

Knowledge mobilisation in healthcare organisations: Synthesising evidence and theory using perspectives of organisational form, resource based view of the firm and critical theory

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Glossary of terms/abbreviations

ABS	Association of Business Schools Ambidexterity – organisations that are capable of pursuing exploitation of existing knowledge and exploration of new knowledge simultaneously are likely to do better than organisations that focus on only one or the other
AC	Absorptive Capacity - an organisation's capacity to absorb new knowledge, based on past learning
AT	Activity Theory
CAS	Clinical Assessment System
CME	Critical Management Education
CoP	Community of Practice- a group of people with common practical aims that learns through doing, making it hard to transfer knowledge outside the community
CP	Critical Perspective
DC	Dynamic Capabilities – an organisation can systematically solve problems by changing its resource base in response to external opportunities and threats; this is a development of the resource based view, introducing external feedback
DIKW	Data, Information, Knowledge and Wisdom
DRG	Diagnosis-Related Group
EBM	Evidence Based Medicine
EBP	Evidence Based Practice
EKA	External Knowledge Application
EKT	External Knowledge Transfer
GE	General Electric
FT	Foundation Trust
GM	General Motors
GP	General Practitioner
HRG	Healthcare Resource Group
HRM	Human Resource Management
HS&DR	Health Service and Delivery Research
IC	Intellectual Capital
ICT	Information and Communication Technology
IO	Industrial Organisation
IS/IT	Information Systems/Information Technology
JV	Joint Venture
KBT	Knowledge Based Theory
KIF	Knowledge Intensive Firm
KM	Knowledge Management
KMS	Knowledge Management System
KRE	Knowledge, Research and Evidence
KT	Knowledge Translation, Knowledge Transfer

MDT	Multi-Disciplinary Team
MIS	Management Information System
MNE	Multinational Enterprise
NHO	Non-Hierarchical Organisation
NHS	National Health Service
NPM	New Public Management
OD	Organisational Development
OF	Organisational Form
OT	Opportunities and Threats
PDSA	Plan, Do, Study, Act
PSF	Professional Service Firm
PI	Principal Investigator
RBT	Resource-Based Theory – a generic term for theory that has grown out of RBV
RBV	Resource Based View – an organisation is the sum of its tangible and intangible resources, including knowledge. Strategic resources' with specific features (see VRIO) can give the firm a sustainable competitive advantage
RRT	Rapid Response Team
RU	Research Utilisation
SCA	Sustained Competitive Advantage
SCP	Structure-Conduct-Performance
SDO	Service Delivery and Organisation [Research Programme]
SNA	Social Network Analysis
SR	Scoping Review – SDO output by the same team in 2010 that underpins this report
STS	Science and Technology Studies
SW	Strengths and Weaknesses
SWOT	Strengths, Weaknesses, Opportunities and Threats – internal (SW) and external (OT) factors that affect organisational performance
TCE	Transaction Cost Economics
UKCRC	UK Clinical Research Collaboration
VRIN	Valuable, Rare, imperfect Imitability and Non-Substitutable – the qualities that strategic resources will have, according to RBV theory, to give a sustained competitive advantage
VRIO	Valuable, Rare, imperfect Imitability and Organisation – a recent improvement on 'VRIN'; the 'organisational' element points to the need for organisational capability to exploit resources

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Executive Summary

Background

The literature review builds on an earlier Scoping Review of the literature on knowledge mobilisation (Crilly et al, 2010; Ferlie et al, 2012a) which identified a gap in the healthcare literature and proposed work in three defined areas or domains. The first is Resource Based View of the Firm, a strategic management concept that examines how differences in capabilities, including knowledge, allow one firm to outperform another. There is no equivalent in healthcare. It states that strategic resources that are valuable, rare, difficult to imitate, and able to be exploited by organisational processes (VRIO principles), will give the firm a sustainable competitive advantage. The second is termed the Critical Perspective, concerned with power and authority in the workplace, which is alive to tensions between occupational groups such as doctors and managers. Two strands of particular interest are Foucauldian and neo-Marxist labour process critical theories. The third area is Organisational Form, which considers whether certain types of organisation, such as networks, are better than others at mobilising knowledge.

Aims

We set out three propositions, drawn from the Scoping Review (SR), to guide the enquiry:

PROPOSITION 1: "The NHS needs to consider how knowledge and information can be used to improve productivity, innovation and performance. The Resource Based View of the firm has application in health."

PROPOSITION 2: "The health sector should make greater use of critical perspectives – especially labour process and Foucauldian perspectives - in understanding the fate of knowledge management systems. The importance of power contests among occupational groups in health systems makes it appropriate to temper positivistic and purely technical approaches to knowledge management with scepticism."

PROPOSITION 3: "NHS Boards should take a clear view on organisational design elements needed to support knowledge mobilisation. We suggest partnership and network-based organisational forms are more effective at knowledge sharing than markets or hierarchies. There is payoff in collaborating."

The three propositions are related to each other. RBV and the Critical Perspective are polarized, as the Resource Based View uses economic models of free market competition while the critical perspective uses sociology of the professions and cautions against importing private sector thinking. The two domains use differing views about human motivation and type of discourse (consensus/dissensus). Organisational Form is characterised as sitting between the two domains, acting as a bridge or a pragmatic hybrid of the two schools of thought.

Methods

We undertook a separate literature search to address each of the three propositions, carried out consecutively. For every domain we selected a string of search terms, based on a summary of the field, and applied them to an agreed set of high impact journals for the period 2008 – 2011, i.e. 56 journals for RBV, 20 for the critical perspective and 25 for organisational form. Each string was the outcome of several iterations. A structured process of sifting and analysis took place, reducing 5283 citations to focus on 167 full papers. A further prioritisation process took place to identify a sub-set of the papers most relevant to the propositions. The systematic journal search was supplemented by snowballing, book and author searches. The advantage of our methods is that we accessed high quality studies with strong theoretical underpinnings. However, they provided insufficient application to healthcare and managers. We remedied this by (a) undertaking a narrative search of healthcare evidence to map to the RBV domain and (b) applying a search of Knowledge, Research, Evidence terms (as used in the Scoping Review) to electronic databases of healthcare literature.

An internal Advisory Group and external group of Chief Executives received interim feedback and acted as a sounding board. These groups emphasized the importance of establishing relevance between abstract theory and the reality of healthcare delivery.

Results

Response to the propositions can be summarised as (1) Agree, (2) Agree, (3) Disagree.

The Resource Based View is relevant to healthcare. The status and validity of RBV theory in the literature has both supporters and detractors. The theory is difficult to operationalise and, at best, has gaps that need to be filled. Specifically, it raises questions of definition and measurement of (a) strategic resources, (b) value and (c) competitive advantage.

RBV is a static theory and has sparked dynamic developments that include (i) 'dynamic capabilities', introducing environmental feedback, (ii) 'absorptive capacity' modelling an organisation's capacity to absorb new knowledge and (iii) 'ambidexterity', which considers exploration and exploitation of knowledge. The literature review has generated a dynamic model that enables mapping between generic theory and healthcare.

The Critical Perspective highlights the importance of the professions in mobilising knowledge within healthcare. It supplies a theory of power and authority that is entirely absent from the functional and, ostensibly, value-free RBV. Critical papers suggest various possibilities of professional enrolment, reinterpretation, superficial compliance and overt resistance to developing Knowledge Management systems. The reaction of the professions to KMS is one major theme. Power relations and their impact on knowledge flows form a second major theme. A large number of Foucauldian papers and a smaller number of labour process papers emerged, e.g. analysing control regimes in UK health centre call centres.

The Organisational Form search shared cross-cutting themes with the other two domains, especially relating to absorptive capacity and ambidexterity. We had anticipated that Proposition no. 3 would have been affirmed since intuitively and theoretically we would expect that organisations based on trust rather than hierarchy would be better at mobilising knowledge. Importance of trust and relationships is indeed supported by the literature. The role of organisational design, however, emerges as much less important. Hierarchies or relational markets based on high trust are more effective at sharing knowledge than networks or collaboratives where trust and relationship quality is poor. Rather than focusing on organisational design, the review suggests that Boards would be better-advised to focus on fostering strong relationships of trust and psychological safety in the workplace.

The 'Knowledge Research Evidence' search of healthcare literature is mapped to the three domains above. Research evidence is the main type of knowledge which has value, and the literature is exercised about how research evidence can best be put into practice. This contrasts with knowledge in the three proposition-domains, which is an intrinsic capability or resource rather than an external product.

We use a bicycle metaphor to capture the relationship between the domains where RBV, CP and OF are components of the machine and KRE is a signpost. The external environment is the terrain. RBV suggests that the machine and its capabilities are more important than the environment in giving a competitive edge.

Conclusions – The Theory

The dynamic model generated by the literature represents an exercise in theory-building that links organisational processes and resources with antecedents and consequences, e.g. performance and competitive advantage. Strategic management goals are modified by feedback from the external environment. A research agenda has emerged in response to the propositions. It involves (a) addressing the weaknesses and gaps in the literature, (b) operationalising measures using healthcare as a concrete example, (c) identifying growing areas of enquiry.

Research questions include:

- Which strategic management perspectives are most useful to senior NHS managers?
- How can 'value' be defined and operationalised (empirically measured)?
- What are the implications of using different measures of value?
- To what extent can 'sustained competitive advantage' be conceptualised and operationalised within the healthcare sector?
- What are 'strategic resources' within health service organisations?
- How can the concepts of exploration and exploitation be applied to the healthcare sector?
- Do organisations benefit by focusing on either exploration or exploitation, or does an organisation need to engage in both activities?

Questions for reflective practitioners include:

- Which resources and capabilities distinguish your organisation from others? How would you apply the RBV perspective in your organisation?
- What models of strategic management are most useful?
- Are the organisation's policies and procedures organised to support the exploitation of its valuable, rare, and costly to imitate resources, including clinically and managerially relevant forms of knowledge?
- Where does organisational slack exist and how can it be used to promote innovation and growth?
- Are the concepts surfaced here of 'absorptive capacity' and 'organisational ambidexterity' meaningful and helpful in the field?
- How are healthcare professionals engaged with knowledge mobilisation efforts in your organisation? Are there sources of resistance or adaptation?
- Does knowledge flow smoothly through well developed relationships in your organisation?
- Do the concepts of a 'relational market' or 'relational hierarchy' surfaced here make any sense in the field?

These questions could usefully be addressed through a follow-on empirical study of NHS and other UK healthcare agencies, by undertaking analyses of published documents using VRIO and associated frameworks.

Conclusions – The Relevance

The HS&DR Programme funds research (evidence synthesis and primary research) to improve the quality, effectiveness and accessibility of the NHS, targeted at an audience of the public, service users, clinicians and managers. The literature review presented in this study has an academic flavour because (a) it deals with theory and (b) it is largely drawn from academic publications that are targeted to an academic audience. Our challenge is to demonstrate its relevance and to translate the major findings to a practitioner audience. To do this we map our research to some key HS&DR aims in this section to address its relevance for managerial practice in the NHS.

HS&DR Aim: Address an issue of major strategic importance to the NHS

Our findings are relevant to the current debate about service configuration. The review compares two different theories – the Resource Based View which focuses on an organisation's internal strengths, and Porter's theory which focuses on industry features. They both point towards the same conclusion, namely that competition and search for competitive advantage will lead to specialisation and to consolidation. Larger centres of excellence will flourish and smaller generalised services will struggle, according to these theories.

There are implications here for policy makers. Unlike Porter (Porter & Teisberg, 2006), who rejects the idea of 'lifting all boats', we are not proposing specialisation and consolidation as a goal. Instead, we are highlighting the strategic impact of competition.

HS&DR Aim: Fill a clear 'evidence gap', and generate new knowledge of direct relevance to the NHS

This HS&DR aim reflects the brief of our project. We identify the Resource Based View of the firm as a strategic management theory that has been researched for 20 years in generic management literature but has not crossed over into health. The study highlights the lack of strategic management theory bespoke for the NHS, and the drawback of importing private-sector concepts wholesale and uncritically into the public sector.

The review finds evidence that supports the following:

- **Organisational slack** - organisations which are rich in resources will have more headroom to innovate, grow and perform. RBV highlights availability of organisational slack as a strategic objective that is in the interests of the organisation. This poses a challenge to the productivity or 'more for less' efficiency agenda operating in the current fiscal climate.

- **Knowledge mobilisation** - important learning factors, resonating with organisational slack, are culture (consistency for doctors and empowerment for nurses) and informal breaks (for both doctors and nurses).
- **Open and closed systems** – We can reconcile the different strategic objectives of providers and commissioners within the economic view of open and closed systems (effectively micro and macro levels). Providers can grow and increase revenue share, operating in an open system, but commissioners work within a closed system or fixed budget.
- **Relationships trump organisational design** - networks may be effective, but a hierarchy/market that exploits good relationships is better at knowledge sharing than a network that harbours poor relationships. Connective ability of individuals is more important than organisational structure when it comes to making organisations effective.
- **Safety trumps finance** - organisations that get diverted by resource arguments at the expense of safety and quality will ultimately fail. This is consistent with RBV, especially if 'value' is defined as unit cost of outcome (rather than input).
- **Knowledge-based organisations** need to be cautious about breaking up tasks into too many discrete subtasks, e.g. exposure to new information may need 'front-loading' by senior clinicians (for example, in an Emergency Department). Our review considered evidence that developing a pyramidal structure and codifying professional tacit know-how may jeopardise quality. It challenges the trend over some years to delegate and cascade discrete components of work to lower grades.
- **VRIO Resources** – the Resource Based View encourages managers to identify strategic resources that are valuable, rare, difficult to imitate, and to foster organisational policies that exploit these resources. Our thumbnail sketch based on Foundation Trust Forward Plans suggests that this is a novel approach which goes beyond a conventional SWOT analysis.
- **Organisation-specific factors** outweigh market conditions, accounting for 22% of variation in performance premium according to some studies (Crook et al, 2008).
- **Managers matter** - leadership, creation of a consistent and psychologically safe culture, capitalising on strengths, allied with the internal resource base, allow one organisation to outperform another, even over the same rough terrain.

The Report

1 Introduction and Methods

How does knowledge shape an organisation and influence its strategic direction? We consider this in a literature review that draws from a range of disciplines including economics, strategic management, sociology, accountancy and organisational studies. The study, commissioned by NIHR SDO in January 2011, builds on an earlier Scoping Review of the literature on knowledge mobilisation (Crilly et al, 2010; Ferlie et al, 2012a).

The Scoping Review identified a gap in the healthcare literature and proposed further work in three defined areas. Firstly, generic strategic management literature over the last 20 years has been investigating the Resource Based View of the firm, looking at how capabilities make one firm outperform another. There is, however, no equivalent in healthcare. Secondly, and rather than simply exploring the gap of RBV, we have examined an opposing Critical Perspective. This takes up work by scholars concerned with power and authority in the workplace, and those who caution against applying private sector models to the health sector. A third domain, Organisational Form, is an area that could perhaps shed some light on the RBV *versus* Critical Perspective debate. Are there any particular organisational forms (such as networks) that are better at sharing knowledge than others? Enquiry into these domains is shaped by three propositions set out in the next section.

1.1 Describing the Scoping Review Themes

This section describes the themes that have emerged from our Scoping Review of the knowledge mobilisation literature and motivated this enquiry.

1.1.1 Context: The Nature of Knowledge and Knowing

One of the dominant themes concerns 'what is knowledge?' – acknowledging its contestability - and 'how do we know what we know?' The terminology is not settled: 'knowledge', 'research' and 'evidence' are used in healthcare, commonly as components in a hierarchical relationship where research is a form of evidence and evidence is a source of knowledge (Nutley et al, 2007, p23). In the generic management field, 'knowledge' is

the common noun but its 'loose, ambiguous and rich' qualities defy attempts to make simple distinctions (Alvesson and Kärreman, 2001, p1012).

Taxonomies have adopted a variety of analytical approaches, including: (a) dualist classifications, e.g. tacit-explicit, process-object, covert-overt (Gourlay, 2006, p1426); (b) hierarchies of knowledge, e.g. Ackoff's (1989) spectrum of data, information, knowledge and wisdom (DIKW); or (c) embedded capabilities, where knowing and doing are inextricably linked (e.g. Orlikowski, 2002). The distinction between tacit and explicit knowledge (Polanyi, 1962; Nonaka, 1994) has achieved paradigmatic status, according to Gourlay (2006, p1415). Tacit knowledge is an embedded capability, in which we know by doing (like riding a bicycle) and where context affects competence and capability through sense-making (Weick, 1993, 1996), e.g. in responding to an airline disaster.

