, communities of practice are organic, emergent structures which are learning continually as members find novel ways of engaging in the community's activities, developing the practice with experience, and cultivating the repertoire of resources to renegotiate meanings. The process of learning is not an activity undertaken in a domain that is separate from the community's enterprise, but is reflected in the development of the practice itself: it is 'the very process of being engaged in, and participating in developing, an ongoing practice' (Wenger 1998: 95). Rather than focusing on learning as the mere accumulation of knowledge or acquisition of skills, the theory of communities of practice highlights the learning that takes place through the everyday engagement of individuals in the practices of communities. A community of practice is the coherent and self-organising frontier of mutual and sustained practice in a shared domain of interest.

Having outlined the key characteristics of epistemic communities and communities of practice, the everyday sociology of learning and innovation within each of these groups can now be compared. In essence, the everyday practices within both types of community are based on embodied, socially constructed, and materially situated mechanisms of learning. As has been illustrated, both the production of laboratory knowledge within an epistemic community and the servicing of photocopiers within a community of practice rely on similar everyday practices of learning – that is, sustained interaction, the circulation of stories, coordination of interests, shared expertise, and a repertoire of technical devices.

The congruity of the knowledge practices across these communities is to be expected, given that, as seen earlier, the ontology of individual learning is not primarily cognitive, but is tied to the attuning of the perceptual system to habitual affordances. As such, divisions among knowledge activities and occupations cannot be drawn straightforwardly and ascribed to differences in the cognitive capabilities of the particular communities involved. Instead, the distinctions between communities are more likely to lie in the structure and visibility of the socio-material infrastructure

constitutive of each specific community. For example, the intentionality of the knowledge practices within an epistemic community will not be embedded in the cognitive traits of the group concerned, but instead be attributable to the organisational mechanisms that afford the collective construction and validation of knowledge. This would include the clear definition of objectives, the lucidity of the codebook, the presence of an adjudicating body, the incentives for participation, and the rhythm and modes of engagement of the community. As such, intentionality is constructed in relation to the socio-material affordances of the community. Equally, the success of a community of practice does not depend on the transmission of codified knowledge and tacit routines from one generation to the next, but lies instead in the negotiation of meaning through everyday social and material practices, which afford learning through collective engagement, imagination, and alignment. The ways in which this socio-material infrastructure for learning is recognised, made visible, and cultivated will determine the authority and reproductive practices of the community. Thus, while epistemic communities and communities of practice may differ according to the degree of intentionality of their knowledge activities, this does not reflect a substantive difference in the everyday practices of learning within these communities, but variation in the utility and visibility of the socio-material infrastructure for knowing that is associated with each type of community. In the next section, the governance mechanisms necessary to cultivate this situated infrastructure for learning in a corporate context are outlined and discussed.

3.5 Governing communities

A communitarian approach to governance would suggest that learning and innovation do not neatly coincide with the top-down deployment of managerial interventions. Instead, learning is produced in the practices of engagement of different communities distributed across the firm. The locus of innovation is the voluntarily produced and locally negotiated enterprise of communities. The role for managers is to support practices of interaction and provide opportunities for different forms of community engagement. This communitarian perspective on learning is underpinned by a non-cognitivist interpretation of knowledge, which regards knowledge as being manifested in embodied and situated practices, as outlined earlier.

Within a corporate context, the governance imperative lies in recognising the specific sociology of learning in different communities across the firm and identifying appropriate mechanisms to support and leverage the competences defined in the practices of these communities. The specific capabilities cultivated by the participation of a group of employees in a community of practice can be supported by 'soft' managerial techniques that are sensitive to the modes of learning already established and reproduced in the everyday practices of the community. Informed by this philosophy of design, there is a series of identifiable principles that may be followed to cultivate learning within individual communities and organisations (Table 3.2).

Design Principles	**Communities**	**Organisations**
Evolution	Catalyse development of extant social networks	Build on local practices and discover effective design elements through iterative action-reflection cycles
Perspectives	Draw on the collective experience of members. Outside perspective helps communities see new possibilities and develop current social network	Give CoPs visibility and allow community leaders to emerge in strategic domains
Participation	Invite multiple forms of membership	Connect projects, functions, senior managers, and R&D units by encouraging informal relationships and designing policies that foster coordination and interaction
Rhythm	Combine routine and novel practices	Align informal practices with organisational goals and objectives

Table 3.2. Cultivating learning in communities and organisations
Source: Adapted from Wenger, McDermott and Snyder (2002)

At the level of individual communities, managers should use four principles to design for learning. First, they should draw on existing social networks that coalesce around specific domains of interest. The design of the community should evolve from the norms of voluntary participation and informal interaction that characterise the practices of knowing within these networks.

Second, the core members should define the enterprise of the community. As communities coalesce around locally negotiated practices, any attempt at stewardship should emerge from the perspective of the key participants in the community. This ensures that the community develops in accordance with the collective experience of the group, their main motivations for engagement, and the repertoire of communicative and artefactual resources on which they draw. However, in order to transform an informal social network into an 'alive' community intent on learning, the group needs to allow outside perspectives to filter through the community. Educating the group about the role of communities in similar organisations and establishing a dialogue with experts in a related domain are two methods by which outside influences may be incorporated into the community's practices (Wenger, McDermott and Snyder 2002).

Third, a community can also benefit from a variety of perspectives by inviting differing levels of participation, from core members who take a leading role in community projects, engage in debates, and push the learning agenda of the community, through to peripheral members who rarely participate actively but draw their own insights from the issues and technical discussions that emerge in the public forum. By legitimising peripheral forms of participation, communities facilitate access to a rich domain of learning without forcing members to contribute actively. In an organisation context where full participation is compulsory, as in the traditional functional team environment, such an obligation would demand that new members be formally acculturated, possibly necessitating corporate investment in specific training modules or professional qualifications. Thus, through voluntary forms of participation and informal mechanisms of learning, communities absorb many of the sunk costs normally associated with institutional knowledge initiatives (Amin and Cohendet 2004).

Finally, managers should attempt to maintain the 'rhythm of engagement, imagination and alignment' (Wenger 1998: 250) that typifies the practices of routine and exploratory learning within communities. Engagement can be supported by a soft infrastructure for learning that facilitates interaction among community members. Resonating with the turn towards pragmatic knowledge in the governance strategies of business organisations outlined earlier, this infrastructure may include: the provision of creative tasks for participants to undertake together, such as occasions for making decisions and creating solutions; virtual interactional spaces using communication technologies; and exposing members to different aspects of the practice by having an 'open house'

attitude which supports casual encounters, exchanges of experience, storytelling, and the sharing of interpretations of key concepts among different community members. Imagination is facilitated through reflective practices – away days, sabbaticals, and other breaks from routine work activity – as well as exploratory practices – scenario building, prototyping, play and other simulations. Alignment of community members is achieved through convergence practices – providing a common focus, leadership, and sources of inspiration – as well as coordinating mechanisms, including project schedules and deadlines; information transmission through the community; and auditing mechanisms for measuring aspects of performance.

Although a series of principles for encouraging learning within individual communities has been outlined, it is likely that only relatively small organisations will be constituted in one or two primary communities of practice. Larger and more complex firms may be expected to possess multiple communities with differing forms of engagement, conventions of meaning, and everyday practices. In managing such an organisation, the challenge therefore lies in leveraging and aligning the creative practices of a number of distributed and potentially divergent communities. As with the design of individual communities, an equivalent set of principles applies to the stewardship of pragmatic knowledge and communitarian learning at the organisational level.

With reference to Table 3.2, corporate leaders should attempt, first, to build on the inherent 'aliveness' of communities by 'combining this passion with the resources and power of the organization to create value far beyond what a community could achieve otherwise' (Wenger, McDermott and Snyder 2002: 191). Rather than attempting to orchestrate learning through a top-down strategic architecture that is couched in terms of communities, organisations should take an action-oriented or pragmatic approach that allows the 'aliveness' of active communities to emerge by rewarding these groups with resources for relevant innovation projects, supporting knowledge-sharing initiatives, and recognising and publicising the value of these communities.

Second, the pragmatic knowledge that communities accumulate through their everyday practices should be recognised by allowing these 'front-line' insights to feed back into corporate strategy. For example, there is good reason to suspect that communities may be well placed to facilitate innovation in response to a changing environmental context. As Brown and Duguid (1991: 51) note, 'it is the organization's communities, at all

levels, who are in contact with the environment and involved in interpretive sense making, congruence finding, and adapting. It is from any site of such interactions that new insights can be co-produced'. The situated learning embedded in communitarian practices can be leveraged organisationally if communities are involved in the development of business strategy and community leaders are able to emerge in strategic domains.

Third, organisations should attempt to align and coordinate the practices of multiple communities. The absorbed engagement of communities often produces 'deep learning' in relation to the everyday enterprise of the community, but 'radically new insights often arise at the boundaries between communities' (Wenger 2000: 233-234). Innovative learning is most likely to emerge when the interstitial spaces between communities are carefully managed, allowing them to become 'areas of unusual learning, places where perspectives meet and new possibilities arise' (ibid 233). One way in which the practices of a set of heterogeneous communities may be coordinated is through the strategic management or creation of 'boundary objects' (Star and Griesemer 1989). A boundary object is defined by Star and Griesemer (1989) as 'an object which lives in multiple social worlds and which has different identities in each' (p.409). Organisations should be designed to support the informal forms of learning which emerge in the practices of communities by serving as a boundary object that can connect the perspectives of its various communities and thereby 'coordinate multiple kinds of knowledgeability into a process of organizational learning' (Wenger 1998: 247). A boundary object is not only a shared material resource used by a number of different communities but it also has a different practical meaning in relation to the enterprise of each of them[21]. The reification of aspects of practice held in common across a number of interdependent communities into boundary objects will help to facilitate the coordination and alignment of those communities by setting a common purpose through which different perspectives may become connected.

An example of the successful use of a boundary object to connect the communities of a large organisation is the creation of a best practice database for use by photocopier

[21] Star and Griesemer (1989) describe how the state of California acted as a boundary object in the early development of Berkeley's Museum of Vertebrate Zoology. The declaration of the state as a nature preserve by the founding director of the museum created a common object through which the interests of the different communities connected to the institution (including university administrators, research scientists, amateur collectors, and private sponsors) could be resolved enabling the cooperative work of making the museum a centre of authority to take place.

service technicians at Xerox (Brown and Duguid 2000). The database was developed in response to the discovery that small groups of technicians would regularly engage in collaborative problem solving when they met informally for breakfast or lunch (as discussed earlier). By creating an organisation-wide database, Xerox sought to mobilise the knowledge created in these unofficial working practices that were enacted in a variety of forms across the firm's multiple communities of technicians that encompassed 25,000 members worldwide. The database represents a 'bottom-up' knowledge management system that was devised in response to an identifiable social practice of communities of technicians, and the records held on the database are also populated and regulated by the technicians themselves. Brown and Duguid (2000) claim that this approach to organisational coordination is more successful than top-down approaches (they report that the database had saved Xerox around $100 million) because it is designed in accordance with the dynamics of an existing knowledge sharing practice. The database has become a significant boundary object around which a new practice of tip sharing – rewarded by peer recognition and career progression for submitting 'good' tips – has become organised on a globally coordinated scale. By reifying knowledge sharing as a competence common to all of its technicians, Xerox has aligned the practices of its multiple communities of technicians so that they can now be said to act as a distributed epistemic community.

Finally, in order to leverage the pragmatic learning routines of communities, corporate leaders should seek to align these practices with the formal goals and objectives of the organisation. As previously noted, this process of alignment can be achieved to some extent by allowing the insights of communities to influence business strategy. However, the tensions between the informal practices of communities and the business objectives of the formal hierarchy are likely to run deeper than the reconciliation of perspectives that may be achieved through the participatory and iterative production of corporate strategy. Recall from Chapter 2 that reflexive strategic management demands the negotiation of the relationship between the core beliefs held by top management and the peripheral beliefs embedded in other parts of the hierarchy. However, this cognitivist approach is problematic because of the difficulty in abstracting and articulating strategic propositions from the practical knowledge accumulated through situated learning. One reason for this, as Gibson (1979) notes, is the non-representational *excess* of experience: 'However skilled an explicator one may become one will always, I believe, see more than one can say' (p.261).

Rather than being resolved strategically, these tensions are likely to resonate through the socio-material infrastructure of communities (in both strategic and operational domains) as this infrastructure is embedded in a corporate context and entangled in the imperatives of strategic management. A product of the embroilment of this infrastructure, communitarian practice will emerge in response to the material affordances of the formal hierarchy (including business objectives, policies and procedures, core values, organigrams, profitability, monetary resources, training provision, office design, and appraisal systems) and the everyday passions and embodied skills of the community (including shared discourse and war stories, professional cynicism, jealousies and solidarities, lunchtime rituals, heuristics and shortcuts, communicative conventions, and extended debates and controversies). The art of a community-based approach to governance is to work this material infrastructure to align the passions of the organisation's communities with the commercial opportunities present in the business environment.

3.6 Conclusion

In this chapter the presuppositions of cognitivism, namely the privileging of a representing mind and the consequent neglect of embodied and socio-material practices, have been questioned. In organisation theory, the influence of the cognitivist approach has led to the conceptualisation of individuals (and, by extension, firms) as cognitive agents who 'possess' knowledge and can be examined in isolation from the socio-material context of their actions. In this chapter, an alternative to the cognitivist approach to organisational learning and innovation has been formulated and developed. The cognitivist conception of knowledge was re-evaluated through the turn to an analysis of everyday practice. In the course of this analysis, three problematics associated with cognitivist theories of learning were identified (1) learning is conceptualised as a distinct process separable from everyday practice; (2) learning is understood as a process of transferring and acquiring *existing* knowledge; and (3) learning is assumed to be limited to human actors. As a consequence of the existence of these problematics, the micro-practices of knowledge *creation* (innovation) have been neglected.

In order to return to the practice of knowledge creation, a situated approach to learning has been adopted. Aiming to alleviate the three problematics of cognitivism, this

perspective was used to claim that (1) learning is an integral aspect of engagement in social practice; (2) knowledge is created through the recursive and circuitous practice of social interaction; and (3) learning and innovation are distributed throughout the socio-material context of practice. In sum, the turn to practice suggests that learning is not cognitive but embodied, not individual but shared and material, and not abstract but situated in the ongoing enterprise of the production of social practice. By decentring the perspective of the subject, a situated theory of practice also opens up a space in which the agency of the material infrastructure constitutive of specific learning contexts can be recognised.

In order to examine the influence of social practice on corporate learning, the concept of socially grounded communities was introduced. Two types of community were delineated and scrutinised. Epistemic communities are groups of individuals who engage in practices of exploration – that is, they specialise in the construction and validation of knowledge. Communities of practice are groups of individuals who engage in practices of exploitation – that is, they learn through engagement in a joint enterprise and by regularly sharing understandings of what they do. However, regardless of the intentionality of the knowledge practices within each type of community, both draw on similar everyday practices of learning, including sustained interaction, alignment of interests, use of a repertoire of material devices, and formal and informal meetings. This means that we can deduce, along with Amin and Cohendet (2004), that all communities are engaged to a varying extent in non-deliberate practices of everyday learning. Equally, intentionality is constructed through the structure and visibility of the socio-material infrastructure for learning within specific communities. Thus, the mechanisms suggested for governing learning within communities are all primarily aimed at working the socio-material affordances constitutive of specific settings.

While a non-cognitivist ontology of learning has revealed the socio-material basis of corporate knowledge and innovation, this approach also raises a number of questions which require thorough empirical investigation in order to be resolved. These questions are associated with the three knowledge claims that emerged from the situated learning perspective, as outlined above. First, with respect to the identification of everyday practice as a source of learning, empirical research is needed to establish the linkages between specific practices and particular modes of learning. The role of embodied practices or learning-in-doing needs to be contrasted with traditional mechanisms of

learning and evaluated with respect to specific learning outcomes. Second, in relation to the claim that knowledge is produced through social interaction, further research is necessary to determine the relationship between the specific circumstances of interaction and the sociology of knowledge and innovation produced. With respect to the circumstances of interaction, research is required to determine whether social interaction is of equal relevance in different contexts, including formal and informal settings, and in relation to top-down and bottom-up modes of learning. Third, with respect to the claim that learning and innovation are distributed throughout the socio-material context of practice, substantive empirical research is required to identify the social and material arrangements that afford or inhibit learning within specific contexts. Specifically, which modes of interaction and engagement underpin the formation of communities and the learning that they produce?

Finally, and in light of the knowledge claims described above, further work is needed to evaluate the corresponding propositions regarding learning and innovation in relation to the counter-claims of cognitivism, as outlined in Chapter 2. As stated in the introductory chapter of this thesis, this comparative analysis is important because there have been few attempts to explore managerial and communitarian approaches to learning and innovation through substantive research conducted in a corporate context. In particular, how is the architecture of the formal hierarchy and the informal learning infrastructure of its communities related? This question will be addressed through a comparative analysis of the two approaches at the levels of conception and empiricism. Conceptually, the claims regarding corporate learning and innovation that are associated with each perspective need to be abstracted and contrasted to define the relationship between the approaches, including overlaps, synergies, and notable points of distinction. Having described this relationship, the methodologies that are required to examine empirically the claims that each make about the mechanisms that underpin corporate learning and innovation can be outlined. The conceptually motivated choice of methodologies ensures that the efficacy of both approaches, as well as the emerging relationship between them, can be perceived and examined through the research tools of the empirical work.

In the next chapter, the conceptual evaluation is undertaken and the choice of research methodologies is presented and justified. The empirical work that was conducted through the use of these methodologies is then described in Chapters 5 and 6. The two

approaches will be evaluated comparatively through the corporate case studies described in these chapters and culminate with Chapter 7, the concluding chapter of the thesis.

Chapter 4

Research Methodology and Innovation Strategies: Royal Mail

4.1 Introduction

This chapter describes the methodologies that were used to examine organisational learning and innovation within Royal Mail, and sets the context for the empirical work by providing a historical overview of the innovation strategies employed by this organisation. In section 4.2, the axiomatic conceptual foundations of the cognitive and non-cognitive approaches to organisational learning and innovation are defined and contrasted. Having articulated the relationship between the two approaches, the organisational practices that are the object of the research, and the ethnographic methods that were used to investigate these practices, are described in section 4.3. Following this methodological overview, the commercial activities and innovation strategies employed by Royal Mail over the last thirty years are discussed in section 4.4. This review specifies a historical frame for the context within which the study of corporate learning and innovation was undertaken.

4.2 Approaching corporate learning and innovation: conceptual review

In order to frame the conceptual discussion of corporate learning and innovation, a cognitivist/non-cognitivist heuristic has been used to organise the thematic chapters of this thesis. The first approach draws on a cognitivist interpretation of knowledge – that is, learning and innovation are conceptualised as intentional processes, involving the acquisition, propagation, and governance of different forms of cognitive knowledge. The second approach is underpinned by a non-cognitivist conceptualisation of knowledge – that is, learning and innovation are treated as social and material practices, involving the use of situated resources and the successful alignment of heterogeneous human and non-human actants. Although a series of claims relating to learning and innovation has thus been formulated, as we move towards defining the research methodology necessary to examine these claims it is important to acknowledge this heuristic and describe the relationship between the terms of this dualism. This conceptual review will enable the methodologies that are required to undertake an empirical examination of both perspectives to be specified.

As summarised in Table 4.1, the claims that emerge from a cognitivist framework all interpret learning and innovation in relation to an individual cognitive agent. Whether this be an individual human being, a project group, or an organisation the propositions emerge from the same basic question: how does this agent acquire, develop, and utilise knowledge?

Construct	**Values**	**Assumptions**	**Strategies**
Acquisition	1. Mind is serial computational system	Expertise based on possession of extensive codified knowledge	Achieve goals by formulating plan for processing information
	2. Mind is adaptive representational system	Mind possesses interpretive framework	Learning as intervention in strategies (incremental) or values (radical)
Propagation	1. Interaction grounded in cognitive variation	Tension between group proximity/ understanding and distance/novelty	Intervention to maintain novelty and bridge distance
	2. Knowledge representations transmitted through pedagogy	Novice taught through observation, judgement, and intervention	Provide opportunities for socialisation, education, and imitation
Governance	1. Leverage resources for competitive advantage	Cognitive structure reflects beliefs and goals of top management	Create strategic architecture: choose competences; communicate vision; leverage skills
	2. Learning is collective and cumulative	Senior managers coordinate and integrate routines	Maximise absorptive capacity; manage knowledge interfaces

Table 4.1. Cognitivist constructs: values, assumptions, and strategies

For the individual, knowledge is processed through cognitive recognition and interpretation in the context of goal-directed activities: problem solving, behavioural intervention, and pedagogy. For the group, the processing of knowledge depends on the cognitive variation among the interacting individuals. For the organisation, the processing of knowledge either reflects the cognitions of senior managers or knowledge is conceptualised as a distributed capability and the focus shifts towards the movement of knowledge across the internal and external interfaces of the firm (Hayek 1945). However, even in the latter case, individualist constructs pertaining to cognition are invoked to account for the acquisition of knowledge: 'learning systems' (Fiol and Lyles 1985), 'assimilation' and 'accommodation' (Nooteboom 1999), and 'absorptive

capacity' (Cohen and Levinthal 1990). According to the cognitivist approach, learning and innovation should be described in relation to an identifiable cognitive structure.

In contrast, the claims that emerge from non-cognitivist perspectives all interpret learning and innovation as situated practices that are enacted in the relations constitutive of specific knowledge contexts (summarised in Table 4.2). Knowledge is constructed through relational practices: pragmatic engagement, collaboration, and the ordering of socio-material affordances. By shifting our attention away from the subject and towards the relations constitutive of practice, the non-cognitivist perspective discloses knowledge as an emergent and variable 'object'. Rather than being concerned with the location of knowledge in relation to a cognitive system, this approach is attuned to the construction of this 'object' in the course of socio-material practices (including the practice of representation). Knowledge is not 'out-there' waiting to be known through cognition, intervention, or pedagogy. Instead, it is always caught up in the practice of engagement, negotiation, and affordances. According to the non-cognitivist approach, knowledge generation should be described in and through practice.

Construct	**Values**	**Assumptions**	**Strategies**
Situated Learning	1. Learning as engagement in social practice	Learning as attuning of sensory system to habitual affordances	Provide opportunities for embodied learning: exploration, tool use, and disclosure
	2. Knowledge created through sociality	Communication as meaning and awareness	Facilitate collaboration: debate, negotiation, and social conflict
	3. Learning and innovation distributed across material context	Context affords opportunities for knowing and learning	Work socio-material infrastructure
Communities	Community as voluntary and locally negotiated enterprise	Knowledge generated through joint engagement and repeated interaction	Socio-material infrastructure supports unintentional practices of learning
Governance	Organisation as constellation of communities	Leverage and align creative practices of heterogeneous communities	Create rhythm of engagement; engage communities in strategy; manage boundaries; align with objectives

Table 4.2. Non-cognitivist constructs: values, assumptions, and strategies

In order to draw these terms together, we need to examine the ways in which cognitivism interprets relational practice and non-cognitivism interprets the individual cognising subject. For cognitivists, practice is 'automatic' (Polanyi 1967; Nelson and Winter 1982). As Bourdieu (1990: 52) notes, 'practice is seen as no more than the acting-out of roles, the playing of scores or the implementation of plans'. The role, the score, and the plan are attributed to cognitive mechanisms situated within the mind, the work of mental representations or tacit knowledge. This is why knowledge practices (problem-solving or pedagogy, for example) are described in terms of the setting of goals, the formulation of plans, and an entity dubbed knowledge that is acquired by expert or novice, respectively. Equally, in the context of social interaction, practice is interpreted as a 'container' through which cognitive agents introduce, combine, and transfer entities. The sociology of interaction is attributable to the variation among the cognitive frameworks of the individuals who find themselves within this container. Similarly, in a corporate context, organisational practices are seen as the product of managerial strategies (a plan of actions) for exploiting knowledge out-there, combining resources in-here, and orchestrating collective learning. When knowledge is conceptualised in terms of organisational routines, it is the 'automaticity' of practice that resists adaptation or innovation. Strategic intervention is not precluded by the indeterminacy or 'messiness' (Law 2004) of practice. On the contrary, procedures are so embrained that they function 'programmatically' (Simon 1991). Practice is more or less reducible to the (tacit) strategy or plan.

Through a non-cognitivist framework, the individual cognising subject is decentred or displaced; the subject becomes a momentary effect constituted in dialogical relations (Shotter 1997). Rather than being presupposed, the subject is enacted in relation to absorbed engagement (Heidegger 1962); the affordances of the environment (Gibson 1979); the experience of meaning through participation in communities (Lave and Wenger 1991); and situated within a network of materially heterogeneous resources (Suchman 1987; Law and Hetherington 2000). As an effect, the subject is interpreted in terms of the materiality or affordances of practice. Rather than invoking cognitive mechanisms, this approach accounts for the presence of knowledge by describing the practices that afford representation, including those associated with traditionally cognitive processes such as strategy formulation or problem solving. For example, using a situated approach, Orr (1996) describes how service technicians solve unusual photocopier problems using the socio-material resources available rather than the

institutional training manual, 'the plan'. Photocopier problems are diagnosed during collaborative troubleshooting sessions, 'on the premise that a fresh perspective may make it possible to reinterpret the facts into an adequate representation of the problem' (Orr 1996: 123-4). Instead of situating knowledge within the cranium, Orr situates the representation in the practices of interaction and narration among the technicians. Thus, cognitivist constructs seem to rematerialise in the practical ontology of learning. Practice becomes the locus of 'mutual intelligibility' (Garfinkel 1967; Suchman 1987), 'logic' (Bourdieu 1990), and 'coherence' (Wenger 1998). Excluded from the mind, the social scientist as ethnographer situates cognition in practice.

While the consequences of this move do appear to destabilise aspects of the non-cognitivist enterprise (see Harrison 2002), it does allow cognitivist and non-cognitivist accounts of learning to be described through a symmetrical practice-based framework. The cognitivist/non-cognitivist dualism would seem to collapse once the practical aspects of cognitive knowledge are disclosed and the implicit representationalism embedded in practice-based explanations of learning and innovation is recognised. As such, the propositions that emerged from the cognitivist and non-cognitivist approaches can be drawn together and examined as practices in which knowing (representation) and doing (situated learning) become inseparable. As such, the claims associated with the two theoretical perspectives can be drawn together and addressed through an examination of organisational practice. In the next section, the methodology that is required to conduct an investigation of these practices is discussed.

4.3 Methodological overview

Given that it has been recognised that learning and innovation are manifested in practices (whether cognitive or non-cognitive), the task now is to define the method by which the conceptual concerns that pertain to these practices may be exhibited. By drawing on the propositions outlined earlier in Tables 4.1 and 4.2, a set of questions and corresponding methods for examining corporate learning and innovation within Royal Mail can be defined (Table 4.3).

Research question	Methodologies
Cognitivism	
Acquisition • How is cognitive knowledge acquired?	Determine the role of formal acquisition mechanisms such as information systems, R&D, market research, and strategic planning by collecting information that relates to the appropriation of cognitive knowledge. Consult secondary sources of evidence, including minutes of meetings, strategic reports, and archives of intranet discussion groups. Interview senior managers and others involved in the development of knowledge acquisition strategies.
Propagation • How does cognitive proximity or distance influence learning within project groups?	Determine the influence of the variation in cognitive schemes by observing the sociology of interaction within the context of case-study projects. Qualify the role of cognition by discussing with the project group any variation in their background skills and experience, and the impact that they believe this has on the ways in which they share knowledge and learn.
Governance • How do senior managers create a strategic architecture for learning? • Which managerial practices produce absorptive capacity?	Explore the role of managerial cognition in the generation of organisational learning by evaluating the role of managerial devices for promoting learning and innovation, including strategic partnerships and restructuring programmes. Examine the practices through which senior managers devise such devices through interviews and observational techniques, and evaluate their success by examining the on-the-ground processes of learning.
Pragmatism	
Situated learning • How does engagement in everyday practices generate learning? • How is knowledge generated through sociality? • Does the material context afford or inhibit innovation?	Determine the role of informal practices of learning by engaging in the practices of a functional group or project team. The social practices of learning will be tracked by following the daily movements of these teams, conducting formal and informal interviews, transcribing fly-on-the-wall discussions, monitoring the use of resources and the development of concepts and ideas, and participating in team meetings, creative sessions, conferences, social events, away-days, and other formal and informal contexts for learning.
Communities • Which modes of interaction and engagement underpin the formation of communities and the learning that they produce?	As communities are defined by relations of repeated interaction, addressing this question involves spending an extended period of time with specific organisational groups (managers, functional teams, or project groups) and mapping the formal and informal practices through which they negotiate their work and engage in processes of learning.
Governance • How is the architecture of the formal hierarchy and the informal learning infrastructure of its communities related?	It is important to qualify the role of communities by examining the performance of the everyday practices of work in relation to the counter-claims of cognitivism, which emphasises the role of cognitive knowledge and managerial strategies. The materiality of context – an infrastructure within which the formal and informal are entangled – should be interrogated in order to derive the relationship between the two approaches. Thus, the use of both formal resources (organigrams, business processes, office design) and informal practices (war stories, heuristics, debates) needs to be catalogued and examined.

Table 4.3. Research questions and methodologies

Ethnographic techniques were chosen for accessing these organisational practices. Although ethnography is an established choice of method for examining such practices (see Law 1994; Orr 1996; Wenger 1998; Knorr Cetina 1999; Weeks 2004), the precise techniques through which this method produces evidence remain vague and opaque. The following quotation from an ethnography textbook, which attempts to describe the

practice of ethnography, is typical: '[ethnography] involves the ethnographer participating, overtly or covertly, in people's daily lives for an extended period of time, watching what happens, listening to what is said, asking questions – in fact, collecting whatever data are available to throw light on the issues that are the focus of the research' (Hammersley and Atkinson 1995: 1). The opacity of ethnography appears to reflect an inherent tension between practice and representation. While ethnography was chosen because it appeared to be in line with the principle of learning through engagement (Heidegger 1962), the difficulty lies in translating the experiences thereby 'acquired' into evidence that can be used to evaluate buttoned-down propositions, concepts, and theories.

The real work of ethnography is accomplished through a number of processes of translation: participation, adaptation, application, and compilation. The first stage involves participating *to excess*. There are two dimensions to this practice. On the one hand, uncertainty about what might constitute *valuable* or *authentic* participation means that whenever opportunities to engage in organisational practices do emerge the ethnographer has to make every effort to exploit them. This includes a variety of actions: securing a research placement with the organisation; giving informal and formal research briefings to people who share the same office space; requesting access to information, performing interviews, gathering project documentation and, in general, making observations and asking questions; and, most importantly, making the case to be involved in as many projects, meetings, and 'events' as possible. Through these multiple forms of participation, some valuable sources of evidence should begin, hopefully, to emerge. On the other hand, drawing evidence out of these experiences of participation involves more work – that is, further participation. This involves the construction of material resources: the artefacts of ethnography. Each observation, interaction, project meeting, interview, or email needs to be recorded and catalogued. For example, if a project meeting is attended, not only do the parties involved, the type of room, the purpose of the meeting, the circulation of documents, the construction of new artefacts, and the dialogue and main outputs need to be recorded, but other 'moments', that often strike the ethnographer as nothing more concrete than a *feeling* that something has changed or a *hunch* that something novel might be at work, have to be noted down hastily among the other inscriptions for later analysis, embellishment, or qualification (through discussion with one of the participants, for instance). It is these practical insights that constitute the bedrock of a field diary and act as resources for

more sustained reflection about emerging ideas, developing themes, and the validity of the hypotheses that stimulated the empirical research.