This discussion has major practical implications in healthcare where new knowledge may challenge practice. Evidence Based Management, growing out of the Evidence Based Medicine (EBM) movement (Walshe and Rundall, 2001) highlights the tension between knowledge types. The hierarchy of evidence attributed to medical science (discussed in Davies et al, 2000) sets systematic review and meta-analyses of randomised controlled trials as the highest form of evidence, and personal experience as the lowest. Lambert (2006) has critiqued EBM for its failure to consider patient views and narratives and for its emphasis upon formulaic clinical guidelines, ignoring the role of clinical skills. Even in the medical arena, which draws on experimental, replicable and ostensibly generalisable knowledge, the notion of a hierarchical evidence-based approach to practice is contentious (Gabbay and Le May, 2004; 2011). In the management arena, where evidence is non-replicable and contextual, the problem is exacerbated. "Because of the constrained, contested, and political nature of many managerial decisions, it may be difficult for managers to apply research evidence even when it is available" (Walshe and Rundall, 2001, p445). It becomes all the more important to form a view about what constitutes knowledge among healthcare managers and how it can be mobilised.

Alavi and Leidner (2001) gave examples of knowledge types, half of which were illustrated through clinical examples, such as administering a drug or performing surgery, demonstrating know-how. The management examples in their typology were more diffuse. For example, pragmatic knowledge was defined as 'useful knowledge for an organisation' and included best practices, engineering drawings, market reports (p113). It highlights the idea that 'knowledge' in healthcare management does not just mean research-based knowledge or evidence that is passed on from the

academic community. It resides in everyday management practice (recalling Orlikowski's (2002) mutual constitution of knowing and practice).

There is a body of literature that deals in 'things' or boundary objects that people talk about and use to mobilise knowledge between communities of practice, e.g. charts, papers, tables, diagrams (Carlile, 2002; Swan et al, 2007). Boundary objects represent a type of knowledge that is rooted in practice, and does not depend upon research from an academic community or evidence disseminated from the top down. The literature stream comes from generic management literature and illustrates how non-health-sector theories can expand our approach to 'what is management knowledge?' and shed light on pragmatic knowledge that is less contestable than policy-related evidence.

Epistemological questions dealing with knowledge and the nature of knowing are important in themselves and have practical implications but are also relevant to our enquiry because they relate to the first proposition (below), that knowledge and information can improve productivity, innovation and performance.

1.1.2 Resource Based View of the Firm

The Resource Based View (RBV) takes an economic perspective in which the organisation is the firm, defined as the sum of resources at its disposal. Knowledge is a key resource which can be protected or mobilised to gain competitive advantage (Wernerfelt, 1984; Barney, 1991). The scoping review found that RBV-based work does not feature in the current health literature, but our proposition contends that it is timely to fill this gap, since the financial climate from 2010 onwards will lead NHS organisations to seek productivity and performance advantages.

RBV is implicit in the management literature, since all forms of knowledge or learning contribute to competitive performance. A resource-based approach to organisational growth and innovation was formulated by the economist Edith Penrose (1959). The strategic management literature has built upon this perspective (Spender 1996). Core principles of the resource-based view are that "resources and capabilities which are simultaneously valuable, rare, imperfectly imitable and non-substitutable – the VRIN conditions – are the main source of above-normal rents and competitive advantage" (Easterby-Smith & Prieto 2008, p236). VRIN has recently been supplanted by VRIO (Barney and Clark, 2007) where O stands for organisational capacity.

Theories of knowledge as a resource have gone beyond the ambit of economics. The concept of 'dynamic capability' addresses the processes by which knowledge is exploited (Sher & Lee, 2004), linked to 'absorptive capacity' of the knowledge consumer (Lenox & King 2004). The role of knowledge in building 'social capital' has been taken up by other disciplines, (e.g. business, sociology, organisational behaviour and human resources management) in theorising how value is present within and between individuals and social networks, with an impact on productivity (e.g. Widen Wulff & Ginman, 2004). The distinction between stocks and flows, comparing resource-based and relational views (Mesquita et al, 2008), is also discussed in terms of organisational form, looking at knowledge sharing in strategic alliances (Connell & Voola, 2007).

The first proposition, drawn from the scoping review is:

PROPOSITION 1: "The NHS needs to consider how knowledge and information can be used to improve productivity, innovation and performance. The Resource Based View of the firm has application in health."

1.1.3 Critical Theory: Labour Process and Foucauldian analyses

The RBV perspective is positivistic and functional in nature, and treats knowledge as a commodity that adds value and can be readily transferred. RBV is not critical of the role that knowledge might play in terms of power structures or vested interests. There is scope for a competing perspective that adopts a more critical edge and seeks to locate sources of power within knowledge mobilisation processes.

'Critical theory' consists of a wide range of perspectives rather than a unified theory (Schultze and Staball, 2004). It includes neo Marxist (labour process) approaches and also a growing body of Foucauldian studies applied to current health care organisations.

A critical perspective is polarised against the Resource Based View of the firm and, by focusing on the social contests around knowledge management systems, warns that knowledge management is not a value-free or purely technical solution. A critical perspective highlights the contestability of management knowledge and the limits of technology (e.g. Currie and Kerrin, 2004). Alvesson and Kärreman (2001) juxtapose 'knowledge' and 'management' as an 'odd couple' in which knowledge is inherently difficult to manage, concluding that 'knowledge management' really amounts to managing and controlling people.

We are particularly interested in two strands of critical management literature. The first is a neo-Marxist or labour process perspective which looks at the possible role of knowledge management systems in work intensification or deskilling. Are there power conflicts around the introduction of knowledge management systems (see Currie and Kerrin, 2004)? Who gains and who loses? What are the positive and negative incentives that the different stakeholders face? Do knowledge management systems enable top management to 'capture' employee knowledge – including the previously tacit knowledge of key clinical professionals – as a key organisational resource and to extract more surplus value for shareholders (in a firm) or the Board (in a public service organisation)? Does bottom-up resistance blunt attempts to secure top-down implementation of new knowledge systems?

The second strand is Foucauldian analysis. Foucault (e.g. 1974, 1977) provides an important theoretical lens for analysing power and its application through language (Ceci, 2004), increasingly powerful electronic surveillance systems and new modes of control and self regulation (Doolin, 2004). Foucault also writes about the knowledge/power nexus which highlights the role of learned professionals who become part of state apparatuses (contrary to the Marxist prediction of structural conflict between public service professionals and an assertive New Public Management style state). Foucauldian forms of analysis are being increasingly applied to the health care sector by scholars internationally (Doolin, 2004, in New Zealand; Waring, 2009, in the UK; Iedema and Rhodes, 2010, in Australia). A key question is whether health care professionals resist attempts to reshape their conduct through new surveillance and self-surveillance systems. This is an important theoretical development which will have significant implications for applied work in terms of suggesting new ways of thinking in such areas as Evidence Based Medicine, clinical governance and patient safety arenas which may all involve new ICTs, reporting requirements and novel knowledge management systems.

Studies in the generic organisational literature have frequently used health sector organisations as case study sites, illustrating how knowledge management can be frustrated by power issues which arise in the doctor-management relationship (Doolin, 2004), and how IS/IT can be used to control professionals (Hanlon et al, 2005). Currie et al (2008, p382) reject the application of private-sector models: "Inappropriately imported models of private sector management take little account of the distinctive properties of public sector organizations ... [N]aïve application of external, business sector and managerial policies ... are ill suited for the complexities and cultures of the NHS." They argue that the specific organisational

context of the NHS needs to be taken further into account in understanding the long term impact of knowledge mobilisation efforts.

A heightened sensitivity and understanding of the power-based relationships between doctors, managers, nurses, and a well-developed sense of the political and organisational context, means that critical discourse has been widely applied in healthcare whereas RBV has not. Indeed, it has been used more in healthcare settings than in many settings within the generic management literature. This critical perspective is an important counterweight to positivistic and functionalist approaches to the analysis of knowledge mobilisation efforts which needs to be developed further. Our second proposition, drawn from the Scoping Review, suggests:

PROPOSITION 2: "The health sector should make greater use of critical perspectives – especially labour process and Foucauldian perspectives - in understanding the fate of knowledge management systems. The importance of power contests among occupational groups in health systems makes it appropriate to temper positivistic and purely technical approaches to knowledge management with scepticism."

1.1.4 Organisational Forms and Health Care Organisations

Organisational theory, in the context of knowledge mobilisation and research utilisation, reflects on what characteristics of an organisation (its organisational form) are more likely to promote learning and hence the use of knowledge and research. Strategic alliances, joint ventures, networks, hierarchies, Professional Service Firms, are all different organisational forms that are considered in the literature in relation to knowledge sharing. Relationships, reciprocity and trust are of interest at the boundaries of organisations as preconditions for effective knowledge transfer and creation (e.g. Adler, 2001; Inkpen, 2000; Becerra et al, 2008; Kachra and White, 2008). There is a theoretical bias in favour of networks and partnerships, rather than hierarchies or markets, as effective vehicles for organisational learning (Adler, 2001). However, empirical results have been less conclusive (Addicott, McGivern & Ferlie, 2006). Managed networks have been formed in health, partly on the rationale that knowledge will thereby be more effectively shared (Bate and Robert, 2002). When making organisational design choices, what kind of organisational form best supports knowledge mobilisation efforts? We suggest a particular angle as a way of approaching the literature:

PROPOSITION 3: "NHS Boards should take a clear view on organisational design elements needed to support knowledge

mobilisation. We suggest partnership and network-based organisational forms are more effective at knowledge sharing than markets or hierarchies. There is payoff in collaborating.”

1.2 Structure of Report

This chapter sets the scene, building on the original Scoping Review. It shows how three domains (abbreviated to RBV, CP and OF) have been used as a vehicle for enquiry, generating three specific propositions to be tested. It goes on to describe the methods that were used. Essentially, three structured reviews of journals were launched, addressing each of the three propositions in turn. Each domain has been documented separately (Chapters 2 – 5), incorporating the findings from the structured journal review, plus subsequent snowballing and book searches. A fourth search (Chapter 6) was conducted to map a broad healthcare knowledge mobilisation literature to the three domains.

The final chapter 7 concludes by assessing the strengths and limitations of this study in relation to its original intentions, and responds directly to the propositions. Is RBV relevant to healthcare? Does theory need to explicitly incorporate the professions? Is there any best organisational form for knowledge sharing?

1.3 Methods

We approached the proposition for each domain separately, undertaking consecutive searches based on a common approach:

- Setting the search within a governance framework
- Agreeing the work programme
- Identifying source journals
- Identifying, piloting and finalising search terms
- Obtaining titles/abstracts
- Sifting the titles and abstracts to generate a final sub-set of titles/abstracts with relevance to the propositions
- Obtaining pdf files of whole papers for the sub-set of titles/abstracts
- Reading the papers
- Starring papers – identifying those to be given priority in the review
- Devising a thematic framework, based on the content of the literature
- Searching books, authors, snowballed references, and applying narrative methods

- Identifying gaps, resulting in the Knowledge Research Evidence search known as KRE2
- Writing up the findings

Appendices 1 – 7 contain technical documentation of methods.

1.3.1 Governance Framework

The team, consisting of the Principal Investigator, Lead Researcher/Project Manager, Research Assistant, Librarian, met approximately every three weeks. This Small Team was joined by two senior academics to form the Advisory Group (Big Team) which met once a quarter. Papers and minutes flowed to these teams and fed into SDO project monitoring arrangements.

Table 1. The Team

Role	Person	Abbreviation
Principal Investigator	Prof Ewan Ferlie	EF
Lead Researcher/Project Manager	Dr Tessa Crilly	TC
Research Assistant	Ms Susan Trenholm	ST
Librarian	Ms Anna Peckham	AP
Advisor	Prof Graeme Currie	GC
Advisor/Investigator	Dr Ashok Jashapara	AJ

The Advisory Group gave consideration to the weight of material, how it met gaps in the literature and final outputs. It also played an important role in determining search terms and journals to be accessed. We tested out interim findings through presentations to NHS Chief Executives, receiving feedback from them through the SDO/NHS Confederation Chief Executive Research Networks in London and Nottingham.

1.3.2 Work Programme & Chronology

We conducted searches of the three separate domains linked to the propositions. A fourth cross-cutting domain of Knowledge Research Evidence was specified and searched to capture healthcare literature. We tackled them consecutively (rather than in parallel) to (a) manage the workload among the team, (b) reflect the priority and weight of each domain within the project, and (c) benefit from learning gained through successive searches. RBV was tackled first as it was the most exploratory and novel to healthcare. Our approach was divergent, trying to locate RBV within the broader strategic management literature. The chronological order of searching was:

1. **Resource Based View (RBV)** – structured journal search 2008-2011, adding snowballed references and books. An electronic database search of RBV 2000-2011, using narrow terms, provided some triangulation and validated our selection of journals. We added a narrative search to bridge the divide between generic strategic management and the health sector;
2. **Critical Perspective (CP)** – structured journal search 2008-2011, adding snowballed references and books;
3. **Organisational Form (OF)** – structured journal search 2008-2011, adding snowballed references and books;
4. **Knowledge, Research and Evidence (KRE)** – we replicated a search that we had used in the Scoping Review that looked for Knowledge, Research and Evidence mobilisation papers across electronic health databases. This differed from the 1-3 domains above because it was applied to a broad database of all healthcare journals and grey literature, rather than to specific journals.

1.3.3 Source Journals

Peer reviewed journals with high ABS impact factors of 4 (where 1 is low and 4 is the highest) were selected as our starting point¹. The original proposal had suggested: "a structured search of perhaps a dozen high impact peer reviewed journals (using Web of Science high impact factor data to assist in identifying journals) over a seven year period". In practice we opted for broader coverage of journals over a shorter time period. For RBV we searched 56 journals over the period 2008-2011. Since we were at March 2011 this amounted to 56 x 3.25 years (= 182 journal years), which was more than double the original suggestion of 12 journals over 7 years (= 84 journal years). This decision was taken after reflecting on the Scoping Review which covered the period 2000-2008 and provided a trail of literature up to 2008 – a ready-made 'snowball'. By selecting 2008-2011

¹ The Association of Business Schools (ABS) assigns an impact factor to journals, as a quality guide for the UK business and management research community. Journals are grouped into four categories (grades 1 to 4) plus a new category of 4*. The grouping is intended to reflect the quality of those journals according to the following evidence sources:

- a. the assessments of leading UK researchers in each of the main sub-fields covered
- b. the mean citation impact scores for the most recent five year period
- c. evaluation by the editors of the quality standards, track records, contents and processes of each journal included in the Guide
- d. the number of times the journal was cited as a top journal in ten lists taken to be representative of the 'world' rating business and management journals
- e. the number of times a journal was cited in the submissions to the 2008 Research Assessment Exercise

we had one year of overlap, but a good opportunity to branch out across all recent literature. A strategy of casting the net wide across a large set of high impact journals minimised the risk of missing important studies. The objective was to improve the quality of the review. A consequence was that the volume of material to be sifted was set at quite a high level.

In the Critical Perspective and Organisational Form searches we narrowed the number of journals to 20 and 25 respectively, based on greater familiarity with the field. (The strategic management theory of RBV was a novel area of healthcare enquiry, encouraging us to set broad boundaries).

Nevertheless, instead of 252 journal years (7 years x 12 journals x 3 domains), the table below shows that we surveyed 328 journal years, increasing to 429 when we did a supplementary sweep up to March 2012.

Table 2. Journal Search

	No. Journals Searched (Mainly ABS Impact Factor 4)	No. Journal Years (2008 – March 2011)	No. Journal Years (2008 – Mar 2012)
Resource Based View	56	182	238
Critical Perspective	20	65	85
Organisational Form	25	81	106
Total	101	328	429

1.3.4 Search Terms

The search terms were informed by the proposition and domain description, and were piloted to test their volume impact. Final search strings were labelled:

- RBV3 - third iteration
- CP6 - sixth iteration
- OF2 - second iteration
- KRE2 - second iteration

Initial versions (i.e. RBV1, CP1 etc) of the searches generated over 14,000 citations. Modifications reduced the volume to 5283 references by: excluding "innovation" from RBV; delimiting RBV by "organisation", "company", "firm"; delimiting CP6 and OF2 by "knowledge", "research", "evidence". The final search terms are listed below, together with the number of references generated.