The process of participation is not a mechanical act in which the ethnographer moves autonomously from event to event and crafts a set of ethnographic resources. Instead, the organisational context within which the research is conducted will affect the mobility of the ethnographer and the ways in which the practices that he or she encounters may be disclosed. The method of ethnography – the research questions, techniques, and plan of action – has to be *adaptable* in order to reflect the evolving context through which the study takes place. With respect to the study of learning within Royal Mail, one source of adaptation seems particularly noteworthy. At the time of the research, the organisation was making a loss and undergoing a radical programme of restructuring in order to improve its operational performance. As manifested in my experience of working within Royal Mail, this state was made visible as a phenomenon that could be described as 'the moral and ethical effects of shame' (Pattison 2000: 4). This can be rationalised into three palpable effects on the trajectory of the ethnography. First, my work colleagues would deal with this by engaging in defensive behaviour, such as cynicism and negative self-assessment. This would usually be expressed in informal settings, such as the lunchroom or nearby pub after work, and would be reported to me directly or overheard in the course of relaxed conversation. Second, set against this background, there were times when I seemed to be excluded from the working agenda of functional teams or everyday project activities because my presence – as an ethnographer – might have exacerbated a feeling of objectification. Finally, wary of this tendency, I would avoid tracking particular marketing projects or pursuing certain conceptual themes (such as cynicism as a community value) when this involved engaging with the set of behaviours that would appear to issue from the practice of shame. In full awareness that my thesis would be reviewed by both senior managers and the legal services department, I was hesitant about developing any ideas that linked the ethos of learning within Royal Mail to unpalatable notions of counter-culture, alienation, and cynicism. While conducting the ethnography I adapted the mode of inquiry actively in order to circumvent a set of issues that might otherwise be expected to attract attention in a study of learning within a large, hierarchical, and politicised organisation.

While participation is associated with opportunities to generate evidence, and adaptation denotes the evidence-displacing effect of the research context, the relationship between the subject (ethnographer) and object (organisational practices) describes the *politics of application*. During the study of Royal Mail, this involved the negotiation of the tension between the position of subject and object – that is, being an 'outsider' or observer of practice versus becoming an 'insider' or participant in practice. The *insider* perspective was cultivated through everyday engagement with 'colleagues' at the office, which included ongoing conversations, making coffee, taking telephone messages, exchanging emails, photocopying and performing other administrative duties, going to the sandwich shop for lunch, and making, where possible, substantive contributions to the work of functional groups and project teams. Through such interactions I got to know a relatively small number of office colleagues as a fellow 'marketer'. Mutual engagement afforded access to 'a variety of unguarded behaviour' (Latour and Woolgar 1986: 153) and thereby allowed me to assess the ways in which marketers learn in both formal and informal settings. An *outsider* perspective was experienced when I interacted with Royal Mail colleagues, particularly senior managers, that were from other functions of the organisation or when I encountered new and unfamiliar projects. While this experience was somewhat perturbing, it was necessary to interact with a broader range of colleagues in order to evaluate the overall learning and innovation policies that were being pursued by the organisation, including the corporate plan, the restructuring programme, the use of inter-firm alliances, and the media development strategy. My supervisor at Royal Mail utilised her network of high-level contacts in order to facilitate access to these practices. The level of access afforded, including the ability to conduct interviews with senior managers and observe marketing executive committee meetings, enabled me to examine the ways in which the organisation was managed strategically beyond my involvement in any particular project. Thus, the combination of *insider* and *outsider* perspectives afforded an evaluation of both top-down and bottom-up mechanisms of learning and innovation.

Finally, during and after the period of ethnography, evidence that appears to pertain to the thematic concerns is *compiled*. This phase involves the analysis of detailed field-notes, research diaries, transcripts of interviews, and documentary evidence. As we tend to see more than we can say (Gibson 1979), the practice of writing ethnography – like the writing of economic research reports (Preda 2002) – often involves an extended process of 'epistemic tinkering' away from the field. This involves matching up the

evidence with different propositions about organisational learning and innovation, and compiling a set of evidence that speaks to the themes that were identified through the conceptual framework (specified in Chapters 2 and 3). Although I do not believe that the interpretive agency of the ethnographer can or should be eliminated, one method of mitigating for this risk is to provide pluralistic or 'polyphonic' (Crang 1992) accounts of practices. Accordingly, the evidence drawn from my ethnographic research is described in the thesis through extended vignettes which allow the 'events' or 'phenomena' to circulate through the socio-material practices of different actors, including senior managers, functional teams, contrasting project groups, PowerPoint presentations, organigrams, and circumscribed communities. Rather than aiming to describe the full complexity of organisational practices, I am acknowledging the insufficiency or contingency of representation.

With reference to the methodological framework, addressing the questions that arise from the two theories of learning and innovation does require access to practices that manifest both the formal managerial strategies and devices that are used to manipulate cognitive knowledge and the informal modes of engagement and interaction that generate learning and innovation in communities. The setting chosen for addressing these themes was Commercial Development[22], an innovation unit within the marketing department of Royal Mail. This unit is responsible for extending the capabilities possessed by the organisation by developing new mail-related products and services that are antecedent to Royal Mail's core competence in postal collection and delivery[23]. As such, working with this unit afforded an assessment of Royal Mail's formal strategies for learning and innovation as well as an opportunity to witness the on-the-ground practices through which these strategies were enacted. Thus, this choice of unit allows the relationships between the architecture of the formal hierarchy and the informal learning infrastructure of its communities to be charted.

During a nine-month research placement (January to October 2004) with the unit in central London, the practices associated with three different innovation projects were examined. The first project is the managerial restructuring of the marketing department which took place in March 2004. Access to the group of senior managers who devised the new strategic architecture of the department allowed me to evaluate the restructuring

[22] Throughout this thesis all references to names (employee, role, team, and product) are pseudonymous.
[23] The activities of Commercial Development are contextualised and described in greater depth in section 4.4.

as a top-down innovation, and contrast this account of the event with the experiences of a functional team of employees, who were the recipients of this strategy. The two vignettes used to describe the event are based on a range of forms of evidence. The first vignette was produced following the analysis of a number of managerial artefacts relating to the restructuring project. These artefacts included a 'project initiation document'; a series of PowerPoint presentations that were created to update various stakeholders on the progress of the project; and a number of presentations that were cascaded to team leaders across Marketing to communicate the changes to their teams. The company intranet was also utilised as an information source, as it contained regular updates on the progress of the restructuring, and it was also the location for finding information about policies, ways of working, structure templates, strategies, and procedures. As a marketer within the department I was also sent regular 'marketing comms' emails which brought a wealth of information to my Royal Mail issue laptop, including the monthly newsletter for the department and formal updates on the restructuring. I was also involved in some of the face-to-face meetings (from January 2004) that were given by team leaders to update their respective teams on progress with the restructuring. My industry supervisor also facilitated semi-structured interviews with senior managers within the marketing department[24]. All of the interviews lasted for around an hour. Finally, I was able to participate in the marketing department's 'welcome event', which brought all the marketers together, and took place a month after the restructuring had been implemented. This event forms the starting point for both narratives.

[24] During the ethnography, approximately 70 interviews were arranged and conducted with senior personnel and others across Royal Mail and within partner organisations. An indexed list of the interviewees cited in the text is provided in Appendix 1. The number and content of questions varied from interview to interview. On occasion, I would send a draft set of questions to the interviewee in advance of the interview. However, much to the annoyance of those who had prepared answers to my questions, I would very rarely stick to the interview schedule, preferring instead to have a dialogical exchange in which I would respond to what the interviewee had just said rather than refer to the next one in a pre-determined set of questions. The discrepancy between the total number of interviews conducted and the actual number cited in the text is due to the limited value that could be derived from many of the interviews. This method was not sufficient for acquiring the depth of understanding sought into the role of different mechanisms in the innovation process, such as sociality or the value of a particular training programme. For example, in the first interview I conducted, when I asked the interviewee about the reasons for a particular decision being made at a meeting, he seemed irritated by the notion that he might be able to remember the events of one distant meeting out of the many he had attended since. It soon became clear that interviews and documentary evidence were valuable research tools for acquiring a high-level overview of the trajectory of a project but they alone were not adequate for disclosing the everyday practices and routines that can determine its success or failure.

The narrative of the second vignette, which takes the perspective of a team of marketers, is based on my attendance at the monthly meetings of one of the sub-teams within Commercial Development, 'Fusion'. At my request, I was included on the team's email circulation list, and aspects of the analysis come from studying the emails that were circulated on a daily basis among the team. I also spent significant periods of time working at the same desk cluster as the team. This enabled me to make observations, ask questions, and engage in dialogue, although despite many requests to become more involved with their work, I only ever conducted very small pieces of work with the team. However, engagement extended to my taking lunch with different team members, including one lunch in a restaurant, which involved the whole team and followed one of the monthly meetings. Finally, I was able to conduct loosely structured interviews with six of the team's nine members, each lasting for around an hour. The restructuring of the marketing department is described in more detail in Chapter 5.

The impact of the restructuring exercise on activities within the marketing department also affected the research. In the months leading up to the restructuring the office was very quiet, with as few as seven or eight employees present on some days in an office able to house between sixty and eighty people. Given the need to divest of 50 per cent of the department's personnel, there was a great deal of uncertainty about job roles leading up to the restructuring. This made trying to arrange interviews with a number of marketers difficult and impeded my access to some team and project meetings. On the day when the allocation of employees to new roles was announced there were broad smiles, handshakes, laughter, and nods of agreement, along with quiet contemplation, sombreness, anxiety, and tears. On that occasion, along with a number of others, I did have to leave the office. However, given the regularity with which organisations do go through restructuring and downsizing exercises, researching the implications for innovation in such a context represented an important opportunity to further understanding of the processes of learning and innovation in such circumstances.

The second project is the development of an online advertising service that enables small organisations to create direct-mail campaigns. The construction of the website, undertaken in partnership with an advertising agency, was one of the earliest products of Royal Mail's 'media ownership' strategy that aimed to consolidate the organisation's core competence in mail collection and delivery by increasing the overall volume of mail being sent in the UK. Participation in this project contributes to the objectives of

this thesis by enabling an assessment of the performance of a formal market development strategy, extending the domain of mail-related products and services possessed by Royal Mail. Furthermore, as this approach to innovation was undertaken in conjunction with external partners, this strategy may be evaluated as an attempt to generate absorptive capacity through the exploitation of external knowledge. Specifically, the practices of learning associated with the inter-organisational project group responsible for the development of one of the products of this strategy were examined. This created a space in which the impact of cognitive proximity and distance on the execution of this strategy could be evaluated.

Initially, the project did not seem ideal because it involved only one employee within Royal Mail (the product manager who worked on the project with individuals from the advertising agency), and therefore it was difficult to observe the daily sociology of interaction and team dynamics. When I first worked with the product manager I asked him to treat me as if I were a new employee, in order to become as immersed as possible in the typical working role of a marketer. This approach proved effective, as I was able to engage in project meetings, undertake pieces of project work, and interview personnel within Royal Mail and at the marketing agency with an informed view of the product and its management. This project is described in more detail in Chapter 6.

Although this project provided a useful insight into innovation practices – particularly the collaboration of the marketing department and a marketing agency – the tempo of activities in relation to the project was not sufficient to fill all of my time so there were days when I was struggling to engage in any research activities per se. Through the use of informal contacts I was able to secure involvement in an additional marketing project. This third and final project, which was concerned with the redevelopment of the Royal Mail website, was led by a sub-team within the brand unit of the marketing department. As this project was also undertaken in conjunction with an external partner, I was able to compare and contrast the practices of this team with those examined through the second project (in Chapter 6). This project exhibited a contrasting logic of interaction, which allowed me to evaluate the role of informal enterprise and repeated interaction in both the performance of formal strategies for innovation and in the generation of absorptive capacity.

In this supplementary project I was more of an observer than a participant. I tried to find a working role to legitimise my inclusion in the project team but, in practice, the absence of line-management and formal work-related objectives rendered making a recognised contribution very difficult. Furthermore, my lack of practical marketing knowledge, stemming from a lack of training and experience, meant that when I was observing meetings and interactions I was not always able to understand the explicit utterances, for example jargon and acronyms, or shared understandings that were left unsaid, particularly office politics and cynicism about the firm. Through social learning, asking questions and engaging in dialogue, I was able to overcome some of the 'cognitive distance' caused by the lack of shared *habitus* (Bourdieu 1990). The apparent redundancy of my role in relation to the development of the project sometimes made it difficult to remain involved. People would not always remember to involve me in meetings or 'copy me in' to emails relating to the development of the projects, so on a number of occasions I had to send emails reminding project team members why it was important that I was kept informed of project developments. Despite these attempts to keep informed, I undoubtedly missed out on some of the meetings and email exchanges related to this project.

These were the conceptual concerns and methodological tools that were used to conduct the research within Royal Mail. Beginning with a historical overview of Royal Mail's strategies for innovation, the remainder of this thesis describes the evidence that was crafted through the practice of this research.

4.4 Royal Mail: innovation strategies in historical context

In the 1970s, the Post Office was an organisation in decline: labour productivity fell by 12 per cent between 1968 and 1978 (Pryke 1981: 149 cited in Parker 1994). This downward trend in efficiency can be linked to conflict between the trade unions and the management culture. The union impeded technological innovations, such as the mechanisation of letter sorting in mail centres, deeming that these would undermine established patterns of working. Such disputes were punctuated by frequent periods of industrial action, which depleted efficiency and generated negative perceptions among customers. The 'authoritarian' public-sector management culture of the organisation tied decision-making autonomy to the centre, while in other parts of the organisation, 'innovation and risk-taking were discouraged, while conforming to "procedures" was mandatory' (Parker 1994: 17). When Sir Ron Dearing became chairman of the Post

Office in 1981, he described the organisation he had inherited as one with 'blurred roles, a reverence for seniority, lots of paperwork, cautious management, low levels of professionalism, a very strong Personnel function and deeply entrenched unions' (quoted in Parker 1994: 18). In response to the productivity problems of the 1970s, Dearing led the organisation through a fundamental restructuring exercise in the 1980s.

The need for organisational change was given impetus in the early 1980s by the partial liberalisation of the postal market introduced by the newly elected Conservative government. Private sector companies would be entitled to compete with the Post Office in the courier express market for the first time, as long as they charged at least one pound for delivering items of mail. The opening up of the courier market was perceived by the Post Office to be the first step towards the full liberalisation of postal services leading to the loss of monopoly status in the organisation's core market of letter collection and delivery. A team of external consultants worked with senior Post Office managers to assess the potential competitiveness of the organisation in a fully liberalised market, by auditing its internal capabilities (Fish 1988). The consultancy team paid particular attention to the paradigmatic 'belief systems' of the organisation and the subconscious 'mental maps' of senior managers, an approach that was influenced by the work of the philosopher of science Thomas Kuhn (1922-96). The consultants were reportedly guided by the principle that:

> In all organisations beliefs are based on the past, what has succeeded and on the scar tissue of what has failed. They are buried in the organisational subconscious and they crucially influence the behaviour of people. [...] These paradigms are difficult to break when they become inappropriate. Organisational capability becomes locked into a circular pattern as knowledge and understanding of the environment are interpreted and acted upon according to the belief systems in operation.
>
> (Fish 1988: 29)

The conceptualisation of organisational behaviour in terms of the underpinning paradigmatic belief systems in use at the firm resonates with cognitive models of organisational learning, particularly the distinction between single and double-loop forms of learning made by Argyris and Schön (1978), as described in Chapter 2. The consultants working for the Post Office sought to induce double-loop learning by effecting a change in the prevailing set of core beliefs or values within the organisation in accordance with a paradigm shift. In this cognitivist interpretation of change, reflexive or double-loop learning is associated with path-breaking innovation. This

becomes possible when, as Fish states above, the 'circular pattern' of the interpretation of the environment is unlocked. After a four-month period of research, the consultants claimed to have found a number of 'heavily ingrained' paradigms in use at the Post Office, which they organised into a number of categories (summarised in Table 4.4).

Paradigm	**Beliefs of Post Office**	**Behaviour**
Vision	Possesses de facto monopoly	Meets internal standards not customer needs
Strategy	Cost-cutting to contain real unit costs	Negotiation with unions to raise productivity; marketing had low impact
Organisation	Interdependency of postal services required unitary structure	Conflict for central resources; hierarchical tiers distorted communications
Systems	Tight central control necessary	Low accountability; permeating rules; top-down communication
People	Complex knowledge and skills needed for accurate job performance	Most-intelligent managers form policy at HQ; others knowledgeable about the rules
Skills	Specialists needed at centre; rule-following 'generalists' elsewhere	Key managerial capabilities missing
Values	Public service, loyalty, and long service more important than job performance	Risk averse; innovation and creativity low

Table 4.4. Paradigms found by consultants in Post Office in 1984
Source: Based on Fish (1988: 29-30)

The consultants concluded that the organisation's set of beliefs and resultant behaviours were not appropriate for competing in a liberalising and increasingly turbulent postal market. The consultants argued that the Post Office needed to 'reframe thinking' in order to focus on customers and markets and suggested the need for 'market-based structural change' to the strategic board of the Post Office.

Following the work of the consultancy team, the organisation was reorganised in 1986 into four independent business units, each with its own managerial structure and financial accounting system to reflect the organisation's different markets: Royal Mail (letters), Post Office Counters (retail), Parcelforce (parcels), and Girobank (banking). According to the chairman at the time, the market focus was key to creating a more commercially oriented organisation:

> The reorganisation of the business, which required several thousand key managers to change roles, brought pressures during the year. However, the new structure, and the cultural change which accompanied it, have created a more commercially accountable approach to customer needs, service quality, and the effective leadership of staff.
>
> (Dearing quoted in Post Office 1987: 16)

As well as the restructuring of the organisation, there were cultural changes geared towards changing the bureaucratic style of management and to make people 'think market' (Fish 1988): management posts attracted performance-related pay; new skills were infused into middle managers through the introduction of external specialists; marketing and production functions were integrated to encourage the firm to 'look outwards' to customers and competitors; the headquarters were decentralised and line-delegation was encouraged; and more productive working methods exorcised 'ghost duties' (Parker 1994).

The same consultancy team conducted an audit in 1988 of the dominant paradigms following the implementation of the restructuring. On the whole, the attempt to turn the beliefs of personnel towards 'thinking market' and away from internal standards, and to create a market-oriented rather than centralised organisational structure, appeared to have worked. As reflected in Table 4.5, service quality, specialisation, and the importance of market awareness had all apparently been enhanced.

Paradigm	**Beliefs of Post Office**	**Behaviour**
Vision	Service quality supplanting cost as primary growth strategy	Staff committed to their own business units and aware of competitive pressures
Strategy	Competitors standards used as reference points	Business and corporate planning skills enhanced
Organisation	Benefit of specialisms appreciated	Marketing function becoming force
People	Individual and team performance valued	Increased pace and enthusiasm; 'stars were being unearthed in unlikely places'
Skills	Capability to manage change enhanced	Career progress through specialism, experience and performance understood
Values	Positive leadership among senior managers	Creative and speedier decision-making at the top but not below that level; blame rather than experimentation prevalent

Table 4.5. Paradigms found by consultants in Post Office in 1988
Source: Based on Fish (1988: 32-33)

Notwithstanding these benefits, the consultants admitted that below senior management level the organisational changes had not, at the time of the review, had much of an impact. They professed that: 'Organisations, however, cannot simply transform their deep-rooted belief systems overnight. The good work done so far needs to be reinforced, particularly below top-management level. The process of seizing the hearts and minds of 170,000 staff has only just started' (Fish 1988: 33). Thus, while double-loop forms of learning did appear to take place at board and senior management level, changing the beliefs or dominant paradigms of employees throughout the hierarchy was not so straightforward. From a communitarian perspective, one possible reason for the resistance to change is that the top-down, cognitive approach to innovation was antithetical to the local conventions of meaning within communities across the firm. These conventions of meaning are generated through everyday forms of practical engagement, and could well have been resistant to a hierarchically imposed change programme. Certainly, the level of unionisation of the workforce and the historical conflict with management would seem to support this hypothesis. Indeed, the chairman had claimed that successful union negotiations were necessary to pave the way for 'major changes in working practices which give the prospect of a better quality of service for a lower cost' (Dearing quoted in Post Office 1985: 3).

In order to reinforce the message of market-based cultural change throughout the organisation, a radical programme which aimed to increase the productive efficiency of the organisation by reducing real unit costs began in the late 1980s. The changes to working practices were underpinned by total quality management (TQM) principles adopted from the private sector and promoted by the government in an attempt to construct internal 'market discipline' across the public services (Jenkins, Noon and Martinez Lucio 1995). A number of senior managers had visited the United States to benchmark organisations that had successfully implemented TQM techniques and were strong candidates for the prestigious Malcolm Baldrige National Quality Award: Xerox, Westinghouse, and Motorola (Armistead and Machin 1998). Under a new chairman, Sir Bryan Nicholson, TQM was interpreted at the Post Office as a strategy for the continuous improvement of the service quality of the organisation in relation to customer needs:

> [TQM is] a long-term customer-driven strategy of change. It is not a "quick-fix" approach. It requires us progressively to create a working style and environment in which continuous improvement in the direction of meeting

> customers' requirements for a quality service is the norm. It also requires us to objectively measure our performance and to publish the results openly.
> (Nicholson quoted in Post Office 1989: 4)

To meet the need for service improvement, a dedicated corporate director was appointed in 1989 to 'turn strategy into action throughout the Post Office' (ibid). Like the restructuring of the company in 1986, the adoption of TQM practices at the Post Office took a formal and top-down trajectory. Senior managers and supervisors were exposed to TQM principles at five-day workshops first and then they, in turn, were responsible for supporting the cascading of the methods to operational employees lower down the organisational hierarchy (Hooper 1997). This formal approach to organisational change was typical of the rule-based and regulatory institutional context of the public sector (Jenkins, Noon and Martinez Lucio 1995).

By embedding a TQM approach within the organisation's belief system, the Post Office sought to unite employees in achieving the common goal of meeting customer requirements: 'Employees are expected to rally around the concepts of quality and customer needs and fulfil the unitarist ideology of working towards a common approach which is highlighted in the business mission and value statement' (Jenkins, Noon and Martinez Lucio 1995: 90). In order to support the internalisation of these values, a convention of monthly team meetings was established across the organisation, and staff views would be sought through an annual business questionnaire (Post Office 1989). Along with the implementation of TQM principles, the mechanisation project, thwarted by the union in the 1970s, eventually resumed in the 1980s allowing the automated sorting of letters to increase from 10 to 61 per cent over the decade (Parker 1994). By the early 1990s, the Post Office was the most profitable postal operator in Europe.

As a stand-alone business unit within the Post Office, Royal Mail underwent a further restructuring exercise of its own in 1992. The sixty-four national districts of the business were rationalised into nine semi-autonomous regional divisions, each responsible for its own financial accounting and customer management. This structural change was accompanied by the separation of the firm's core operations into delivery, processing, and distribution systems. This 'functionalization' of operational practices was introduced to reduce the overlapping of roles and to facilitate 'greater devolvement of managerial capability down the hierarchy' (Jenkins, Noon and Martinez Lucio 1995:

90) by reducing the number of hierarchical tiers between the chief executive and postal worker from nine to six through 3,500 voluntary redundancies. Senior managers legitimised such changes by claiming that structural inefficiencies were not compatible with the impending competition that threatened to enter the postal market. The firm's senior managers used the TQM theme of continuous process innovation – which had became an explicit aim of the Post Office's mission statement – as an underpinning reason for restructuring the firm in order to achieve 'the meshing of the organizational values and philosophy to its structure' (Jenkins, Noon and Martinez Lucio 1995: 90).

In the new, less hierarchical structure, employees were cast as key actors in improving the Post Office's competitive position in relation to the threat of new private firms entering the postal market (Crosbie 1994: 19):

> Every employee is an ambassador for Royal Mail. They have the added importance of acting as eyes and ears for the business and can warn of problems before they arise in addition to keeping watch on the competition. Knowing what is going on in the marketplace can be vital in fending off a rival.
>
> (quoted in Jenkins, Noon and Martinez Lucio 1995)

Thus, while the approach to organisational change was a formal and managerially led process, the anticipated benefits of a leaner and flatter organisation would be the more efficient mobilisation of the knowledge of the organisation's wealth of frontline employees through the functional structure of the firm. This managerial desire to capitalise on the knowledge of operational employees is not far removed from Brown and Duguid's (1991) claim that the communities of an organisation, if recognised and strategically aligned, are a potentially valuable source of competitive advantage and innovation, being engaged in continuous interaction with the organisation's environment and everyday sense-making. Although day-to-day 'teamworking' practices were officially blocked by the trade union because the need for non-managerial team leaders would undermine the social arrangements of the shop floor (Overell 1996), temporary quality improvement project teams, each composed of six co-workers, were devised in a variety of operational areas to increase efficiency through the innovation of specific work processes (Jenkins, Noon and Martinez Lucio 1995). The empowering of staff to engage in developing the processes with which they work was a managerial initiative created to make employees 'feel that their ideas and opinions are important and valued and the climate is one of ownership and

accountability' (ibid 94). The process innovations achieved through the work of the teams – such as improving the safety of delivery staff and employee communication – were showcased through an annual teamwork exhibition: 'a communion for quality conscious employees and a revelation for the converted' (Jenkins, Noon and Martinez Lucio 1995: 95). Although the explicit aim of this event was to celebrate and disseminate best practice, it could also be interpreted as one element in a wider internal marketing exercise that was designed to generate support for organisational change, particularly in the face of strong union opposition to new working arrangements.

Despite the rise of a range of human resource empowerment initiatives – including the provision of opportunities for frontline employees to undertake training for management posts (People Management 1995) – increasing the productivity of workers and the efficiency of processes remained at the centre of Royal Mail's corporate strategy at this time. The organisational restructuring of Royal Mail in 1992 was accompanied by the introduction of a number of quantitative measures for assessing productivity across the operational sites of the organisation. Using Taylorist work-study techniques, Royal Mail developed a measure of labour productivity and then created an indicator of 'best practice' to compare offices with different levels of automation. Local managers were then set productivity improvement targets, which rose by over 20 per cent nationally between 1990 and 1996 (Armistead and Machin 1998). Although the productivity targets were successful in generating efficiency gains, the local nature of the measurement techniques, however, caused a conflict among operational functions, and even between work areas within individual offices. This was because the measurement system was tied to specific processing tasks rather than the end-to-end process of collecting and delivering mail, which formed the basis of published quality of service results:

> the functionally applied productivity measurements and targets were driving functions to improve, often at the expense of business-wide performance, and discouraging improvement across the whole pipeline process. [...] The weaknesses included cross functional projects and initiatives failing due to lack of ownership and a reluctance to work together. Functions struggled to overcome their differences and they remained essentially vertically focused. This was compounded by the functional productivity measurements.
>
> (Armistead and Machin 1998: 331)

Thus, there was a tension between initiatives that aimed to promote local ownership and accountability, including the teamworking initiative described earlier, and the need

to standardise processes to increase productivity through the whole 'pipeline' by ensuring the coherence of a collective organisational system. The vertical focus of the operating functions, and lack of integration at the interfaces among them, was confronted with a business process development project that focused on improving the whole mail pipeline process by increasing efficiency from the point of collection to delivery. The initiative – which involved the mapping of the pipeline in process flowcharts and identifying areas for improvement at functional interfaces – could be interpreted as a cross-functional 'boundary object' (Star and Griesemer 1989) that 'aimed to remould the operational functions around an integrated product pipeline, with a focus on effective and co-ordinated management' (Armistead and Machin 1998: 331). This end-to-end approach 'recognised that the interfaces between and within the functions are key in providing a quality service to customers' (ibid). The purpose of the project was to instil in employees the importance of cross-functional working and the broader productivity context within which their own 'local' work took place. Following the success of the reification of the pipeline process, other organisation-wide managerial processes and standards, including the utilisation of face-to-face team meetings for cascading information from senior managers and the standardisation of project management techniques for cross-functional projects, were introduced to raise efficiency by improving the internal coherence of the key operational processes within the firm.

By the mid-1990s, the creation of a decentralised organisation and enactment of an increasingly commercially oriented culture seemed to be at odds with the public sector status of the organisation, and there were regular calls for the Post Office to be privatised from both internal sources and the business media (Post Office 1994; Senior 1993; Economist 1994a 1994b 1995). In particular, the burden of a government-controlled external financing limit, which limited the level of profit that could be reinvested in the firm, was thought to be putting the Post Office in a precarious position in an increasingly competitive communication market in which the facsimile and email were becoming compelling alternatives to the postal system. After intensive negotiations with the UK Board of Trade, the government agreed to relax the Post Office's capital investment limit in 1995. The then chairman, Mike Heron, reacted positively to the decision: 'For the first time we can now see possibilities for a new, more commercial framework in which the Post Office can turn its vision into firm plans

and establish a new culture for the benefit of customers' (quoted in Direct Marketing 1995: 6).

With this new level of financial flexibility, the Post Office sought to establish itself as a worldwide logistics system within what was perceived to be an increasingly global and integrated media market. Building a global distribution company was thought to be central to capitalising on the rise of e-commerce and, in particular, internet retail. Accordingly, the chief executive at the time, John Roberts, claimed that in order to compete 'successfully in a global postal sector [...] posts must become complete distribution companies with global reach. Global capability will be crucial to success' (quoted in Bartram 2000: 56). At a cost of £500 million, the Post Office made numerous acquisitions and formed a number of joint ventures in order to establish a presence in the US and European postal markets (Export Today 2000). At the same time, large postal carriers, such as DHL and Deutsche Post, were making significant acquisitions in the UK courier express delivery market (Business Europe 1999). By 2001, the Post Office had emerged as a major player in the international mail market, having established or taken ownership of 19 companies around the world (Consignia plc 2001).

Financial freedom also allowed the Post Office to launch a formal strategy in 1996 that was concerned with establishing an 'innovative culture' across the organisation (Whitehead 1999a). This move was initiated in response to the challenges presented to the organisation by the proliferation of competing communication technologies and the continuous threat of the liberalisation of its core markets. There were three main products of this strategy: a knowledge management focus; the establishment of an innovation fund, leading to the creation of an innovation laboratory; and an intention to become a 'media owner' in the advertising industry.

The decision to focus on knowledge management stemmed from the belief of senior managers that the intellectual assets of the Post Office would become as important as the physical ones in a competitive market environment (Hepburn 2000). A knowledge director was promoted to the organisation's board and an existing internal consultancy unit within the Post Office was reorganised in line with knowledge management principles to integrate the expertise distributed across the organisation (Hepburn 2000). The autonomous consultancy unit consisted of 250 employees, working in a number of

practitioner groups with different sets of technical capabilities, who were recruited to work on internal client projects and assignments. The knowledge management communities were linked by a knowledge database that included a directory of contacts across the business and catalogued the skills and assignments accomplished by each internal consultant. The consultants were expected to allocate 30 per cent of their time to conduct research and record information: activities which were recognised in the bonus structure (Hepburn 2000).

Senior managers within the unit sought to foster a variety of collaborative practices within the consultancy, including reflective learning and experience-sharing activities. The aim was to extend these practices outside the consultancy, as the employees throughout the Post Office were thought to possess a vast store of tacit knowledge:

> They have a great deal of knowledge about everything from how to get mail from A to B, to how we use our people to get us through the Christmas rush. A lot of that knowledge is contained in documents, manuals, reports and so on, but there is also an awful lot more that isn't written down anywhere. It's all in people's heads. [...] Everything about the Post Office can be replicated by any other organisation except one thing; [...] The knowledge of our people cannot be bought, and it's that vital ingredient that makes the whole thing work.
>
> (Post Office Knowledge Consultant quoted in Whitehead 1999b: 68)

Guided by this belief, the aim of the knowledge management group was to generate learning by 'capturing as much of the vital data as possible' (Whitehead 1999b: 68) that was stored as tacit knowledge in 'people's heads'. For example, one technique used to capture the knowledge of a departing member of staff or to retrieve the knowledge that consultants had acquired after participating in a significant project would be to conduct a one-to-one 'knowledge interview'. This was a time-consuming and costly technique that, in one case, reportedly lasted for seven hours and resulted in an eighty-page transcription of speech (Whitehead 1999b). Following the interview, a report would be written and a 'knowledge map' of the participant would be produced. Although they were expensive to administer, use of the interviews following significant projects had apparently saved time and money. The zealous codification of knowledge led to the development of 17 intranets and 300 databases across the Post Office (Hepburn 2000). Given the fragmented distribution of a large volume of information, a senior consultant did admit that, 'Even with a successful knowledge management process and culture, our information sources may still be hard to find' (quoted in Hepburn 2000: 9).

The internal consultancy disbanded during a functional restructuring exercise in 2000[25]. Although the practitioner groups had developed technical capabilities through the accumulation of codified and tacit knowledge (for example, contract and project management 'best practices' were documented in knowledge repositories and the consultants gathered expertise through engagement in a range of cross-functional projects), the cost of developing these skills through investment in professional qualifications, the production of an in-house quarterly journal and conferences, a generous bonus structure, and collaborative technologies proved too costly to sustain when the Post Office began to make a loss at the turn of the century[26]. While many of the consultants continue to work in functional roles in different parts of the organisation (including finance, marketing, and technology units), specific knowledge management ventures now tend to be undertaken through temporary cross-functional teams or with the specialist support of external management consultancy[27].

The second product of the innovation strategy was an innovation fund that made available £3.4 million of capital to support new technology projects that were suggested by employees within the organisation (Radzin 2001). According to a member of the research group responsible for its administration, the fund was established in order to mobilise the creative ideas that were held by frontline employees (quoted in Radzin 2001: 71): 'It is not necessarily a company's strategy director and managing director who have all the good ideas, [...] It's often the people on the front line, and our innovation fund is a way of tapping into this resource'.

The scheme, which is based on a similar employee-suggestion scheme used by the Japanese car company Toyota, had reportedly funded over 100 technology projects within the first two years of being established (Whitehead 1999a). A significant invention of the fund was the construction of a dedicated creative space dubbed 'The Innovation Lab' in 1998. 'The Lab' was built in the leafy grounds of the Post Office's training and development centre in the English Midlands. The Lab runs professionally facilitated sessions that enable small groups of employees to engage in creative problem solving, business visioning, relationship development, business simulations, and scenario planning. According to the blurb on a promotional leaflet:

[25] Interview with RM1, sales manager, marketing function, (03/08/04).
[26] Interview with RM2, product manager, marketing function, (20/01/04).
[27] Interview with RM3, former knowledge consultant, finance function, (19/01/04).

> The Lab is a radical and creative place that has been designed to give people the opportunity to unlock, explore and resolve difficult business issues. It provides an alternative space that can excite, challenge and focus innovative thought, engaging people in behaviours different to their normal way of working.

The Lab has a number of features designed to promote and support creative thinking: 'whiteboard' walls for sketching out ideas or concepts; computer pods for inputting ideas that enable anonymous brainstorming; a series of themed debating rooms with various toys to promote play, including Rubik's cubes, finger puppets, and beach balls; and the presence of sofas, coffee machines, fruit bowls, palm trees, and treasure chests. All of these features combine to create an affective and non-hierarchical space that bears little resemblance to traditional Post Office working environments. As we saw in Chapter 3, the creation of a space designed to promote creativity resonates with the tendency among a growing number of large corporations that are aiming to exploit space as part of their innovation strategies: from the use of performative knowledge in outdoor management training courses to the incorporation of traditionally high-interaction spaces into office buildings to promote everyday sociality such as bars, coffee shops, and town squares (Hinchliffe 2000; Zelinsky 2002; Thrift 2005).

Through a series of interviews with managerial and technical staff associated with The Lab, Lewis and Moultrie (2005) report that the creative space had been used effectively by project groups to support the development of new products and services, manage internal and external relationships, and engage in strategic planning. One of the managers interviewed claimed that the dislocation of The Lab from the normal office environment created an atmosphere conducive to creative problem solving with 'fewer conflicts because participants leave traditional animosities (e.g. hierarchy, experience based, and functional) at the door' (quoted in Lewis and Moultrie 2005: 78). However, during the second year of the renewal plan, control of the facility transferred from Royal Mail's technology research group to the human resources department as the former group was restructured and downsized. In the time since this function has taken ownership of the space, the emphasis has reportedly moved away from exploratory activities (for example, showcasing new technologies) towards more routine practices, such as staff training and business development (Lewis and Moultrie 2005). Furthermore, in order to justify the operational costs of maintaining this space in an efficiency driven environment, The Lab is actually hired out to external organisations

more often than it is used as a creative space for internal projects[28]. At present, rather than being able to link the lab to any tangible impact on the internal working culture, 'perhaps the most significant benefit [...] is the degree to which it is a physical reinforcement of the strategic intent of the organization to be innovative or creative' (Lewis and Moultrie 2005: 81). With some 190,000 employees, Royal Mail would need to produce a series of similar creative hubs in order to build sufficient capacity to effect a change in the routine working patterns of the majority of staff.

The final product of the innovation strategy was the development of an infrastructure that would enable Royal Mail to act as a 'media owner' in the advertising industry. In tandem with the strategic use of The Lab to position the organisation as an increasingly creative company, the emblematic use of space was extended with the design of a new office building that aimed to symbolise Royal Mail's intention to become an established provider of advertising-related services. In the early 2000s, Media House was built in central London's 'media land' to give Royal Mail high visibility in the direct-marketing industry (a key source of postal revenue[29]). As a convenient location for advertising agency representatives and key industry influencers to visit, the building was designed to act as the organisation's 'shop window' in the advertising industry. Media House would become a space where training in 'below-the-line' or direct advertising, specialist consultancy advice, and face-to-face meetings with knowledgeable experts would be offered to advertisers. In order to increase the credibility of Royal Mail in the advertising industry, a number of sales consultants with expertise in direct marketing were recruited to work at Media House and a number of partnership arrangements were established with leading advertising agencies in order to allow Royal Mail to offer a range of marketing tools to clients[30].

Embodying the desire to influence a radically different market, such a place needed to nurture the type of culture that 'external visitors will empathise with and perceive as combining positive elements of both "media" and "Royal Mail" [...] Marketing's culture will need to be distinct from those of other current and previous market units'[31]. One element of developing a culture able to command greater credibility in the

[28] By contrast, in the two years following The Lab's opening in 1998, 40 per cent of the 8,500 visitors were reportedly from outside organisations (Radzin 2001: 71).
[29] The volume of direct mail doubled between 1984 and 1994, accounting for 16.9 per cent of the mail volume handled by the Post Office by the end of this period (Direct Marketing 1994: 65).
[30] Interview with RM4, Media House director, marketing function, (09/01/04).
[31] Background of Requirements, Media House Business Case documentation, 2001.

advertising industry was to design an office space able to foster more creative ways of working among the marketers and sales staff who would work there and interact with visiting clients. According to a case-study of the office on the website of the agency responsible for its interior design[32], the office represented a break with tradition for Royal Mail:

> Designed with this discerning audience [large advertisers and their advisers] in mind, Media House is a radical departure from the conservatism normally associated with Royal Mail. [...] we helped to define a contemporary and informal feel for the building. We then created an identity for the centre which is expressed throughout the modern designer interiors as compelling statements of the effectiveness of mail media.

Within the company, the office was alleged by some to have been designed in reaction to, as a senior manager told me in interview, the 'inferiority complex' that Royal Mail had about not being perceived as a 'sexy company'; one where the workers were engaged in a 'grungy job'[33]. Certainly, Media House feels and looks different from other Royal Mail office buildings. The office has a modern feel, effected by design features including: an open-plan design that enables high visibility of activity across the office workspace; magnolia walls that are illuminated by ceiling-mounted spotlights; uncluttered desk clusters that are designed for intimate forms of working and are equipped with technologies, portable telephones and internet access points; a number of centrally placed meeting rooms with minimal screening that reveal marketers involved in interaction and debate; a touchdown area to the rear of the main office that is furnished with round café-style tables and an Italian coffee machine that expect informal interaction and sociality; and a corridor connecting the office and touchdown area which narrows and pauses the circulation of workers between the two areas, thereby encouraging phatic communication and potentially serendipitous encounters.

The design of the office space does promote interaction. The modular desk clusters draw teams of marketers into close proximity. This intimacy catalyses interaction among neighbouring marketers and thereby reinforces mutuality among team members who share the same functional team. Marketers develop social relationships that are the product of daily cycles of sociality in which technical debate, gossip about colleagues, jokes, and general 'office banter' take place around desks, and in other areas of the

[32] Website address withheld to protect anonymity of organisation, site visited on 04/10/04.
[33] Interview with RM5, senior project manager, operational function, (06/02/04).

office where marketers encounter one another. Although it is difficult to measure the creative worth of the space directly, comments made in interview by a marketer who works at Media House seem to provide anecdotal evidence of the interactional value of the office: 'you meet people, talk about things, and improve your knowledge on an ongoing basis; just by being able to because people are around [...] and being able to have a corridor chat or a ten-minute chat or see my boss. One is the input and the other is making it a two-way thing and bouncing ideas'[34].

Notwithstanding these investments in knowledge management, creativity, and business development in the latter half of the 1990s, Royal Mail reported its first after-tax loss for 24 years in the year 2000. The loss of £264m was attributed to a number of factors, not least of which was the £500m investment required to make the acquisitions necessary for penetrating the US and European postal markets (Bartram 2000). However, the losses realised in 2000 were symptomatic of three main problems that developed during the 1990s. These all stemmed from the public sector status of the organisation. First, by abstracting one million pounds of revenue a day under the external financing limit until 1995, the government prevented the Post Office from reinvesting all of the surplus revenue it did make in automation projects and new technologies which resulted in the relative escalation of operating costs (Post Office 1994). Second, in not permitting the price of stamps to rise in accordance with the rate of inflation from 1995 until the end of the decade, the government cost the organisation a further £530 million in revenue (Economist 2002)[35]. Finally, despite attempts during the 1980s and early 1990s to reduce the number of hierarchical tiers within the company and inculcate positive leadership among middle managers, a former senior executive at Royal Mail claimed that bureaucracy continued to inhibit innovation at the turn of the century: 'the corporate culture is not what is needed for running a commercial business [...] There are layers and layers of management. The bureaucracy is so entrenched that even if you come with good intentions you get nowhere' (quoted in Beckett 2002: 76).

Motivated by the tensions associated with the public-sector status of the organisation, the UK government revealed in 1999 that the Post Office would be transformed into a public limited company (plc) and that competition would be introduced across all postal

[34] Interview with RM6, project manager, marketing function, (01/07/04).
[35] The price of a second class stamp was in fact reduced by one penny in 1999 (Royal Mail 2002a).

services (Economist 1999). However, the company would remain wholly owned by the government and subject to state regulation. On 26 March 2001, the Post Office became a plc and was renamed Consignia to reflect this change in status. An industry regulator, the Postal Services Commission (Postcomm), was established to manage the liberalisation of the postal market, issuing licences to private companies and thereby allowing other organisations to compete in the provision of postal services[36]. As the incumbent organisation would still be required to provide a universal postal service in the liberalised market, Consignia feared that the price controls imposed by Postcomm on philatelic products would weaken unfairly their competitive standing (Consignia plc 2002a).

Despite the change in status, a record operational loss of £318 million was made during Consignia's first year as a limited company (Consignia plc 2002b). Coinciding with the publication of the accounts, the company announced that it would be renamed Royal Mail Group due to a negative response to the change of name among employees and media alike (Schouller 2002; Kleinman 2002). In response to the accumulation of losses since 2000, the managerial board took on a more commercial orientation and the company embarked on a period of 'restructuring for recovery'. Allan Leighton, credited with helping to turn around the fortunes of a major supermarket in the 1990s, became Royal Mail's new chairman in March 2002. On the day of his appointment, Leighton announced a three-year renewal plan that aimed to return the business to profitability by reducing gross annual costs by £1.4 billion by April 2005 (Consignia plc 2002c). Ending the desire to become a global distribution company that had underpinned the acquisition strategy of the 1990s, the restructuring plan would enable Royal Mail to become 'world-class, not world-active' (Leighton quoted in Economist 2002: 86). This aim would be realised through the fulfilment of four explicit goals: make the business a great place to work; improve customer service; return to profitability; and deliver positive cashflow (Consignia plc 2002d).

To deliver these objectives, Leighton began by restructuring the company's board, recruiting seven external directors with private-sector experience in technology, retail, finance, and advertising (Royal Mail 2002b). Adam Crozier, the modernising head of

[36] In January 2003, licences were granted to operators delivering bulk mail representing 30 per cent of the value of the mail market. In April 2005, the bulk threshold was lowered so that 60 per cent of the mail market is open to licensed competitors. In January 2006, all restrictions on market entry were lifted by Postcomm.

the Football Association, became chief executive in place of John Roberts, who had been an employee of Royal Mail for 35 years (Royal Mail 2002c). Justifying the financial burden of the private-sector appointments, Leighton linked corporate performance to the composition of the top management team of the company (quoted in Royal Mail 2002d):

> Royal Mail's three-year recovery plan is the biggest challenge the company has faced and it's one of the great management challenges in UK business. We are determined to create a great working environment, improve up customer service and restore profitability. [...] The calibre of the Board will be crucial in achieving the recovery plan. I'm confident we are getting the right people to deliver our stretching goals.

To meet the goals articulated in the renewal plan, the company embarked on a group-wide restructuring exercise. This involved: the voluntary redundancy of 30,000 staff; the outsourcing of non-core activities; the downsizing of the Parcelforce business; and the closure of 3000 sub-post offices. The plan to rationalise operations by moving to a single daily delivery of mail in 2004 would also save the company £350 million per year (Consignia plc 2002d). As well as these cost-saving measures, the penny rise in the price of stamps agreed by Postcomm in February 2003 was predicted to generate £750 million in revenue (Royal Mail 2003a).

To soften the effects of the redundancy programme and to resolve the long-standing tension between the trade union and management, making Royal Mail 'a great place to work' became a key priority:

> Instead of a well-paid, highly motivated workforce and an efficient operation, we've got low paid employees, high operating costs and low morale. Being able to give our people a better reward for the work they do will lift morale and, crucially, this will boost customer service. In addition, management mistakes have been made over a number of years, including a failure to resolve deep-rooted industrial relations problems.
>
> (Leighton quoted in Consignia plc 2002d)

A number of measures were designed to improve the everyday working conditions of employees. First, a 'Firstline Fix' scheme was introduced which provided operational and non-operational teams with a budget to enhance their local working environment. Second, in order to increase the level of communication throughout the hierarchy, team leaders were instructed to engage in weekly 'Work Time Listening & Learning'

sessions with their teams. These half-an-hour forums were designed as a vehicle through which teams could discuss local issues, engage in regular dialogue, and find rapid solutions to problems. Third, in order to boost morale, the Board introduced a 'Share in Success' scheme through which every employee would be awarded a £1000 bonus if Royal Mail made a £500 million operating profit in the financial year ending April 2005, coinciding with the end of the renewal plan (Royal Mail 2002e). Finally, following intensive negotiations with the trade union and the impending threat of a national strike, an increase of 14.5 per cent in the basic pay of operational staff was agreed in September 2003 (Morgan 2003).

By the end of the first year of the renewal plan, Royal Mail had managed to reduce the annual loss in day-to-day operations from £318 million to £197 million, largely through the outsourcing of the firm's information technology function and the voluntary redundancy of 16,600 staff (Royal Mail Holdings plc 2003). Efficiency was increased as days lost through strikes fell by 90 per cent: the best year for industrial relations in a decade (Royal Mail 2003b). However, an unofficial strike across London during the autumn of 2003 would be blamed for Royal Mail's failure to meet any one of Postcomm's 15 quality-of-service targets at the end of the following year (Royal Mail 2004a). The industrial action generated estimated costs of £100m in compensation payments and Postcomm fines (Gow 2004). Having averted an official strike, the chief executive is reported to believe that the level of unrest among operational employees is due to a lack of trust in both the new, highly-paid management team and the leaders of the trade union, the latter being perceived to be pursuing an 'overly political' agenda (Morgan 2003). Whatever the underlying reason for the unofficial walkout – whether this be a dispute over pay, dissatisfaction with working conditions, discontent with the speed of the organisational restructuring and the scale of redundancies, or distrust of the new managers and trade union leaders – the possibility of further industrial action represents a potent threat to customer confidence and loyalty in a competitive environment.

While the operational changes appeared to undermine Royal Mail's quality of service (at least temporarily), the need to maintain current sources of revenue (exploitation) as well as identify and exploit new sources of income (exploration) remained of critical importance in a liberalising market. Although successive restructuring exercises inhibited the knowledge management strategy and the initiatives developed by the

technology research group in the late 1990s, Royal Mail continued to focus on innovation through market development strategies, including the drive to become a credible 'media owner' in the advertising industry. In the pursuit of this strategy, the marketing teams based at Media House would remain key actors in the development of a new organisational capability and the process of innovation.

The market development strategy involved the provision of business-to-business solutions along the 'value chain' of mail. This consists in vertically integrated activities such as data and media services, print and production, and customer response management capabilities, that take place prior or subsequent to the organisation's core competence in postal collection and delivery. The disclosure of the value chain led to the creation of a number of new products and services, including a web-based service that provided a platform for small businesses to design and manage mailshot campaigns, the development of which is described in Chapter 6. While the initiation of a media ownership strategy preceded the privatisation of Royal Mail (Post Office 2000), the functional units designed to deliver this strategy were restructured twice during the renewal plan. The voluntary redundancy programme included the departure of 3,000 non-operational managers (Royal Mail 2003c), as Leighton sought 'to reduce the number of layers between the Board and the front line' (quoted in Royal Mail 2002b).

At the end of the first year of the renewal plan, a new marketing function was created which integrated two existing units that had been configured according to different customer segments, namely business, consumer, and media advertising. The restructuring involved the voluntary redundancy of 100 employees across the two functions (Royal Mail 2003d), including an 80 per cent reduction in the number of specialist advertising consultants who were recruited when Media House originally opened[37]. The new marketing director claimed that the functional architecture reflected the need to concentrate on the exploitation of commercial opportunities in the context of a liberalising market (quoted in Royal Mail 2003d):

> The new structures are all about becoming more focused, building our brand and keeping to clear priorities. Our marketing effort remains very focussed on business results, giving customers the right choices and levels of service as competition intensifies.

[37] Interview with RM7, senior advertising consultant, sales function (09/01/04).

At the end of the second year of the renewal plan, the marketing department went through a second restructuring exercise. This time, the review aimed to reduce the number of marketing roles by between 40 and 50 per cent (Royal Mail 2004b). As this radical programme of change was implemented during the period of my research, the consequences in terms of corporate learning and innovation were examined and are presented from managerial and communitarian perspectives in Chapter 5. Exposure to the restructuring exercise proved to be an ideal opportunity to assess the efficacy of a top-down managerial intervention mechanism and provided a context through which the role of communities and situated learning could be examined in relation to a radical programme of change.

In summary, the review of the commercial activities and innovation strategies employed by Royal Mail over the last thirty years would seem to indicate that the managerial culture within this organisation has been conducive to authoritarianism and that corporate change has tended to be underpinned by a concern with efficiency and implemented through top-down managerial intervention programmes. The centralised mechanisms of governance and the systematic approach to organisational change within Royal Mail appear to be typical of the rule-based institutional context that is characteristic of the public sector (Jenkins, Noon and Martinez Lucio 1995). However, over the last thirty years, significant elements of learning did emerge in response to the strategies and processes that were devised to stimulate innovation and change. Most notably, a formal innovation strategy aiming to inculcate an 'innovative culture' within Royal Mail unleashed three products at the turn of the century: a knowledge management structure constituted in technical practitioner groups and codification systems; an innovation fund, resulting in the development of an affective space designed to promote and support group creativity; and a drive to become a credible 'media owner' in the advertising industry through the disclosure of value chain capabilities. From a competence-based perspective, with the impending liberalisation of the postal market and the construction of a formal innovation strategy, the mid-1990s could be interpreted as the period within which the governance imperative at Royal Mail shifted away from strategic management and towards the cultivation of dynamic capabilities. Rather than concentrating on the exploitation of the knowledge and skills associated with the traditional competence in postal collection and delivery, the strategic focus turned towards the maintenance and enhancement of capabilities

through investment in knowledge management, the establishment of a global logistical presence, and the formation of value chain and advertising capabilities.

While each of the initiatives noted above undoubtedly generated positive consequences for Royal Mail, they were all inhibited by a number of unintentional effects. First, the resilience of workplace unionism has been a reliable citation in accounts that document tension and conflict within Royal Mail and resistance to managerial programmes of change (Gall 1995). For example, the 'deeply entrenched unions' that Dearing noted when he became chairman of the Post Office in 1981 were not 'seized' by the restructuring and cultural change programme of 1986; they blocked the mobilisation of shop-floor knowledge through teamworking practices in the early 1990s; and they re-emerged in a dispute over pay and working conditions during the second year of the renewal plan. Second, a lack of capital due to the external-financing limit imposed by the government until 1995, and the losses accumulated from 2000 due to the excess of expenditure over revenue, limited the scale and duration of the managerial initiatives that were undertaken during these periods of time. Finally, bureaucracy and aspects of ineffective governance were at work in the mixed performance of strategies. While the formulation in the mid-1990s of a multifaceted innovation strategy in preparation for the liberalisation of the postal market demonstrated that management had become less cautious since the time when Dearing had become chairman, the lack of commercial experience that stemmed from three centuries as a government-run organisation undermined the translation of this strategy into innovative practice. Shortly before Royal Mail became a limited company in 2001, a leading expert on postal services, Dick Palder, argued that the management were undistinguished in the execution of strategy: 'Their top people are trained for thinking, making new visions and arguing their case with government, [...] But they've been held in check for government for so long, they're not so good at putting great ideas into practice' (quoted in Bartram 2000: 58). In particular, the attempt to exploit e-commerce by implementing a global distribution strategy while simultaneously endeavouring to protect the domestic market by launching a media ownership strategy appeared to be too ambitious a plan for an emerging commercial organisation to execute in practice.

The present chairman's approach to the governance of Royal Mail can be seen as an attempt to manage the three unintentional effects associated with the strategies of his predecessors. The chairman sought to alleviate the consequences of a series of

'management mistakes' with a radical programme of restructuring. Having created an uncomplicated plan for change and communicating this clearly to the organisation, Leighton intended to 'execute better than anybody else in the world' (Leighton 2002: 12). However, the execution of this strategy appeared to generate a further series of unintended effects. By concentrating on the iteration of the renewal plan and market development strategy through the firm's marketing communities, these effects are catalogued and examined in the forthcoming empirical chapters of this thesis.

Chapter 5

Managerial Cognitivism at Work

5.1 Introduction

This thesis has developed two distinct theories of organisational learning and innovation that now require thorough empirical examination. As discussed in the last chapter, each theory consists in a different set of propositions regarding the conceptualisation and governance of corporate learning and innovation. Tying corporate performance to the management of cognitive knowledge, the first theory proposes that organisations should develop competences by orchestrating collective learning through a variety of strategic intervention mechanisms, such as processes for exploiting external knowledge and devices for aligning organisational functions. Thought to have an equally significant effect on learning and innovation, the second theory suggests that corporate performance is linked to the everyday interactions and practices constitutive of specific socio-material settings, including functional groups, project teams, and workplace communities. Whether or not senior managers recognise and seek to manipulate this informal knowledge infrastructure, the practices that this infrastructure afford do influence learning and innovation, not least because of the effect that they may have on the performance of the formal intervention mechanisms.

Although there is a corpus of literature that draws on the first theory, and an emerging collection of organisational case studies that engages with aspects of the second theory, there have been few attempts to explore the relationship between the two theories using substantive ethnographic research. In relation to some of the questions articulated in the last chapter, further evidence is required to increase understanding of the governance implications that are associated with these two theories, and the relation between them. For example, how and when do senior managers create a strategic architecture, and with what consequences for learning? What role do communities play in the performance of the performance of this architecture? How are the formal hierarchy and communitarian practice related in the processes of learning and innovation?

This chapter addresses these questions by examining the effect of cognitive knowledge and everyday practices on learning and innovation during a period of organisational change: the restructuring of Royal Mail's marketing department in March 2004. The

chapter describes the restructuring process from two different perspectives. First, influenced by the competence-based approach to the firm outlined in Chapter 2, a managerial interpretation of the process is developed. The managerial vignette focuses on the impetus for change and the method through which senior managers designed a new functional architecture for the marketing department, including its structure and processes, and the subsequent communication of this architecture to the department's marketers. This vignette is analysed through a competence-based framework to reveal the event in terms of managerial cognition, the alignment of functions, and knowledge governance.

Second, influenced by social anthropological techniques, and underpinned by the non-cognitivist interpretation of knowledge developed in Chapter 3, the restructuring is described from the point of view of a team of marketers working within the department during the period of change. In the months following the implementation of the restructuring, this team needed to communicate the knowledge and capabilities it possessed to adjacent teams within Marketing and to other organisational functions, especially the sales department. Rather than being a straightforward process, involving the exchange of explicit knowledge to demonstrate the team's position in relation to the objectives and strategy of the marketing executive, the vignette shows that the accomplishment of this exercise depended on a whole manner of intermediaries – including monthly reports of activities, as well as joint team meetings and creative sessions – and involved combinations of cognitive and non-cognitive forms of knowledge. The analysis of the second vignette aims to evaluate whether, along with the input of managerial cognition and strategy, corporate restructuring is also 'produced in the local pragmatics of communication concerning "what it is to know what to do" as distributed within the reproduction and continuing creation of communities of practice' (Engestrom and Middleton 1996: 6).

Thus, the chapter divides into two broad parts. Sections 5.2 and 5.3 represent the managerial vignette and competence-based analysis of the restructuring process respectively. The focus shifts in section 5.4 to describe the event from the perspective of the marketers and social practice, followed by an analysis through a communitarian framework in section 5.5. In section 5.6, the chapter concludes with a comparative review of both descriptions of the restructuring process, and an assessment of the effect on learning within the department.

5.2 The restructuring of Marketing (1): managerial intervention

> We have become used to change, greater change than any other organisation in the UK. These changes are necessary to make us fit to compete with the competition in a year's time. There is a desperate need to become more innovative and creative with how we deal with our customers. We need more products and services that make people think differently. We need to focus on the customer and the quality of service we provide. Marketing is at the heart of what we do. Marketing has to work hand-in-hand with Operations to make sure our customers end up better off.

These are the words of Royal Mail's chief executive as his face appears on a large video-screen at the front of an auditorium within a conference centre in central London. He is addressing an audience of marketers who have been gathered together for the marketing department's 'welcome event'.

This half-day conference is taking place in May 2004, a month after the completion of the restructuring of the department. As discussed in the last chapter, the reorganisation has involved the voluntary redundancy of 50 per cent of the marketing function's staff. The rationalisation of the department is one effect of the chairman's goal of reducing the headcount of non-operational managers prior to commencing the final year of the renewal plan, a change programme that aims to return the business to profitability over a three-year period. The decision to reorganise the marketing department had been taken some six months earlier by the management board of the company, and it had been the marketing director's role to manage the restructuring.

Following the opening speech from the chief executive, an interview with the marketing director is being performed on stage for the watching audience. Each question is posed in a casual, conversational style: 'Why was the restructuring undertaken?' 'Two reasons', the director replied, 'firstly, we need to be more efficient; secondly, we need to be more effective. We need to work closer with Sales and Operations. The new structure gives people personally more headroom and space to work'. Towards the end of the previous year, the marketing director created a project team to manage the restructuring project: a newly appointed human resources manager; a senior member of the sales team, who was involved in the recent restructuring of the sales function; and a senior employee within the marketing function.

Although the exercise was part of a larger scheme being undertaken at group level 'to make the business leaner and better able to meet the demands of the competitive market'[38], the restructuring aimed to produce a number of benefits that would influence the discipline of learning within the marketing department (Figure 5.1).

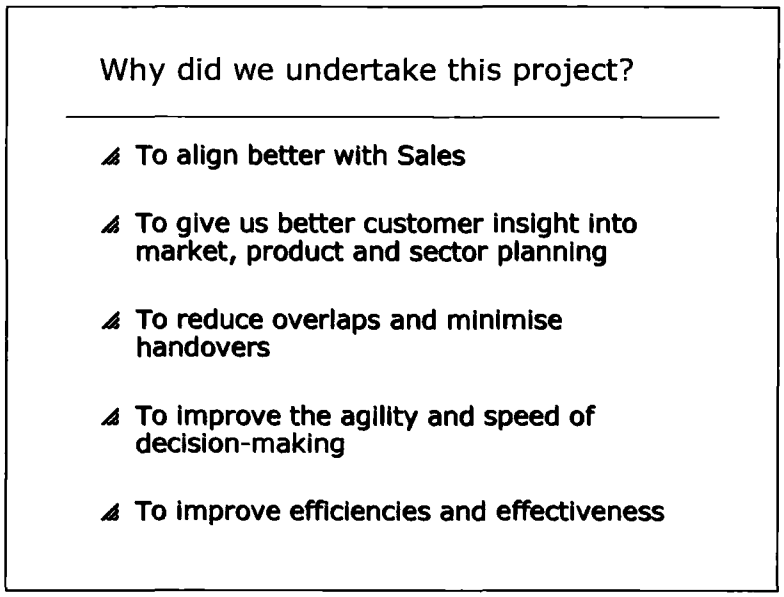


Figure 5.1. Marketing review briefing: why did we undertake this project?
Source: PowerPoint slide from team leaders presentation, 12 December 2003

The five objectives of the restructuring were constructed to address a corresponding set of problems associated with the then existing functional architecture. First, the marketing department needed to be realigned with Sales because the latter function had been reorganised in 2003 to focus on the different industry sectors of business clients, such as government and financial services. The shift in orientation of Sales, recommended by a major management consultancy, was generally recognised as a positive move, increasing the focus on customer needs and improving morale[39]. However, without the same input of consultancy knowledge, the marketing department was still organised according to different uses or applications of mail, rather than market sector need. The marketing teams were structured around postal services associated with advertising, financial transactions, consumer mail, goods distribution, and value chain activities. Unfortunately, as a member of the restructuring group stated in interview, organising the department according to the different uses of mail was preventing

[38] Team leaders presentation, 12/12/03.
[39] Interviews with members of the sales function, (RM8, 05/05/04; RM9, 11/05/04; RM10, 11/05/04; RM11, 11/05/04).

marketers from focusing on the multiple needs of each business client, thereby making it:

> difficult for the unit to work well within Marketing and also for it to work well across Sales because Sales are organised around vertical markets and sectors as opposed to applications. So within Sales they would deal with, say a bank, but that bank may use mail across all four of our applications, and have products spread across those, so it is difficult for us to work up customer propositions and implement them in Sales.
>
> (RM12, senior marketer, 05/04/04)

In order to create propositions that were attuned to the needs of different types of business client, the marketing department needed to be reorganised to reflect the focus on market sectors within the sales community.