Table 3. Search Terms

RBV3 (3347 Refs)	CP6 (578 Refs)	OF2 (1084 Refs)	KRE2 (274 refs)
Competition Transfer (K as asset) Dynamic capabilities Performance Value Competitive advantage Social Capital Productivity Gain Absorptive capacity Core competency + Organisation, firm, company	Power Surveillance Foucault Foucauldian Critical Resistance Jurisdiction Marx Neo-Marxist Labour process Postmodern discourse Labour Capital Professional regulation Professional control Critical perspective + Knowledge, research, evidence	Network Partnership Collaboration Hierarchy Market Knowledge intensive firm Boundary spanner Professional service firm Communities of practice Strategic alliance Virtual organisation Organisational form + Knowledge, research, evidence	Based on: knowledge management, transfer, sharing, capture, utilisation, mobilisation, exchange, transmission, translation, diffusion, implementation; research, evidence (See Appendix 2 for syntax)

1.3.5 Abstracts and titles: obtaining, sifting and selecting

After defining the search terms and agreeing journal search strategy, the Librarian generated 5283 references (abstracts/titles) in total.

We developed a Data Extraction Sheet (DES) to determine the criteria that would be used to narrow down the search to relevant and important articles. Two researchers (TC and ST) applied this data extraction sheet to twenty full papers to develop a common approach to assessing relevance.

We used a reduced version of the data extraction sheet to establish criteria for reducing the long list of 5283 references into a shorter list. The criteria included (a) relevance to the proposition, (b) relevance to healthcare, (c) relevance to KM, (d) contribution to body of knowledge, e.g. reviews of research and evidence were considered useful. We also noted the main topic or theme of the citation, so that we were able to build up a profile of the material that was being sifted (e.g. Appendix 4). Leadership and Human Resource Management practice, through use of incentives, for example, formed distinct categories connected with the term 'performance'.

We adopted a sifting process:

- Sift 1: two researchers sifted the long list of titles/abstracts into a short list. They audited their approach by double-working on a pilot set and analysing the results. The researchers had 72% consistency with the first 100 references relating to RBV, prompting them to divide the list of citations. Double-working on 214 citations for the OF search produced an 82% inter-rater consistency.

- Sift 2: the short list for RBV and CP was considered by the PI and reduced to a final list. OF did not have a second sift. Instead, the researchers double-rated the whole list of references in Sift 1 to produce a final list.

Papers were obtained and studied:

- Pdf: the final list was passed on to the librarian, who retrieved full papers in pdf format. In the case of RBV, for example, 100 papers were selected.
- Starred: The PI plus 2 researchers read all papers and identified those that were considered to be the most valuable, by marking them with a star. They met to discuss the rationale for highlighting these exemplar papers. Review papers that took an overview of the field, bringing together a body of work and critiquing it, were considered to be more useful than narrow empirical studies. The starring process helped the team to establish focus, but unstarred papers were still included in the review findings. Volumes are summarised below.

Table 4. Summary of Volumes from Journal Search

<p>Resource Based View of the Firm</p> <ul style="list-style-type: none"> • Searched RBV3 across 56 journals • 3347 abstracts • 100 pdfs, with 6%-24% starred • 44 referenced 	<p>Critical Perspective</p> <ul style="list-style-type: none"> • Search CP6 across 20 journals • 578 abstracts • 41 pdfs with 26 starred • 25 referenced
<p>Organisational Form</p> <ul style="list-style-type: none"> • Search OF2 across 25 journals • 1084 abstracts • 80 pdf files retrieved with 17 starred • 41 referenced 	<p>Knowledge Research Evidence</p> <ul style="list-style-type: none"> • KRE2 using electronic databases: OVID (Medline, Embase, HMIC & CINAHL) • 274 abstracts • 46 pdf files retrieved & referenced

1.3.6 Other Sources

The journal search (RBV, CP, OF) and database search (KRE) was supplemented by other methods and sources:

- **Publishers & Books:** The librarian accessed publishers' lists (Blackwell Wiley, Cambridge University Press, Emerald Publishing Group, MIT Press, McGraw-Hill, Oxford University Press, Palgrave Macmillan, Radcliffe Medical Press, Routledge, SAGE Publications, Cornell University Press, Edward Elgar Publishing, Harvard Business Review Press, Polity Press, Princeton University Press, University of Chicago Press) and

generated 53 titles. Other publishers' catalogues were also searched but no relevant books identified (Kluwer; Stanford University Press). It was a hand search, looking for titles relevant to Knowledge and Knowledge Mobilisation.

- **Other Books:** A further book search was undertaken by the Lead Researcher of titles on Amazon relating to strategic management, resource based view of the firm, critical perspective of knowledge mobilisation, and organisational form. This generated 50 titles.
- **Authors:** The Advisory Group recommended a list of authors connected with the domains.
- **Snowballing.** The search period was 2008-2011 (subsequently brought up to date to 2012). We accessed older material and classic texts through snowballing, i.e. by picking up references from our selected papers. (Greenhalgh & Peacock, 2005, describe 'snowball sampling' as developing the strategy according to the requirements of the study and being responsive to the literature already obtained. This is similar to what we describe as 'narrative methods' below).
- **Narrative Methods** do not have predefined inclusion or exclusion criteria or structured search strategies. They are generally regarded as less reliable than systematic approaches (e.g. Aveyard, 2007) because they are less explicit, rigorous or comprehensive. However, as a supplementary approach, once an analytical framework has been established, narrative enquiry is efficient and potentially illuminating. We adopted a narrative search of health-related empirical literature following the RBV search, aiming to explore relevance to health. In principle, 'narrative' or 'undefined' search methods combine author searches and snowballing. But we use the term 'narrative' in a narrower sense. We make the distinction that the narrative method is informed by the researchers' knowledge of the field and that it is driven by narrative tension, trying to answer a question, e.g. 'what are strategic resources in healthcare?' In the case of RBV, systematic-type methods were inevitably insufficient since RBV is absent in healthcare and so cannot be observed directly. A more interpretative or narrative-type approach was required to bridge the generic management-health gap.

1.3.7 Thematic Analysis and the Sifting Process

The titles and abstracts gave us sufficient information to put a category or topic label against each reference, reflecting the main focus of the paper. Appendix 4

shows that in the RBV search we generated over 60 category headings. The label 'RBV' ranks only twenty third, illustrating the wide range of other literature that we accessed. The category ranked most frequently overall is entitled 'organisational form', showing the high degree of overlap between RBV and the Organisational Form domain. There was no attempt to shape the categories at this point. We applied 'yes' and 'no' labels in the first sift, generating 629 yesses (see Appendix 6), to determine what would be advanced to the next review stage. The second sift, conducted by the PI, yielded 100 pdfs which were read by the whole team.

Repetition of the process for the Organisational Form (OF2) and Critical Perspective (CP6) produced further long lists of themes.

Some of the search terms generated references that were unrelated to our focus on knowledge mobilisation in organisations. 'Performance' for example captured HR practices linked to management and individual performance; 'critical' is used to mean 'very important', which was not relevant, as well as 'sceptical', which was relevant to our enquiry.

We consolidated the loose categories into a set of cross-cutting themes (table 5) that were used as an analytical framework. The themes did not emerge automatically from the sifting process. The table was produced fairly late in the process once all the searches had been concluded, the pdf papers read and the write-up process was in train. The patterning was based on: (a) frequency of themes that surfaced, e.g. social capital; (b) reading into the literature to identify theoretical constructs, e.g. routines as a capability or resource; (c) analytical nesting devices, e.g. vertical units of analysis and lateral flows and processes; (d) an assessment of how the three domains interacted with each other, e.g. competitive advantage featured heavily in RBV and hardly at all within the critical perspective.

1.3.8 Cross-Cutting Themes

We grappled with the themes below which were cross-cutting throughout the domains. Our decision to treat each domain (proposition) separately means that recurring topics, such as absorptive capacity, are repeated. The number of ticks denotes strength of emphasis in the literature stream. RBV and organisational form contain similar subject areas. KRE does not feature below as it was introduced after the three domains had been analysed, responding to a perceived gap in the literature (discussed more fully in the concluding chapter).

Table 5. Cross-Cutting Themes

	RBV	Critical	Organisational Form
Theory:			
RBV	✓✓✓		
Dynamic Capabilities	✓✓		✓
Absorptive Capacity	✓✓		✓
Ambidexterity	✓		✓
Unit of Analysis:			✓
Individual		✓	✓
Group		✓	✓
Organisation	✓	✓	✓
System			✓
Inputs & Capabilities:			
Resources	✓✓✓		
Knowledge	✓✓	✓	✓
Routines	✓✓✓	✓	
Organisational Slack	✓		
Power		✓✓✓	✓
Social Capital	✓	✓	✓
Relationships	✓	✓	✓
Identity		✓	
Environment:			
Market & competition	✓		
Flows & Processes:			
Knowledge Sharing	✓	✓	✓
Ambidexterity	✓		✓
Market Entry & Exit	✓		
Structures:			✓
Alliance	✓		✓
Network	✓		✓✓✓
KIF	✓	✓	✓
Public Service	✓		✓
Outcome:			
Performance	✓✓		
Competitive Advantage	✓✓		✓
Value Creation	✓✓	✓	✓
Innovation	✓		✓✓✓
Dominant Lit.	Strategic Mgt	Sociological	Org. Studies

2 Resource Based View of the Firm

PROPOSITION 1: “The NHS needs to consider how knowledge and information can be used to improve productivity, innovation and performance. The Resource Based View of the firm has application in health.”

This chapter describes the findings of the literature search relating to RBV. It is a somewhat abstract field, rooted in economics and strategic management. After establishing the nature and status of the Resource Based View of the firm, the challenge is to make links across to healthcare literature. We accomplish this by developing an analytical framework that, in Chapter 3, we map to healthcare through narrative search methods.

2.1 Introduction

RBV is a theory. Much of the literature is about: (a) locating RBV – explaining, testing empirically, setting in context and establishing its status through critique; (b) developing RBV - improving the theory by developing new constructs, that either replace RBV entirely or refine specific angles; (c) drilling into antecedents and consequences - dealing with specific elements of the RBV theory, such as competitive advantage. There is no literature that directly links RBV with our field of interest which is healthcare, hence (d) the narrative exercise in Chapter 3, drawing together evidence and mapping it onto health.

This chapter uses the literature to make connections and draw out an analytical framework that can be used to (a) connect to the Critical Perspective and Organisational Form searches and (b) provide an architecture that can be applied to the health sector. It builds up from a seemingly abstract and divergent generic management literature.

But first we introduce RBV through a brief description and then consider ‘resources’, its essential component, and the link with knowledge mobilisation.

2.2 Describing RBV

The Resource Based View of the firm is easy to state. An organisation (firm) is made up of tangible and intangible resources, assets or capabilities. Knowledge is an important intangible resource. Firms have

different resource profiles (are heterogeneous) and these differences account for variations in their performance. 'Strategic resources' with specific features can give the firm a sustainable competitive advantage. The features were initially summed up in the literature (Barney, 1991) as VRIN: they must be simultaneously Valuable, Rare, difficult to Imitate and Non-substitutable. They have subsequently been restated as VRIO (Barney and Clark, 2007): Valuable, Rare, difficult to Imitate and exploitable by the firm's Organisational processes.

Newbert (2008) summarises RBV thus:

"The resource-based view of the firm (RBV) assumes that resources, or 'stocks of available factors that are owned or controlled by the firm' (Amit and Schoemaker, 1993: 35), and capabilities, or the 'firm's capacity to deploy *Resources*' (Amit and Schoemaker, 1993: 35, emphasis in original), are both heterogeneously distributed among firms and imperfectly mobile. These assumptions allow not only for the existence of differences in firm resource endowments, but also for these differences to persist over time (Barney, 1991). Based on these assumptions, RBV scholars hypothesize that

- (1) if a firm possesses and exploits resources and capabilities that are both valuable and rare, it will attain a competitive advantage,
- (2) if these resources and capabilities are also both inimitable and non-substitutable, the firm will sustain this advantage, and
- (3) the attainment of such advantages will enable the firm to improve its short-term and long-term performance (Amit and Schoemaker, 1993; Barney, 1991, 1997; Eisenhardt and Martin, 2000; Henderson and Cockburn, 1994; Powell, 2001; Teece, Pisano, and Shuen, 1997)."

2.3 Resources

Resources, capabilities, competences and routines are the components of the firm that are of interest to us in RBV. The term 'organisational routines' was conceptualised by Nelson and Winter as "the regular and predictable patterns of activity, made up of coordinated actions by individuals, that become more automatic in forms the more they are used" p487. Kraaijenbrink et al (2010) find little distinction between resources and capabilities (note: Barney and Clark, 2007, argue that resources and capabilities are one and the same thing) and are frustrated by the lack of attention to the impact of different resources upon sustained competitive advantage. "Although the RBV recognizes different types of resource – for example, physical, capital, human capital, and organizational capital (Barney, 1991) – it treats them all the same way." (p359).

In scouring the RBV literature for a workable definition of resources we tend to come up against generalisations. This, according to Kraaijenbrink et al (2010, p358) is a flaw in RBV theory, and also in its successor theory,

'dynamic capabilities'. Kraaijenbrink et al use these definitions to make their point:

By a resource is meant anything which could be thought of as strength or weakness of a given firm. More formally, a firm's resources at a given time could be defined as those (tangible and intangible) assets which are tied semi-permanently to the firm. (Wernerfelt, 1984: 172)

Firm resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness. (Barney, 1991: 101; Barney, 2002: 155)

The firm's *Resources* will be defined as stocks of available factors that are owned or controlled by the firm. (Amit & Schoemaker, 1993: 35)

the firm's processes that use resources—specifically the processes to integrate, reconfigure, gain and release resources—to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die. (Eisenhardt & Martin, 2000: 1107)

Crook et al (2008) note the 'strategic' quality of resources and the role of knowledge based on the VRIN criteria: "it is valuable, such that it reduces costs or increases value to customers, rare enough that competitors do not use the same resource to compete away the value, and difficult to imitate or substitute, which keeps competitors from gaining parity (Barney, 1991). Resources identified in the literature as potentially strategic include, for example, reputation, patents, and unique knowledge (Barney and Arkan, 2001)." P1142

But Crook et al acknowledge (2008, p1152) that, though the theory makes a broad generalisation that knowledge underpins all strategic resources (e.g., Grant, 1996b), detailed questions remain unanswered, such as which strategic resources are superior, how they interact, what is the relationship with environment and value? The theory is not predictive as it is not sufficiently well-developed.

2.3.1 Knowledge

Knowledge is the key organisational resource within a knowledge society, where abstract modes of thinking play a central role in the economy, rather than work with the soil. (Styhre (2011: 51) suggests that a knowledge society does not mean that we are all becoming increasingly knowledgeable, but that we all know more about less). Knowledge as a strategic resource drives the resource-based view (and knowledge as a source of power drives the critical perspective). When we look at

organisational form we are asking, which structure best facilitates knowledge flow.

The Scoping Review showed that Knowledge and Knowledge Mobilisation could be described from multiple angles. Knowledge-as-data, knowledge-as-meaning, or knowledge-as-practice represent different epistemologies. Explicit data can be codified into clinical support systems while tacit or more messy knowledge cannot easily be described and, like riding a bike, is learned by doing. Evidence Based Health Care is a movement that gained importance in the 1990s, starting with Evidence Based Medicine and migrating to Evidence Based Management. The original model of strict hierarchies of evidence within clinical practice, transmitted in a linear and rational manner, has been supplanted by a more human and interactive model, e.g. Gabbay and Le May (2004) describe mindlines developed by GPs.