Second, the logic of generating new products and services by mail application rather than market need was thought to be limiting the exploitation of customer insight, particularly the knowledge possessed by Sales. Marketing was perceived to be acting within a vertically oriented 'knowledge silo':

> They need to start connecting with the clients and they need to get out more. It's not about being in Media House and thinking up good ideas. They need to go out and engage the client. They're not connected. Too many people sat behind too many desks for too long. They should be coming to the leaders of the sales community and saying, ok, we've got some great ideas we want to test them with the client or, alternatively, we're actually short of ideas and we want to go and listen to a client. Tell me what it's all about. If you did that, you would start to develop positive links between Sales and Marketing instead of barriers. If Marketing were much more responsive to the request and Sales were more proactive in asking, it would be a much better environment.
>
> (RM13, client director, sales function, 13/05/04)

As the structure of the marketing department was not oriented towards the client face, the innovations that were produced within the department were not always aligned with market sector requirements because various flows of customer knowledge were not being drawn on and incorporated into product development cycles.

Third, as the marketing and sales departments were organised according to different imperatives, both departments were perceived to be performing a number of overlapping functions, including marketing strategy and client engagement:

> Before, what we had, was that we had Marketing pushing stuff out, it not really landing on Sales, so pretty poor deployment of marketing activity. You also had Sales thinking, Marketing don't understand what we're trying to do here and they're not doing anything with it therefore we are going to do our own stuff. So Sales were basically doing too much of their own marketing, not brilliantly either. Marketing were doing their own thing and, with it not landing on Sales, suddenly you've got wasted money.
>
> (RM14, development manager, marketing function, 20/04/04)

Due to the disconnection of the practices across the two departments, the cross-functional activities that are associated with the translation of client and market requirements into successful innovations were not well coordinated.

Fourth, the mode of decision making within the marketing department needed to be standardised because different teams appeared to be working in accordance with distinct processes. To a large extent, the variation in process can be traced back to the integration of two discrete business units to create a single marketing function at the end of the first year of the renewal plan (described in Chapter 4). The current director of marketing was appointed in early 2003 to manage the amalgamation of the existing business units. He later recalled in interview that a lack of consistency had remained a problem since that time:

> The two business units I inherited at that time were in some ways competing with one another. They did their own separate income forecasts, projections, product development, and they shared the use of the brand. From my experience of what I inherited, there were always four different ways of doing things, four different numbers that people could hide behind, and when you are trying to interact with other departments you have to be able to at least know which process you are following relatively consistently to be able to get it done.
>
> (RM15, marketing director, 08/09/04)

Viewed from above, as some teams were continuing to base decisions on different premises, this was undermining the coherence of end-to-end decision making and the level of accountability across the department as a whole.

Finally, the restructuring programme sought to increase the effectiveness of the marketing function. Although the fulfilment of this goal would depend on the accomplishment of the other objectives, an additional problem related to the level of technical marketing skills possessed by the department. In particular, the relative scarcity of marketers in possession of professionally accredited marketing qualifications

was cited as a concern. During interview, a member of the human resources function linked the absence of accreditation to the historic monopolistic status of the organisation, and claimed that the current impetus for change stemmed from the impending liberalisation of the postal market:

> We can't just have a big slice of middle management who do not have professional qualifications. It is what companies did about twenty years ago and Royal Mail didn't. We need to make sure that we do that, so that we don't get lost, we don't suddenly die out. I think the reason why it is happening now is because there is a risk that that could happen to the company. We recognise the need for change and we are doing something about it. It is not just a culture thing, if we want to employ high quality people then we need to make sure that we are creating them as well. Also, if you look at the direction that the business is going in: we are going to go into a competitive market that we haven't been in before.
>
> (RM16, support manager, human resources function, 13/08/04)

With the emergence of competition, Royal Mail would need to provide differentiated products and services to the company's traditional client base. The accomplishment of this shift would require a marketing department that was able to demonstrate a reputable level of marketing expertise and could, in time, attract new marketers, both graduates and experienced practitioners, with the necessary repertoire of skills into the department. In sum, the objectives of the restructuring programme aimed to address five problems associated with the traditional marketing architecture, namely (1) alignment (through translation); (2) insight (through specialisation); (3) overlaps (through rationalisation); (4) decision making (through standardisation); and (5) effectiveness (through professionalisation).

Given the overarching aim of increasing the cost efficiency of the whole organisation, and the specific problems within Marketing, a review of the unit began in November 2003. Having agreed the core objectives, the project team began the task of restructuring the department by 'working up' a number of principles of organisational design (Figure 5.2). This list of rules acted as a framework through which the team could structure their subsequent search activities. Each principle can be understood as an operationalisation of one or another of the five objectives of the restructuring programme. The first four principles issue from the objective of rationalisation, the reduction of overlaps. This set of principles is grounded in the reality that Royal Mail is 'a great failure' (Leighton 2002: 12); the chairman stated unequivocally that Royal Mail was 'haemorrhaging cash' and needed to change. All change must, first and foremost,

support the strategic goals of the renewal plan. There is no room for duplication; the management structure must be flat and flexible.

Figure 5.2. Marketing review briefing: organisational design principles
Source: PowerPoint slide from progress meeting, 11 November 2003

The fifth design principle of supporting coordination stems from the objective of realigning the practices of Marketing with the logic of organisation established within the sales function. As one of the objectives of the restructuring is to fashion new or different connections among Marketing and Sales, the accomplishment of this goal depends on the ability of marketers to learn to relate to Sales in new ways. From a top-down perspective, the marketers need to be informed of the proper relation to ensure that the two functions would operate effectively together. As I will go on to show, the attempt to teach the marketers the intended relation involved the deployment of a number of pedagogical tools, including organigrams and business process maps. The sixth principle that the structure should contribute to value goals gives expression to the restructuring objective of supplying market and customer insight. Royal Mail's value goal is to be the best postal organisation worldwide, as the market leader in the provision of mail-related services. With respect to this aspiration, Marketing's role is to provide the organisation with valuable commercial knowledge or insight. The final two principles are consistent with the restructuring objectives of standardising decision making and improving effectiveness through the professionalisation of individual capabilities.

Guided by these design principles, the project team entered a period of search or 'fact gathering'. They began this process with the performance of a series of one-to-one interviews with senior personnel from Marketing and Sales to obtain their perspectives on the issues and requirements for the reorganisation of the department[40]. The views expressed during these interviews were then rationalised by the team into key points of consensus and contention. In mid-November, these statements were gathered together onto a PowerPoint slide and presented to the marketing and sales directors for feedback. The interview process can be understood as an attempt to harness some of the tacit knowledge embedded within the upper tiers of the marketing hierarchy.

As well as generating information through internal consultation, the team also drew on external sources of codified knowledge. These included reviewing theories of organisation in marketing textbooks and conducting benchmark assessments of the marketing practices of other large organisations. As a member of the project team later explained in interview, this knowledge was then used by the team to generate a number of design templates for a new marketing architecture. Each of these options was scored against the restructuring objectives and the design principles:

> We brainstormed some ideas about the structure: we looked at what other companies do, so we benchmarked with other blue chip organisations; and we referred to marketing theories and textbooks. We started with about nine options of what the structure should look like. Then we basically scored the options against the principles and our criteria. From here, we got it down to two options which we presented back to the marketing and sales directors, and then we made a final recommendation in December. So we had about four to six weeks of scoping; we interviewed all of the marketing director's current executive committee along with some of the sales director's team, and took all of their views, individually.
>
> (RM12, senior marketer, 05/04/04)

In a second presentation to the marketing and sales directors in early December, the two leading structure options were outlined in line-structure templates. Each organigram showed lines of authority that fed down in strands from the marketing director at the top of the pyramid into five functional teams. Both options contained teams that were responsible for innovation (acquisition of new capabilities), brand (customer communications and research), and policy (commercial and economic strategy). Although the composition of these three teams had changed, the overall role of each

[40] I was also able to interview a number of the employees consulted during the review exercise, and their views therefore intersect with some of the quotations cited above.

would remain similar either side of the restructuring. However, the two frontrunners did differ with respect to the final two marketing teams that they proposed. These two teams held responsibility for the product architecture and the market interface.

The first option suggested that one of the teams should be responsible for the consumer and small business market, while the other team should be responsible for the large business market. The second option proposed that all of the mail products, both business and consumer, should be situated within one team and that the other team should be responsible for the relationship with different industry sectors. Following further meetings with the marketing and sales directors, the project team recommended that the second option should be proposed for group investment appraisal. This option was selected because the specified structure afforded clearer lines of accountability (specifically, the distinction between products and sectors); a greater focus on industry sectors (improving the level of customer insight and the degree of alignment with Sales); and the standardisation of decision making (fewer people would be involved with the product/sector line-structure distinction). The new functional structure, depicted in Figure 5.3, was signed off by the chief executive and approved by the central investment committee.

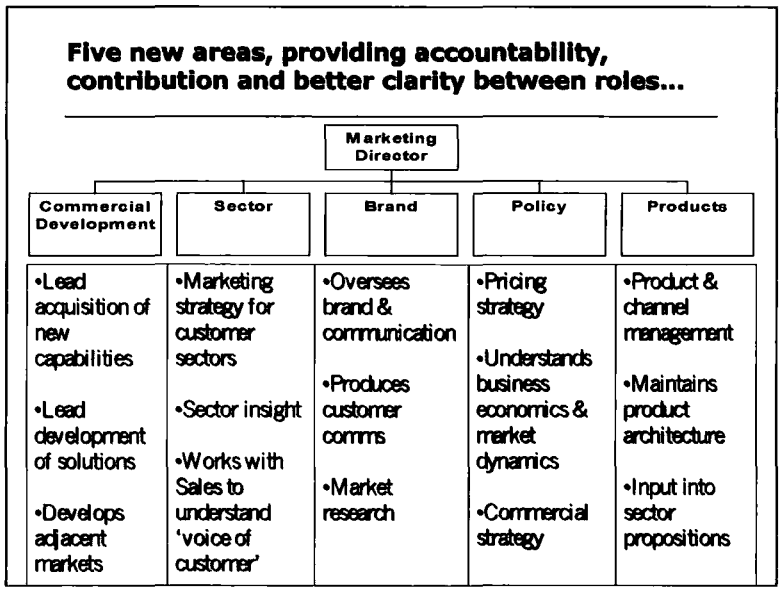


Figure 5.3. Organigram of new marketing structure: areas and responsibilities
Source: PowerPoint slide from team leader briefing, 12 December 2003, simplified to protect commercial confidence

The design template of the new marketing structure included a specification of the intended role and responsibilities of each team. The Commercial Development team, the

one within which I would be working and conducting research, was accorded the role of creating integrated solutions for large Royal Mail clients through the development of new capabilities and the management of alliances with partner organisations. Although this team fulfilled a similar role prior to the restructuring, the move towards the production of integrated solutions signalled a shift in emphasis, as the newly appointed director of the unit explained in interview:

> In terms of structure, one way of defining Commercial Development is by products e.g. data services, mailroom management, supply chain. Each strand has individual services and capabilities that we could sell on a transactional basis to existing or new customers. In the last restructuring, the rationale for formulating Commercial Development was to exploit greater opportunities that present themselves, particularly within existing customers, up the value chain. We want to become intimately involved in other aspects of that [value chain], that are antecedent to the actual process of mail distribution. In business terms, we are about defending the core revenues and profits by extension to other areas and deepening the relationship with those customers, and winning incremental business from new customers because of that new found capability.
>
> (RM17, director, commercial development, 14/09/04)

The direction of the unit was set to move towards extending the capabilities of Royal Mail, through the provision of mail-related solutions for key clients, in order to sustain client loyalty in the context of a liberalising market environment. On paper, this aim would be met through the working practices of five sub-teams within Commercial Development. The five existing teams, each responsible for a different set of products along the value chain, would be consolidated into three teams, and two new teams that were formerly situated within the operations and sales functions would be integrated into the unit. After the restructuring, three of the teams would be responsible for existing value chain products (data and media services, mailroom management, and logistics), a fourth team would work across these teams to generate client propositions that draw on these products, and the final team would extend the value chain through the development of new capabilities. Led by a team leader, each of the new teams would accommodate between four and twenty marketers.

As well as prescribing a functional structure for reorganising the department, the project team also drew up a number of business processes that were designed to illustrate how the various teams should coordinate their activities. These end-to-end business processes included procedures for investment appraisal, business planning,

communications processes, performance management, and solution development. A booklet of over twenty business processes was distributed to all marketers at the end of the marketing event, with each process represented in a separate process flow diagram. For example, for the development of value chain solutions, a significant responsibility in the role of members of Commercial Development, the process is divided into a number of sequential stages (Figure 5.4).

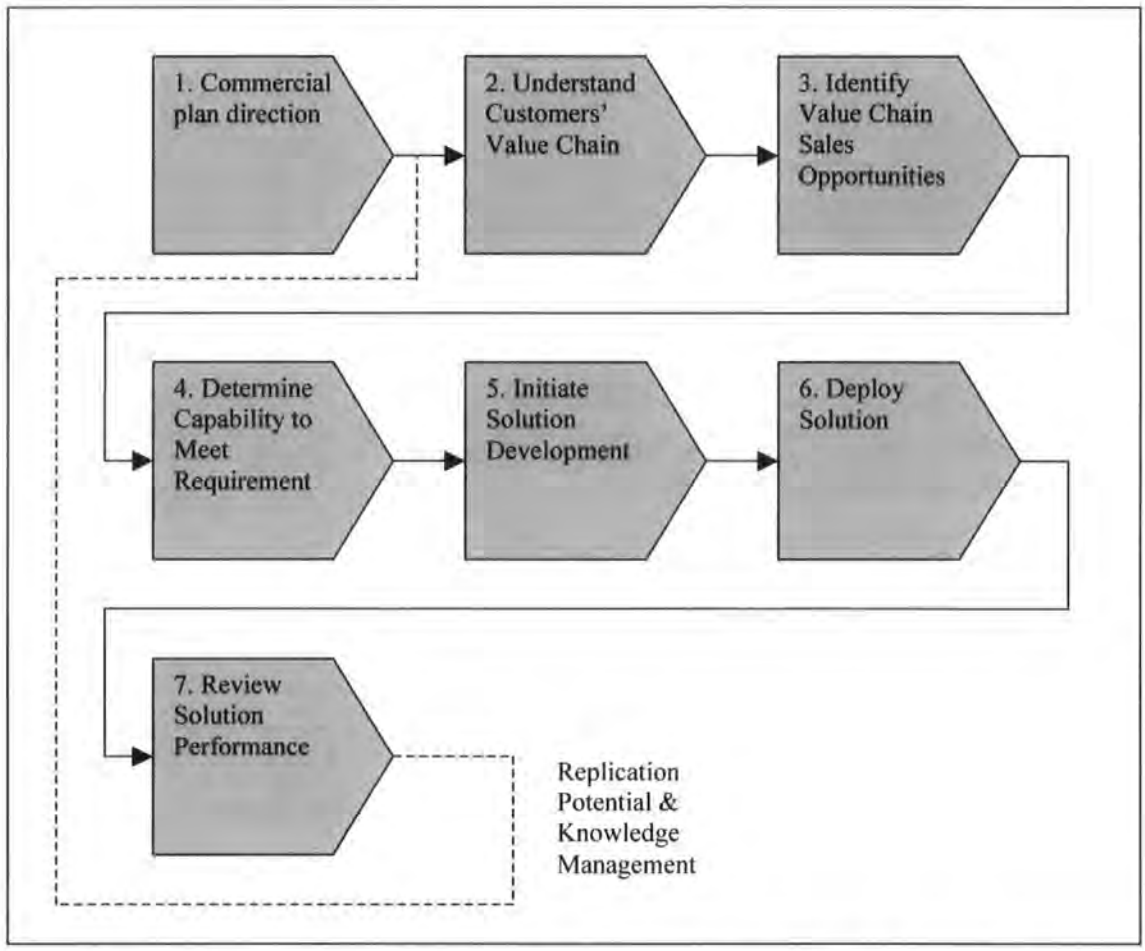


Figure 5.4. Business process for solution development, simplified to protect commercial confidence

The first stage in the process is the definition of a domain of solutions that is in the commercial interest of Royal Mail to develop. This sets the strategy and direction for the domain of marketing capabilities and is determined by the marketing director, and outlined in the commercial plan for the marketing department. Under this direction, the sales account handler for each client should seek to understand the value chain of their client and identify potential sales opportunities. Commercial Development then appraises the opportunity and decides whether the department possesses, or should acquire, the capability to meet the requirement of the client. If the decision is positive, then development of the solution is initiated with the client, and deployed. Finally,

following deployment, Commercial Development reviews the performance of the solution in terms of revenue, contribution, and effectiveness. This review is used to inform the future commercial direction for solution development. Thus, as outlined in the process map, the marketing director sets the strategic direction for solution development, and then Commercial Development oversees the development, deployment, and evaluation of solutions to meet sales opportunities that are within the scope of that direction.

Once the new structure and processes had been agreed, the new functional architecture was communicated to the marketers. The process of communication was underpinned by a triangulated strategy: regular emails from the marketing director to keep marketers updated on the progress of the changes; the archiving of various documents on the company intranet site to embed the new structure – the commercial plan, structure templates, and business processes; and the delivery of PowerPoint presentations and briefings to team leaders to take their newly forming teams through the changes.

The communication process has culminated with the welcome event in central London. Unlike the event that followed the previous restructuring, when the occasion had been used as an opportunity to inform the marketers of the latest sensibilities of the department, this time it was more about facilitating team bonding and engagement:

> Last year we held a Marketing conference. It was an all-day event, and unfortunately due to the number of presentations it became really quite one way, like transmit; there was a lot of information that we tried to get across and some attendees found it too intensive and therefore mind-numbing. What we are trying to do this year is a series of communications in advance of the launch event that will provide for the marketers all the information they need. For the conference itself in May, we will get the marketing director to spend the first half an hour reminding people of the key messages, and then spend the rest of the time having more fun. We will have three sessions, which will be completely different, so a team-building session, a motivational session, and a brand quiz session and then bringing everyone back together for a questions and answers session.
>
> (RM12, senior marketer, 05/04/04)

An external motivational firm led the team-building sessions. The enthusiastic facilitator aimed to 'energise' groups of marketers through a series of activities, including a 'mass massage' session, whereby participants were encouraged to turn to the individual to their right and perform a neck massage after asking the person whether

they 'like it hard or soft'. The marketers also performed a greeting game, in which they were required to walk among the seats of the auditorium and greet one another in a manner appropriate to other imagined circumstances, for example, meeting a long-lost friend or an important business client. The aim of the session was to relieve tension and encourage playful interaction among an audience that had recently been through a major programme of change and was low on morale.

In the final acts of the event, the marketing director is standing on the stage, addressing the marketing community, thanking them for their participation, and reiterating to them his oft-repeated maxims:

> Firstly, work together as one team
> Secondly, be professional towards each other, our customers and our colleagues across the business
> Thirdly, everyone should welcome the chance to be judged by our results
> Fourthly, keep things simple and focus on action – no more jargon
> Finally, let's not deny our business position – keep it real

The director first used these maxims when he managed the amalgamation of two separate business units to create the marketing department in 2003. Then, like now, the emphasis was on supporting the integration of new teams, underlining the importance of communication, and engendering recognition of the weak financial position of the organisation and the need for change. The director states that in the current business climate where costs were still having to be cut to make the targets of the renewal plan, 'being extravagant was not on'.

While the marketing director emphasised prudence during his time on stage, the sales director uses his turn to stir the audience by emphasising that they are a part of 'the biggest corporate turnaround going'. According to him, there is still a need to be more commercial and positive about the capabilities of the company. The sales director closes the event by calling for 'more collective passion and a "can do" attitude', to which the marketing director adds, 'yes, but not too much passion'. Although the restructuring had been accomplished, there was evidently some work still to be done on the alignment of Marketing and Sales.

5.3 Disclosing restructuring through a competence-based framework

As discussed in Chapter 2, organisational learning is generated through the creation of a strategic architecture by the top management team. This involves three top-down managerial activities: choosing a domain of competences based on the firm's core skills; communicating this vision to the rest of the organisation; and designing governance mechanisms that leverage the skills distributed across organisational functions. However, the articulation of this theory of organisational learning raises two critical questions. Firstly, do the top management teams of large organisations act in accordance with the principles of this managerial prescription, and with what effect on organisational learning? Secondly, having addressed this question, what are the consequences for organisational learning theory? The evidence presented in the managerial vignette will be used to evaluate the first question. Then, in the light of this evaluation, the consequences for competence-based theory will be assessed.

Did the top management team at Royal Mail create a strategic architecture for generating organisational learning? In order to address this question, the three managerial activities associated with the creation of a strategic architecture will be used to order the events described in the vignette. First, did managers choose a domain of competences based on an audit of core skills? The answer is both yes and no. It rather depends on the importance of the verb 'choose'. If we were to return to the mid-1990s, to consider this question from the perspective of the senior managers who made the initial decision to invest in the development of new competences (along the value chain of mail), the answer would probably be yes. Facilitated by the relaxation of the capital investment limit in 1995, Royal Mail were able to launch a formal innovation strategy that aimed to support the core competence in mail collection and delivery in response to a perceived threat of impending market liberalisation, a fear that had plagued the organisation since the opening up of the courier express market in the early 1980s. For the first time in decades, the top management team was able to measure the firm's core skills against those capabilities envisaged to be necessary to compete in an open market environment, and act to redress the imbalance. In a position to choose a new strategic direction for the organisation, senior managers sought to enact this vision by unleashing an array of products serving global distribution, knowledge management, and market development strategies. However, once these strategies became associated with negative

effects – the first losses recorded for 24 years in 2000 – the process of choosing future strategies would be informed and constrained by this experience.

Royal Mail is haemorrhaging cash. Management mistakes have left the business in a perilous state. Royal Mail is a great failure. The new chairman made these statements shortly after he was appointed in March 2002. A new reality emerges. In response to the accumulation of losses since 2000, Leighton announced a renewal plan that aimed to return the business to profitability over a three-year period. The innovation imperative would now be competing with a programme of 'restructuring for recovery'. Rather than focusing on collective learning, this plan was designed to improve morale through investment in working conditions, and reduce operational costs through redundancy, outsourcing, and downsizing. When the review of the marketing department began in November 2003, the guiding principle was to support the strategic goals of the renewal plan. The audit of the department was shaped by a rationalisation imperative.

Nevertheless, once this imperative had been defined, the project team were able to conduct a review of the core skills held within the marketing department and identify a new functional architecture. The way in which the team approached this task is analogous to the process of search outlined in March and Simon's (1958/1993) cognitivist theory of innovation. In this theory, the route to innovation is a formal search process with three elements: programme structure, search, and screening. The programme structure divides the innovation process into a series of sub-problems to be addressed and a procedural rationality, expressed in the design of a sequence of broad phases, for approaching them. With respect to the review of Marketing, the exercise was divided into different aspects, including information gathering through internal consultation, the accumulation of external codified knowledge, and the production of different structure options. These aspects were addressed in a linear fashion, beginning with fact gathering in early November and ending with a set of project recommendations in mid-December.

Next, according to this theory of innovation, individuals search for information of potential relevance for satisfying the goals associated with the programme. For the restructuring project, five objectives were defined: realign with the sales function; improve customer insight; reduce overlaps; improve decision making; and increase effectiveness. With these objectives in mind, the project team accumulated information

by conducting interviews with senior managers to acquire their views on the issues and requirements for the new department and by consulting marketing textbooks to generate a number of alternative functional structure options. By incorporating the views of a handful of existing marketers, the development of the new functional architecture also attempted to draw on the tacit knowledge that pertained to the department's existing routines. The contributions made by the senior managers had the role of outlining those routines which currently worked well (those with operational focus), those routines that could be adapted (management of products and sectors), and those which should be dispensed with (overlapping roles within and beyond Marketing).

Finally, in theory, the alternatives generated through search are screened for relevance with respect to the solution of the problem at hand. In the marketing review project, the structure options were scored against the organisational design principles, which oriented the group's decision-making processes by urging them to attend to the ways in which each option fulfilled the objectives, especially that of rationalisation. The evaluation process was also supported by oral feedback and guidance from the marketing and sales directors during regular progress meetings.

Thus, the final recommendation of the project team can be understood as the product of two conflicting imperatives. On the one hand, in the context of a liberalising environment, a key value goal of Royal Mail was to become known as a provider of postal services with reputable value. In order to achieve this goal, the top management team recognised the need to extend the organisation's domain of core competences – which was traditionally accepted as being limited to activities relating to mail collection and delivery – by acquiring new capabilities to underpin vertically integrated solutions, such as data and media services, mailroom management, and logistics. With respect to this innovation imperative, which was first defined in the mid-1990s, the organisation's marketing activities should be aligned with the sales department to exploit the customer insight held within the latter function and be attuned to the needs of business clients in order to produce integrated solutions. On the other hand, the review of the marketing department needed to cohere with an organisation-wide rationalisation imperative. By providing clearer lines of accountability and reducing the number of people involved in decision making, the structure that was finally recommended by the project team fulfilled this goal. Taking into consideration both imperatives, the marketing review cannot be interpreted solely as an attempt to stimulate collective learning around the

acquisition of a new competence, as the intention to pursue this aspiration was tempered by a more fundamental programme of redundancy.

Did managers communicate their vision of competences to the rest of the organisation? Again, the answer is both yes and no. This time the answer depends on the importance that is attached to the role of 'vision'. If the strategic goals of the renewal plan are deemed to denote the Board's vision, then the answer is a resounding yes. Make the business a great place to work. Improve customer service. Return to profitability. Deliver positive cashflow. As discussed in Chapter 4, there was also an extrinsic incentive to reduce costs: a monetary bonus for every employee if Royal Mail made a significant operating profit by the end of the renewal plan. Everyone was focused on the goals of the renewal plan. The marketers knew what accomplishing the goals would involve. Soon after joining Royal Mail, Leighton brought together middle managers from across the firm to communicate his own take on organisational design: the organisation is a triangle – the strategists sit at the top, the people who do the work are at the bottom, and everyone in between them is 'treacle'[41]. Those marketers who decided to leave understood that the restructuring was necessary to make the business leaner and more competitive and they accepted the option of redundancy. For those who decided to stay, they were now – as the sales director emphasised at the welcome event – part of 'the biggest corporate turnaround going'.

The key message associated with the restructuring of marketing was one of prudence: revised budget; incremental improvements; complete the recovery plan. Through the periodic reiteration of his five maxims, the marketing director highlighted the need for the marketers to work towards the delivery of the firm's overall strategic goals. Marketing, for the moment, was not about 'major reinvention and innovation'[42]. Instead, the director wished to stress the importance of the department's role in relation to the organisation's overall financial position. In such a climate, the function did not enjoy financial autonomy and therefore, as the director stated at the conference, 'being extravagant was not on'.

By communicating a common way of understanding their activities and marketing identity, the key messages and maxims may act as a set of corporate values, or world-

[41] Interview with RM12, senior marketer, (13/09/04).
[42] Interview with RM15, marketing director, (08/09/04).

view, that is designed to foster organisational commitment and social cooperation among marketers (Lyles and Schwenk 1992). While a widespread consensus concerning the centrality of the strategic goals of the renewal plan may be found among marketers, the lack of a longer-term vision for either Royal Mail or the marketing department did appear to undermine confidence and the efficacy of knowledge activities within the department. Although this issue will be discussed in more detail in section 5.5, it is worth noting at this stage that the marketers were uncertain as to the strategic direction in which the firm would be moving. As we shall see in the second vignette, a number of marketers expressed concern about a perceived lack of a clear vision among the top management team. Not satisfied with the articulation of short-term recovery goals, the marketers were interested in the future of the department over the longer term, particularly with respect to the specific markets that Royal Mail would or would not be entering. As this strategic vision seemed to be lacking, there was a lack of alignment to a common corporate world-view regarding learning and innovation within the marketing department.

Finally, the managerial prescription advises firms to design governance mechanisms to integrate and coordinate the learning capabilities and production skills distributed across different functions of the firm. Did Royal Mail managers devise governance mechanisms to leverage functional skills? This time the answer is yes. The organigram recommended by the restructuring team represents the intended distribution of knowledge or skills across the marketing function (as shown in Figure 5.3). Whether or not these skills are then combined in cross-functional patterns of coordination, each of the marketing teams was designed with a specific role and set of responsibilities in mind. For example, the team within Commercial Development that I would work with, Fusion, were allocated a new intended role – as a member of the restructuring group stated in interview:

> This was quite a big team of mainly project managers, but we have really stripped this down. What this team should now be doing is thinking about what our value chain strategy is for the next three to five years, looking at who we need to partner with, as opposed to buy, to give us that capability, and working up those relationships to make that happen.
>
> (RM12, senior marketer, 05/04/04)

So defined, the role of the Fusion team was designed to contribute to the fulfilment of the umbrella responsibilities of Commercial Development, namely capability

acquisition, solution development, and market engagement. In order to ensure that the marketers within each team develop the appropriate domain of knowledge, each role was allocated a specific set of objectives. The governance structure was organised to facilitate the dissemination of these objectives and monitor the performance of marketers in relation to them.

Like every other Royal Mail function, the marketing department is organised according to a hierarchical system of governance. As a member of the managerial board, the marketing director is responsible for the delivery of a number of marketing objectives that are agreed with the chairman of this board, the chief executive. The marketing director cascades the activities required to fulfil these objectives through the function using a line-management system. For example, each employee within Commercial Development is set quarterly objectives by their team leader that, in turn, reflect the objectives of his or her line manager (in a structure typically of four tiers). Employee and line manager have one-to-one meetings on a regular basis to review progress against these objectives. Employees also discuss progress more informally at monthly meetings when they each update the rest of their teams on their recent activities. The embedded status of objectives in the day-to-day work patterns of Commercial Development employees was revealed to me when, during an interview with a member of the Fusion team, the interviewee showed me that he had noted his six quarterly objectives at the back of his work notebook for quick reference[43].

Through the cascading of objectives, the marketing director is able to act through the functional architecture, to ensure that the marketing hierarchy focuses on the problems and issues that need to be addressed in order to fulfil the objectives agreed with the managerial board. Thus, while distributed throughout the marketing function, the knowledge and skills that subsist within the numerous marketing teams only exist in relation to a top-down set of marketing objectives. As such, the skills of marketers are assessed in terms of the contribution that they make to the overall objectives of the marketing department. Within such a framework, I would question the ability of managers at the apex of the hierarchy to recognise either the improvisational skills that marketers may use to interpret and meet the formal objectives, or the acts of creativity that, while valuable, are not aimed at achieving objectives at all. The role that these

[43] Interview with RM18, marketer, fusion team, (10/08/04).

informal practices do play in organisational learning, some of which are described in the second vignette, will be discussed in section 5.5 of this chapter.