Figure 1. Taxonomy of Knowledge Types
(Alavi & Leidner, 2001, p113)

Knowledge Types	Definitions	Examples
Tacit	Knowledge is rooted in actions, experience, and involvement in specific context	Best means of dealing with specific customer
Cognitive tacit:	Mental models	Individual's belief on cause-effect relationships
Technical tacit:	Know-how applicable to specific work	Surgery skills
Explicit	Articulated, generalized knowledge	Knowledge of major customers in a region
Individual	Created by and inherent in the individual	Insights gained from completed project
Social	Created by and inherent in collective actions of a group	Norms for inter-group communication
Declarative	Know-about	What drug is appropriate for an illness
Procedural	Know-how	How to administer a particular drug
Causal	Know-why	Understanding why the drug works
Conditional	Know-when	Understanding when to prescribe the drug
Relational	Know-with	Understanding how the drug interacts with other drugs
Pragmatic	Useful knowledge for an organization	Best practices, business frameworks, project experiences, engineering drawings, market reports

Alavi and Leidner (2001) described a taxonomy of knowledge perspectives as follows:

- Data and information, e.g. raw numbers: Knowledge management focuses on IS/IT and assimilation of information;
- State of mind: knowledge is the state of knowing and understanding. KM involves enhancing individual learning;
- Object: knowledge as object to be stored and manipulated. KM involves gathering, storing and transferring knowledge stocks;
- Process: knowledge is a process of applying expertise or is a technical routine within the organisation;
- Access to information: knowledge is a condition of access to information. Understanding is needed to understand what information to retrieve;
- Capability: knowledge is the potential to influence action. KM is about building core competencies and understanding strategic know-how.

The Resource Based View draws on all of these concepts. The vocabulary that is most prevalent includes process, routine and capability but this is consistent with the notion of knowledge as an asset or transferrable object and also allows for tacit knowledge rooted in experience. Their taxonomy of knowledge types continues to be illuminating.

Costea et al (2008) feature in both the RBV stream and the Critical Perspective stream of literature. They lump 'knowledge' and 'knowledge management' into the 'mumbo-jumbo' of managerial fads and fashions. They disparage the seductiveness of the idea that 'knowledge' is "the great differentiator of performance and a main platform of personal and collective success" (p669), articulated as a 'narrative of hope' that hinges upon "the 'magic' of mastery and expertise" (p669). These critical and ironic perspectives do not represent the RBV approach to knowledge. The mainstream verdict is one of conviction that knowledge governance is key to success in the market, i.e. yielding sustained competitive advantage (e.g. Foss et al, 2010).

The Knowledge Based View has grown out of the resource-based tradition: 'knowledge is the most strategically significant resource of the firm (Dierickx & Cool, 1989; Grant, 1996a,b; Kogut & Zander, 1992)" Reus et al, 2009, p382. "The capability of individual organisations is critically underpinned by knowledge" (Johnson & Scholes, 2002, p150). This knowledge may be outward looking, understanding what service users, consumers and regulators want. In the context of RBV, we consider knowledge as a resource or core competence embedded in individuals, processes, systems and relationships.

2.3.2 Social Capital as a Resource

Social capital refers to the resources derived from social relationships. Payne et al (2011) reviewed 20 years of literature, starting from Coleman's (1988) founding paper, to form a typology of social capital that takes account of different levels of analysis: individual, group and organisation. Their ambition is to steer research towards looking at multiple levels, i.e. both micro and macro, at any one time. At the micro level, social capital among individuals has been defined as "friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital" (Burt, 1992, p9). At the macro level, Putnam (1995, p67) defines social capital as "features of social organizations such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (quoted in Payne et al, 2011, p492). A widely used definition is Portes and Sensenbrenner's (1993, p67) notion of social capital as "a collectivity". Adler and Kwon (2002) reviewed the management literature and, finding 23 distinct definitions, derived a broad description of social capital as the goodwill derived from the structure and content of social relations (Payne et al, 2011, p492).

Payne et al's (2011) typology is based on two intersecting dimensions of (i) unit of analysis and (ii) locus of activity in terms of internal and external ties, i.e. is social capital drawn from outside or inside the organisation? The four resulting quadrants are: (a) social capital of individuals with internal ties (individual/internal), (b) social capital of collectives with internal ties (collective/internal), (c) social capital of individuals with external ties (individual/external) and (d) social capital of collectives with external ties (collective/external). The theoretical foundations are summarised as:

- Bridging of structural holes (Burt, 1982, 1992, 1997a, 1997b, 2000)
- Strong ties and network closure (Coleman, 1988, 1990)
- Embeddedness (Granovetter, 1985; Uzzi, 1996, 1997)
- Social resource theory (Lin, 1999, 2001, 2002; Lin, Ensel & Vaughn, 1981; Lin, Vaughn & Ensl, 1981)
- Strength of weak ties (Granovetter, 1973)
- Multiple dimensions of social capital (Nahapiet & Ghoshal, 1998)
- Model of social capital (Adler & Kwon, 2002)

Figure 2. Typology and Definitions of Ties Based on Unit of Analysis

	Individual/Internal	Collective/Internal
Internal Ties	<u>General Definition:</u> Assets and resources made available through social relationships that an individual can use to their personal benefit.	<u>General Definition:</u> Assets and resources made available through relationships within the social structure of the collective (i.e. group or organization) that can be utilized by the collective.
	<u>Dominant Perspective:</u> Structural Holes	<u>Dominant Perspective:</u> Structural Holes
External Ties	<u>General Definition:</u> Assets and resources made available through social relationships that span boundaries, and through which both the individual and the collective can draw upon and benefit.	<u>General Definition:</u> Assets and resources made available to the collective through network ties that span boundaries to other collectives, and through which the collective may benefit.
	<u>Dominant Perspective:</u> Structural Holes & Strong Ties/Network Closure	<u>Dominant Perspective:</u> Structural Holes & Strong Ties/Network Closure
	Individual Social Capital	Collective Social Capital

Payne et al set out a research agenda to test: the impact of social capital upon firm performance, e.g. external and internal relationships of top management; effect of social capital on organisational formation growth, innovation and survival; the role of social capital in the development of the firm’s intellectual capital and the firm’s ability to innovate. The relationship with RBV is that social capital is a resource that adds to the capability of the organisation.

2.3.3 Social Capital as a Measure of Effectiveness and Performance

We tend to think of social capital as a resource that can be built up to fortify an organisation as an input. It is possible also to think of social capital as an outcome and measure of effectiveness in its own right. Individual organisations, e.g. hospitals, that have a strong reputation and are trusted within the community, contribute to the aggregated social capital and capacity of the community (Putnam 1993, Chaskin et al. 2001).

Networked organisations, while less visible than buildings, may also contribute to community social capital. Networks have emerged as an organisational response to “wicked” problems (O’Toole, 1997a) where vulnerable clients are exposed to a maze of complicated systems, e.g. homeless, frail elderly (Leishsenring 2004), victims of disaster relief (Kapucu 2005), disabled children (Townshley, Abbott, and Watson 2004), and people with serious mental illness (SMI) (Provan and Milward 1995). They deal with fragmentation in human and health services, where clients

are at risk of “falling through the cracks” (Agranoff 1991; Ferlie, Hawkins, and Kewell 2003; President’s New Freedom Commission on Mental Health 2003) (Provan et al, 2009, p873).

Provan, Huang & Milward (2009) studied networks in public health systems to look at how they improved social outcomes, i.e. measures of social capital, in terms of trustworthiness, reputation and influence. Trustworthiness is a measure of reliability and consistency, i.e. the extent to which partners believe that an organisation will do what it says it will do, honouring its commitments. Trust can be built up through strategic alliances over time. Reputation, in the sense of recognition among peers, is measured by perceptions that the organisation is doing a good job and provides high-quality services. Influence is a measure of reach within other organisations, i.e. the extent to which an organisation’s views and actions are taken into account by other organisations in their own decision-making. Provan et al (2009) linked network embeddedness (structure) with resources and power: “Central organizations are more embedded in the flow of information and resources in the network than noncentral, or peripheral actors, and have typically been found to have greater power (Cook and Emerson 1978).” (pp874-875). Their empirical study of public service networks confirmed that organisations that were ‘embedded’, i.e. in a central position within a network structure, had stronger measures of social capital that grew with maturity over time.

2.3.4 Knowledge Sharing in Organisations

A linear logical view is that knowledge is a resource (stock or asset) and knowledge transfer is a process or a routine (flow) within the firm or between firms. A non-linear or embedded idea of knowing as practice (Orlikowski, 2002), however, replaces the stocks and flow model with a more nuanced account of tacit knowledge that is sticky and difficult to share. It may be hoarded (Empson, 2001) and knowledge management systems may be resisted (Doolin, 2004). Behaviour of professionals in relation to knowledge sharing is a major theme of the Critical Perspective, but it has also emerged in the RBV search (e.g. Brivot, 2011; Kärreman and Alvesson, 2009; Kärreman, 2010).

Brivot (2011) gives an account of knowledge sharing in a Parisian law firm, where knowledge is the key resource along with the professionals, lawyers, within the firm. Knowledge management (KM) systems have been developed since the 1990s to create knowledge bases of best practice. The legal ‘epistemic culture’ is about words rather than numbers, and the knowledge base in Brivot’s case study PSF contained 20,000 documents.

This text base is consistent with lawyers' epistemic culture: "where knowledge is highly interpretable and contested, knowledge creation is grounded within, and relies far more [than in other professional fields] upon an explicit knowledge base articulated in text-based forms" (Robertson et al 2003: 852-3, quoted in Brivot, 2011, p495). The KM library of documents, accessible through a search engine, contains contracts, opinion letters, reports, memoranda, presentations. Some of these have been badged as 'best practice' by an internal standards committee.

Brivot questioned whether bureaucratisation and codification of knowledge removed control from lawyers, shifting power from professionals to managers. The answer was largely 'no'. Professionals responded along a spectrum, with varying degrees of usage and non-usage, enthusiasm and hostility but, in general, they appropriated the system to suit themselves. They actively participated in the 'bureaucratisation' process while maintaining control of knowledge through informal routes. Lawyers used the KM system for the following reasons:

- To deal with questions of law – the KM system enhanced the efficiency of their work, enabled them to streamline and standardise their advice, and provided leads for novel questions;
- Personal development – lawyers developed their own personal libraries for later use or reference;
- To spy – clandestine scrutiny of peers' work was enabled as lawyers checked on the quality and content of their colleagues' work;
- Claim and hoard knowledge – professionals adopted strategies to develop substantial bodies of work and then claim the territory; lawyers would hoard knowledge for the same reason, withholding it from the KM system in order to prevent others from accessing the territory;
- Because they were under surveillance – administrative systems had been put in place to monitor the extent to which lawyers drew on the 'best practice' posted in the system. Use of the system was compulsory. While the primary purpose of the KM system had been declared to be to improve the quality of work, emphasis shifted towards gains in productivity and efficiency.

Brivot concluded that in spite of the administrative surveillance, professionals took the best from the system (in terms of improving their knowledge base) and manipulated it to suit their own objectives. In this way they aligned their own aims with those of the organisation but were not controlled by them, i.e. "they were able to align their behaviour with managerial goals intended to enhance transparency, accountability and cost-efficiency, but at the same time retain their independence within a bureaucratized setting." (p503). The nature of professional knowledge and

behaviour meant that knowledge management systems aiming to codify information did not detract from professional control and autonomy: “Even though work environments are becoming more rationalized and mechanized, the essence of professional work is still the largely intangible application of individual creativity, experience and judgement” (p504).

2.3.5 Human Resources – Professionals

There is an intersection between RBV and the critical perspective (illustrated by Brivot above) in the area of professions, knowledge as a resource and knowledge sharing. Mechanistic strategic management literature gives way to more discursive sociological accounts. Styhre (2011) conceives of professionals as “processes”, based on collaboration and action within a community. Individuals are “ultimately performing certain activities of social worth” and “dependent on being part of the flow of data, information and know-how that, over time, constitutes professional authority” (pxii). Styhre moves away from the more typical Weberian notion of professionalism as a strategy of control that monopolises areas of formal expertise via entry barriers and accreditation and instead shifts our attention to the interactive and day-to-day work of doctors, lawyers, architects, scientists etc. He conceives of “professionalism as a form of systematic and institutionalized knowledge sharing”. The Big Leviathan monolithic metaphor is replaced by a relational, processual and bottom-up perspective on “the communal and collegial nature of professional work” (pxiii). Knowledge sharing is functional, done out of necessity rather than goodwill. “Today professional life is messier and characterised by relationality” (p10).

Styhre gives a roll-call of classic texts relating to the concept of *professional*, a key term in sociological vocabulary: Goode, 1957; Wilensky, 1964; Carr-Saunders and Wilson’s (1933) *The Professions*; Johnson, 1972; Larson, 1977; Abbott, 1988; Friedson, 1986, 2001. He opts to use Leicht and Fennell (2008)’s definition of professionals. It emphasises the public nature of professionals, legitimated by society, with expertise based on knowledge that is ‘generally acknowledged’ (p20), and the corollary that there is no such thing as a private professional:

“We define professional work as incumbents: (a) whose work is defined by the application of theoretical and scientific knowledge to tasks tied to core societal values (health, justice, financial status, etc.), (b) where the terms and conditions of work traditionally command considerable autonomy and freedom from oversight, except by peer representatives of the professional occupation, and (c) where claims to exclusive or nearly exclusive control

over a task domain are linked to the application of the knowledge imparted to professionals as part of their training (Leicht and Fennell, 2008: 421)" (Styhre, 2011: 16)

Professionalisation is "the result of a successful professional project; an occupation is professionalized to the extent that it successfully defines a set of work tasks as their exclusive domain, and successfully defends that domain against competing claims" (Leicht and Fennell, 2001:8 in Styhre 2011: 17). There may be substantial heterogeneity and struggle between sub-groups, e.g. radiologists may need to defend their expertise against surgeons who feel equal to reading visual media.

"The ratio of indeterminacy to technical rules in professional work has to remain at a high level" (Malhotra and Morris, 2009:899) in Styhre (2011:20). By definition, professional operations cannot be standardized and subject to programmed behaviour. "Intellectual capacities reside in humans rather than systems or routines". The implication for RBV is that the professional person is the resource, which in turn defines the process or routine. Entry barriers to the profession include psychological barriers, since confidence in their own capacities and belief in their own abilities is part of the formation process. Thus entry barriers include formal (credentials) and informal boundaries.

If professions are a form of institution (Styhre, 2011, p28) then managerialism is a new institution. "Managerialism is a mode of thought and action based on a desire to control, enhance efficiency, normalize and suppress conflict and promote the universalization of sectional managerial interests" (Kuhn, 2009: 685-6), p29. Surveillance and audit are tools of control. Managerial objectives of establishing performance metrics collide with the medical profession's traditional grip on control and authority.

2.3.6 Are Professionals a Strategic Resource?

Crook et al (2008) argue that the theory of VRIN requires highly specific constructs of what constitutes strategic resources, which are hardly ever available. They quote this elaborate metaphor to illustrate the point:

"Econometric theory is like an exquisitely balanced French recipe, spelling out precisely with how many turns to mix the sauce, how many carats of spice to add, and for how many milliseconds to bake the mixture at exactly 474 degrees of temperature. But when the statistical cook turns to raw materials, he finds that hearts of cactus fruit are unavailable, so he substitutes chunks of cantaloupe; where the recipe calls for vermicelli he uses shredded wheat; and he substitutes green garment dye for curry,

ping-pong balls for turtle's eggs, and, for Chalifougnac vintage 1883, a can of turpentine (Valavanis, 1959: 83)."

In summary, professionals are both a knowledge resource and a knowledge process. They are also strong candidates to meet the VRIN/ VRIO criteria of strategic resources or capabilities. The relational and the communal-doing or practice aspect of professionalism is consistent with the concept of communities of practice (Brown and Duguid, 2001) based on embedded and situated learning (Lave and Wenger, 1991). Tacit knowledge is counted as more valuable than explicit knowledge (Bierly et al, 2009). The bounded nature of professional work serves to prevent outsiders from coming in, through formal entry barriers created by credentials and training, and serves to stop knowledge from seeping out. Indeterminacy (Jamous and Peloille, 1970) and mystification (Hughes, 1975) ensure that knowledge does not become explicit, codified and transferred beyond the profession.

2.4 Locating RBV

This section locates RBV in four ways. First of all, it locates the theory by describing it in full. Secondly, it sets RBV within the field of strategic management, noting similarities and contrasts with other theories. Thirdly, it goes back to first principles by building up the chronology of RBV, showing how it reached this point. Fourthly, it assesses the status of RBV, based on contemporary literature.

2.4.1 Locating RBV as a Theory

"Resource-based theory is an efficiency-based explanation of sustained superior firm performance" (Barney and Clark, 2007: v)

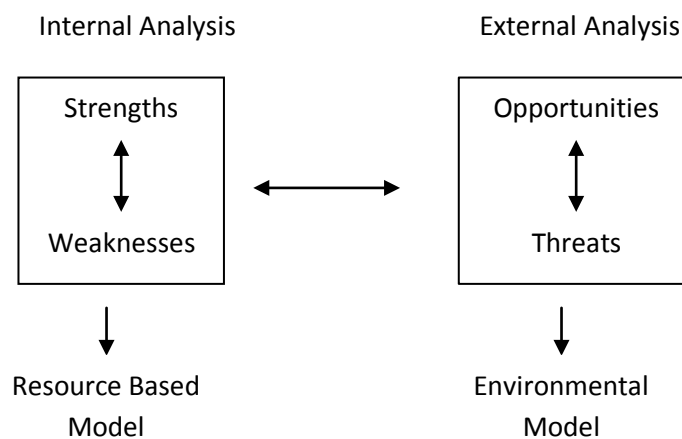
We set out current theory as articulated by a major exponent, Jay Barney, who is credited with turning RBV into a strategic management theory. In his recent volume (Barney and Clark, 2007) the terminology has explicitly shifted towards 'resource-based theory'. RBV's status as a strategic management theory depends on its ability to deal with antecedents or consequences. That is to say, it draws on a larger theoretical framework taking account of sustained competitive advantage or performance as consequences of RBV.

Barney and Clark pose the central question of strategic management: "Why do some firms persistently outperform others?" (2007, p1) and describe the two types of explanations that are available. The first is the Structure-Conduct-Performance (SCP) paradigm of industrial organisation economics, articulated by

Porter (1979, 1981) (described in more detail later). It suggests that a firm can command higher prices for its products or services and entry barriers will allow price differentials to persist. The second explanation rests on differential capabilities of the firm itself, including its internal efficiencies. RBV falls within this category. The two perspectives are not necessarily contradictory. SCP lays emphasis upon external conditions while RBV steers attention to internal factors.

The external-internal frameworks were combined from the 1960s onwards into the SWOT framework (Ansoff, 1965; Andrews, 1971; Hofer and Schendel, 1978). It suggests that firms gain competitive advantage by exploiting their internal strengths rather than weaknesses, and by responding to environmental opportunities and avoiding threats. The main difference is that SWOT has no mechanism for choosing strengths and becomes an exercise in list-making whereas RBV has a theoretical framework.

Figure 3. Relationship between SWOT analysis, the resource-based model and models of industry attractiveness (structure-conduct-performance)
(Source: Barney and Clark, 2007: 50)



The next question is “what do we mean by performance?” The vocabulary of generic management literature talks about ‘competitive advantage’, ‘sustained competitive advantage’ and ‘economic rents’. Definitions that link these terms are:

“An enterprise has a *Competitive Advantage* if it is able to create more economic value than the marginal (break-even) competitor in its product market.”

“The *Economic Value* created by an enterprise in the course of providing a good or service is the difference between the perceived benefits gained by the purchasers of the good and the economic cost to the enterprise.”

(both from Peteraf and Barney, 2003: 314; quoted in Barney and Clark, 2007: 24-25)

Barney and Clark (2007: 25) explain these definitions further: (1) economic value and competitive advantage are theoretically linked and so can be used interchangeably; (2) they are a *net* benefits approach to value creation; (3) economic value is an aggregate of producer surplus (economic rent) and consumer surplus (customer value for money), taking account of all stakeholders; (4) *perceived* benefits are important as a measure of quality differentials; (5) greater value implies greater efficiency, supporting an efficiency view of resource-based theory.

While RBV has traditionally been concerned with value creation in the private firm, it can be argued that New Public Management (e.g. Hood, 1991; Ferlie et al, 1996) style reforms in the NHS (e.g. creation of Foundation Trusts) have created quasi firms with a strong interest in achieving sustained performance in relation to their peers. Under these circumstances, RBV becomes more applicable.

Firm Resources, Sustained Competitive Advantage and VRIO

The first conditions for SCA are the assumptions that firm resources are heterogenous (different between firms) and immobile (not easily transferred). To have the potential for SCA, a firm's resource must also be: (1) *valuable, in the sense that it exploits opportunities and eliminates threats*. (b) *rare among the firm's current and potential competitors*, (c) *imperfectly imitable*, (d) *able to be exploited by a firm's organizational processes*. (Barney and Clark, 2007: 57)

The framework for resource-based analysis is described as VRIO, summarising the four key parameters:

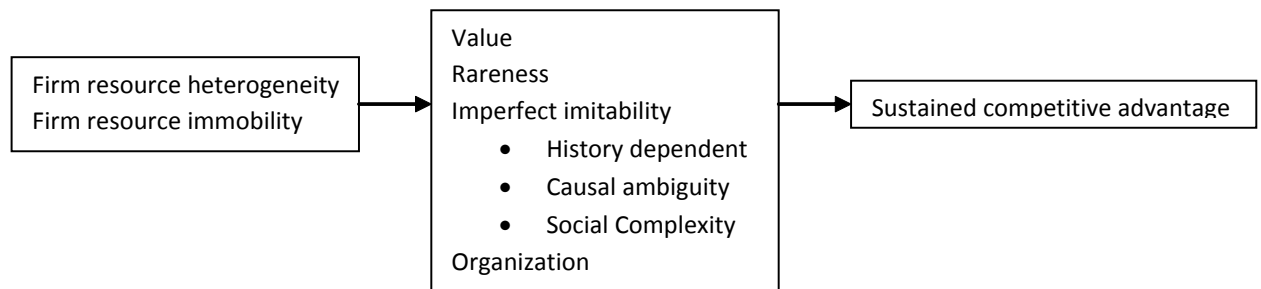
- Valuable: "resources are valuable when they enable a firm to conceive or implement strategies that improve its efficiency or effectiveness" (p57). Barney and Clark refute the accusation of tautology directed at this statement on the basis that (a) critics (e.g. Priem and Butler, 2001a; 2001b) do not fully articulate the theory and (b) empirical tests produce results that are sometimes inconsistent with the theory, rendering tautology impossible;
- Rare: "How rare a valuable firm resource must be in order to have the potential for generating a competitive advantage is a difficult question" (p59);
- Imperfectly Imitable: "valuable and rare organizational resources can only be sources of *sustained* competitive advantage if firms that do not possess these resources cannot obtain them by direct duplication or

substitution" (p59). Unique historical conditions (path dependence), causal ambiguity (nobody else understands how to use the resources fully), social complexity (e.g. social relations, culture, traditions), difficulty in substitutability, all present obstacles to imitation;

- Organisation: based on processes and capacity to exploit resources.

Figure 4. Relationship between resource heterogeneity and immobility, VRIO, and sustained competitive advantage

(Source: Barney and Clark, 2007: 69)



Questions that firms can ask themselves (Barney and Clark, 2007: 70) are:

- Value: do a firm's resources and capabilities enable the firm to respond to environmental threats or opportunities?
- Rarity: is a resource currently controlled by only a small number of competing firms?
- Imitability: do firms without a resource face a cost disadvantage in obtaining or developing it?
- Organisation: Are a firm's other policies and procedures organised to support the exploitation of its valuable, rare, and costly to imitate resources?

2.4.2 Locating RBV within the Field of Strategic Management

RBV is located in the Strategic Management discipline. Mintzberg et al (1998) in "Strategy Safari" set out ten schools of Strategic Management thought: design, planning, positioning, entrepreneurial, cognitive, learning, power, cultural, environmental and configuration, with reference to over 500 studies. Here, both Dynamic Capabilities and RBV are classed as descriptive rather than prescriptive (or predictive) theories. DC is located within Learning while RBV perhaps surprisingly is located within Power.

Whittington (2001) helpfully boils down the field into a four-hander typology. He complains about "bogus certainties" in the field, noting that Amazon listed 47 books with the title Strategic Management, at an average

of \$50 per volume, all with the same matrices, the same authorities. "There is little variety, little self-doubt" p1. [We found at 31st October 2012 that this had increased to 2,141 hardcover titles]. Scherer (1998), on the other hand, is bothered by fragmentation, i.e. excessive variety at the frontier of research, allied with false certainty:

"Research in management has become more and more differentiated and complex It has become opaque for both the researcher, who looks for orientation within the field and tries to advance knowledge, and the practitioner, who simply looks toward academia in order to solve managerial problems." P148. 'Incommensurability' describes the problem of fragmented and possibly competing perspectives.

"we see a growing fragmentation and disorientation that makes it very difficult for academics and practitioners to reasonably use theoretical advice in order to deal with managerial and scholarly problems (Scherer, 1995; Scherer and Dowling, 1995)" p148

He concluded that "if managers were to observe academic dialogue within the fields of strategy and organisation theory, then they would become rather disillusioned" p150:

"... the profusion of strategy models has become a source of confusion for executives and researchers. While many in the research community seem disinterested in finding remedies for this problem... Professors from leading business schools offer seminars in which they will proclaim the finally-discovered, true meaning of strategy – and each has his or her own different version of the truth." Gilbert et al (1988:2, quoted in Scherer, 1998:151)

Whittington divides theories of strategy into: classical (rational), evolutionary (fatalistic), processual (pragmatic) and systemic (relativist). Some of the characteristics are captured as follows:

- Classical: strategy is rational since planning can anticipate and adapt to market change. It is profit maximising, with an "emphasis on the long run, the explicit and deliberate conception of goals, and the local cascading of actions and resources from original objectives" p12 . Classical strategy comes from military practice and academic economics since many of the earliest proponents of systematic managerial thought for American business used their shared military experience. Chandler, 1962:13 describes strategy as: "the determination of the basic, long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for those goals". The role of top management is

to focus on strategic responsibility and not routine operational activities;

- Evolutionary: strategy is fatalistic, involving survival of the fittest since nothing can be predicted: “markets are too tough and too unpredictable for heavy investments in strategic plans” p10;
- Processual: strategy is pragmatic and accommodates to unpredictable vagaries of organisations and markets; effective strategy emerges directly from action and from intimate involvement in the day to day operations and basic strengths of the organisation;
- Systemic : strategy is relativist and contingent, dependent upon the power context; it is linked to the power and culture of the local social systems, and must be ‘sociologically efficient’, appropriate to particular social contexts; “there is no one best way of strategy: just play by the local rules” p10

The four categories are set in quadrants along an Outcomes axis (what is strategy for?) and a Process axis (how is it done?). RBV is located in the processual quadrant. It is polarised against the classical quadrant, which is inhabited by a profit-maximising firm based on rational economic self-interest within a competitive environment. Markets in the processual quadrant are tolerant of under-performance and there is a greater sense of muddling through, based on bounded rationality (or limited knowledge) of actors (Cyert and March, 1963). Organisational slack provides a buffer, allowing firms to ‘satisfice’ rather than profit-maximise. The internal workings of an organisation are based on fallible human beings, who form dominant coalitions, and build up standard operating procedures and routines. Strategic behaviour can become entrenched. Whittington describes this as a ‘modest view of organisations’ (p22); “strategies are not chosen; they are programmed” (p23). Nelson and Winter’s description of the role of routines lies at the heart of RBV:

“it is quite inappropriate to conceive of firm behavior in terms of deliberate choice from a broad menu of alternatives that some external observer considers to be ‘available’ opportunities for the organization. The menu is not broad, but narrow and idiosyncratic; it is built into the firm’s routines, and most of the ‘choosing’ is also accomplished automatically by these routines.” (Nelson & Winter, 1982: 134, in Whittington, 2001: 23)

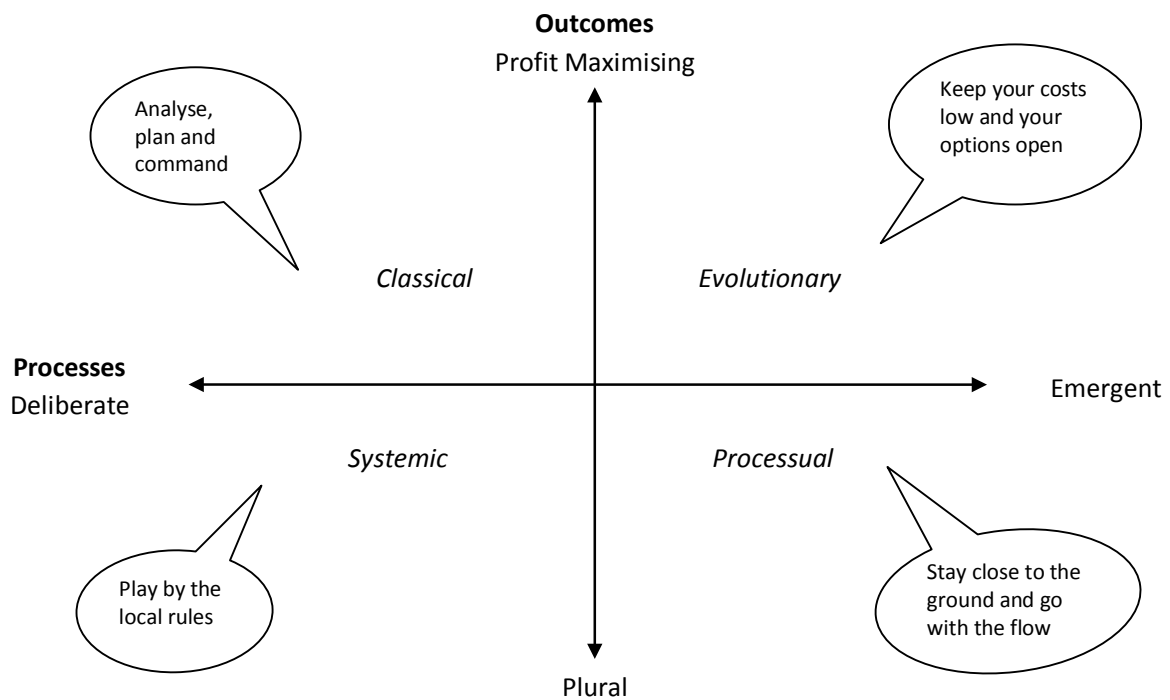
Weick’s (1990) story illustrates the value of strategy in this context, which is more to energise and rally the troops than to give direction. Hungarian soldiers became hopelessly lost in the Alps and lay down to die in the frozen terrain. Everything changed when a soldier found a map; they regained a sense of purpose and worked their way out. Back at base camp they discovered that the map was of the Pyrenees.

As a metaphor it is possible to unpack this story many ways: an imperfect strategy is better than none; the ground will freeze while waiting for the right map; strategy is found in action (March, 1976). Experiment and learning, driven by underlying intent, can produce 'emergent strategy'.

Resource-based strategic theory locates the source of sustainable superior performance (or competitive advantage) within the firm, through building core competences that include tacit skills and patterns of co-operation which take time to learn and evolve. Knowledge is an intangible asset which is embedded in the culture, routines and teamwork of a firm.

Figure 5. Generic Perspectives on Strategy and Summary Implications

Source: (Whittington, 2001, p10)



A Competing Strategic Management Theory

Barney and Clark (2007) explained RBV by describing what it was not, i.e. by setting it in opposition to Porter's Five Forces theory, also called the structure-conduct-performance (SCP) paradigm. (Whittington locates Porter in the Classical quadrant). They argued that in a SWOT analysis, RBV represents SW, the internal strengths and weaknesses of a firm, and

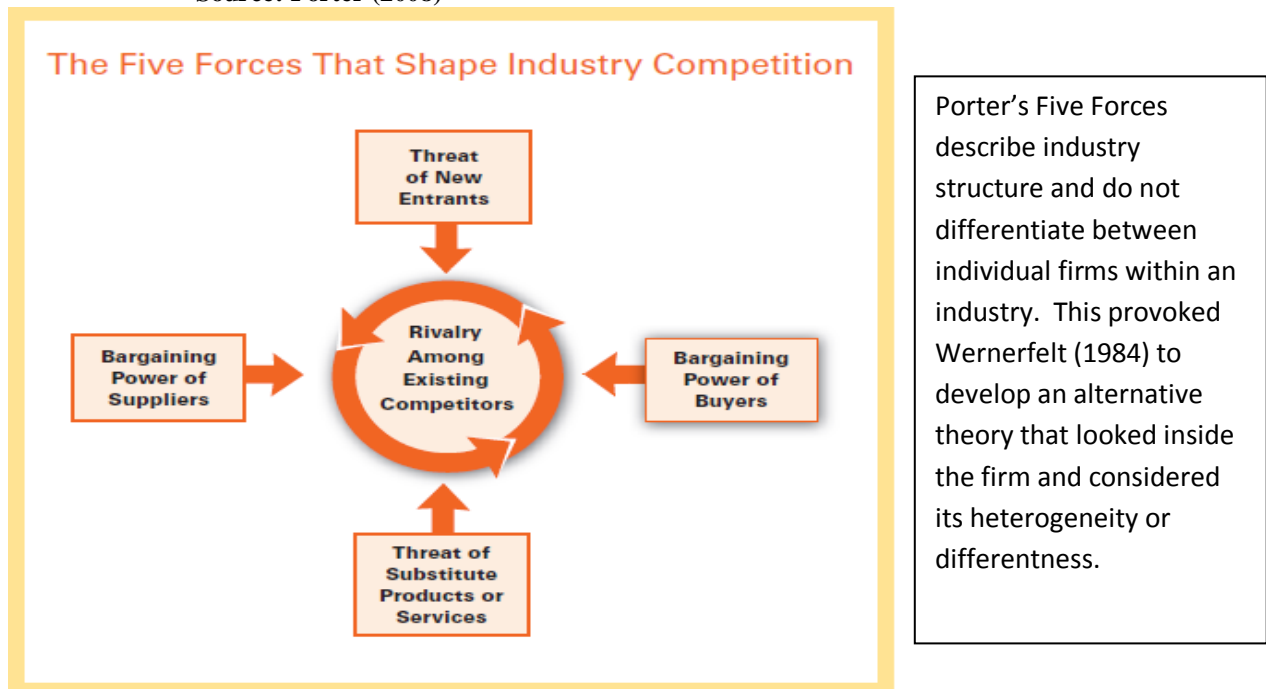
Porter's SCP represents the OT, or external opportunities and threats prevailing in the environment.