Notwithstanding this shortcoming of a hierarchical system of governance, the restructuring group reoriented the existing marketing teams within this system in order to promote a new regime of action. The restructuring was designed to improve the translation of market and customer insight into mail-related solutions by realigning the practices of the marketing and sales functions. The intention of such activity is consistent with the desire to establish a new competence, a skill that emerges from the cross-functional combination of resources (Grant 1998). With the aim of supporting the alignment of the two departments, the restructuring group created a series of business processes that were designed to illustrate how the skills situated within each function should be coordinated. In an interview following the restructuring, the marketing director explained the reasons why these formal processes had been designed and communicated to employees:

> I think in our culture, we do have certain things that are reserved and other things that are delegated. [...] I try to give people the freedom to act. There are some people who won't allow any spend over a thousand quid unless it is authorised by them in person. I do insist that they follow a commercial process in making that decision. So I would expect, if you give out trust you then have to along with trust give responsibility and responsibility is an overall, thorough, sensible rationale. What I didn't want to do is have myriad ways of confusing people coming in developing a product. So we have these key processes, the key marketing processes, because I would rather have one way of developing products.
>
> (RM15, marketing director, 08/09/04)

Thus, while delegating responsibility, the business processes should enable the marketing and sales functions to coordinate their activities by ensuring that they are performed in accordance with the process controls of the management team. In this way, the processes are designed to improve the effectiveness of the marketing department by formalising the relation with the sales function.

While not concerned explicitly with promoting learning, the intention underpinning the design of the business processes is consistent with the purpose of a hierarchical mode of governance – that is, to align the everyday practices of employees with the managerial logic for organising work. Although such modes of governance are criticised from a learning perspective 'because they are designed to achieve predetermined goals; they

are not designed for innovation' (Morgan 1997: 28), the need to reverse the organisation's poor financial position makes it unsurprising that the management team wanted the marketers to make decisions in accordance with a commercial process. Designed to address the perceived problems of overlapping roles and variations in decision making, the business processes can be viewed as devices which aimed to jettison informal practices for accomplishing work by introducing standardised processes.

In summary, the managerial prescription for producing organisational learning has been a useful frame for disclosing the restructuring of the marketing department. However, the management team within Royal Mail only acted partially in accordance with this prescription. Although the managers did select a domain of competences by formal search, their choice was informed rather more by a rationalisation imperative than an intention to stimulate collective learning. As such, when this vision was communicated to the marketing department, the behaviour fostered was a commitment to the short-term goals of the renewal plan rather than a longer-term vision of sustained learning and innovation. Finally, a limited repertoire of governance mechanisms was devised to leverage functional skills. In order to fulfil the goals of the top management team, the new marketing teams were organised according to a hierarchical mode of governance and were allocated managerially defined roles, responsibilities, and quarterly objectives. The managers aimed to establish a new competence in mail-related solution development by devising formal business processes for coordinating the practices of the marketing and sales teams.

Although the managerial prescription for producing collective learning did resonate with the organisational practices that were examined, the discrepancy between the theoretical framework and the actual events described is due to the failure of the strategic management approach to register the idiosyncrasies of organisational context. When Royal Mail did focus on competence-based learning in the late 1990s, the losses that were associated subsequently with those strategies would inform the selection of future governance strategies. As discussed in Chapter 4, the restructuring of Royal Mail can be understood as an attempt to alleviate the consequences of past acts of ineffective governance by changing the composition of the managerial board, making large-scale redundancies of middle managers, and attempting to improve the morale of operational workers. When viewed in historical context, the new strategic architecture would appear

to be designed to produce 'unlearning' (Hedberg 1981), as much as collective learning around an identified set of competences. In order to recognise the conflicting imperatives that may be at work when organisations do pursue learning initiatives, the strategic management approach would benefit from the incorporation of an evolutionary-economic interpretation of corporate change. By conceptualising the firm as a unique bundle of assets, routines, world-views, habits, and memories, the evolutionary economics approach is able to link observable practices to the influence of context-specific variables that have evolved over time. As stated in Chapter 2, by integrating aspects of strategic management with an evolutionary-economic conceptualisation of knowledge, the emergence of the dynamic capabilities has begun to address the prescriptive and context-effacing tendencies of this literature. However, by remaining committed to an epistemology of possessed knowledge, competence-based approaches are unable to recognise the effect of non-cognitive practices on the design and performance of managerial intervention mechanisms.

While the normative principles of strategic management can be used to disclose the restructuring as a manifestation of cognitive knowledge, the formulation of the restructuring and the deployment of selected governance devices also involved a number of non-cognitive processes. Firstly, the design of the strategic architecture was not solely the product of managerial cognition. Contrary to the strategic-managerial approach to competences, the top management team did not choose the new functional architecture for marketing in isolation. Instead, a modest input of material and social resources was used to support the cognitive activities of the managerial team. For example, the interviews that the project team conducted with senior employees within Marketing and Sales are recognisable as an attempt to mobilise a swath of tacit knowledge that related to the extant procedural routines within the marketing department. Once the views expressed during these interviews had been translated into pithy statements, organised into points of consensus and contention, and gathered together on PowerPoint slides, they appeared in numerous progress meetings as 'the view' of the marketers. By affording a degree of temporal and spatial mobility, the material agency of PowerPoint made the knowledge that was acquired during the interviews 'ready-to-hand' (Heidegger 1962) for arguing a point, supporting a particular alternative, and underpinning a firm recommendation. Thus, through a process of materialisation, outside perspectives were made available to influence the decision making activities of the managerial group.

Secondly, although I was not able to observe the managerial group directly because the restructuring project was completed before I began my ethnography, observations drawn from other marketing executive events suggest that sociality does play a role in the development of managerial strategy. Having attended two Royal Mail strategy workshops in the summer of 2004[44], I found that the plans and policies that were developed during these meetings were the product of social practices, which included: spontaneous contributions and anecdotes that were thrown into the discussion to lever the trajectory of the meeting; the scribbling of ideas regarding markets and competitors onto pieces of paper that were sellotaped to the boardroom walls; and each debate was supported by perspective-orienting booklets that outlined imagined market scenarios of both a positive and negative nature. While the outputs from such meetings are shepherded into formal policy documents and translated into firm intentions regarding markets, competences, and competitors, these social practices do have a role in the development of strategy because they engender conviviality among the assembled group, and thereby create a space in which ideas can develop through dialogue, and alternative perspectives can be uncovered.

Finally, aspects of the process of implementing the restructuring appeared to exploit performative knowledge. As well as introducing formal mechanisms for combining resources, the arrival of the new department was accompanied by a managerial desire to embed a culture of informal engagement and playful interaction among the marketers that remained. Dispensing with the pedagogical function of past conferences, the team-building sessions and rousing speeches that were delivered at the welcome event appeared to denote a change in sensibility of the management of the department. Although the renewal plan was a key theme of the conference, the dramaturgical aspects of the event can be interpreted as managerial devices that were intended to stimulate pragmatic learning and signal a break with the past practice of top-down management and an ethos of bureaucratic order within the organisation. Along with other symbols of creativity, the open-plan design of Media House and the dislocated innovation laboratory, the emergence of a dynamic marketing function was deemed to be a critical resource for conveying credibility to existing and potential clients in a rapidly liberalising market[45].

[44] The workshops, which involved the top management team within marketing and other senior managers, were held on 24 June 2004 and 20 September 2004 at Royal Mail's head office in central London.
[45] Interview with RM4, Media House director, marketing function, (09/01/04).

On the basis of this evidence, the conceptualisation of knowledge in the competence-based approach to the firm should be adapted in order to reflect the role of social and material practices in the selection and governance of competences. However, why should strategic management be understood as a formal cognitive process? As discussed in Chapter 2, this may reflect the hegemony of cognitivist models of competence in western institutions and folk epistemology which tend to account for skilful performances in terms of formal operations (see Shanon 1993). Within Royal Mail, senior managers and employees alike seemed to assume that they were in possession of sets of capabilities which, in turn, were assessed during performance management meetings and developed through the organisation's training programme[46]. By narrating strategic management as a process of search and mental reasoning, competence-based theory would appear to sponsor an epistemology of detachment and perpetuate the exclusion of social practices and other forms of non-cognitive noise. Thus, while the formulation of the restructuring was disclosed as a cognitive process, this may reveal rather more about the resources (managerial artefacts and interviews) that were used to examine this project than the actual practices through which this exercise was accomplished.

An unintended consequence of the epistemology of detachment of the competence-based approach to the firm is the neglect of the actual processes through which managerial strategies are translated into substantive practices. As such, it is not possible to evaluate the efficacy of the managerial restructuring programme without examining the effect that this did have on the on-the-ground practices of learning within the marketing department. The second half of this chapter evaluates these practices by exploring the restructuring process from the perspective of a team of marketers as they make sense of their new organisational role in the months following the implementation of this intervention mechanism.

5.4 The restructuring of Marketing (2): the marketers

I am sitting ten rows back from the stage of the auditorium. Although the room is dimly lit I feel quite conspicuous with my pen and notebook in hand. The director of marketing has just been introduced by the master of ceremonies and is approaching the stage. The marketer sitting to my left leans slightly towards me to comment on the

[46] Interview with RM19, senior manager, human resources function, (21/07/04).

welcome given by the audience of marketers to the director, 'half-hearted clap!'. He is one of the many marketers I do not recognise, and although the headcount of the department has recently been halved, I am surprised to see two hundred or more people sitting in the audience around me. My surprise is due in part to the distribution of marketing activities among a number of different offices and I have only conducted research within one of them.

The audience seems to be reeling still from the restructuring of the department that has taken place over the previous few months. I can remember vividly the period when the interviews for the new roles had taken place. They were spread out over two weeks and during that time I had never seen Media House so quiet. On some days there was no more than a handful of people present and sat in desks dotted around the office. I remember speaking to Andy, who worked at the desk opposite to me, in the lunchroom just before he was about to go for an hour-long interview for a role that would have represented a promotion for him. Wearing a tie, a rare thing for a marketer, he told me that he had tried to prepare for the interview, 'because what they do is assess you against a set of capabilities, so you try and think of examples where you have demonstrated that capability, but they really want you to slip up'. I felt quite uncomfortable talking to Andy, partly because I was not having to go through the same process as him because of my role, but mainly because he seemed so nervous, and normally he was so jovial. He said that it didn't matter too much if he didn't get the job because 'my wife has a good job anyway, and we don't have any kids or anything'. In the end, Andy didn't get the job.

Andy did begin work with a new team in the new department but he was, in the eyes of the executive committee, going to be performing the same role within that team. The name of the team had not changed – it was still called Fusion – but its membership had, and there was a new team leader. She would report directly to the director of Commercial Development, a member of the marketing director's executive committee. In an interview she complained about the composition of her team, suggesting that it was not clear why they had been put together:

> To a large extent there isn't a link between them, certainly as I inherited them. I inherited a couple of technical guys, I inherited a finance man, I seem to have inherited a bunch of value chain type people. The technical finance man is very useful in that he will help us evaluate the joint ventures

> and alliances we have, and he will help us evaluate future ones, and I suppose he sits in my team because otherwise he would be homeless. The technical element of my team I am not sure should be in my team, so I am working to move it. I think what my team can do is it can take a very broad view, but it has to be flexible, and it has to manage its interfaces very carefully.
>
> (RM20, team leader, fusion team, 14/05/04)

As indicated in the following quotation from Fusion's contribution to Commercial Development's monthly report for April 2004, the first task of the team was to interpret what the role of the team was: 'Much of the month has been taken up with the deceptively simple task of defining what we do and the team's interface with sales and other areas of marketing'. In the eyes of the team, the new structure template, business processes, and assigned roles and responsibilities of Commercial Development were not adequate for answering this basic question. The lack of certainty was attributed to the business not being clear 'at the top' as to the strategic direction it wanted to move in. The following quotation from an interview with a member of a team that worked alongside Fusion is typical:

> I'm not sure that the business has a strong idea of what it wants to do. It's in a state of flux and trying to build a foundation at the moment. [...] We try one thing, and if it's not working we just leave it and move on to something else; you have a sense of flavour of the quarter. We need clear strategies, goals and mission statements but these have gone more waffly. Now it's: 'be the best at what we do'. But what do we do? What revenue do we need to keep the business afloat and enough profit to do what it wants to do next year? Everyone throws up spreadsheets every week on targets but I have no confidence that it represents reality. I have no faith that we know what's profitable and what's not.
>
> (RM21, marketer, team 4, commercial development, 05/08/04)

The perceived lack of commitment to a strategy or clear vision of where the company was aiming to go was a view that had been echoed by marketers throughout my period of research. This opinion explains in part the solidarity marketers expressed through their unenthusiastic reaction to the appearance of senior managers at the welcome event. Like other groups within Marketing, defining the purpose of the team was an exercise that Fusion would go on and try to negotiate themselves.

In the midst of this uncertainty, in the weeks following the restructuring of the department, one of the members of the Fusion team produced a 'suggested way of

working' document, which included a pictorial representation of the responsibilities of the different teams within Commercial Development (Figure 5.5).

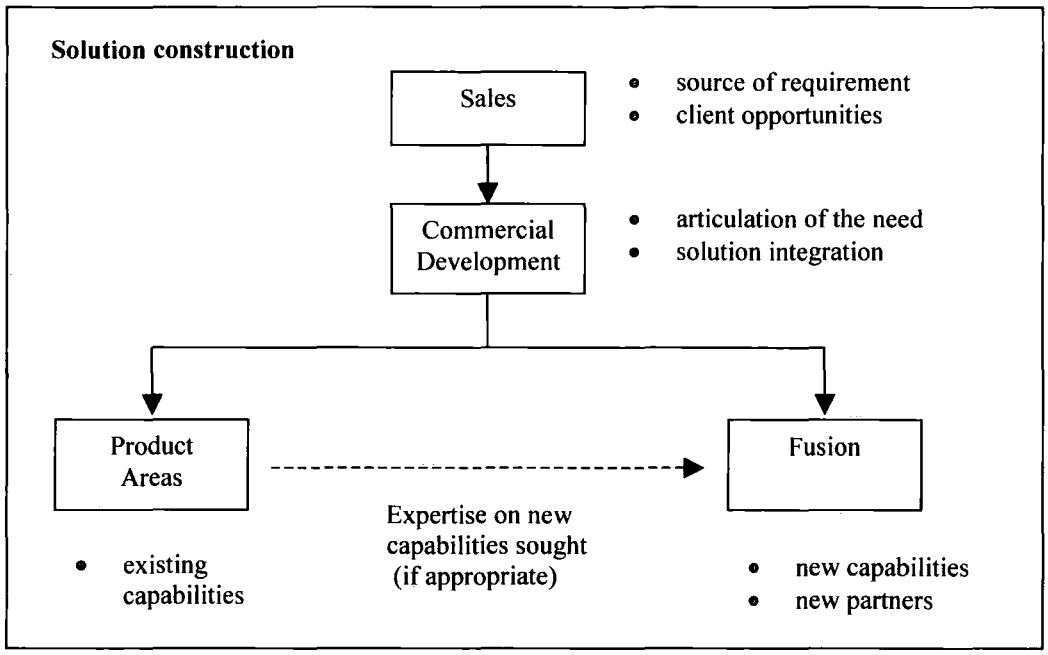


Figure 5.5. Commercial Development: suggested way of working, simplified to protect commercial confidence

As he explained in an interview, the team member decided to produce the document because the head of one of the newly established teams was not sure of what his team's role should be within Commercial Development:

> I wrote that because we had changing teams and direct reports and this, that, and the other. A new team leader came in and had no idea what the hell we were doing. If I actually try and stick it on a piece of paper and bounce it around then at least that gives people a reasonable grasp of where they sit and how they interrelate and so forth.
>
> (RM22, marketer, fusion team, 16/08/04)

The creation of this informal document was an attempt to stabilise the linkages between the different teams within Commercial Development and establish an agreed way of working among them. However, the work of the Fusion team to institute ways of working went further.

An early link between Fusion and the sales function was forged through the attendance of the team leader of Fusion at a team meeting of one of the sales teams. She gave a short six-slide presentation, which laid out basic elements of Commercial Development's strategy, including as a key principle the need to 'acquire and grow

capability quickly and cheaply'. This slide was supported by a diagrammatic representation of 'what we do in Commercial Development' which summarised the role of the different teams, as well as the position in the 'value chain' of the products they each manage in relation to the firm's core competence in mail collection and delivery (Figure 5.6).

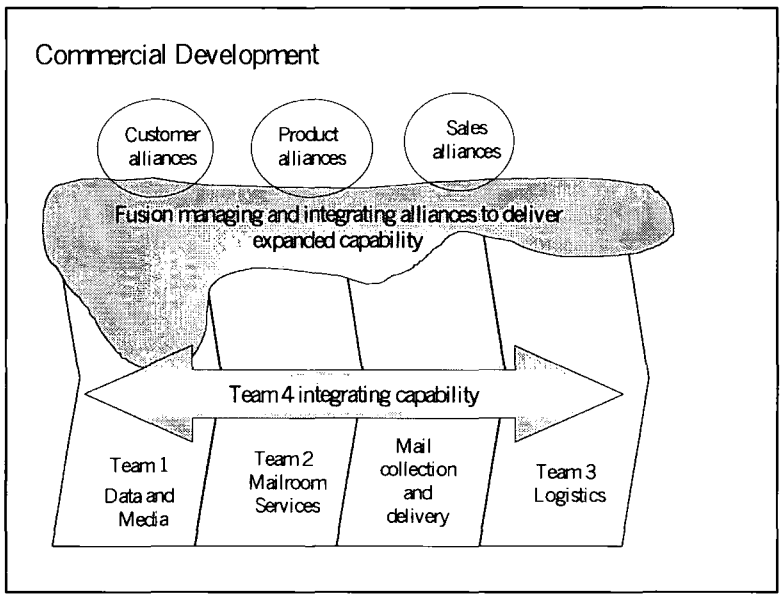


Figure 5.6. What we do in Commercial Development
Source: PowerPoint slide from team leader's presentation to sales team, 18 May 2004, simplified to protect commercial confidence

The slide also showed the way in which Fusion should work across the 'value chain' to manage capabilities and assess opportunities for capability expansion. According to this way of working, the role of Sales was to work with Fusion to develop integrated solutions that could draw on any of the value chain alliances. The presentation also listed the team's five priorities for new capability development that were taken from a strategic document the team leader had recently written for the director of Commercial Development. In the feisty discussion that followed the presentation, the team leader took feedback from the sales team on the way of working and principles. The sales team wanted, in particular, clarification about who was responsible for the implementation of solutions and further detail on how the product and solution capabilities could be turned into viable propositions that could be taken by Sales to specific market sectors or clients. The team leader shared the feedback from this meeting via email with the rest of the team, the other team leaders, and the Commercial Development director. Having seen the 'what we do' slide, the Commercial Development director asked at his next team meeting for all of the teams to produce similar slides in order that the unit as a

whole had a better idea of what everyone did. This collection of slides was eventually archived on the Commercial Development homepage on the company intranet site.

At the next Fusion team meeting, the group sought to begin to translate the value chain capabilities that Commercial Development possessed into client or market sector propositions, as the sales team had requested. This involved taking an existing diagram of product capabilities, ranging from customer targeting to mailroom management, and categorising them into capabilities that would enable a client either to acquire new customers, serve existing customers, or grow the relationship with them. This exercise involved the team leader scribbling ideas down on a flipchart while the rest of the team sat around the table, looked at the existing diagram, and threw in contributions. One of the team, who tended to work on data propositions, argued that acquisition was about "finding good customers for them and communicating with them in the best way". Then, another member of the team said that serving customers was about capabilities that enabled us to "serve our customers' customers". Through a number more contributions, hastily noted down, the team then settled on the idea that growing the relationship depended upon being able to communicate with the:

* Right person
* Right channel
* Right timing
* Right message

It was agreed among the team that the 'acquire, serve and grow' model was an initial proposal that could be taken to the sales teams as a proposition for captivating their clients.

Two days later, the proposition model received its first test. Three members of the Fusion team and myself were meeting with the sales account manager for one of Royal Mail's key business clients in the retail sector. The purpose of the meeting, which was branded a creative session, was to explore and generate a sales proposition that could be taken to the client. This was an opportunity to assess the alignment of Sales and Marketing. The account manager, Terry, led the meeting by giving an informal PowerPoint-based presentation about his client. This was a broad-brushed overview of the company, including details such as its size and revenue; the markets it operated in; its strategies for the forthcoming year; and a summary of potential sales opportunities

Royal Mail may have with the client. Terry had compiled the list of potential opportunities on the basis of a director-level meeting with the client the week before. While Terry gave the presentation we all jotted points down on our notepads, and when one was felt significant enough, the flow of Terry's talk was interrupted by questions: "are you sure they aren't using this product already?"; "what software are they using to profile their customers?"; "are they looking to increase their mailings?".

Once the fifteen-minute presentation had finished, the focus switched to the marketers. Andy led this section of the meeting – a brainstorming session aimed at generating a sales proposition for the client – which was structured around the 'acquire, serve and grow' model that had been worked on earlier that week in the team meeting. Andy distributed the updated diagram and wrote the headings of 'acquire', 'serve', and 'grow' on separate flipchart sheets. Under these headings he sought contributions from the group about the key activities that the client undertook in each of these areas. Based on the presentation, Terry's own insights, and preparatory work by the marketers leading into the meeting, the sheets were gradually filled up with notes about the company's organisational structure, advertising activities, call centre and customer databases, suppliers, and payment processing techniques. Following the same method, the team then looked at how these activities across customer acquisition, service, and growth could be supported by Royal Mail's capabilities. This resulted in the appendage of three or four bullet points to each section of the client's activities. The output from the meeting was a draft diagrammatic sales proposition for the client that emphasised how Royal Mail could improve their acquisition of customers.

Although the sales proposition did not lead directly to a sale with this particular client, the initial work that was carried out in the meeting was used elsewhere as a framework for pitching Commercial Development services and core products to the sales team. A 'solutions aid' was developed over the following months which aimed to demonstrate how Commercial Development capabilities could be translated into sales propositions, still based on the 'acquire, serve and grow' model. The generation of these representations, based on cross-functional meetings and circuits of collaboration, helped to stabilise the alignment of Sales and Marketing. As Andy later remarked on the process, 'It shows that good ideas don't die – they just evolve'[47].

[47] Personal communication, 18/11/04.

5.5 Disclosing restructuring through a communitarian framework

While the first vignette disclosed the restructuring process as the product of a series of managerial activities, this account neglected the practices through which the process was co-produced by the marketers of the department. As we saw in Chapter 3, the theory of communities of practice suggests that informal groups throughout the hierarchy learn through participation in shared socio-material practices. According to Wenger (1998), communities cultivate learning through three modes of interaction: joint enterprise, shared repertoire, and mutual engagement. By situating the restructuring process in relation to the practices of the Fusion team, the vignette allows the utility of different dimensions of communitarian learning to be examined in relation to a radical managerial programme of change. In what ways did communitarian practice influence the success of the restructuring exercise? Is each mode of interaction an equally important mechanism of learning? The events described in the vignette will be used to address these questions, and then the effect of both strategic management and communities on the discipline of learning within the department will be discussed in the concluding section of this chapter.

To address the questions raised above, the vignette will be interpreted using Wenger's (1998) three aspects of learning through interaction. The accomplishment of each of the managerial objectives of the restructuring can be tied to the different modes of interaction that were observable in the practices of the Fusion team (see Table 5.1). The negotiation of a joint enterprise, which involves developing an understanding of why a practice is engaged in, helped the marketers to fulfil the formal objectives of aligning with the sales function and improving the efficacy of decision making. In the aftermath of the restructuring, the response of the Fusion team was to establish an understanding of 'what we do' in the new department. The structure templates and business processes that the management team made available for consultation were deemed to be inadequate resources for resolving this fundamental question. Instead, the answer was the product of the interpretive work of the team, which was undertaken as a group and with reference to other marketing and sales teams.

Restructuring Objective	Joint Enterprise	Shared Repertoire	Mutual Engagement
Alignment	Interpretive work of Fusion team clarified their own role and the nature of the interface with Sales		
Insight			Creative meetings with the sales function enable perceived client needs and marketing capabilities to be combined
Reduce overlaps		Informal 'way of working' document identified cross-functional 'overlaps' as critical aspect of solution development	
Decision making	Solution proposition model created through reflexive debate; tool aids decision making by classifying the department's range of mail-related capabilities		
Effectiveness			Marketing skills generated through practice of developing sales propositions

Table 5.1. Restructuring objectives: learning outcome by mode of interaction

The process of negotiating the role of the team was borne out of confusion and a perceived lack of guidance from senior managers. This was expressed, for instance, in the interview with the team leader of Fusion who stated that she was unable to understand why the members of her team had been allocated to the same group. The task of defining the team's role and aligning this with those of adjacent teams within the sales function began when Fusion's team leader attended a team meeting of one of the sales teams. With the support of a diagram, the team leader communicated the intended roles of the five Commercial Development teams, and the emerging strategies and priorities of Fusion. The reaction of the sales consultants, who wanted to know how the product capabilities could be translated into client propositions, brought about the subsequent activities of the Fusion team. This feedback stimulated a reflexive debate among the team about the ways in which the capabilities amassed by the marketing department could add value to prospective clients of Royal Mail. This led to the development of the 'acquire, serve and grow' model which was used thereafter to aid in the construction of sales propositions. This framework of value chain services and core products, which was made available to the marketing and sales functions, supported

decision making regarding solution development by ordering the department's repertoire of mail-related capabilities.

As an informal mechanism of learning, the success of the joint enterprise of Fusion seemed to emerge from the durability of the knowledge utilised by this team. The enactment of this knowledge bore two characteristics. First, the enterprise of the team was triggered by the requirements of an adjacent organisational function and not by any managerial instrument of the restructuring. As the sales teams had negotiated a restructuring exercise successfully in 2003, they were able to specify the actions that were necessary in order to bring marketing activities into line with their practices. This experience, coupled with awareness of the current practices of the marketing department, made the situated perspective of sales an authoritative position and one to which the Fusion team could become moored. Second, the reflexive practices of Fusion were led by experienced marketers who occupied similar functional roles prior to the restructuring. As these individuals were familiar with Royal Mail's existing array of products and capabilities, they were well placed to translate this knowledge into a new solutions-oriented model that could be digested by the sales function.

The marketers used a repertoire of shared resources, a material infrastructure for negotiating meaning and orienting activities, to facilitate coordination and therefore engage with the managerial objective of reducing overlaps. Although the Fusion team produced a number of artefacts while grappling with the new strategic architecture of the department, the construction of the resource I want to discuss in further detail is the informal 'way of working' document (as shown in Figure 5.5). Akin to the process of joint enterprise, the production of this resource involved the use of knowledge that was constituted in the practices of marketing prior to the restructuring of the department. The member of Fusion that created this document, which illustrated how he believed the various teams within Commercial Development should work together to produce solutions, did so on the basis of his experience of working within one of the teams that had existed prior to, and been reformulated in, the restructuring. The diagram is, therefore, based on a set of social relationships and routines that existed in the months preceding the restructuring, and these are redrawn in the context of the changing direction of the new department. By reifying awareness of past practices, the document makes this practical experience available to guide the activities of the new teams. Thus, rather than depending on the adoption of new managerial processes, forging a new set

of relations depended on the maintenance and adaptation of familiar practices of interaction.

However, as a tool of coordination, in what ways is this informal document different from the formal business process for developing solutions (as illustrated in Figure 5.4)? The key point of distinction between them is that, while the formal flow diagram represents a managerial process, the informal diagram depicts a practice. As the formal process map is drawn from the perspective of senior managers, it reflects their top-down vision of solution development. According to senior management, the construction of solutions is anchored in the predetermined strategic plan for Sales and Marketing (the value proposition). It is arbitrated through the day-to-day decision-making of key managers, and it is also a linear process in which responsibility at each stage is handed on from function to function. The marketer's diagram, in contrast, issues from the practice of solution development. This is led by the sales function (the source of customer requirements). Solutions are constructed through the sharing of expertise among the on-the-ground marketing teams. This is understood as a cross-functional process because both Sales and Marketing are involved in the articulation of customer needs. By describing the interrelationships among the different functions and teams, the diagram signals to new and existing marketers the importance of communication and interaction in navigating the joint practice of developing solutions. Thus, while the linear and programmatic nature of the formal business process aimed to rationalise overlaps and standardise decision making, the informal document understood 'overlaps' as an essential component of the practice of solution development.

Through mutual engagement, or doing things together, the marketers attempted to contribute to the managerial goals of improving the exploitation of customer insight and increasing the effectiveness of the department. While the interpretive work of Fusion acted as an important structuring and orienting mechanism, the new relations and interfaces of the strategic architecture were negotiated in the practice of cross-functional interaction. These interactions took the form of shared meetings, criss-crossing of emails, mutual creative sessions, and the exchange of illustrative artefacts. In the absence of formal opportunities for learning, the mutual engagement of the marketers appeared to be the predominant context within which marketing skills were developed. To take one example of engagement, that of the creative session involving members of the Fusion team and the sales account manager, I want to argue that meetings of this

type enacted the relation between client knowledge (Sales) and marketing skills (Marketing).

The creative meeting was organised to develop a sales proposition for a large client of Royal Mail. Through the sociality of this meeting, Terry was able to become 'the voice of the customer'. Supported by the bulleted text, figures, and tables of a PowerPoint presentation, the characteristics and perceived requirements of the client were communicated to the marketers. When the brainstorming section of the meeting began, with traces of Terry's presentation still in ink and on mind, 'the client' was confronted with the rationalising qualities of the Fusion team's 'acquire, serve and grow' diagram that had been distributed among the group. The activities of the client were roughly divided into the three constituent elements of the model and scribbled onto the flipcharts via the verbal contributions of the team. This was the moment at which client insight and marketing capabilities were brought together and translated into a sales proposition. Through the dance of these two perspectives, the creative parameters of the meeting were negotiated and defined. It was the culmination of a process that began with the early interactions among the Fusion and sales teams, developed through their own interpretive work, and was supported by the production of numerous resources. For the marketing team that I followed, this recursive process of interaction and engagement was the vehicle through which the restructuring exercise was negotiated.

5.6 Conclusion

While the competence-based account of the restructuring assumed that the new strategic architecture of marketing was the product of managerial knowledge – embodied in marketing strategies, processes, and plans – approaching the event through a communities of practice framework revealed the importance of the situated practices of a marketing team in fulfilling the learning objectives of this exercise. From a managerial perspective, the main achievement of the restructuring was to reorient the on-the-ground practices of the marketing teams. While I argued that these teams were a durable source of organisational knowledge, the effect of the restructuring was to steer the work of these groups in a new direction – that is, to stimulate the disclosure of integrated solutions rather than generic products or commodities. Rather than being inculcated directly by the vision or governance devices of the management team, achieving this change in orientation depended on a further round of interpretive work and informal

engagement by the marketing and sales teams. Thus, while the top-down mode of innovation did effect a change in the learning processes of the marketing teams, the accomplishment of this shift relied on the joint enterprise of the department's communities.

The obvious drawback of the restructuring was the reduction in the level of investment in the marketing department. Not only were the number of employees reduced by half, but the formal training and development programme was also suspended temporarily, and the strategic initiative for extending the domain of mail-related capabilities was not able to secure new funding. Although these downsizing measures did not appear to affect the informal modes of interaction of the Fusion team, it did arguably alter the value of these practices. In order to illustrate this contention, I want to return to the outcome of the creative session that was described earlier. While I suggested that meetings of this type helped to forge the relationship between client knowledge and marketing skills, they did contribute only partially to the formal restructuring goal of translating customer insight into more effective product and sector propositions. With respect to the creative session, the customer insight presented by Terry was converted by the marketers into newly formed categories of the department's existing set of mail-related capabilities. Rather than being used as a source of novelty, the perceived needs of the client were matched up with a predetermined domain of solutions. The identified problem of Marketing not 'connecting with the clients' – as stated by a client director in interview earlier[48] – did not stem from a lack of mutual engagement with Sales, but was due to an investment constraint that inhibited the creative potential of such practices of engagement. Thus, as an organisation's business position can influence the value of the practices of its communities, this finding suggests that traditional explanatory variables, such as the firm's set of resource inputs, can still be significant determinants of corporate competitiveness.