Porter (2008) asserted that "the job of the strategist is to understand and cope with competition". His Five Forces analysis draws upon industrial organisation (IO) economics to derive five factors that determine the competitive intensity and therefore profitability of a market or industry. The more attractive the industry, the more the five forces interact to produce profit margins.

The five forces include three forces from 'horizontal' competition (threat of substitute products, the threat of established rivals, and the threat of new entrants) and two forces from 'vertical' competition (the bargaining power of suppliers and the bargaining power of customers). Although published in 1980, they were reprised in his 2008 paper, shown below.

Figure 6. Porter's Five Forces Theory

Source: Porter (2008)



Porter and Health Care

Porter has specifically turned his attention to healthcare with his book "Redefining Health Care: Creating Value-Based Competition on Results" (Porter & Teisberg, 2006). It has one pervading idea – that competition in health care should be based on results. "What is needed is competition on results, not just evidence-based medicine" p7. He argues that: "health

care delivery cries out for strategy, given the stakes, the scale, and the sheer complexity of the task" p151.

Internal structures and processes of the hospital or health care organisation would be improved and affected, i.e. capability and innovation would be enhanced, as a result of competitive forces. His key message is that competition should be based on the correct metric – *results* not processes, costs, inputs or output volumes. His measure of value is what we would call cost-effectiveness, combining quality and cost, i.e. "the results that matter are patient outcomes per unit of cost at the medical condition level". He defines value as the outcome after dealing with the patient's particular medical condition over the full cycle of care, and advocates pay for performance. "Competition on value must revolve around results" p6.

Porter is quite messianic in his message:

"When competition on results is working at the right level, it will reverberate throughout the system in ways that we can only begin to imagine. There will be no need to predetermine the best way to structure the system, specify the processes of care that should be used, dictate how IT systems should be designed, or decide which new medical technologies should be adopted. If every actor in the system has to measure and report results, professional pride will motivate improvement. If every actor has to compete for every subscriber and patient, improvement and innovation will occur even faster." p8

At this level, we see that Porter's theory of competition and RBV are by no means mutually exclusive. They are both about how to improve performance. The difference is in drivers, or antecedents and consequences. Porter can be characterised as seeing competition as a way to drive improvement in capabilities, which yield a sustained competitive advantage. Proponents of resource-based theory argue that capabilities drive sustained competitive advantage within a competitive environment.

2.4.3 Locating RBV in Chronology

In the literature review, by taking the most current academic papers from 2008-2011, we were drawing on the culmination of 30 years scholarship. Concepts had reached a level of refinement and abstraction that were removed from the original thinking of RBV. A neoclassical economic and econometric approach was being applied to a field which had initially started as reaction to standard neoclassical economics. To gain a real insight it was necessary to snowball the references and track through the chronology of RBV.

Wernerfelt (1984) coined the term 'Resource-based View of the Firm' with a short mathematical paper published in *Strategic Management Journal*, using stylised facts and logic. As he admitted later (Lockett et al, 2008), this was largely in reaction to Porter's Five Forces theory that was being taught in every MBA programme. Porter's theory dealt with industry structure rather than the internal characteristics of the firm.

Penrose (1959) is credited with being the initiator of the concept with her theory of growth and innovation in the firm based in internal resources. Wernerfelt cited Penrose (1959) in passing but later commented that he did not see himself as building on her work: "The Penrose stuff, I knew about it but I did not think of it as related to what I was doing at all" (Lockett, et al, p1129). Barney (1991) hardened up the concept by attaching VRIN conditions (subsequently VRIO; Barney and Clark, 2007) as a source of sustainable competitive advantage.

Edith Penrose (1959): Economic Perspective of Firms

The Resource Based View of the firm has its origins in economic theory, which treats organisations as firms. The literature suggests that 'the RBV community has clung to an inappropriately narrow neoclassical economic rationality' (Kraaijenbrink et al, 2010). And yet the originator of RBV, Edith Penrose (1959), was perceived to be outside the mainstream, and indeed pitted against it. According to Pitelis (2009): "a battle of paradigms may well be involved" (pxxxii). "No less than the outright domination of one theory may be required."

When Penrose published *The Theory of the Growth of the Firm*, in 1959, (4th edition, 2009) it was expected to exert influence as a counterweight to neoclassical economics with its fixation on the price mechanism. She rejected traditional economic theories of growth based on 'optimum' sizes for profit maximization, and biological analogies that treated firms as organisms. "There are many difficulties with this type of analysis, one of the most serious being the fact that human motivation and conscious human decision have no place in the process of growth." (Penrose, 2009, p2). Humans doing things and making decisions are central to her theory: "the emphasis is on the internal resources of a firm – on the productive services available to a firm from its own resources, particularly the productive services available from management with experience within the firm."

The theory of the growth of the firm is "an argument about the theory of (growth of) knowledge. For anything and everything new to even be conceived, perceived, let alone implemented, one needs prior knowledge,

including the very capacity to obtain knowledge, i.e. to learn" (Pitelis, 2009, p xxxiii). For Penrose, it is *firms* which help create knowledge" (p xxxiii). The theory of growth is based on internal activities through innovation, followed by external processes of merger and acquisition. The internal process is described as follows:

"if a collection of invisible productive resources is to be fully used, the minimum level of output at which the firm must produce must correspond to the least common multiple of the various outputs obtainable from the smallest units in which each type of resource can be acquired This output will tend to be greater the larger the variety of resources and the more diverse the units in which they operate (Penrose, 1955, p533; quoted in Penrose, 2009, pxviii).

The status of Penrose's theory is assured, according to Pitelis:

"Her theory serves as the glue that binds together economic and organizational theories of firms, organizations, institutions, and (business) strategy. Importantly, Penrose's work has significant implications for managerial practice." (Pitelis, 2009, p. xl)

Penrose's work has jumped disciplines. Mainstream economics has rather ignored her work but in the last 25 years other fields have picked up the resource-based, competence-based, or knowledge-based theory of the firm, with or without explicit acknowledgement of her work. Pitelis (2009, p. xxx) notes that organisational economics, strategic management, international business, entrepreneurship, and human resource management have appropriated these resource-based ideas of growth and innovation.

Wernerfelt (1984) and Strategic Management

Wernerfelt (1984) was motivated to set out a resource based view of the firm because 'too much management research was focused on the external environment rather than on the strengths of the firm' (Lockett et al, 2008, p1126).

'I had come to Michigan and was given essentially a syllabus which included the first chapter of Porter's book with the five forces and so on I couldn't see how this was compatible with equilibrium, in the sense that I was thinking "so we are educating 50,000 MBAs a year and now they all learn that such and such is an attractive industry and therefore they all enter that industry." And now it's going to stop being attractive real quick.' p1127

".. I mean, you cannot go out and tell 50,000 people to do something which is only good if one person does it or three people do it." p1129

He believed that Porter's Structure-Conduct-Performance paradigm induced a herd mentality which would be counterproductive: "unless you put

something in, that could generate some heterogeneity in the strategies, the five forces are just a recipe for disaster”, and instead that “in order to compete, firms need to identify their resources [strengths] and only then should they worry about competing” p1127.

He does not overstate the value of his contribution: “I put the stone on the ground and left it. When I looked back, others had put the stones on top of it and next to it, building part of a wall.” (Wernerfelt, 1995; Lockett et al, 2008, p1130). His own subsequent papers were rejected by Strategic Management Journal, so any potential theoretical developments by Wernerfelt fell by the wayside.

The main message is that RBV is about internal differentiation. Lockett et al (2008, p1136) note that since 1984, “the field of Strategic Management has embraced the following ideas:

- (1) Firms are fundamentally heterogeneous;
- (2) A firm should base its strategy on its strengths;
- (3) Tomorrow’s strengths are likely to be developed from today’s strengths.”
- (4) In addition, market structures , market allocation and industry positioning do not tell us anything about the details of an individual firm.

Barney (1991) and Strategic Resources

Jay Barney (1991) attached conditions to the strategic resources which would confer sustained competitive advantage. He defined ‘firm resources’ as a key concept:

“Physical capital resources include the physical technology used in a firm, a firm’s plant and equipment, its geographic location, and its access to raw materials. Human capital resources include the training, experience, judgment, intelligence, relationships, and insight of *individual* managers and workers in a firm. Organizational capital resources include a firm’s formal reporting structure, its formal and informal planning, controlling, and coordinating systems, as well as informal relations among groups within a firm and between a firm and those in its environment.” p101.

Strategic resources must have Value, Rareness, Imperfect imitability, Non-substitutability (the VRIN conditions) to sustain competitive advantage (Barney, 1991, p112). Barriers to entry or mobility barriers prevent other firms from entering the market and eroding competitive advantage. Barney is identified with the RBV theory and in the subsequent decades

(Barney and Clark, 2007) has refined the theory and attempted to operationalise it.

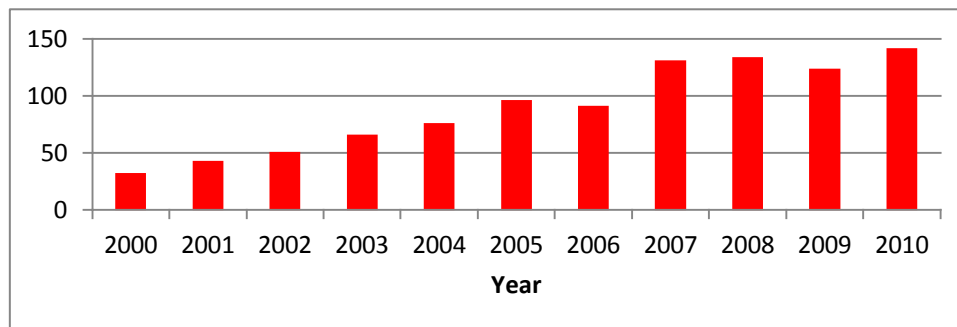
2.4.4 Locating the Status of RBV

RBV has attracted considerable interest, polarising supporters and detractors. It came as something of a shock early in our review to encounter major critiques of RBV (e.g. Kraaijenbrink et al, 2010) just at the point where we were exploring its relevance to healthcare.

Supporting the Theory

The theory is relevant, if trends in academic interest are anything to go by. We undertook a rapid search of the field, based on the narrow terms of 'resource based view' and 'resource based view of the firm' over a ten year period. It showed a steady growth of articles in the field between 2000 (32 articles from 335 journals) and 2008 (159 articles from 335 journals). Between 2008 and 2010 the volume appears to have plateaued.

Figure 7. Results of RBV Time Trend Search 2000-2010



Authors highlight the popularity of the resource based view as an explainer of performance (e.g. Newbert, 2008). Arend and Levesque (2010) describe RBV as "one of the core theories of management". Crook et al (2008) did a stock-take of interest in the field through a meta-analysis of 125 studies of RBT that collectively encompass over 29,000 organisations. They refer to 'resource-based logic' rather than the 'resource based view' and use the term 'resource-based theory' or RBT as a catch-all for RBV, which is still evolving. As evidence of increasing interest, Crook et al (2008) noted that Barney's 1991 paper had been cited over 2000 times according to *Web of Science*. (In October 2012, we found that this citation count had risen to 6,377). They concluded that the theory still had mileage:

"Resource-based theory has become one of the most influential perspectives guiding strategic management research. In contrast to a

recent review that concluded that RBT has 'received only modest support overall' (Newbert, 2007: 121), our findings show that support is quite robust. Indeed, our results demonstrate that, while RBT is still evolving as a theory, its empirical base of over 29,000 organizations offers strong support for the assertion that organizations' performance is enhanced to the extent that they possess strategic resources. Overall, our results are consistent with resource based expectations, and show that RBT has, to use Godfrey and Hill's (1995) language, stood, and stood strong." p1153

The qualification to this statement was that theory-building needed to be toughened up the concept by addressing particular questions, such as which resources are strategic and how competitive advantage can be attained:

"theory building about and empirical inquiry into the processes through which strategic resources lead to high performance, how value is appropriated, and how resources interact with the environment and strategy is essential. This will allow RBT to fully develop as a theory, and to offer more precise managerial prescriptions. " p1153

Crook et al (2008) concluded that RBT still had traction. It had empirical validity since their meta-analysis of studies identified 22% of variation premium due to strategic resources:

"The sizeable link between resources and performance leads to the conclusion that RBT is managerially relevant and worthy of researchers' attention." p1151

Criticisms of the Theory

Kraaijenbrink *et al* (2010) systematically considered the critiques of RBV that have been building up, concluding that RBV is "more of a heuristic than a substantial theory". They consider the criticism that RBV is a tautology (acknowledged and rejected by Barney and Clark, 2007: 57-59) and adjudicate that it is a major weakness that diminishes RBV's usefulness:

"A critique that has widely resonated is that the RBV is a tautology that fails to fulfill the criteria for a true theory. Lockett et al (2009) and Priem and Butler (2001a, 2001b) argue the RBV does not contain the law-like generalizations that must be expected. Rather, it stands on analytic statements that are tautological, true by definition, and not able to be tested."

Barney's words are used as evidence of tautology through the circular argument that resources are valuable because they create value:

' "Resources are valuable when they enable a firm to conceive of or implement strategies that improve its efficiency or effectiveness" (Barney, 1991:105)' p356

Like Crook et al (2008), Kraaijenbrink *et al* (2010) conclude that concepts in need of further development are (a) resource, (b) value and (c) the

narrow conceptualisation of a firm's competitive advantage. They also say that RBV has 'clung to an inappropriately narrow neoclassical economic rationality' (an accusation that led us to retrace the steps from inception of RBV with Penrose).

Implications for Theory Building

'Resource-based logic' is a loose concept rather than a well developed theory. Wernerfelt was candid about this in his interview with Lockett et al (2008), suggesting that his work has been cited in literature just to indicate that firms are different. He also thinks that the theory is not particularly powerful, being descriptive rather than prescriptive, and that the concept of resources remains vague:

"Instead I think it just says okay, here are some of the resources that are important, but it doesn't tell you what to do with them really..... I think that's a little bit old hat maybe in the field." P1133

"My sense is, however, that many resources remain mystical.... What exactly is it that makes one group of people better at doing something?" p1134

Even Pitelis notes ruefully: "There is no obvious limit to the growth of such literature, if anything it seems to be branching out at an alarming rate in increasingly novel and unpredictable directions" (in Penrose, 2009, pxxxii).

In summary, we observe two things happening in the literature: on the one hand, resource-based arguments are being used to adapt theory in a loose way; on the other hand, there is an effort to tighten up theory and be critical in the process. The problem is one of theory-building. Rather than being a wrong theory, it would appear that RBV is an incomplete theory. Areas that remain weak in the generic literature are definition and operationalisation (empirical measurement) of:

- resources;
- value;
- competitive advantage.

2.5 Developments in the Field

The polarisation between Barney and Porter's perspectives, whether firm or market environment is the key to sustained competitive advantage, gives an indication of how difficult it would be to determine cause and effect in a dynamic world. Theoretical developments such as dynamic capabilities, absorptive capacity and ambidexterity (exploration and exploitation) are all attempts to span the firm-environment divide.

2.5.1 Dynamic Capabilities

The term 'dynamic capabilities' came into the literature with Teece et al (1990). At that time, clear linkages to the resource-based approach were noted. It was put this way:

'if control over scarce resources is the source of economic profits, then it follows that such issues as skill acquisition and learning become fundamental strategic issues. It is in this second dimension, encompassing skill acquisition, learning, and capability accumulation that we believe lays the greatest potential for the resource-based perspective to contribute to strategy. We will refer to this as the "dynamic capabilities approach", recognizing of course that it is part of the overall resource-based perspective' (Teece et al. 1990: 9).

Dynamic capabilities, in effect, adds zest to RBV by introducing environmental feedback, enabling it to "generate and exploit internal and external enterprise-specific competences, and to address the enterprise's changing environment (Teece and Pisano, 1994; Teece et al 1997)." P1190. The theory remains linked to capabilities, but with an environmental loop. Augier and Teece (2008) describe the foundation of Dynamic Capabilities as "Strategy as Evolution with Design" and brand the theory as a successor to behavioural and New Institutional economics:

"The dynamic capabilities the core ideas approach builds, in particular, upon the theoretical foundations provided by Schumpeter (1934), Penrose (1959), Williamson (1975, 1985), Cyert and March (1963), Rumelt (1984), Nelson and Winter (1982), Teece (1982), and Teece et al. (1994). In particular, it is consistent with the view that the emergence of new products and processes results from new combinations of knowledge and that processes of organizational and strategic renewal are essential for the long-term survival of the business firm. Enterprises must also match the exploration of new opportunities with the exploitation of existing ones." P1196

As a theory-building enterprise, DC suffers from the same problem as RBV in trying to acquire theoretical rigour. Barreto (2010) attributes the origin of DC to Teece et al (1997) and in a survey of the DC literature 1997-2007 argues that the concept is too hazy. He offers a new definition (based on the criteria of what a theory should contain):

"... the definition of dynamic capabilities is far from being consolidated. On one hand, the construct has been criticized for being vague and elusive (Kraatz & Zajac, 2001), mysterious and confusing (Winter, 2003), abstract and intractable (Danneels, 2008), and obscure and tautological (Williamson, 1999). On the other hand, several proposals and findings have recently been provided, and they deserve full consideration. For

instance, Helfat et al. (2007) made a significant attempt to offer a new definition. However, at the same time other researchers (e.g., Menguc & Auh, 2006; Moliterno & Wiersema, 2007; Pablo, Reay, Dewald, & Casebeer, 2007; Schreyögg & Kliesch-Eberl, 2007; Teece, 2007) made new relevant suggestions. So a new conceptualization is required to deal with previous criticisms and to incorporate these new theoretical and empirical developments." P270

Barreto (2010) studies literature 1997 – 2007 and draws out nine definitions of dynamic capabilities from significant theorists. He goes on to provide a tenth definition, based on the firm's ability to change its resource base in response to opportunities and threats from the market. This quite explicitly joins together the internal and the external perspective of firm and market, held separate by Barney and Porter. It is a logical development, introducing feedback from the environment.

Table 6. Main Definitions of Dynamic Capabilities

(Source: Barreto, 2010)

Teece & Pisano (1994)	The subset of the competences and capabilities that allow the firm to create new products and processes and respond to changing market circumstances
Teece, Pisano, & Shuen (1997)	The firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments
Eisenhardt & Martin (2000)	The firm's processes that use resources—specifically the processes to integrate, reconfigure, gain, and release resources—to match and even create market change; dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die
Teece (2000)	The ability to sense and then seize opportunities quickly and proficiently
Zollo & Winter (2002)	A dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness
Winter (2003)	Those (capabilities) that operate to extend, modify, or create ordinary capabilities
Zahra, Sapienza, & Davidsson (2006)	The abilities to reconfigure a firm's resources and routines in the manner envisioned and deemed appropriate by its principal decision maker(s)
Helfat et al. (2007)	The capacity of an organization to purposefully create, extend, or modify its resource base
Teece (2007)	Dynamic capabilities can be disaggregated into the capacity (a) to sense and shape opportunities and threats, (b) to seize opportunities, and (c) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets
Barreto (2010)	A dynamic capability is the firm's potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base. (p271)

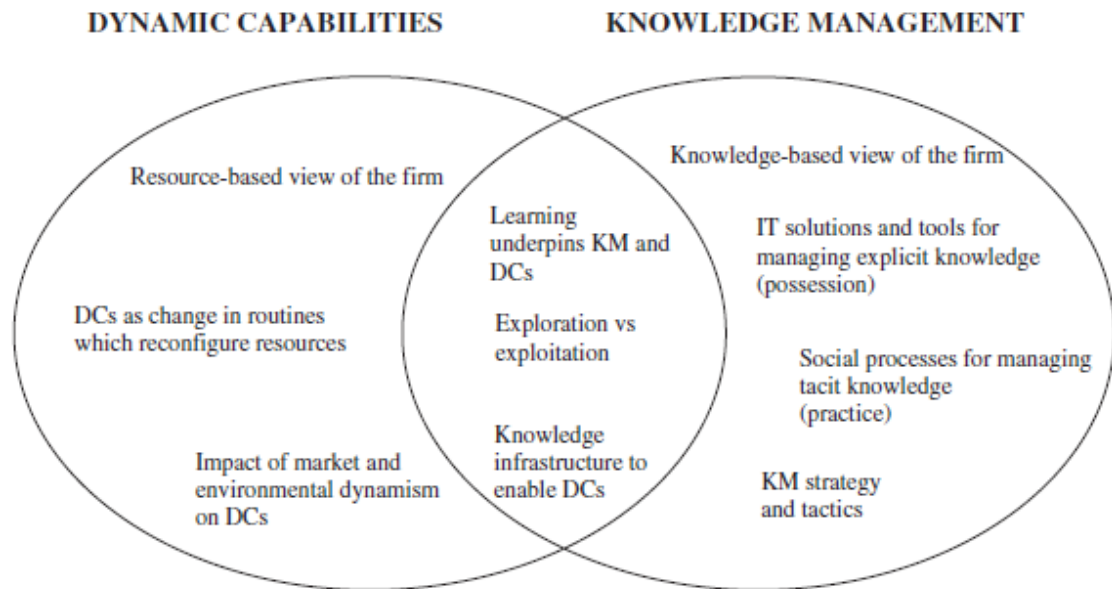
Easterby-Smith and Prieto (2008) integrate dynamic capabilities with knowledge management under the aegis of organisational learning. They introduce the concept of exploration and exploitation which is associated with absorptive capacity and, latterly, with ambidexterity. They link 'dynamic capabilities' and 'knowledge management' which are common terms within the strategic management literature, looking at "how best to manage organisations in dynamic and discontinuous environments" (p235) by building and sustaining competitive advantage (e.g. Eisenhardt and Martin, 2000; Teece, Pisano and Shuen, 1997; Grant, 1996a).

In an introduction to a special edition on Dynamic Capabilities, Easterby-Smith et al (2009) list the current debates and future directions in the field. DC is associated with the RBV "which is itself a highly active area of research" but has greater strengths and application because it:

- Overcomes criticisms of RBV that it is static and equilibrium-based;
- Acts as "an antidote to the dark side of resource-based advantage, when changing conditions turn core competencies into core rigidities (Leonard-Barton, 1992)";
- Is concerned with change management (OD);
- Deals with strategic renewal, adaptation and growth;
- Uses temporal dynamics – capability lifecycles and evolutionary paths of firms and industries;
- Acknowledges environment as turbulent and hypercompetitive;
- Incorporates innovation and organisational learning;
- Explicitly builds in knowledge management and a knowledge based view.

They argue that the key debates in the field concern the definition of DC (e.g. addressed by Barreto, 2010, above), and effects and consequences in terms of market advantage and firm performance. In linking capabilities to knowledge in the form of processes and routines there is a need for definitions of routines and "processes whose nature varies with the degree of market dynamism, taking the form of simple rules". The association between competitive advantage and DC is again potentially unfalsifiable: Teece etc in Helfat et al (2007, p4) describe dynamic capabilities as "the capacity of an organization to purposefully create, extend or modify its resource base".

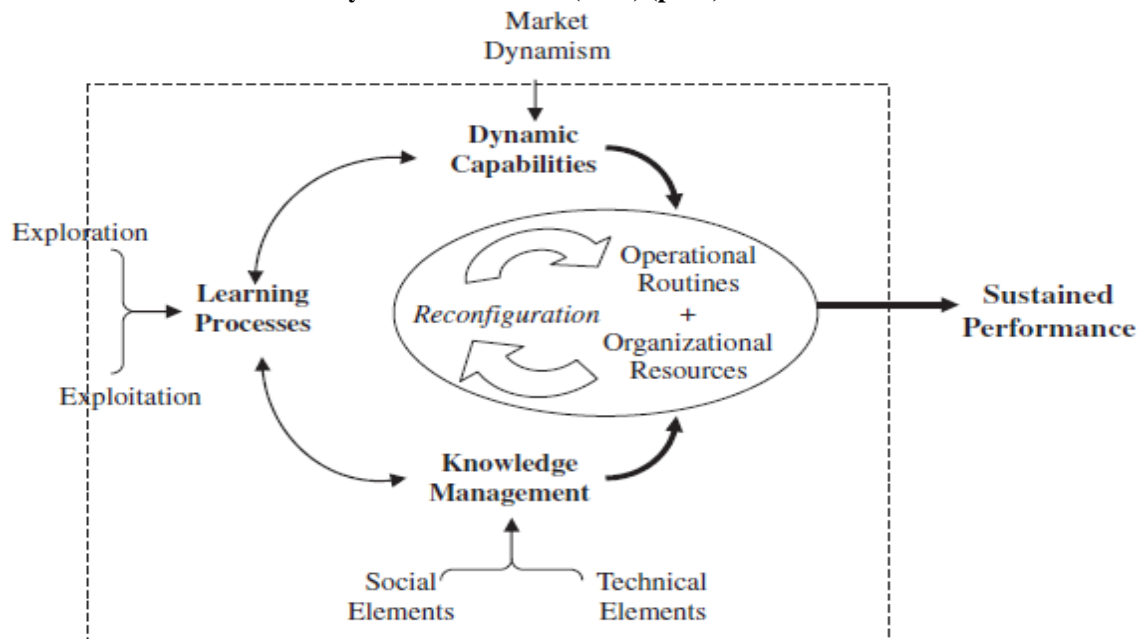
Figure 8. Boundaries and overlaps of the dynamic capabilities and knowledge management fields



(KM, knowledge management; DCs, dynamic capabilities) Source: Easterby-Smith and Prieto (2008) p.240

Figure 9. Linking knowledge management and dynamic capabilities

Source: Easterby-Smith and Prieto (2008) (p243)



2.5.2 Absorptive Capacity: Exploration & Exploitation

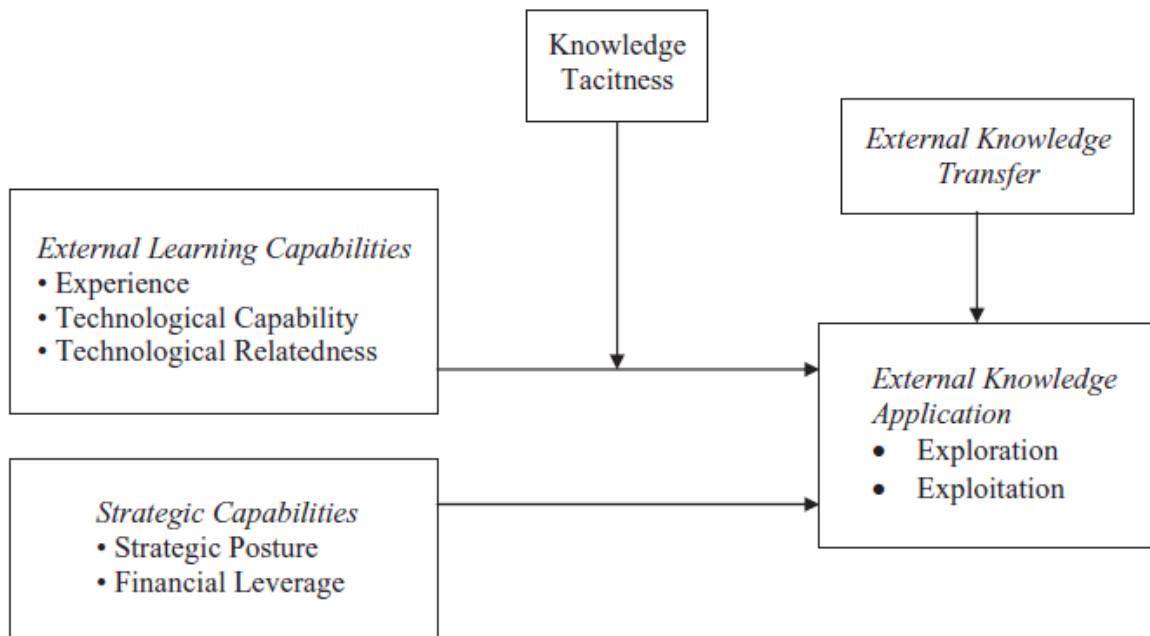
'Absorptive capacity' describes the process of knowledge and transfer and application (Cohen and Levinthal, 1990), "which posits that firms need to (a) recognize new, valuable and relevant knowledge; (b) assimilate it into their processes; and (c) apply it commercially" Bierly et al (2009, p482).

The concepts of exploration and exploitation underpin absorptive capacity, an organisation's ability to transfer and apply knowledge. Absorptive capacity is an important capability for firms pursuing an innovation strategy. Easterby-Smith and Prieto (2008) above show a connection with dynamic capabilities, learning and RBV. Bierly et al (2009) connect it to competitive advantage: "A firm's ability to acquire and exploit external knowledge is often critical to achieving and sustaining a competitive advantage". The concept of absorptive capacity is distinctive in giving knowledge centre stage as the key resource that drives innovation.

Bierly et al (2009) have produced a detailed model, distinguishing between exploration and exploitation, and also between transfer of external knowledge to a firm (EKT) and application of that knowledge within the firm once it had been transferred (EKA). This analysis sheds light on when collaboration would be more likely to succeed and when to fail. They adopt Zahra and George's (2002) model of absorptive capacity and knowledge transfer as a two-step process. Knowledge is, first, transferred from external source to organisation and, second, applied within the organisation. They define the first step as External Knowledge Transfer (EKT) and the second step as External Knowledge Application.

Figure 10. A model of external knowledge application

Source: Bierly et al (2009)



'Exploration' describes generation of new capabilities and 'exploitation' means enhancing existing capabilities. Bierly et al (2009) hypothesise a series of

relationships between the EKA and characteristics of the organisation (while controlling for EKT). EKA is positively related to three learning capabilities:

- Financial leverage, i.e. profitability: there is a link between slack resources and profitability. Rather than working at maximum productive efficiency, profitable firms are expected to have slack resources (Rosner, 1968) which give the firm scope to invest, innovate and create value for future profitability;
- Prior collaborative experience: Tacit knowledge is rooted in experience and skills. Because it is not codified or explicit it is difficult to transfer because it cannot be formally communicated. This makes it sticky and difficult to imitate, making it more valuable and likely to lead to sustainable competitive advantage. Difficulty in transferring tacit knowledge means that “prior experience creates collaborative know-how” when firms transfer knowledge through new strategic alliances;
- Technological capability and relatedness: “what can be learned is directly related to what is already known” (Inkpen and Pien, 2006, p781; quoted p488).

The empirical results of Bierly et al (2009)’s work showed interaction between knowledge tacitness and the three learning capabilities. Tacit knowledge could be more successfully transferred if the individuals possessing the knowledge were also transferred to the new setting. Learning *in situ* was more successful than just receiving explanations.

2.5.3 Ambidexterity: Exploration and Exploitation

Raisch & Birkinshaw (2008) define organisational ambidexterity as: “an organisation’s ability to be aligned and efficient in its management of today’s business demands while simultaneously being adaptive to changes in the environment”. It is synonymous with exploration and exploitation of new and existing capabilities. They review the literature to develop a comprehensive model that covers research into the antecedents, moderators and outcomes of organisational ambidexterity. The literature stream includes organisational learning, technological innovation, organisational adaptation, strategic management and organisation design.