In the next chapter, I use further ethnographic evidence to reflect on the learning and governance implications of the complex relationship between intended strategies for innovation and the variegated practices that emerge in response to those strategies.

[48] RM13, client director, sales function, (13/05/04).

Chapter 6

Innovation-in-Action

6.1 Introduction

Faced with impending market liberalisation, Royal Mail prepared for competition by investing in the development of new mail-related capabilities. The enactment of this strategy involved the development of inter-firm alliances with a series of partner organisations and specialist marketing agencies. As top managers aimed to expand the domain of competences possessed by Royal Mail, the purpose of working with external partners was to acquire access to new knowledge and skills that were situated within the target strategic domain. Underpinned by the intention of developing mail-related solutions for Royal Mail's clients, strategic partnerships were created to access: new technologies (creative software tools and print facilities); operational skills (mailroom and warehouse management); and marketing expertise (campaign management and digital design). Understood as a formal strategy for innovation, top managers sought to extend the capabilities of Royal Mail by exploiting an assemblage of external sources of knowledge and expertise.

Having defined the approach to innovation adopted by Royal Mail, a number of logical questions follow. First, how successful was this approach, and why? Second, having addressed this question, what are the consequences for theories of organisational learning and innovation? In order to frame these questions, a construct from the cognitive tradition that signifies the ability of the firm to exploit external knowledge will be used. The cognitive structure of the firm possesses an 'absorptive capacity' (Cohen and Levinthal 1990). Expressing the path-dependency of organisational learning, this concept suggests that an organisation's ability to recognise and utilise external knowledge is a function of its current stock of knowledge. As Royal Mail's innovation strategy is based on the exploitation of external knowledge, by applying the notion of absorptive capacity it should be possible to predict the success with which this strategy was executed. Traditionally, as discussed in Chapter 2, cognitive intervention mechanisms are prescribed to maximise the absorptive capacity of the firm. However, according to non-cognitivist theory, an organisation's informal knowledge infrastructure – constituted in everyday interaction and socio-material practice – will also influence its capacity for learning. Thus, by interpreting the innovation strategies of organisations

using the concept of absorptive capacity, the utility of both cognitive and non-cognitive theories of learning can be evaluated.

In order to assess the efficacy of Royal Mail's approach to innovation, examples from the practices of two contrasting marketing projects will be presented and discussed. A product of the managerial intention to extend the organisation's domain of competences, both projects were undertaken in conjunction with external partners. The first project, described through a vignette in section 6.2, was initiated to develop an advertising service that would enable business organisations, particularly SMEs, to create direct-mail campaigns online. A direct-marketing agency was involved in the project to provide technical expertise, including knowledge of the SME market and software development skills. Following the vignette, the effectiveness of this project is discussed and evaluated in section 6.3. The second project, illustrated by a vignette in section 6.4, was organised to redesign the customer services section of Royal Mail's website. With the introduction of competition across all postal services, this project was part of a portfolio of work that aimed to develop the commercial reputation of Royal Mail by improving the brand interface. Although the aim of the project was not markedly innovative, it is presented as an example of novelty because it was administered using a new method of project management. A creative agency was employed to provide specialist knowledge, including expertise in creative design and project management support. Following the vignette, the effectiveness of this project is discussed and evaluated in section 6.5. The chapter concludes with a comparative evaluation of the two projects (section 6.6). The different outcomes are linked to the social anthropology of engagement associated with each project, and the implications for theories of organisational learning are discussed.

6.2 Project one: developing a new advertising product

Having secured research access to Royal Mail after a three-month delay[49], I arrived at the marketing office in London for 9am on my first day. I reported to a senior manager within the Commercial Development team (whom I had met during the previous week to discuss the nature of the research I wanted to do), and he allocated to me the desk opposite to the one where he worked. There were just a few feet of desk space and a couple of piles of paper and books between us. This was the intimate ontology of an

[49] This was due to the industrial action across a number of operational units in the autumn of 2003.

open-plan office: a daunting space for a research student used to working in relative isolation. However, there were benefits arising from this lack of privacy and partitioning. From where I was sitting I was able to observe activities and conventions across the entire office, from the entrance immediately to my left to the comings and goings at the coffee machine in the far right-hand corner[50].

After a week of working within Media House, I am meeting Mark, the marketing product manager I shall be working with as part of my role as a marketer. After his line manager introduces us briefly, I explain my research objectives and Mark suggests that we should meet later that morning so that he can provide an introduction to the product that I am going to support him in managing. Mark sits at an adjacent cluster of desks to mine but due to a lack of room around the desks we walk out of the main office area and sit at a small coffee table in the touchdown zone. Mark places his laptop on the table and brings up the internet homepage of the product that he manages. The product is called *Web DM*, a website that allows visitors to create direct-mail campaigns online.

The product had been launched a year earlier in order to encourage business organisations to advertise their products and services using direct mail. During a subsequent interview with Mark – who had been the product manager for just six months and was therefore not involved in the development of the product concept – he stated that the product idea was borne out of a:

> strategic viewpoint where the business unit was all about promoting the use of direct mail as an advertising channel and, as a result of that overriding strategy, the SME audience was recognised as one where there was a large degree of potential because of the spend they had on marketing against the spend they currently had for direct mail or direct marketing.
>
> (Mark, product manager, 10/02/04)

Thus, the product was developed under a strategic managerial imperative to increase the proportion of direct mail sent by SMEs relative to other advertising channels within the 'media mix'. There was also a tactical need to develop a web-based product to interact with SMEs because it was proving difficult to service a high number of customers within this sector using a limited team of desk-based sales account managers.

[50] For example, I soon noticed that the male workers at Media House did not tend to wear ties so I discarded mine at the first opportunity. Later that morning though, an IT engineer supplied me with the standard-issue laptop computer and portable telephone and it was those which eventually became for me, as for the majority of people in the office, the dominant objects of attention.

Mark demonstrates the purpose of the product by navigating the website's pages to highlight various features:

> Here, you can choose the type of mail-pack you want to create. Here, you can choose the colour scheme of the mail-pack and add text and pictures, if you want. Here, you can select a 'targeted' list of addresses that you want to send the mail-pack to, or you can upload your own list of customer addresses, here[51].

This informal meeting, during which I receive some background to the development of the product and a demonstration of its features, forms my initial training in product management. Mark suggests that I spend the next few days familiarising myself with the product and welcomes my suggestion of letting him know if I have any ideas about its design or management.

As part of my support role, I contact one of the managers actually involved in the early development of the product concept to learn more about the strategy underpinning the product's development. The marketer, who is no longer based at Media House, tells me that the product had been developed in response to a number of queries that were coming from SMEs who had visited the Royal Mail website[52]. These enterprises had assumed that Royal Mail could create direct mail campaigns for them, and were requesting quotes for producing a campaign. On the basis of these enquiries, the manager thought that this service was one that Royal Mail should offer to meet this need, as it would directly support the managerial objective of increasing the use of direct mail. In association with other marketers, he sketched out the design features that would allow SMEs to create a direct-mail piece on a website. Royal Mail commissioned a number of pieces of research on the product concept which were undertaken by external market research agencies. One of these was a series of hour-long focus group sessions with a number of SME managers and employees which aimed to test and develop the product concept by obtaining the input of representatives from the intended target audience.

On the basis of the results of the market research, a product specification was drawn up, and the task of constructing the product website was open to tender by third-party organisations. The project was outsourced due to a lack of technical knowledge and

[51] Construction based on ethnographer's narration of introductory meeting with Mark, (12/01/04).
[52] Interview with RM23, former product manager, marketing function, (13/02/04).

resources to develop the product internally[53]. A notice was submitted to the Official Journal of the European Union (OJEU) inviting tenders to 'develop a web-based service to enable SMEs and others to simply and effectively produce direct mail and leaflet distributions online'. Three responses were received and a highly reputable, London-based direct-marketing agency was selected.

When I visit the offices of this agency to introduce myself to Royal Mail's account handler, Rich, he tells me that they had been awarded the contract for constructing the website because they have experience of developing similar online tools for two other large organisations who use them to send direct mail to their own customer bases. For Royal Mail, a primary concern was that the website should be developed quickly, and the agency was in a position to achieve this because they could adapt the functionality of the current tools that they had developed for these other clients. A 'creative brief' for the development work was drawn up, and both organisations were involved for the six-month period it took for the product to be developed and launched.

Although the website attracted hundreds of visitors during the first quarter of the year following launch, the sales or conversion rate was very low. Both Royal Mail and the marketing agency suggested two reasons for the low volume of sales. First, there was a lack of advertising promotion at the time of launch:

> There was no launch for *Web DM*. It is only accidental traffic that has come to the site, or maybe those who searched for 'DM' on a search engine. We are now waiting for the marketing.
>
> (Rich, account handler, marketing agency, 03/02/04)

> It didn't hit the ground running in that, when I inherited it for example, for obvious reasons, because there were redundancies, there was no sales and marketing plan in place. It just launched on a quiet basis.
>
> (Mark, product manager, 10/02/04)

There was no sales and marketing plan for the product because the time at which it was launched coincided with the initial restructuring of the organisation's marketing units at the end of the first year of the renewal plan. The development of the product was

[53] Royal Mail did not have the resources to develop the product internally because they were diversifying into an adjacent market 'upstream' from the core competence in mail collection and delivery. Outsourcing the creation of the website to a third-party organisation allows Royal Mail to draw on the expertise of this organisation in order to establish a foothold in a new market with uncertain revenue value. This means that the firm is not encumbered with sunk costs if internal competences were developed to compete in a new market that could yield a low return on capital expenditure.

managed within one of the business units that was subsequently amalgamated to create an integrated marketing unit in 2003. As the development team moved into new roles, the marketing of the product suffered due to a lack of continuity in managerial resources.

Second, at an early concept development stage, there was neither the depth of research nor iteration of findings into the development cycle to ensure that the product specification would be oriented towards the needs of a specific target market:

> [...] not enough thought was given in certain stages, namely the targeting of this thing. Sometimes people don't believe in research quite frankly. What they would prefer to do is go from what their experience tells them or what a major client tells them; this is a good idea, lets do something with it. I think, in fairness, that's how *Web DM* came about. It was in the industry an accepted idea that actually sounds quite good, what if we could make that a reality? I think where it fell down is that there wasn't enough research at a beta level to say: now, customers, what do you think of this? Because I still have a suspicion that the SME marketplace isn't ready for it.
>
> (Mark, product manager, 10/08/04)

The account handler, who argues that the product failed to embody an adequate understanding of the market, supports this:

> There wasn't a clearly defined market for the product. For example, are we interacting with novice or experienced users of direct mail? They need the right level of communication. On the original site, the copy was too complex for the novices and too dumbed-down for experienced users.
>
> (Rich, account handler, 03/02/04)

Following the first quarter of low sales, a piece of market research is undertaken to address the lack of knowledge of the product needs of the SME market. An external research company is commissioned to evaluate the usability of the website. It does this by rewarding twenty SMEs for participating in computer-based usability tests. The research report highlights a number of key areas of the website that needed to be redeveloped to make the product more appealing to the target audience. The advertising agency is also present for the presentation of the research and, on the basis of their interpretation of the results, translated the findings into a second creative brief for making a number of development changes to the website:

> We took the existing content and changed it. We wrote it in the language used by SMEs for SMEs. We got into the mindset of SMEs; they feel

> vulnerable, isolated and reluctant to use marketing agencies. Before, we had been talking to people in our own language.
>
> (Rich, account handler, 03/02/04)

I join the project after the majority of the changes suggested by the market research have been implemented by the agency and made 'live' on the website. My first task is to manage an additional set of small design changes that were recommended in the research and are yet to be incorporated into the product by the agency. The nature of these design changes is agreed at the first face-to-face meeting I attend between Mark and the agency. The meeting ends with the action point that the agency shall assign a time and cost for making each of the changes and get back to us.

Following the meeting, Mark asks me to liaise with the agency to progress this piece of work. I do this by telephoning Rich in the week following the meeting to find out when the length of time and cost for each change will be known, and I then exchange emails with Mark to inform him of progress. I soon realise that supporting in the management of the product is characterised, for the most part, by the development and maintenance of telephone and email mediated relations. I use telephone and email as the predominant mode of communication with other individuals within Royal Mail and with the direct-marketing agency who host the *Web DM* website.

Once Rich has assigned costs to the changes, he emails them to us in tabulated form in a document attachment. Mark emails Rich to thank him for the table of costs and to inform him that Mark and I will be meeting to discuss which changes we should like addressing before the end of the current financial quarter. This short meeting, which is structured around a printed version of the document from the agency, takes place in the touchdown zone the following week. We agree the changes we would like making, annotate the document accordingly, and I construct an email to Rich to let him know the changes we want implementing and our estimated total cost for the work. Rich replies, confirming that our cost is correct and forecasts the number of 'man days' that the work will take. I reply to inform Rich that this is fine and to advise him of the date by which an invoice for the work is required.

Technical development of the website begins at the agency and, after a week, Rich telephones to let me know that a number of the design changes have been made to the website and that these will be accessible for my approval on a 'dev-site' prior to being

effected on the live website. The next day he emails me the IP address for accessing this site and describes a number of pages of *Web DM* that he would like me to visit to check the changes and provide feedback. Guided by the descriptions of the changes in the email from the agency, I visit the dev-site via the screen of my laptop and a number of finger presses on the keyboard. Once there, I cross-reference the changes to the site against the descriptions in Rich's email with the changes agreed in our original meeting and with the appearance of the current 'live' site. I email Rich to agree all of the changes, other than suggesting that the colour of a hyperlink should be changed to increase its prominence on the screen. Rich emails me back saying that the necessary 'amend' will be made and, with Mark's agreement, the new site would go live the following week.

Once these changes have gone live, a period of advertising activity is undertaken. This consisted in the placement of 'popup' internet banners for a month-long period on a number of websites targeted at SMEs. However, despite both the design changes to the website and the marketing activity, the website fails to achieve sales targets during the five remaining months of my ethnography of Royal Mail.

6.3 The failure of *Web DM*: a commentary

By describing the engagement of a marketing agency in the development of a new advertising product, the vignette provides an illustration of the desire of top managers to extend the capabilities of the marketing department through the exploitation of external knowledge. Taking *Web DM* as an exemplary product of this strategy, this approach to innovation appeared to fail. The purpose of this section is to use the vignette to comment on the effectiveness of this strategy. The notion of absorptive capacity will be invoked to construct this account of failure.

As the vignette illustrated, Royal Mail manages the development of new products and services by drawing routinely on the knowledge capabilities of partner organisations. This system of organising work was the product of a managerial policy that sought to extend the breadth of competences available to the department through the flexible sourcing of external expertise. As the team leader of Fusion stated in interview, the aim was to secure innovation through these partnerships rather than attempt to develop new capabilities in-house:

> Often we want to work with these partners because they are extremely different to us, and if they can bring a technical capability, which we can secure to our satisfaction through a partnership agreement or an alliance or something, I see it as almost counter-productive [to develop capability in-house]. [...] Royal Mail doesn't have the right culture, structure, and size to foster innovation and what we represent is a route to market for the innovators and a route to the innovators for what is essentially quite a conservative customer base. If we can facilitate bringing those groups together for everybody's benefit then that's good. Bringing someone into the fold wouldn't satisfy them and may not satisfy us and our business.
>
> (RM20, team leader, fusion team, 14/05/04)

As we saw in the last chapter, the lack of creativity and commercial experience within Royal Mail were widely acknowledged as barriers to innovation in a liberalising market environment. As such, once a strategic need for innovation had been identified, this imperative would be fulfilled through the creation of alliances with 'the innovators' of partner organisations. While partnership agreements were arranged to access the knowledge possessed within a series of leading organisations, expenditure on internal marketing personnel was reduced through a succession of restructuring exercises. Underpinned by this dynamic, the practice of innovation would become increasingly displaced to – and mediated by – the creative agents within third-party organisations.

As an innovative new product, the development of *Web DM* reflected this approach to creativity. The viability of this enterprise was dependent on Royal Mail's ability to lever the knowledge capability of a marketing agency. In managing *Web DM*, there did not appear to be a strategic imperative for Royal Mail to participate in the maintenance and development of the website. As such, Royal Mail and the marketing agency worked together, yet engaged only rarely in *joint work*. As we saw, during periods of website development, communication between the two organisations was limited to email and telephone contact. A channel for reporting the status of allocated domains of work, this mode of communication performed the role of aligning the project's activities. As Royal Mail marketers were not engaged in the creative process directly, the alignment of practices could be accomplished through the affordances of ICTs. While such a system of organisation may be an efficient method for leveraging specific resources that are held within an external organisation, the commercial performance of *Web DM* would seem to indicate that the method of managing this project was not without shortcomings. In particular, the absence of mutual engagement of Royal Mail and the marketing agency in creative practices did appear to affect the speed with which the project team could adapt the product to improve its sales performance.

In order to illustrate this claim, I want to return to the period of website development that was described in the vignette. Within the mode of management practised by Royal Mail, there is a marked division between the managerial capability that is used to lever the knowledge assets that are tied to marketing agencies, and the accumulation of everyday pragmatic exposure to the creative processes in which those assets are practised by agencies. The dominant communication media, email and telephone afforded the performance of everyday managerial tasks, including agreeing costs for periods of website development, informing colleagues of progress, and checking completed design work. However, the use of these media did not, on the whole, facilitate the mutual engagement of the project team in creative practices, such as participating in a sustained debate about the design of the website or generating a series of ideas and theories with respect to the low level of sales being achieved by the product. These practices, if considered at all, were confined to the minds of discontented individuals within the project team and were not afforded a space for articulation in a group context.

The only time when the group did meet face-to-face was for monthly, or less frequent, product status meetings. Normally convened within a meeting room at Media House, these meetings tended to be organised around specific periods of activity, such as product development, advertising campaigns, or market research. The meetings provided an opportunity for sharing information and updating the group on the current status of these activities. In each meeting, spreadsheet charts depicting customer visits to the website were presented by the agency but the ensuing discussion only related trends in usage to the efficacy of advertising campaigns or design changes to the website. The assembled group did not, for instance, explore the underlying reasons for the degree of correlation between customer usage and the activities undertaken by Royal Mail or the marketing agency. The meetings did not appear to be a forum for engaging in any meaningful work, such as exchanging relevant experiences or negotiating differing interpretations of the reasons for the product's low sales volume.

Having suggested that the development of *Web DM* was characterised by an absence of mutual engagement, and was therefore manageable through the routine employment of ICTs and status meetings, it would seem logical to ask why this should be the case. The answer may be derived from an examination of the way in which Royal Mail approached the development of new mail-related capabilities. In order to cultivate these

capabilities, alliances were arranged with external organisations to acquire access to knowledge and skills that were situated within a new strategic domain. As the team leader of Fusion stated in interview earlier, Royal Mail decided to work with organisations that were 'extremely different to us' because the competences required to secure competitive advantage in a broader market context (mail-related solutions) were not deemed to be wholly available in-house. There was a gap between the stock of knowledge that was currently available within Royal Mail and the bundle of skills, routines, and products that was perceived to be necessary to establish a new set of capabilities. The formation of inter-firm alliances would bridge this gap. However, I want to argue that the practices of learning, critical for the successful exploitation of the knowledge generated within these alliances, were largely neglected.

The marketing agency that was selected to develop *Web DM* possessed a set of skills that was quite different from that which was available within Royal Mail. The CEO of this organisation was the founder of another London-based advertising agency that Nigel Thrift (2005) refers to as 'the chief exemplar of the creative company' (p.143). This agency was employed to work on the development of the website because of the inimitable domains of knowledge, both technical and cultural, that the organisation could bring to the project. Thus, Royal Mail's decision to use a marketing agency can be read as an attempt to generate novelty through the exploitation of 'cognitive distance' (Nooteboom 1999): a qualitative difference among the interpretive schemes of the members of the marketing agency and those prevalent within Royal Mail. However, as stated in Chapter 2, in order to facilitate meaningful interaction within a project group that possesses a range of cognitive structures, we might predict that some sort of intervention mechanism would be required to mobilise the tacit knowledge that sticks to the routines of the 'innovative partner'.

During the time that I worked within the *Web DM* team, no such mechanisms appeared to be in place. Certainly, the spatial intermediation of the practices of the two organisations did nothing to help bridge the cognitive distance between their respective sets of knowledge. Nevertheless, even when the client and agency did come together for face-to-face meetings, both acted within the parameters of a relatively rigid division of roles. This stifled learning, and potentially creativity, because of the lack of engagement of the group with a common set of issues or tasks. For example, after attending my first project meeting, which took place at the beginning of the period of website

development described earlier, I asked Mark, the product manager, informally what he had thought of the meeting:

> As you saw, the meeting was a fairly consensual one; it was made to discuss improvements and wasn't 'live' as such. The output was that the agency need to come up with a time-plan and costs for the changes outlined. We will then look at that and outline the priorities for between now and until the end of the quarter. It was more of a status / confirmation meeting.

To make sense of the lack of mutual engagement within the context of this meeting, Mark's classification of the session as a 'fairly consensual one' is instructive. The meeting was consensual in so far as Royal Mail and the agency deferred to the specific domain of expertise and knowledge associated with their partner's project role. Royal Mail deferred to the agency's role of website developer, while the agency deferred to Royal Mail's role of achieving sales revenue on the product. This meant that, on the whole, Royal Mail did not get involved in website development by the agency, while the agency would not be drawn on Royal Mail's methods for achieving sales revenue, which included administering advertising campaigns and market research activity. Participation in an extended debate about the performance of these activities would mean that one or the other party would have to become embroiled in the role of the other. While the client and agency may have held competing perspectives on the way in which the development of *Web DM* was being managed (due to differing cognitive schemes), the material arrangement of the relationship between the two organisations precluded an exploration of these views[54].

The formal nature of the relationship between Royal Mail and the marketing agency was cast by the contractual arrangement that was agreed by both parties at the outset of the project. Originally, the agency was engaged to produce a software application that would allow SMEs to produce direct mail campaigns online. At an agreed cost, the agency would develop the product and a technical artefact (*Web DM*) would exchange hands. The status meetings and telemediated practices were arranged to monitor the creative work of the agency. The contract appeared to be negotiated on the understanding that the knowledge embodied in *Web DM* could be absorbed readily by

[54] In the London advertising industry, Grabher (2004) claims that agencies nurture trust between client and agency through the practice of 'educating clients'. This includes 'clarifying the division of labour that is rooted in mutual respect for professional competencies' (p.112). From a 'client' perspective, in the case of *Web DM*, the maintenance of a strict division of labour between Royal Mail and the agency did not appear to develop trust but rather seemed to sustain cognitive distance due to a lack of mutual pragmatic engagement, leading to impasse.

Royal Mail. Organised around this artefact, different functions of the strategic architecture of Royal Mail should be coordinated to produce sales revenue. For example, the product manager is expected to evaluate the performance of the product by commissioning pieces of market research that are then managed by the dedicated market research team within Royal Mail. In turn, the market research team briefs external market research agencies to carry out specific pieces of research. Rather than acting as a pragmatic creative agent, Royal Mail manages its internal and external interfaces in accordance with the belief that creativity is procurable through formal transactional relationships.

Assuming that this method for utilising a distributed system of knowledge is successful (Hayek 1945), innovation can be cultivated in a vast array of domains and in the absence of significant investments in the internal absorptive or learning capacity of the firm (beyond partner selection and monitoring practices). However, this approach to innovation faces four major drawbacks. First, given that the successful generation of innovation is often a tumultuous process (Latour and Woolgar 1986; Akrich, Callon and Latour 2002), an attempt to secure novelty through a transactional relationship is likely to be problematic. For example, in the case of *Web DM*, the initial lack of sales revenue meant that the product had to go through a further cycle of development that had not been foreseen:

> I think with *Web DM* as the specific example, what should have happened and hasn't is that the agency were engaged to develop the actual product / solution because Royal Mail did not have the expertise, the time, the budget – if we were to develop it internally – to produce this solution. Once that solution was built and developed, the theoretical way forward is to disengage the agency to the point where they are purely hosting the application as opposed to being intensively involved with the product itself. So, in theory, if the product met the identified customer need, then by virtue of the fact that it does and the incoming sales that come in, the relationship with the agency is a lot more withdrawn than what it currently is.
>
> (Mark, product manager, 10/08/04)

As only the agency possessed the technical knowledge to develop the website, Royal Mail remained engaged in a costly relationship that should have involved only the exchange of a technical artefact. As no mechanisms were in place to reduce the level of dependence on the partner organisation, notably those which would allow Royal Mail to learn some of the skills practised by the agency, navigating the lengthy process of

product development through a consultative arrangement became an expensive and relatively inflexible approach to innovation.

Second, the reliance on external agencies fashions a relationship of creative dependency. While economising on resources and facilitating access to a wider range of capabilities, a decentred system of knowledge management can create a 'hollowed out' (Storey 2002) structure of learning practices. For example, the strategic architecture of the marketing department dictates that the majority of pieces of market research are coordinated by a separate market research team within the department, who draw up briefs for marketing agencies who then undertake the research themselves. This means that the marketer who commissioned the research, along with any other stakeholders, does not interact with 'the market' directly but experiences it in codified form in research reports or, more commonly, as an audience member in the delivery of PowerPoint presentations by marketing agencies. Hence, marketers are not routinely involved in 'sensemaking' themselves (Weick 1995); what they engage in and learn is how to make sense of the market as depicted in the reports and presentations of the 'sense-makers' of the market research agencies. Thus, the employment of marketing agencies confers market knowledge on external organisations and creates a relationship of dependency in which it is the agencies who appear to speak for the market. Rather than being led by the marketing department, the production of new knowledge tends to be mediated by the creative practices that are manifest within these organisations. In the absence of an internal absorptive capacity, Royal Mail can only trust the desire and wherewithal of external agencies to generate innovation.

Third, a corollary of relying on an external agency to produce creativity is the neglect of investment in internal 'people-embodied skills' (Prahalad and Hamel 1990: 84). While the engagement of partners appeared to be a key strategic focus, the training and development of Royal Mail marketers tended to be overlooked. During the time that I was working at Media House there was little evidence of an active training and development programme being in place. Towards the end of the ethnography, Mark left Royal Mail to work for another large organisation. As he indicated during interview, the lack of investment in the development of the skills of managers was a source of frustration:

> Training and development is totally invisible at the moment and this is one of the main reasons why I am leaving. I think there is an absence of any

> guidance at line manager level in terms of what's available, how to get hold of it, and I think if you did a straw poll around the office and said when was the last time you actually did some personal development, because it doesn't have to be a course or a seminar, it could just be work shadowing someone, they would struggle to come up with something in the last year, and that's quite frustrating for people that aren't new starters, that aren't senior management, and are the majority of people in this business.
>
> (Mark, product manager, 10/08/04)

Other than acquiring the competence to administer 'the innovators' through on-the-job experience in successive managerial roles, the hierarchical and decentred organisational structure did not seem to support the emergence of in-house experts in core knowledge domains or recognise the value of creative skills among middle managers. The product of such cases of dissatisfaction among internal managers and successive restructuring exercises, the turnover of personnel did appear to affect the management of products, including *Web DM*. Shortly before he left Royal Mail, Mark reflected on the consequences of the changes in product management over the two-year life of the *Web DM* project:

> From a project management perspective, there's been several changes from Royal Mail's perspective and, actually, the agency, although one of the original representatives is still involved. So, the expertise and the background learning, while some was passed over, you never are going to get everything and, as you know, I am moving on and actually passing over to someone else so it has suffered from a lack of resource continuity. So in some respects you go over the same ground more than once because you don't know any different, and I think in the last eight months we have pretty much isolated the core reasons, based on the research you actually did, and with our previous learnings as to why this thing doesn't work. Because of the change in project management, as far as I can see, none of these reasons are yet to be addressed.
>
> (Mark, product manager, 10/08/04)

Both Mark and Rich became involved in the project after the product had been originally developed and launched. In turn, Mark left the organisation during the period of my research with Marketing and 'handed over' responsibility for managing the product to another individual within the department. While it could be argued that the 'possessed' knowledge accumulated by the current product manager, such as product documentation, legal contracts, market research presentations, lists of project contacts, and a varying amount of tacit know-how, is imparted in 'baton-passing' meetings between changing managers, the knowledge practised in managing the product – the terms of interaction, common sense of where the product is in its development, future

possibilities, challenges, and passion – is embodied in the everyday knowledge routines which align Royal Mail and other agencies. It is due to a breakdown in the practice of these routines that the 'background learning', as Mark referred to it, is lost and the project loses momentum while new knowledge routines, which depend on the brokering of new relationships, are established. Furthermore, owing to the changes in roles caused by the restructuring exercises, there was a lack of ongoing inter-generational contact between past managers of the product and current ones[55]. This meant that learning was not often supported across generations, which can generate new insights through the negotiation of perspectives (Wenger 1998).

Finally, the evidence suggests that the scarcity of investment in an internal absorptive capacity is antithetical to the formation of communities of practice. In relation to the *Web DM* project, the setting-up of an arm's length relationship with an *external* agency and the denudation of the creative skills of *internal* managers do not appear to promote joint work. The nature of the contractual relationship between Royal Mail and the marketing agency meant that the fees that the agency received were invariant with respect to the sales revenue generated by the product. The agency did not, therefore, share the same sort of innovation imperative as Royal Mail when the product failed to achieve sales targets. This anomaly appeared to deter mutual engagement in informal communitarian practices that should, perhaps, have been aimed at changing the product rapidly in the hope of turning it into a success. Significantly, the contractual distribution of competences meant that the burden of improving the sales performance fell on Royal Mail.

The formal mechanism for generating new knowledge – the acquisition of customer insight from market research activity – did not seem to trigger an innovative breakthrough during the period of the ethnography. According to Mark, the existence of a non-specialist market research team within the marketing department prior to the restructuring exercise of March 2004, was not ideally suited to generating specific insights with respect to the SME sector. Subsequently, the accommodation of a market sector team with an SME sector insight group within the functional architecture of the department may stand a greater chance of developing relevant knowledge:

[55] Past managers were no longer based at Media House and were difficult to contact. I was only able to conduct a relatively short telephone interview with one of the two managers whom I tried to arrange face-to-face meetings with.

> From a marketing perspective, the vast majority of research is carried out by the research team and undertaken by research agencies. From an SME perspective, it is only recently with the marketing restructure that this sector has actually been acknowledged as a sector that needs some specific attention, and has got a devoted team to that sector. [...] From a proposition perspective, the customer segment focus is better than the... how do we promote direct mail focus, because you appreciate the broader needs of that audience.
>
> (Mark, product manager, 10/08/04)

Although it was not possible to evaluate the efficacy of the knowledge routines of this new group while I was based at Media House, the creation of a team with a shared domain of interest (the SME sector) may encourage participation and social interaction in the negotiation of a specialist enterprise. Thus, this organisational change holds the promise of developing one aspect of the absorptive capacity of Royal Mail.

Notwithstanding the emergence of a sector insight team within the marketing department, the failings of *Web DM* can be attributed to the lack of investment in the absorptive capacity of Royal Mail. As few managerial mechanisms for cultivating the learning capability of the marketing department were discovered, it seems plausible to attribute the trajectory of *Web DM* to an inability to recognise the need to provide: opportunities for learning (to bridge the cognitive distance between client and agency); investment in human capital (to build durable and creative internal marketing teams); and common innovation objectives (to encourage mutual engagement among Royal Mail and partner organisations). While the absorptive capacity of the marketing department could have been developed using the formal mechanisms noted above, the capacity to learn may otherwise be established through the fostering of an informal knowledge infrastructure. An illustration of the affordances of this infrastructure, as manifested in the logic of interaction of a contrasting market project, is presented in the next vignette.

6.4 Project two: embedding a new project management process

I am accompanying Chris, a young marketing manager, to the initial meeting of a cross-functional project involving employees from a number of Royal Mail departments: a technology function (Ad-Tech), Customer Services, and us, the representatives from Marketing. I met Chris for the first time earlier on today to conduct an interview about innovation after being put in contact with him by his own manager, whom I had

interviewed during the previous week. During the interview with Chris, he described a new process for managing projects that he had recently helped to develop and he was hoping that it would be utilised in the management of a handful of forthcoming projects. Following my expression of interest in seeing this new process being deployed, Chris invites me to come along to the initial meeting for one of these projects that is happening this afternoon. The meeting was taking place at Royal Mail's head office, a ten-minute bus journey away from Media House across central London.

We grab a sandwich on the way to the bus stop and engage in swift conversation around the eating of our lunch during the bus ride – we assess the merits of different universities and discuss the success or otherwise of past Royal Mail projects. When we arrive at head office, a little late for the meeting, a man, dressed conspicuously in jeans and a dress shirt, stands up from the seats in the foyer and joins us at the reception desk to greet Chris. In the lift we take up to the floor of the meeting room, he is introduced as James, a strategy director from Create, one of the creative agencies that is used to bolster the expertise of the department.

Chris opens the meeting room door; we follow him through. We are met by a group of eight suited Royal Mail employees sitting around an oval meeting table. Apologetically, we walk around to the far side of the table and take up the three places farthest away from the entrance. The convenor of the meeting, Alex, a member of the Ad-Tech function, duly invites Chris to introduce his guests. Having introduced James, and me as Stuart, Chris then requests that the rest of the table introduce themselves to us. Once this interruption has been negotiated, Alex is able to continue with the PowerPoint presentation he has been delivering to the group prior to our late arrival. The opening slides of the presentation describe the features of a series of blue-chip company websites which, Alex argues, make these sites examples of 'good practice' in the design of customer service pages. Then, the presentation displays stills taken from Royal Mail's website to highlight inadequacies in relation to the 'good' webpages of these other companies. Royal Mail's website is being examined because the business has a backlog of customer telephone and email enquiries that are proving expensive to service and taking a long time to clear. The hope is that by improving the usability of the website, the number of customers needing to raise telephone and email queries with Customer Services directly will be significantly reduced.

Having outlined the problem, Alex goes on to describe a project approach to resolve it. In his vision, the customer services webpages will be modified incrementally by Ad-Tech and the changes updated on a weekly basis on a dev-site. Access to this site would be made available to a cross-functional project team and regular teleconference calls could be convened to bring the geographically dispersed team together for the making of decisions about the design changes. Alex understood Marketing's role as being a participant in a 'usability forum' that would assess any functionality issues arising from the design changes made to the website. His approach would allow easily implementable 'quick wins' to be made by tweaking the website to reduce the level of subsequent email or telephone contact with Customer Services.

According to Alex's agenda for the meeting, this leaves just one key decision to be made. This is to confirm where the money necessary to fund the proposed project will be coming from. Customer Services would be providing one half of the money and, at this point, Chris confirmed that his team will be providing the other. However, before proceeding further with the project, Chris wants to know if there is more detail on the end-to-end process efficiencies – in terms of the cost of customer contact – by keeping the website as it is now and by making any proposed design changes. Chris suggests that this sort of information is necessary for building a 'business case' document that will need to be approved by senior marketers if further funding for the project is to be secured. James, from the creative agency, supports Chris's case by 'putting on his customer hat' and suggesting that a number of issues needs to be resolved in order for the project to progress. These include 'fleshing out' the requirements of Customer Services for changes to the website which should 'drive everything', and constructing a collectively agreed 'project initiation document' to summarise the top priorities for change on the basis of these requirements. The meeting closes with agreement that a further project workshop to include a period of brainstorming is needed in order to clarify the requirements of Customer Services and move the project forward.

As the meeting's participants are gathering together their belongings to leave, Alex approaches Chris to see if they can have a bit more of a chat about how the project is going to progress. Chris agrees and they, along with James and me, go down to the staff canteen, where we sit around a rather smaller but more comfortable table, and share a cola. The discussion represents an elaboration of the final part of the meeting in that the focus is on how the project is going to be structured. James, who is more vocal in this

setting, reiterates that the emphasis should be on the business requirements – that is, what the specific problems are with the website. He reiterates that these should be explicated through a brainstorming session and then in the ensuing discussion any misinterpretation or misunderstanding could be clarified. Once these requirements are understood, then priorities for change can be isolated, and the design and prototyping of new webpages can *then* begin. Alex is concerned that valuable time will be wasted going through these various stages when 'quick wins' that would save the business money can be implemented very quickly. But Chris is aligned with James in the view that the project needs to be structured along these lines in order for the root causes of the problems to be articulated and therefore be addressed. Showing consideration for Alex's desire to act quickly, James assures him that the stress will be on 'speed, but not running off too quickly'.

In the days following this meeting, a number of emails are exchanged among the attendees. At Chris's request, Alex completes a 'briefing template' for the project the day after the meeting and he emails it back to Chris the same day. The document template requests a variety of information, including: an overview of the project; a statement of the requirements the project is responding to; the project deliverables; key time drivers; and details of measurement mechanisms for assessing the project's success. Alex's answers on the form emphasise rapidity. For instance, Alex has listed as a project deliverable the 'identification and implementation of quick wins', with 'implementation' written in bold type. In the 'key time drivers' section, he writes 'Customer services requirements are for rapid action, implement quick wins now!'.

The next face-to-face meeting following the initial workshop takes place a week later at Ad-Tech's offices. Once again, James and Chris are present, along with Alex. This time, Alex has brought to the meeting a project manager from Ad-Tech whom he wants to be responsible for the overall administration of the project. The meeting is arranged to discuss in more detail the programme for the second project workshop, scheduled for a week's time, which Chris and James had deemed necessary at the last workshop. Thus, James and Chris have set the agenda for this meeting. Along with discussing the second workshop, James and Chris also want to discuss a number of other items relating to the general management of the project. The meeting begins with these project management issues. James circulates an A3 sheet of paper that illustrates a new 'document tree process' that they want to follow in managing the project (Figure 6.1).

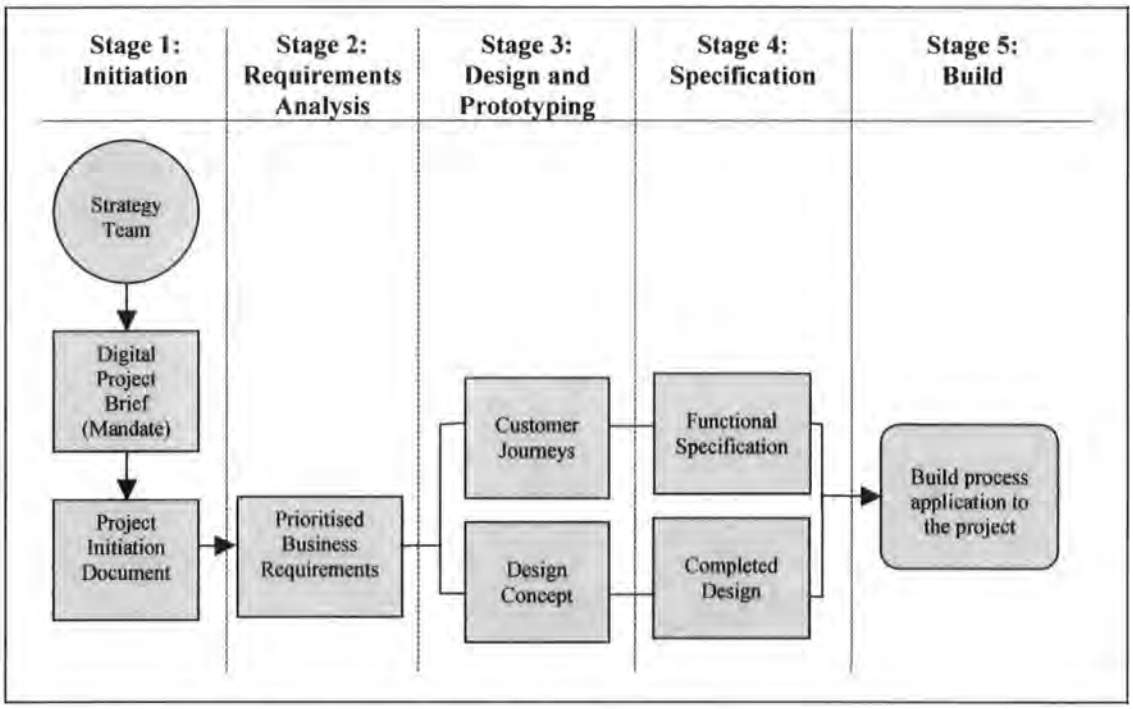


Figure 6.1. Document tree process for digital projects

Using the document as a point of focus, Chris and James take the group through the project management process.

CHRIS: [*running his finger across the document*] There are five stage gates. First you have initiation, which sets the strategy or imperative for undertaking the project.

JAMES: [*looks up from the document to address Alex directly*] This leads to the next stage of prioritising the business requirements. This is critical in order to make sure you are satisfying the business need. This needs to be more specific than… in three weeks Customer Services want reduced telephone and email volumes…

ALEX: [*interrupting*] What about quick wins? It's costing us money. There are things we can do in days. I have no issue with the mechanics but Customer Services won't wait another month!

JAMES: [*speaking defiantly*] Every project should have a process. We can do some lightweight revisions but nothing more until we have the digital project brief agreed… what do we have for the business requirements on paper?

Keith, the newly appointed project manager, tries to intervene.

KEITH: [*looking from Alex to Chris*] I can see two different approaches here. It is going to be crucial how we work together.

CHRIS: We will have eighty per cent of James's time. We are bringing them into the team so you don't need to worry about niceties.

KEITH: [*looking towards Chris*] Within Royal Mail, the main customer is you?

CHRIS: [*nodding*] If the Royal Mail brand is not working then I am in trouble.

KEITH: Ok, Chris is master.

Within an hour of the meeting finishing, James emails Keith a number of sample documents relating to the project management process. These included a couple of project proposal documents and an illustrative set of business requirements. The next day James emails Alex a long list of questions regarding contact with Royal Mail's customers for circulation among the group of people attending the second workshop as preparatory 'homework'.

* * * * *

The same group of participants that attended the initial *Help Online* workshop are sitting around an elongated dark pine table in one of the two boardrooms at Create's offices. The room has been booked for the day. This time around the seats are leather-trimmed rather than cloth-covered. There are two pots of fresh coffee on one of the sideboards and an inviting plate of biscuits. Keith is standing up at the front of the room next to the LCD screen and informing the group of the agenda for the day, which is displayed on the screen (Figure 6.2).

Help Online Workshop – Agenda

Location: Create, west London.
Time: 10am

1 Introduction
Agree objectives for the day:-

- To understand clearly the customer requirement
- Identify a prioritised list of actions
- Agree the project parameters

2 Customer Services Requirements Brainstorm
(Breakout session identifying Customer Services' requirements)

3 Priorities
(Open session prioritising those requirements)

4 Quick Wins
(Open session identifying quick wins for urgent action)

Lunch

7 Exploration of Requirements
(Breakout session; examining requirements in depth)

8 Define the Project

9 Review and agree key meeting outputs

Figure 6.2. Agenda for second *Help Online* project workshop

Following a round table of introductions and the brief articulation of each participant's personal objectives for the day, James stands up to introduce the second item on the agenda: the Requirements Brainstorm.

JAMES: There are four flipcharts and pens available for giving us your feedback [*draws the group's attention towards these by pointing to different parts of the room*]. If there was no customer services section on the website, what would you like? The key is getting your feedback. What would Customer Services like to achieve from the project? The output should be a list of changes to the Royal Mail website.

After this guidance, the group then rise from their seats, split up into groups of three or four, and gather around the four flipcharts. Within each group, the participants scribble ideas down on Post-it notes and attach them to the adjacent flipchart. Keith and James periodically visit each group to ask questions, 'how are you doing?' or to bring over 'inspiration sheets' – which were pieces of paper with ideas contained in speech bubbles – to try to stimulate thinking. After around fifteen minutes the white space on the flipchart sheets of each group is filled with Post-it notes and the groups are recalled to the table. One member of each group is invited by James to read out the ideas that have been attached to their group's flipchart. After a representative from each group had stood up and animatedly fed their ideas back to the entire group, Keith said 'it's now time to get some priorities'.

Every member of the assembled group is instructed to 'vote' for the ideas on each flipchart by placing a 'tick' on four of the Post-it notes attached to each sheet. People quietly move from board to board, strain to read the shaky handwritten scribbles and, after a varying period of deliberation, 'tick' the ideas. Once all of the participants have assigned their allocated number of votes to the Post-its, those with the most ticks are transferred to a clean flipchart sheet by James and he asks people to call out and classify the ideas as high, medium, or low priority. Once this has been done, James then arranges the Post-its under a number of themed headings, such as 'visit', 'data', and 'process management'.

The group moves on to the next item on the agenda, 'Quick Wins'. This is the session that has been incorporated to demonstrate to the group, and in particular to Alex, that there is progress being made with changing some elements of the website.

JAMES: [*addressing group*] There is a known problem with one area of the website. I am now going to present you with a possible solution that we have been working on. We have taken a flying start on this one. We haven't consulted Customer Services, so the chances of it being correct are quite slim [*James demonstrates the changes on a 'preview site' that is being displayed on the projection screen*].
ALEX: [*raises his hand in the air*] What can we do by a week on Friday?
JAMES: [*affecting confusion*] I'm being slow, what requirements are we responding to?
ALEX: Reducing the number of calls to Customer Services by encouraging people to send emails.
JAMES: What does it cost to service an email? We need information that fleshes out the business requirements.
KEITH: I will issue a brief. I will call a meeting and we can generate a set of requirements to begin the design stage. Shall we break for lunch?

After lunch, two of the attendees from the customer services team present issues and problems that they have with the current Royal Mail website. They bring the current website up on the LCD screen, and highlight perceived problems, such as changing the colour of text from grey and reducing the amount of text in the box on the left-hand side of the 'landing page'. After they have pointed out a number of further problems with the current website, Keith begins to summarise what has been determined in terms of business requirements during the course of the workshop. By this time the group appears to be lagging, so Keith quickly runs through where the budget for the project is coming from, and who is on the project board. James says that the day has been useful because they have been able to categorise the requirements into 'the top twenty ones from seventy disparate ones'. Keith thanks the group for attending and says that, together with James, he will document the 'scribbled feedback' on the Post-its and circulate a documented set of business requirements to the group in the next few days. Everyone else has left; James, Keith and myself remain behind. While James collects together a set of 'screenshot' boards that have been annotated at lunchtime, I read aloud the themed ideas written on the Post-its for Keith to type them rapidly into his laptop. A set of action points arising from the meeting is circulated via email among the group.

Two days after the workshop, an email is sent to Chris by a programmer within Ad-Tech who works under Alex. Attached to the email is a number of 'screengrabs' of pages from the website that the programmer has made 'usability fixes' to, and an instruction for Chris: 'If you're happy with what we've done please let me know and I'll send live'. Without Chris's authorisation, the changes are implemented by the programmer. The project team meet to review the 'quick wins'.

KEITH: [*eyes fixed on the screen of his laptop*] First let's discuss the email that's been circulated. It shows obvious things about the screen that can be changed.
ALEX: [*flicking through print-outs of the changes*] We removed the obvious 'contact us' button and changed it to a 'help' button. This takes the customer to a set of FAQs. From there, they can contact Customer Services. It's a once over the ground.
KEITH: [*looks up from his screen*] It's good to have got the ball rolling. By doing something it kicks the project off and makes us think.
JAMES: We should draw a line under this process pretty quickly... otherwise we end up with more spaghetti.

All of the 'quick win' changes are agreed and are implemented on the website later on that week. However, from that point onwards the development of the project is aligned to the digital team's project management technique. James and Chris facilitate a number of face-to-face meetings with individuals present at the second workshop to gather more information about the business requirements before proceeding with design changes. As prototypical design changes are made to the website, further meetings are held to check that the changes meet the business requirements of the stakeholders and, if not, they are refined accordingly and reviewed again. Feedback from Customer Services indicates that early changes made to the website are successful in reducing significantly the number of email and telephone queries to Customer Services. Chris was able to share these positive results with the marketing executive committee when he delivered a presentation to them on the digital strategy. At the end of the presentation, the chair of the committee agreed that further resources to support digital projects would be sought.

6.5 The success of *Help Online*: a commentary

Similar to *Web DM*, the *Help Online* project exemplifies the use of external knowledge and expertise as an approach to innovation. However, the practices and outcomes associated with each project were markedly different. The purpose of this section is to comment on the relative effectiveness of the *Help Online* project. I will argue that the success of this project should be linked to the generation of absorptive capacity through informal mechanisms, namely repeated interaction and the contagion of a specific logic of project management.

While the management of *Web DM* was characterised by an absence of joint work, the development of *Help Online* was heavily influenced by the close collaboration of a manager within Royal Mail's digital team and a strategy director from the creative agency. The product of this alliance was an innovative method of managing marketing

projects. The digital team had developed a way of working that diverged from the 'official' procedures depicted in Marketing's business processes. When I first met Chris, on the day of the initial *Help Online* workshop, he described the origins and features of their new project management technique. The joint creation of the digital team and Create, this was a novel method for delivering technical projects in an emerging 'digital space':

> Royal Mail has a process for everything. Previously, the way of delivering projects was to work through Ad-Tech, whereby they provided the technical elements and we provided the commercial input, you know, we gave them a project brief. We needed to find a new process because there wasn't a process in place for delivering projects in the digital space where many different parties needed to be involved. The business is pretty relaxed about it; I mean it's not that savvy, it wouldn't have recognition of it.
>
> (Chris, digital team manager, 17/05/04)

In order to bring together these different parties, a cross-functional virtual team structure was created. Chris sketched this out on his notepad during our initial meeting and it was also represented on one of the slides of the PowerPoint presentation that he made to the marketing executive committee (Figure 6.3).

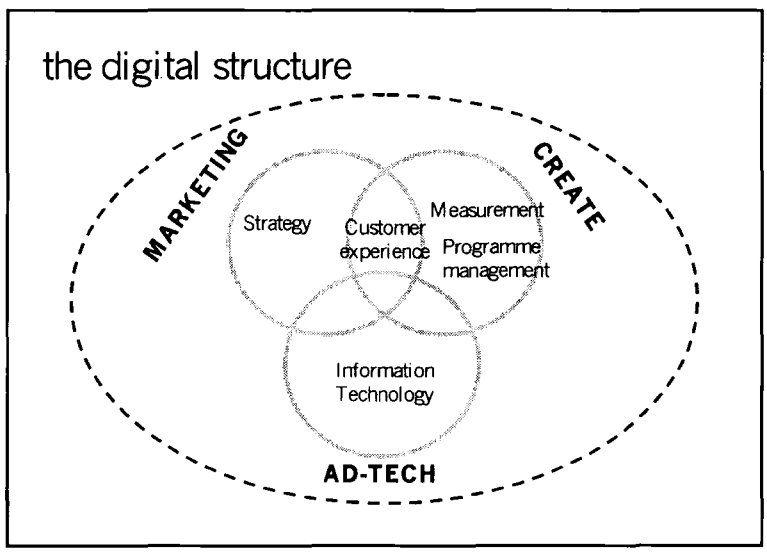


Figure 6.3. The hub structure for delivering digital projects
Source: PowerPoint slide from Chris's presentation to marketing executive, 21 July 2004, simplified to protect commercial confidence

The team structure defined the project role of each represented function. Within this interdependent role structure, the experience of customers was identified as a common domain of interest. As the representatives of Marketing, Chris' team was responsible for

setting the digital strategy. The need to tie each project to a strategy – and to a mechanism for measuring the success of each project in relation to that strategy – was something that Chris had learned during a university course that he had attended recently:

> One of the things I have done is an innovation course with Cranfield University; they have got an innovations funnel. [...] Process one is getting your strategy, prioritising what's important and what's not, and then that directs your creative. So you get the right people – who are creative, who are knowledgeable, who have an understanding of the market – together to actually wrestle with the problems and come up with potential solutions. [...] That's broadly speaking actually an approach. It's strategy, creative, managing a portfolio, with measurement. This is a way of managing a team that brings in the right people and the right forums.
>
> (Chris, digital team manager, 17/05/04)

In order to translate these ideas regarding strategy and management into elements of a virtual team structure, Create were engaged to forge the concept with the specific organisational requirements of Royal Mail, and thereby fashion a new way of working across the digital space:

> Create were involved in the role design and process. In order for it to work though it requires everyone. Royal Mail wanted a different way of working, but it was driven by my team. The decision was to reassess our processes as we were working with a mixture of all different agencies. Create provided most of the advice, the hub structure.
>
> (Chris, digital team manager, 17/05/04)

Having developed the hub structure, James and Chris worked in partnership to develop a process for managing digital projects. The five-stage project delivery process (passing through initiation, requirements analysis, design, specification, and build stages) that they constructed was based on *Prince2* principles[56]. *Prince2* is the project management method that employees at Create are taught to use for managing client projects as a specialist module in their formal training programme[57]. This method was an integral part of the agency's way of working. A willingness to follow this approach, if not the subtle nuances of the technique itself, became apparent in the practices of Royal Mail's

[56] *Prince2* is a stage-gate project management methodology. This technique was developed by a UK government department in 1989 for managing large-scale projects. The approach is flexible in terms of the variety of projects it can be applied to, with respect to scale and content, but rigid in terms of the stages that any project must move through.

[57] 'Create Plan for Training 2004', PowerPoint presentation delivered to Create employees, 27 November 2003.

brand team prior to the disclosure of the 'digital space'. Awareness of the process among employees emerged through interaction with Create representatives in the delivery of marketing projects in the year before the restructuring of the department.

The desire to learn from the practices of the agency was propelled by the perception that the employees within agencies possessed a strong work ethic and were 'experts' in their fields. A member of the digital team, Ben, saw Create's style of working – understood as being driven by the requirements of a client – as being progressive when compared to the practices of Royal Mail's marketing teams in general:

> The reason I see we employ agencies is because they are experts. Ideally Royal Mail would be full of those people but I think agencies headhunt the best and offer them very lucrative salaries because they're obviously in demand. What you are assured of by using an agency is, you know when you purchase their services, you will be getting top-class marketers whereas if you employ Ben you don't know what he is going to be like until he has actually done his job; you never actually know if he will fit into the culture and everything. They are the best and we have to look to them for guidance.
>
> (Ben, graduate, digital team, 13/08/04)

Although Create had traditionally been employed on a project-by-project basis by Royal Mail, the shift to a 'retainer' contract following the restructuring facilitated the development of a more durable relationship. This meant that members of the digital team and the agency were able to interact on an everyday basis through joint involvement in ongoing projects. James was regularly at Media House, either working in the touchdown area or engaged in formal or informal project meetings. The integration of the team with the agency extended to the clearance of two desks at Create's offices for use by members of the digital team before or after the many project meetings that were held at the agency. This system of organisation meant that members of the digital team were able to witness at first-hand – and participate in – the practices of a creative agency.

Thus, the digital team were able to exploit the knowledge immanent in the practices of an external creative agency, Create, because the two groups were involved in an integrated and sustained working relationship. However, by adopting a situated learning approach, the specific mechanisms through which this relationship developed the absorptive capacity of the digital team can be disclosed. First, the client and agency were mutually engaged in a domain of activities, which encompassed: designing the hub

and project management processes for the digital space; engaging in extended debates to influence the management of digital projects; and facilitating project-related activities such as the *Help Online* brainstorming workshop and reviews of customer requirements. By participating in such activities, members of the digital team were able to develop a sense of what constitutes competent engagement by comporting with the skilful performances of the agency's employees. As a member of the team stated during interview, witnessing the way in which a talented member of the agency conducted everyday work activities was a source of learning and inspiration:

> I would watch him at a meeting and he was fantastic. He would facilitate everything; he had great ideas but he didn't always impose them. He always threw everything at people and got people to think and talk. That is something I am trying to learn from. I had to chair a meeting the other day for the first time and I tried to facilitate it in the same manner so I prepared flipcharts so there was a staged way to the meeting and that was a really good learning experience. [...] He is the golden boy of the agency and it's a great agency – so you know he is one of the best – and just working with him for six months was a great experience. He taught me how to conduct a meeting properly.
>
> (Ben, graduate, digital team, 13/08/04)

Second, the digital team's capability to learn was facilitated by the material infrastructure for knowing that was visible within the practices of the agency. As stated earlier, the method by which Create tends to manage projects is underpinned by *Prince2* principles. Embedded in the practices of Create, this methodology represents a common 'procedural authority' (Cowan, David and Foray 2000) that orients the knowledge routines of the staff as they work on client projects. As each project passes through the same predetermined stages, a client who works with the same agency regularly would almost certainly notice that the process by which client projects are managed has a palpable rhythm. In an interview with James, he described the method by which projects tended to be managed:

> We use *Prince2* methodology. You start with the project initiation document, which is a project brief, and outlines the roles and responsibilities on the project and sets the boundaries. Everyone has a point of focus. A problem, for example, may be not getting access to the right people, so you need to initiate a meeting. Then you have the analysis phase, which is the generation of business requirements. Customer journey modelling is key to this. Then in response to these, you have the design phase, which may have technical and creative elements. Then you have implementation.
>
> (James, strategy director, Create, 24/08/04)

In order to facilitate the coordination of different functions within the agency – which includes teams of account managers, creatives, media planners, administrators, and contracted external agencies – each stage of this process is associated with a familiar set of documents that act as 'common currency'[58] within the advertising industry. Thus, the agency's method of project management was reified in the style of a range of shared resources, including: initiation documents, project overview diagrams, prototypical design documents, customer journey models, action registers, and timing plans. The intended role of this material infrastructure may be tied to the goals of the agency's cross-functional teams, manifestations of an epistemic community, that need to coordinate their practices and work to a common method of creating and validating knowledge for their clients. However, the visibility of this method – its lucidity and materiality – also afforded the emulation of aspects of its practice by the client, the digital team. For example, the production of a repertoire of visual representations appeared to captivate the imagination of at least one member of the team:

> The team I work in, maybe this is slightly blowing our own trumpets or arrogant, but we all believe that we're quite a bit ahead of a lot of other people in Marketing. Probably a lot because we've got these external leads; they really wanna get marketing to be the essence of Marketing as opposed to just like a function. [...] We've set it up with the agency and Ad-Tech, we've got these circles on whose responsibility it is to lead in certain areas, like technology, creative, product management, and strategy. So we're all actually getting quite good at this.
>
> (Ben, graduate, digital team, 13/08/04)

Unintentionally, the same set of devices that were used to coordinate the activities of different teams within the creative agency were, through habitual use and depiction, made available for disclosure by the digital team and transposed into the digital space.

Due to the action of the mechanisms described above, when Ad-Tech encountered the digital team at the first *Help Online* project workshop, they were, in effect, encountering a self-organised community of practice. While Ad-Tech were intending to contribute to the delivery of a routine technology project, the task of the digital community was to disseminate a new logic of project management. The remaining part of this section will describe the devices that afforded the contagion of this innovation.

[58] Interview with James, strategy director, (24/08/04).

The initial project workshop led by Alex from Ad-Tech, which I attended with Chris and James, indicates something about how the *Help Online* project may have been managed in the absence of the digital community. The procedural imperative for Ad-Tech was to act as fast as possible to change the website in order to reduce the cost of servicing vast numbers of emails and telephone calls from customers who had visited the site. Alex envisaged that the majority of changes would be accomplished within three weeks. The implementation of 'quick wins' would lead to the realisation of identified cost savings. The workshop led by Ad-Tech was an opportunity to present the problem to all of the stakeholders, to get their 'buy-in' in the form of funding for the project, and to begin to make design changes to the website. In Alex's eyes, the role of the marketing department was limited to acting as a 'usability forum' once the design changes had been made.

The digital community held an alternative view with respect to the way in which the project should be managed. The key difference between their method and Alex's proposed way forward was the community's desire to proceed on the basis of responding to a clearly defined set of 'business requirements'. The satisfactory definition of these required more than the statement of a problem, such as reducing the number of telephone calls and emails to Customer Services. The project should be driven by the actual requirements of Customer Services. This procedural logic was grounded in the digital team's way of working, which had been formed through repeated interaction and mutual engagement with Create, as described earlier. However, aligning the project to this mode of management did require a great deal of work by the digital community, which was accomplished, or so I will argue, through the enrolment of numerous devices and human and non-human actants.

The first of these devices was the disclosure of a 'digital space'. Until the restructuring of March 2004, a functional team that was responsible for products and services within a digital domain did not exist. When a digital team was created, there was a degree of ambiguity with respect to the role and remit of the team. In the hands of Chris, the team's namesake became 'any way we relate to our customers using mobile phones, website [...] there's a whole range of stuff there'[59]. This meant that Chris's team had a stake in a wide range of projects because they involved a relation with Royal Mail's customers. Informing others of the stake that Chris's team had in projects in the digital

[59] Interview with Chris, digital team manager, (17/05/04).

space involved a great deal of informal interaction with other marketers around Media House. For instance, I witnessed an informal meeting that Chris organised with a marketer, who worked in another area of Marketing, to discuss a product concept that was soon to be moving into development stage. Chris described the same digital strategy to this marketer as he had explained to me in interview, and asked the marketer whether he would like the product-in-development to be tied into the digital strategy through the mechanisms of the digital structure that he had described.

This discussion, like the interview I conducted with Chris, was supported by a sketched-out version of 'the digital structure' and the five-staged project management process in Chris's notebook. In the terminology of actor-network theory, these sketches and process diagrams represent the generation of a set of artefacts or network 'intermediaries' that 'define the skills, actions, and relation of heterogeneous entities' (Callon 1991: 186). In the case of the digital space, aligning disparate groups – namely Ad-Tech, Marketing, and Customer Services – depended on the reification of a broad set of project management ideas into a common set of processes and representations:

> [...] to really make this work clearly these have to be one box, it can't be three boxes. Practically, you need to have the same documentation, same project management tools, the same briefing infrastructure, the same recognised process for dealing with things. [...] Because we have documents and standard processes, it means that when we send a brief to someone for a project we can add examples to show them how to fill it in.
>
> (Chris, digital team manager, 17/05/04)

Introduced into conversation with different actors within Royal Mail, and supported by structure diagrams and project management flow charts, the 'digital space' was starting to move beyond the confines of the practices of the digital team, and appearing in notebooks and conversations in numerous places.

The second alignment device was political persuasion. At the initial *Help Online* workshop hosted by Ad-Tech, realigning the trajectory of the project to the method of management desired by the digital community depended on Chris and James interfering with the project plan laid out in Alex's presentation. Without having any process documentation ready-to-hand or an audience educated in the grammar of their project management philosophy, Chris and James resorted to an oratory interrogation of the procedural logic underpinning Alex's approach. James undermined Alex's proposed methodology by venturing forth an alternative procedural logic: one driven by the

'fleshing out' of the requirements of Customer Services. To strengthen their case for this radical approach, Chris invoked the 'official' hierarchy of Marketing by suggesting that compliance with the process of investment appraisal for the project would depend on building a business case proposal, which, particularly in the then cost-cutting climate, would need to demonstrate that the project was addressing a quantifiable need. This was decisive. The lack of a detailed period of exploration to make explicit the business requirements that the project would be responding to meant that Alex's proposed project methodology would not be complying with the formal process for investment appraisal. This revelation meant that a further workshop to explicate the business requirements was an institutional necessity.

The third device that diffused the digital community's project delivery method was endorsement. The method, which adhered to *Prince2* principles, was an adaptation of Create's mode of organising project work with their own clients. The perception, that this method had been used successfully by the agency for many years, was instrumental in facilitating the adoption of the method both within, and beyond, the digital community because Create were 'the experts'. The perception that Create was a successful expert organisation was reinforced by the style of their offices. Although Royal Mail's head office was a pleasant and modern working environment, it was not adorned with anything like the profusion of symbols of creative success that Create's offices possessed: the soaring glass cylindrical building; the advertising campaigns of top-name brands – their work – displayed proudly on the walls; the leather seats and couches; and the pots of cafetière coffee and freshly made sandwich platters. There can be little doubt that when the group of attendees arrived at Create's offices for the second workshop that they would have been relatively impressed by the change of venue. Indeed, during the lunch break of the workshop, one of the attendees from Customer Services was so impressed with the general ambience that she asked James how easy it would be for a relative of hers to get a work placement with the organisation.

The final device that drove the dissemination of the digital community's logic was an embodied trait, tenacity. After the workshop ended – and Alex went for a cold drink with James and Chris – the message about effective project management was resolutely repeated: the business requirements should drive the project. When this informal meeting had finished Chris went straight to the touchdown area in head office and emailed Alex a briefing template for initiating a project, in accordance with stage one of

the digital community's project management process. At the second meeting between the two parties that took place a week later, Chris brought a diagram with him that depicted the document tree process for digital projects and he, with James, described again how they envisaged the project being managed. It was particularly important to present a good case for their alternative approach at this meeting because the project manager, Keith, was to be introduced at this meeting. Although Keith could 'see two different approaches' and exercised a degree of neutrality throughout the time I was involved in the project, he did assign authority to Chris at this meeting, 'Chris is master'. The attempt to educate the project manager in the features of the digital community's project delivery process continued after the meeting, when James emailed to him a number of sample documents relating to the project process, including a business requirements specification. At a further meeting with the project manager – which took place a few days prior to the second workshop – James once again argued the virtues of their requirements-driven approach to Keith, who was at that time attempting to persuade James that elements of Alex's 'quick wins' approach may be valuable. James maintained his stance: 'Process is the key. You need an underpinning requirement that it will solve'. The level of tenacity exhibited by James and the digital community in defending their approach appears to be in line with a convention of working very hard at marketing agencies, as proclaimed on Create's website[60]:

> From our planners to our creatives everyone is into results. And we've found – surprise, surprise – that the best work produces the best results. We've built an enviable reputation for the highest standards and fastest turnaround times on everything from launches to sampling, conferences, exhibitions, PR stunts and even video production.

This was an ethos that Create was proud of being renowned for and one that did spill over into the practices of the digital community.

In summary, the digital community was able to realign the trajectory of the *Help Online* project because they had the wherewithal to deploy a number of enrolment devices: disclosure, political persuasion, endorsement, and tenacity. Like the development of the method of project management, each of these devices was operationalised by a socio-material infrastructure that was cultivated in the practices of the digital community. The disclosure of the digital space was supported by numerous representations, such as

[60] Website address withheld to protect anonymity of organisation, site visited on 20/12/04.

sketches and process diagrams, which reified the intended practices across the domain of a new organisational function. Supported by sociality at the boundaries of the digital community, these artefacts materialised the digital space by bringing its salient practices in to view to aid the perceptual awareness of the uninitiated (Gibson 1979). The process of political persuasion, undertaken by James and Chris in the context of a project workshop, exploited the dialogic of shared practice (Shotter 1993). While the convenor of the workshop, Alex, may have arrived at the meeting room that day with a particular plan of action – and brought a carefully crafted PowerPoint presentation to support this plan – he could not prepare for the spontaneity that was afforded by the dialogical practice of the meeting. This opportunity was translated into dissonance by the digital team and the trajectory of the project was displaced from the projected plan. Create's endorsement of the project management logic was made meaningful by the decision to hold the second brainstorming workshop at the agency's offices. As many of the workshop participants would have been unfamiliar with the social practices of creative agencies, the style of Create's workplace – clad in the materiality of success – was used to reassure all present that the shift in the trajectory of the project was a positive one. Finally, the tenacity with which the management logic was publicised by the digital community was achieved through the tireless exploitation of opportunities for action – initiating meetings, setting agendas, making interjections, constructing emails, circulating document templates, and sharing the odd cola. Whether or not these activities issued from the machinations of a cognitive schema, the point I have made is that they were performed to maintain a particular stance on the project through the *labour* of tenacity.

6.6 Comparative evaluation of projects

In this chapter, selected events from the practices of two projects, *Web DM* and *Help Online*, have been described in order to evaluate the efficacy of Royal Mail's strategy of exploiting external knowledge and expertise to extend the capabilities of the organisation. In this concluding section, I will draw on evidence from the two projects in order to comment on the effectiveness of this strategy and to tease out the implications for theories of organisational learning and innovation.

The evidence presented in this chapter demonstrates that managerial strategies produce variegated practices. Although the two projects were undertaken in conjunction with

external partners, both of which were advertising agencies, the everyday practices through which each of these projects were managed were markedly different. I would therefore suggest that theories of organisational learning cannot hope to grasp the mechanisms that underpin the performance of managerial strategies without acknowledging the practices through which those strategies are enacted. In accordance with the insights generated by situated studies of learning (Suchman 1987; Lave and Wenger 1991), the evidence suggests that it is practice, and not strategy, that determines results.

In order to understand the variation in the outcomes of the two projects, the analysis centred on the social anthropology of engagement that was manifested within the practices of each project. At the outset of this chapter, it was noted that an internal absorptive capacity is required in order to exploit external knowledge. The *Web DM* project appeared to fail because of the absence of formal mechanisms for bridging the cognitive distance between the marketing agency and the product manager within Royal Mail. Coupled with the limited investment in training and development and lack of organisational slack due to the restructuring of the marketing department, I can deduce – in line with cognitivist theories of organisational learning (Cohen and Levinthal 1990; Nooteboom 1999) – that the strategy of generating innovation through the exploitation of external knowledge was unsuccessful because senior managers were not attentive to the absorptive capacity of the firm.

While facing the same set of organisational conditions, the *Help Online* project appeared to succeed because the group leading its development was able to generate absorptive capacity through informal mechanisms. Acting as a community of practice, the digital team was able to produce innovation and learning through repeated interaction and mutual engagement in the context of a durable relationship with an external creative agency. The correlation found between the durability of a relationship and the potential for learning lends support to the claim that the success of ostensibly ephemeral projects is underpinned by an ecology of sustained ties that are constitutive of communities (Grabher 2004). Thus, the informal practices that are the product of the engagement of communities of practice may underpin the formation of new capabilities, as these groups are able seemingly to forge their development in spite of the 'learning failures' of large hierarchical organisations (Amin and Cohendet 2004).

However, in order to gain a fuller understanding of the mechanisms that contribute to the development of the absorptive capacity of a community of practice the analysis turned to the socio-material practices through which these groups engage in processes of learning. In the case of the digital community, although the creative agency was the 'innovative partner' who possessed, among other assets, an established logic of project management and a convention of working hard, the examples of learning and innovation that took place actually emerged through the mutual engagement of the community. By participating in joint activities such as designing the hub and processes for the digital space – towards which a Royal Mail manager contributed by introducing ideas that he had learned during a university course – the digital team were able to achieve a levelling of the knowledge asymmetries that are formed recursively in the traditional division of work between client and agency.

While no difference between the cognitive assets of the two advertising agencies involved in the *Web DM* and *Help Online* projects could be identified, the one factor that does explain their divergence in outcome is the variance in the logic of interaction exhibited in the two projects. While the arm's length contract between the client and agency seemed to sustain creative dependency in the *Web DM* project, the integration of the member of the advertising agency within the *Help Online* project – signified by Chris's 'you don't need to worry about niceties' quip to the team – meant that the whole team participated together in creative practices. Taking the evidence from the projects together, the generation of absorptive capacity is not defined by face-to-face or virtual modes of interaction – the former, traditionally thought of as the context for sharing tacit knowledge, and the latter, the domain through which codified knowledge may travel – but by the relational proximity of the client organisation to the creative mechanisms through which knowledge, tacit or codified, is generated.

Chapter 7
Conclusion

7.1 Introduction

The themes of organisational learning and innovation have become firmly embedded in academic and managerial accounts of corporate performance as recognised sources of advantage among competing firms. However, much of this literature identifies *cognitive* knowledge as the critical resource for generating, propagating, and governing these processes within organisations. Influenced by the turn towards practice in the social sciences over the last two decades, I sought to open up the current debate about knowledge by exploring the relevance of non-cognitivist conceptualisations of learning and innovation. Accordingly, the objectives of this thesis were to clarify the relationship between cognition and different types of learning, and to further understanding of the role of non-cognitive mechanisms in the development of organisational capabilities. In this final chapter I review the findings from the ethnography of Royal Mail in relation to these objectives, and discuss the conceptual and policy implications that emerge from the research.

7.2 Learning and innovation at Royal Mail

Royal Mail is an organisation in transition. After possessing a national monopoly in the provision of postal services for over three centuries, it is now competing with other postal organisations in a liberalised market context. Coupled with the proliferation of other communication media, Royal Mail is facing an innovation imperative that is comparable with any other in its history. Many of the events that are described in this thesis can be understood in relation to this wave of change in the environment of this organisation. This shift precipitated two processes of learning. First, Royal Mail invested in the development of new mail-related capabilities in order to support the core competence in postal collection and delivery. By developing new competences that facilitate the provision of mail solutions, the aim was to sustain loyalty among the firm's largest customers in preparation for market liberalisation. This imperative demanded the creation of a new marketing team that was responsive to the needs of business clients within different market sectors, including retail, finance, and SME. Second, the top management team led the organisation through a radical programme of

restructuring. Designed to make the business leaner in the context of a competitive market environment, this imperative demanded a functional structure that was flatter and more flexible: one which was able to accommodate the redundancy of 30,000 of the organisation's personnel. Thus, while the creation of a new functional architecture for the marketing department did reflect the desire to renew a competence in mailing solutions, the restructuring also aimed to rationalise the department in order to reduce the managerial overhead associated with the function. Beginning with the programme of restructuring, the mechanisms through which each of these managerial strategies was accomplished, as well as their effect on learning and innovation, are described in turn.

The three-year restructuring plan was designed to induce a process of 'unlearning' (Hedberg 1981). The revelation that Royal Mail was 'haemorrhaging cash' (Leighton quoted in Consignia plc 2002d) under the extant managerial regime was used to initiate the largest redundancy exercise in the history of the organisation. The new chairman began this process by shifting the composition of the top management team: Board members possessing years of Royal Mail experience were replaced with external directors who possessed experience of the private sector and modernisation programmes. By displacing the core beliefs of the top team, Leighton's actions can be understood as an attempt to adapt the cognitive structure of the organisation (Lyles and Schwenk 1992). Each product of the innovation strategy that was devised in the period of financial flexibility in the 1990s was either rebuffed (global distribution strategy), rebutted (knowledge consultancy), reallocated (The Lab), or restructured (media ownership strategy). Instead of focusing on innovation, Leighton aimed to resolve the 'deep-rooted industrial relations problems' that had emerged through decades of conflict between the management and trade union. The chairman disclosed the marginalisation of workers and introduced a series of initiatives to boost morale, notably the institutionalisation of weekly team meetings for discussing local issues and the profit-sharing scheme. While the style of corporate change was no less efficiency driven and top-down than previous change initiatives, Leighton's approach appeared to be more successful than those of his predecessors. In April 2005, Royal Mail reported that the accumulated losses of £1.4 billion had been consolidated and that the renewal plan had therefore been completed successfully.

However, it would be unreasonable to attribute this outcome solely to the 'strategic cognition' (Schwenk 1988) of the leaders of the organisation. The renewal plan was

negotiated in the practices of different organisational groups throughout the hierarchy. For the marketing team that I followed, the formal objectives of the restructuring were addressed through a round of interpretive work and reflexive debate that was undertaken in conjunction with adjacent teams within the sales function. While the renewal plan may have been embarked upon in order to adapt historic beliefs and to remove inefficient routines, its successful implementation actually relied on the durability of the knowledge that was situated within the extant practices of the organisation's communities. This knowledge clarified the role of different functional teams and the interfaces among them; it afforded the production of resources which oriented the activities of new and existing marketers; and it supported the translation of marketing capabilities into customer propositions. While the strategies and plans of the top management team's vision steered the marketing teams in a new direction, the successful enactment of the restructuring depended on the maintenance and adaptation of familiar practices of interaction.

Although Royal Mail has returned to profitability, it would be misleading to suggest that this outcome is tantamount to becoming a more innovative organisation. The capacity to develop a set of differentiated products and services has assumed critical importance in a liberalising market. In order to extend the domain of competences possessed by Royal Mail, the top management team pursued a strategy of exploiting external knowledge through inter-firm alliances. This approach to innovation has produced mixed outcomes. The shortcomings of this strategy can be linked to an absence of managerial investment in the learning or absorptive capacity of the organisation. The neglect of learning practices stemmed from the belief that external knowledge could be absorbed readily by Royal Mail. In one example of new product development, *Web DM*, the enactment of this belief resulted in a set of formal transactional relationships for acquiring a technical artefact and managing its performance. In this example, at least, innovation was managed through a distributed system of competences, in which formal transactions represented the exchange of knowledge at the internal and external interfaces of the firm. As the cultivation of internal learning was not a strategic focus, there were few intervention mechanisms in evidence that aimed to encourage joint work within the project space and bridge the cognitive distance between Royal Mail and the partner organisation. By displacing the practice of innovation to external agencies, the use of alliances appears to have

fashioned a relationship of dependency in the formation of a new domain of capabilities.

However, following the restructuring of the marketing department, there were two policy changes that hold the promise of developing the learning capacity of Royal Mail. First, the creation of a marketing insight team, with a shared area of interest, should support mutual engagement around a specialised domain of competence. Second, the shift to 'retainer' contracts has facilitated the development of more durable working relationships among Royal Mail and external agencies within some areas of Marketing. One project that utilised such a contract and was examined during the ethnography was *Help Online*. The sustained interaction of the functional team and the creative agency that were involved in this project afforded the generation of absorptive capacity and innovation through informal mechanisms. The digital team comported with the agency's way of working through participation in a variety of project-based activities. The process of learning was supported by the visibility of the agency's material infrastructure for knowing. Thus, by creating an environment which supports repeated interaction and mutual engagement among marketers and partner organisations, recent changes are increasing the opportunities for learning through inter-firm alliances.

In summary, the two main strategies for learning and innovation that were examined during the research do appear to be improving the business performance of Royal Mail. Although both of these strategies were orchestrated through a top-down system of governance, this does not imply a direct relationship between managerial cognition and organisational learning. As the locus of situated knowledge, Royal Mail's communities mobilise the resources that are required to translate managerial strategies into practice. Such groups played a critical role in the performance of strategies that were designed to enhance both exploitation (restructuring) and exploration (inter-firm alliances). However, the work of these communities is affected by the governance and investment decisions of the top management team. On the one hand, the cognitive architecture of the firm may preclude the formation of communities. Within the marketing department, the decision to pursue innovation through an array of formal alliances has deterred mutual engagement among marketers and therefore inhibited the development of internal capabilities. On the other hand, the creative potential of the engagement of established communities is constrained by the wider business context of the firm. For example, due to the poor financial position of Royal Mail, there was a reduction in the

level of managerial support for new innovation projects for the duration of the renewal plan. The neutralising effect of this decision was evident in the aftermath of the restructuring of the marketing department. While the marketers were able to reorient their activities in response to the new objectives of the function, the lack of organisational resources for translating customer insight into novel mail-related solutions nullified the creative value of the mutual engagement of the marketing and sales teams. The effect of these policies on the on-the-ground practices of engagement within the marketing department demonstrates the circularity of the strategic management of innovation and innovation by community. Thus, neither mode of innovation can be privileged when assessing the mechanisms that underpin the corporate performance of Royal Mail.

7.3 Conceptual and policy implications

In this final section, the ethnographic evidence presented in this thesis is used to formulate the main conceptual and innovation policy implications of the research. These emerge from the articulation of four propositions concerning learning and innovation within hierarchical organisations: the practice of strategic management involves situated resources; communitarian theories of learning privilege the micro-practices of cognition; the practice of learning draws on non-cognitive affordances; and the combination of hierarchical and community-led learning is problematic.

7.3.1 Strategic management as situated practice

Much of the literature on organisational learning and innovation represents strategic management as a formal, detached, and cognition-driven process. However, the evidence in this thesis indicates that managerial cognition is underpinned by an ecology of social and material practices. Three aspects of this ecology were highlighted in the analysis of the managerial restructuring of Royal Mail. First, in formulating a new strategic architecture, the decision-making processes of the managerial team were supported by social and material resources, including interviews with senior marketers, feedback from key stakeholders, and the rationalising ontology of PowerPoint presentations. Second, the implementation of the restructuring relied on the exploitation of performative knowledge – enacted through rousing speeches, team-building sessions, and inspirational workspaces – in order to engender motivation and playful interaction

among a cohort of marketers that was low on morale. Third, although I was not able to witness the activities of the restructuring group directly, observations drawn from participation in other strategic workshops do suggest that the generation of managerial knowledge also relies on sociality and other informal mechanisms of learning. Thus, the competence-based theory of the firm, particularly the strategic management approach, currently places too much emphasis on the outcome of cognition, while neglecting the situated practices in which the social anthropology of cognition is constituted.

The conceptualisation of strategic management as a situated practice has normative implications for the governance of innovation within hierarchical organisations. Within a top-down model of governance, innovation tends to be orchestrated by the top management team and undertaken within dedicated organisational functions, such as R&D units or strategy teams. Within Royal Mail, for example, the present chairman has configured the organisation to ensure that the strategies of the firm are determined at the apex of the hierarchy, while the rest of the organisation performs the work that issues from those strategies. However, there was a good degree of correspondence between the practice of strategy development that was observed in the management boardroom and the sociology of the creative sessions and workshops that were taking place inside other meeting rooms throughout the marketing department. As the sociology of work within both settings is embedded in a similar set of social and material practices, it is unreasonable to draw a hierarchical distinction between the cognitive capabilities of managers (who specialise in the production of cerebral knowledge) and other employees (who specialise in the application of knowledge). Some enlightening perspectives could surely be generated if the employees that enact managerial strategies in their 'everyday' practices are involved in the 'official' processes through which these strategies are developed.

7.3.2 The cognitive basis of communitarian learning

The analysis of learning and innovation within Royal Mail verified the agency of organisational groupings that exist outside the managerial boardroom. However, the practices that a communities of practice framework highlights are cognitive activities (albeit situated). For example, in relation to the restructuring of the marketing department, the outcome of the enterprise of the Fusion team could be termed as one that emerges from a reflexive cognition, *knowing 'what we do'*. Understood as a

community of practice, Fusion's attempt to accomplish this cognitive goal through joint enterprise became the central theme of the analysis. In relation to this goal, the interactions of the team were merely *supported* by mutual engagement and a shared repertoire, which mobilised social and material resources respectively. Having established a guiding intention or purpose, the account of learning was organised around the micro-practices of cognition.

There are two conceptual implications that can be drawn from the identification of the primacy of cognitive learning in the theory of communities of practice. First, when used to examine organisational practices, this theory is compatible with the competence-based approach to the firm. Motivated by a concern with meaning or purpose, communities appear to address the practical insufficiencies of the managerial rules, policies, and procedures that are designed to align the hierarchy to the new goals of a top-down strategy. Through the use of social and material resources, communities are able to bridge the gap between the abstract knowledge that is associated with such strategies and the situated knowledge that is required to make them work in practice. Thus, as repositories of situated knowledge, communities can be interpreted as the practical component of organisation – that is, as groups that possess the necessary resources to translate managerial strategies into action. However, as the basis of communitarian practice is also cognitive, the process of translation involves the production of more organigrams, informal strategies, relationship maps, and conceptual models.

In order to complete this chain of translation, organisations should produce business strategies iteratively in order to accommodate the frontline insights (and artefacts) that are generated through the practices of communities (Brown and Duguid 1991). For example, in relation to Royal Mail, managers might recognise that solution development is an 'overlapping' rather than linear process and re-evaluate the relationship between Sales and Marketing in order to reflect the practices of communities. However, assuming that a sufficiently frequent strategy-practice iteration loop can be established, we might predict that the formulation of strategies and the nature of practices would converge until the interpretative role of communities is fully appropriated and marginalised. This conceptualisation of communities is consistent with the vision of reflexive strategic management that is found in competence-based approaches to the firm, particularly the dynamic capabilities perspective. Such models of governance

assume that learning is a process of knowledge acquisition. Within this dynamic system, communities act as an informal feedback loop – that is, they ensure that the internal representations of the organisation correspond with the nature of the external world.

Second, by interpreting communities as a tool of knowledge acquisition, I would argue that a communities of practice framework neglects those aspects of practice that cannot be caught in a relation of intentionality. As discussed in Chapter 3, situated approaches to learning take issue with the treatment of context in cognitive learning theory. While cognitivism conceptualises 'context' as an object of knowledge, in situated learning theory the constitutive elements of the context support the production of knowledge. Although the situated perspective recognises an array of 'contextual' or 'informal' knowledge inputs, the disclosure of those inputs through absorbed engagement or embodiment is still understood in relation to a cognitive intention or purpose. As such, the aim of the analysis is to show the ways in which the situated representation that is produced through Being-in-the-world is comparable with the representation that could have been acquired through traditional cognitive mechanisms. However, while the ontology of experience does have social and material dimensions, these components of practice should not be seen as mere resources of representation, but as non-cognitive affordances of action (Gibson 1979). This shift in emphasis should indicate that, on the one hand, not all practices can be tied to the production of a representation or cognition and that, on the other hand, learning cannot be read as a wholly intentional, or indeed wholly human practice.

7.3.3 The non-cognitive affordances of learning

While a communities of practice framework views knowledge production as a situated practice, this theory does not recognise the non-cognitive affordances of the social and material context. This conceptualisation of context forces us to question the coherence of the enterprise of a community of practice. According to Wenger (1998), learning is the product of mutual and repeated interaction in relation to a shared practice. A community of practice attracts members by providing a context in 'which we can experience the world and our engagement with it as meaningful' (Wenger 1998: 51). By drawing on a regular set of social and material resources, the sustained performance of a practice leads to the development of a durable system of signification (meaning). Thus, a community of practice becomes a coherent learning entity once the social and material

resources that are required to support the negotiation of meaning are being cultivated and can be identified. However, while affecting the process of learning, the non-cognitive aspects of practice will not register in, and cannot be attributed to, a social system of meaning. This suggests the existence of relationships and connections among practices that do not cohere with the boundaries and learning mechanisms of communities of practice.

Having problematised the ontological coherence of a community of practice, the relationship between strategic management and communitarian practice needs to be re-evaluated. I have already claimed that these two perspectives exhibit a degree of complementarity, for instance, the successful execution of top-down management seems to rely on the situated knowledge that is cultivated in the practices of communities. Furthermore, the practice of management and community exhibits a degree of similarity – that is, both senior executives and marketers appear to make use of an infrastructure of social and material resources when the everyday sociology of their work is examined and compared. However, both of these findings emerge from the operationalisation of each perspective as a narrator of coherent and intentional practices.

The identification of the non-cognitive and unintentional components of practices renders any attempt to attribute an act of learning either to the machinations of the formal hierarchy or to an informal system of enterprise a very difficult and potentially misguided process. An organisation is a complex ecology of technologies, corporate strategies, workspaces, governance devices, everyday sociality, and overlapping modes of conventions. Amid this infrastructure, the learning practices that are ascribed conventionally to either management or to communities would be so entangled that these circumscribed groups must collide and interfere with one another. This 'diffuse and messy' (Law 2004: 2) reading of organisational practices allows claims that were made earlier regarding the interdependency of management and community to be pushed further. For instance, although we have already noted that the precarious business position of Royal Mail affected the value of its communities during the restructuring, this only hints at the entanglement of the practices of communities and the ontology of the wider organisational context.

From the perspective of strategic management, the product of the work of the top management team – the strategies for innovation, organigrams, business processes, and

organisational events – are used by the organisation's communities in ways that could not have been intended when these resources were constructed. Strategies are reinterpreted. Organigrams are redrawn. Processes are amended. Corporate events effect dissonance. The work of communities exploits the space that is created by the epistemology of detachment of top-down management. As such, when an intervention mechanism does appear to produce learning or innovation, I would hesitate to link this outcome to the plan of actions of a social group termed 'the top management team'. From the perspective of communities, the knowledge that these informal groups produce cannot be understood to emerge from a wholly voluntary and locally negotiated practice (see Wenger 1998). The enterprise of communities catalyses the institutional resources that are produced by the formal hierarchy. An act of improvisation requires a template, and a novel method of coordination needs an initial organisational problem. Although these 'external' institutional resources would not be considered as constituent components of the shared repertoire of a community, the learning practices of such groups would not make any sense in the absence of the spaces for action that these resources make available. Thus, while Wenger, McDermott and Snyder (2002) urge managers to design for communitarian learning, a process-driven and hierarchical organisation may represent the most fertile context for the formation of communities.

7.3.4 The trials of community-led learning

The disclosure of the role of communities in the performance of hierarchical organisations raises a profound governance question: could a top-down organisation rely on community-led learning, and with what level of expectation for corporate performance? The evidence in this thesis suggests that a number of micro-governance issues would need to be overcome. These insights are all drawn from an analysis of the practices of the digital community that were described in Chapter 6. Firstly, a bottom-up approach to learning may be frustrated by the presence of acrimonious relations among communities. While Wenger (2000) claims that innovation often emerges at the boundaries between communities, the analysis of the digital community revealed a degree of friction between the different groups involved in the cross-functional project that was led by this team. Rather than attempting to combine elements of the two modes of project management ('quick wins' and 'requirements driven'), the trajectory of the project emerged from the approach that was able to achieve dominance. When the method favoured by the digital community did take precedence, members of the Ad-

Tech function appeared to resist the logic of this technique at every stage of the process. Although the digital community were able to propagate their method, the evidence suggests that other groups outside that community were not interested in digesting the learning that had been cultivated within the practices of an adjacent community. I would therefore argue that it would be wrong to assume that community-led learning initiatives should necessarily be any more successful at an organisational level than ones which are implemented through formal hierarchical processes.

Secondly, in an organisational context where there is friction at the boundaries of communities, the prevailing practices of learning may be orchestrated by the community with the wherewithal to work the socio-material infrastructure to achieve their own ends. As we saw in the *Help Online* project, learning did not take place in a space bereft of power; rather, the course of the project involved the conflicting imperatives of the digital community (secure resources and achieve formal recognition); the marketing agency (extend their domain of ties within Royal Mail); Ad-Tech (take ownership of technology projects); and the marketing executive (custodians of investment appraisal). Identifying a coordination device that could accommodate, whether through hierarchy or community, the conflicting goals of such heterogeneous groups and align those in the pursuit of organisational learning remains a governance challenge that cannot be easily met. For example, even if the digital community's project management hub and process diagrams are considered as intended 'boundary objects' (Star and Griesemer 1989), it seems apparent that such tools of coordination cannot be considered without acknowledging the source of such devices and the issues of power and control that may be entangled in their use. As such, with respect to learning within hierarchical structures, Lave and Wenger (1991: 42) are right to admit that 'unequal relations of power must be included more systematically in our analysis'.

Finally, a top-down system of governance may be antithetical to the reproduction of *innovative* communities of practice. An unintended consequence of the formation of the digital community is the generation of an aspiration among some of its members to leave Royal Mail and join advertising agencies and other partner organisations. This trend may be attributed to the rigidity of a hierarchical role system which does not recognise the expertise that employees accumulate within specific roles over time. Each role is assigned a universal grade with a pre-defined set of salary remuneration levels (low, mid, high). In order for an employee to command a salary that is outside the

parameters associated with a given role, he or she would have to move into a higher graded role. This system encourages employees who have the desire to develop their knowledge in a specific domain (such as digital media) to seek opportunities to increase their level of specialisation by pursuing similar roles within non-hierarchical organisations[61]. From an organisational learning perspective, the denudation of the tacit knowledge base as ambitious employees leave the organisation is incongruent with the accumulation of specialist knowledge assets and the long-term development of the innovation capabilities of Royal Mail. A flexible governance structure and progressive innovation policy which are responsive to the skills that are being practised informally within the communities of a hierarchical organisation are required in order to reverse these sorts of trends. Although informal communities may subsist within a hierarchical structure, if the individual capabilities that are learned through engagement are not recognised and rewarded in the system of governance, the organisational externalities that are generated through the practices of these communities will remain ephemeral and prone to displacement by other affordances.

[61] Acquiring experience with both client organisations and advertising agencies overcomes potential knowledge asymmetries, which stem from a division of work in which the agency assumes the role of 'expert' in a given domain of knowledge, and the client organisation presents a set of 'business requirements' or problems for the application of the agency's expertise. Employees who have experience of both sides of this division of work are appealing to agencies because they have knowledge of the sorts of 'business requirements' clients tend to have (which, in practice, are negotiated by client and agency), and are an attractive prospect for clients because they have a degree of 'expert' knowledge and experience of agency processes, which may be applied in the management of agencies to exact greater value from them.

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Appendix 1

List of interviewees

RM1, sales manager, marketing function, (03/08/04).

RM2, product manager, marketing function, (20/01/04; 27/08/04).

RM3, former knowledge consultant, finance function, (19/01/04).

RM4, Media House director, marketing function, (09/01/04).

RM5, senior project manager, operational function, (06/02/04).

RM6, project manager, marketing function, (01/07/04).

RM7, senior advertising consultant, sales function, (09/01/04).

RM8, business director, sales function, (05/05/04).

RM9, business manager, sales function, (11/05/04).

RM10, sales consultant, sales function, (11/05/04).

RM11, sales manager, sales function, (11/05/04).

RM12, senior marketer, marketing function, (05/04/04; 13/09/04).

RM13, client director, sales function, (13/05/04).

RM14, development manager, marketing function, (20/04/04).

RM15, marketing director, marketing function, (08/09/04).

RM16, support manager, human resources function, (13/08/04).

RM17, director, commercial development, marketing function, (14/09/04).

RM18, marketer, fusion team, marketing function, (10/08/04).

RM19, senior manager, human resources function, (21/07/04).

RM20, team leader, fusion team, marketing function, (14/05/04).

RM21, marketer, team 4, commercial development, marketing function, (05/08/04).

RM22, marketer, fusion team, marketing function, (16/08/04).

RM23, former product manager, marketing function, (13/02/04).

'Mark', product manager, marketing function, (10/02/04; 10/08/04).

'Rich', account handler, marketing agency, (03/02/04).

'Chris', digital team manager, marketing function, (17/05/04; 24/08/04).

'James', strategy director, Create, (24/08/04).

'Ben', graduate, digital team, marketing function, (13/08/04; 16/08/04).

All references to names (employee, role, and team) are pseudonymous.