The conventional view is that there is a trade-off between exploration (seeking resources beyond the firm), and exploitation (using resources within the firm). Barney (1991) and Porter (1980) typify the trade-off perspective, arguing that firms need to focus either on internal strengths and weaknesses through RBV or on market opportunities and threats through SCP. If firms pursue both types

of activity simultaneously then they sacrifice internal consistency which may compromise performance (Wernerfelt and Montgomery, 1988). Ambidexterity, like the dynamic capability view, rejects the trade-off perspective, insisting that the firm-environment orientation is not in conflict. On the contrary, both are required simultaneously.

The ambidexterity premise (Tushman and O'Reilly, 1996) is that firms capable of pursuing both exploitation and exploration at the same time are likely to do better than firms that focus on only one or the other. Pure exploration is betting everything on the long term, engaging in a cycle of never-ending change, while pure exploitation, concentrating only on today's goals, will lead to rigidity and obsolescence. Focus on short-term performance can lead to a competence trap and poor response to environmental change.

Raisch and Birkinshaw (2008) identified a range of terminology used to describe similar polarized concepts across disciplines (summarised in the table below), e.g. continuity-change; leverage-stretch; efficiency-innovation. The ambidexterity premise, that firms must do both to drive long-term performance, lies at the heart of a firm's dynamic capabilities (Eisenhardt & Martin, 2000; Teece, Pisano & Shuen, 1997). The language of exploration and exploitation translates into environmental responsiveness (dynamic capabilities) based on core competencies and resources (RBV). The key test is whether organisations perform better with either exploration or exploitation or, as ambidexterity would have it, with both. But, as Raisch and Birkinshaw concede, empirical tests of the ambidexterity-performance relationship are scarce and somewhat mixed. He and Wong (2004) sampled 206 manufacturing firms, Gibson and Birkinshaw (2004) surveyed 4195 individuals in 41 business units and Lubatkin et al (2006) surveyed 139 enterprises; all three studies found that joint pursuit of exploration and exploitation were good for performance. Venkatraman et al (2007) on the other hand, based on 1005 software firms, found that temporal cycling between exploitation and exploration was good for performance.

Environmental effects may add pressure to be ambidextrous. Dynamic and competitive tensions may force firms to pursue both types of innovation. Raisch and Hotz (2010) suggest that, as environmental conditions become increasingly hostile, companies move towards greater balance between exploitation and exploration.

A further RBV link may be drawn through the firm-specific factors or 'moderators' that may account for conflicting findings around organisational ambidexterity. These include resource endowment, market orientation and firm scope. Rich firms are more likely to be able to afford a complex strategy than poor firms. Lubatkin et al (p647, 2006) state that small firms "lack the amount of slack resources and the kind of hierarchical administration systems that can

help or impede larger firms in managing their contradictory knowledge processes and, thus, affect the attainment of ambidexterity” (quoted in p395, Raisch & Birkinshaw, 2008). Lubatkin et al also argue that the firm’s scope is a moderating factor; structural ambidexterity (e.g. separate units that pursue either exploration or exploitation) may be appropriate for large and diversified firms whereas leadership-based ambidexterity (orientation of top management teams) might be more effective for small firms.

Table 7. Polarities within specific literatures
(based on Raisch & Birkinshaw, 2008)

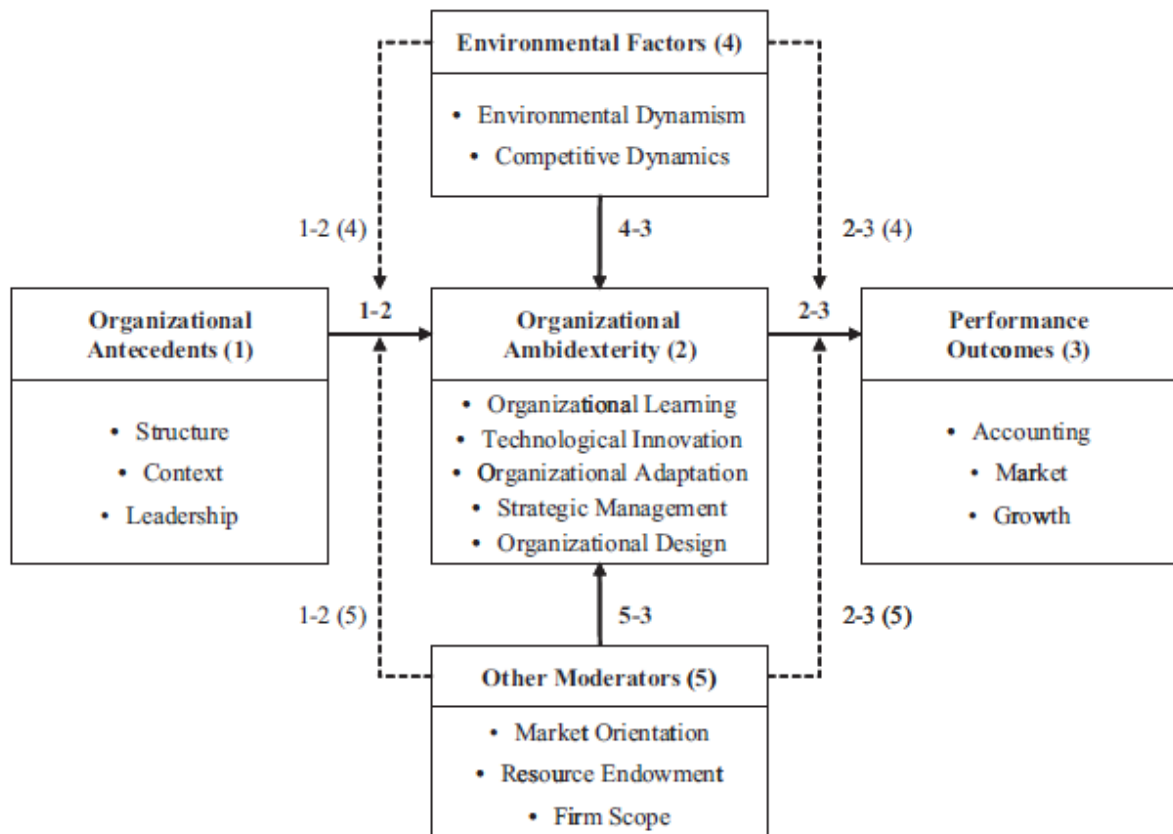
Literature Stream	Near Polarity	Far Polarity	Theoretical Constructs
Technological Innovation	Exploitation	Exploration	Dynamic Capabilities
Organisational Learning	Single loop learning	Double loop learning	
Organisational Learning	Incremental	Radical	
Organisational adaptation	Stability	Transformation	
Organisational Adaptation	Continuity	Change	Evolution
Organisational Adaptation	Continuity	Change	Organisational Identity
Organisational Adaptation	Continuity	Change	Absorptive Capacity
Strategic Management	Leverage	Stretch	
Strategic Management	Induced strategy (Build on existing knowledge)	Autonomous strategy (creation of new competencies)	Ecology Model
Strategic Management	Static efficiency – refinement of existing products, processes and capabilities	Dynamic efficiency – development of new products, processes and capabilities	RBV Dynamic Capabilities
Strategic Management	Competence-leveraging	Competence-building	RBV Dynamic Capabilities
Strategic Management	Selective strategies	Adaptive strategies	
Organisation Design	Efficiency	Flexibility	
Organisation Design	Mechanistic	Organic	
Organisation Design	Short-term efficiency	Long-term innovation	Dominant Model of Ambidexterity

Ambidexterity is the next hot thing, or put more formally, ‘is currently taking shape as a research paradigm in organizational theory’ (pp386, Raisch & Birkinshaw, 2008). The model below summarises the findings of Raisch and Birkinshaw’s review of 20 important articles dealing with structural antecedents, environmental influences, elements of ambidexterity, moderators and effect of ambidexterity on firm performance. It is a broad theoretical framework. Greater specificity will be needed in defining (a) units or variables of interest (e.g. firm, unit, team or individual), (b) relationships between variables, and (c)

how to measure performance. For example, should exploration be linked to growth (e.g. market share, sales, profits) and exploitation to efficiency (e.g. return on assets, return on sales)? Answers to these questions will fulfill Raisch and Birkinshaw's aspiration to 'advance the field from an emergent to a paradigmatic status' (2008, p403).

Figure 11. A Framework for Understanding Organisational Ambidexterity Research

Source: (Raisch & Birkinshaw, 2008, p381)



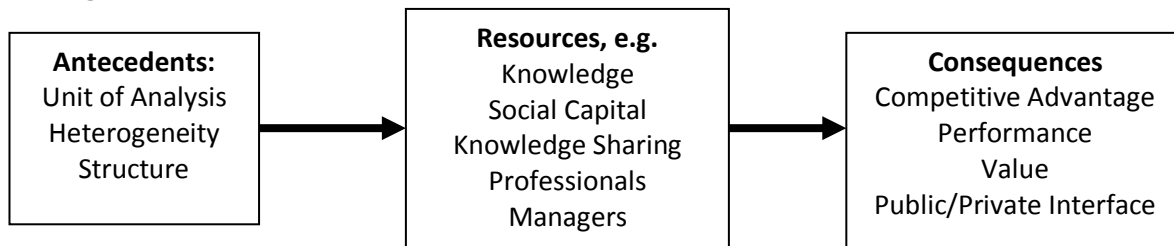
2.6 Drilling into RBV: Antecedents and Consequences

We try to gain a thorough understanding of RBV by looking at the individual elements that make up the theory, based on the literature we have surveyed. We express this as antecedents, resources (components) and consequences. In other words, what are the conditions required for RBV (e.g. what organisational structure), what are the elements within in it (e.g. strategic resources) and what are the outcomes (e.g. sustained competitive advantage)?

The central resources component was covered early on in this chapter. Barney and Clark's (2007) complaint is that RBV is often confined only to resources.

This section on antecedents and consequences is important in gaining a full understanding of the scope of RBV.

Figure 12. Antecedents, Resources and Consequences of RBV



2.6.1 Antecedents

Which Level or Unit of Analysis?

Generic management literature tends to focus on the organisation as the unit of analysis. Foss et al (2010) reviewed 100 articles in 13 top journals and concluded that, notwithstanding the overlap between economics, psychology and organisational studies, too little attention is paid to micro behaviour and assumptions underpinning individual knowledge sharing mechanisms. They stressed the need to concentrate on individuals, which are the fundamental resources and agents of knowledge sharing within organisations. The micro perspective of individuals was contrasted against the firm-level (which they termed 'macro') constructs of "capabilities, dynamic capabilities, absorptive capacity, communities of practice etc" (p457). The organisational focus of academic studies, they argue, makes it difficult to say anything useful to managers. Motivation, incentives and perceptions have a bearing on knowledge sharing behaviour, and have their origin in individuals.

The Foss et al (2010) review is consistent with our reading of the RBV literature in which the organisation is the dominant unit of analysis. The separate stream of Critical Perspective literature, however, focuses on lower levels, either at professional group, team or individual. The intermediate level of staff group is sub-organisational and essential to any understanding of health care organisations where clinical professions and managers form separate communities of practice. (In this sense we would not regard communities of practice as macro constructs).

Heterogeneity and Theories of the Firm

Heterogeneity or internal differences between firms' resources is a key requirement or antecedent of RBV. This is a technical but relevant point that links to the micro-economic theory of the firm. In their discussion of dynamic

capabilities (an extension of RBV), Augier and Teece stated that ‘the most basic contribution of the behavioural theory of the firm is the importance of firm heterogeneity and notions of adaptation’ (2008, p1182).

Neoclassical economics treats the firm as an atomistic, unindividuated agent, i.e. with no internal dynamics or structure. It has a coherent set of goals, usually profit maximisation. Penrose (1959), by focusing on internal competences and resources, was rejecting this model. However, Coase (1937), Simon (1951) and Cyert & March (1963) are credited with stimulating behavioural theories of the firm that has led to New Institutional theory (e.g. Putterman, 1986; Demsetz, 1991; Williamson and Winter, 1993). Here, the internal motivation and dynamics of an organisation are harnessed through contracts and incentive structures. The boundaries of the firm are determined by transaction costs, so that where it is more economic to bring resources inside the firm, rather than trade with them as separate organisations with higher costs of knowledge and contracting, then mergers and acquisitions are more likely to take place (Meyer et al, 2009). Indeed, Kim and Mahoney (2010) offer a theory of the firm that is ‘a nexus of incomplete contracts’. Augier and Teece (2009) put forward dynamic capabilities as the new behavioural theory of the firm. They argue that dynamic capabilities (DC) and transaction cost economics (TCE) are complementary theories, but that TCE deals with organisational form and design on the basis of existing resources whereas DC, and by implication RBV, is concerned about value creation and generating new resources (Augier and Teece, 2008, p1193). TCE lacks a ‘theory of knowledge and production’ (Teece, 1990: 59; p1193).

Related theories of the firm hark back to biological analogies of natural selection (Marshall, 1925), evolution and creative destruction (Schumpeter, 1934). Nelson and Winter (1982) developed the ‘neo Schumpeterian theory of the firm,’ integrating insights from Schumpeter with the work of behavioural economists. They introduced the notion of ‘routines’ or ‘competencies’ which are recurrent patterns of action or processes that may change through learning. (Teece, 2009). Barney and Clark (2007) argue that routines, competences, resources and capabilities are all the same thing. Knowledge is key among them.

Structure of the Organisation

Questions of structure and organisational form have a direct bearing on the Organisational Form search linked to Proposition 3 that networks are a better conduit for knowledge sharing than bureaucracies, hierarchies or markets. Some papers have overlapped between the searches. For example, Rethemeyer & Hatmaker (2008) and Weber and Khademian (2008) look at network structures in public sector provision, Sturdy et al (2009) consider knowledge

flows in management consultancy, and von Nordenflycht (2010) similarly looks at knowledge flows in knowledge intensive firms.

As a general observation, we can say that different types of organisation will have different capabilities, especially in terms of knowledge. The 'esoteric' and 'persuasive' knowledge in Knowledge Intensive Firms (e.g. Kärreman, 2010), including law (Brivot, 2011), will be of a different order to technological knowledge, codified and patented, involved in new product development (e.g. Acur et al, 2010; Al-Laham et al, 2010; Al-Laham et al, 2008).

Generally, in this RBV search, organisational structure is linked up with performance. Relationships are drawn between structure and: organisational performance through networking relationships (Acquaah & Eshun, 2010); performance of entrepreneurial networks through building up social capital (Aarstad et al, 2010); performance through social capital (Andrews, 2010); trustworthiness (a form of social capital) and knowledge sharing within alliances (Becerra et al, 2008); merger and acquisitions (Haleblian et al, 2009); client-perceived performance in professional service firms (La et al, 2009); social outcomes (Provan et al, 2009); alliance management capability, outcomes and success (Schreiner et al, 2009); knowledge sharing (Buckley et al, 2009); human capital within the knowledge economy (Felin et al, 2009).

Organisational structure is given greater attention in the Organisational Form chapter. In the RBV search we are more interested in the capabilities (e.g. social capital) or consequences (performance), both of which are considered in this chapter.

Meyer et al (2009) argue that structure, through mergers and acquisitions, is determined by the nature of the firms' existing knowledge resources. "Both the exploitation and augmentation of knowledge are core to the international strategy of many multinational enterprises (MNE)" The RBV view is that full acquisition or take-over of a geographically-remote enterprise is likely when the local knowledge is tacit and embedded, so that only local staff can provide the role. When the host form already possesses related knowledge then a branch office can be opened in the foreign territory that is staffed by expatriate staff. The transaction cost economic (TCE) view is likewise that a firm will acquire another company where knowledge is embedded, tacit and difficult to learn (transfer). Where knowledge transfer is easy then contractual arrangements (alliances) may be sufficient so that a full take-over is not necessary. (The RBV and TCE perspectives are not inconsistent, but the unit of analysis in RBV is the firm whereas the unit of analysis in TCE is the transaction or contract).

2.6.2 Consequences

Growth, innovation, value creation and sustained competitive advantage are the successful consequences of a high performing organisation. Porter's view (1980) is that the market and relationships between firms is more important than the features of the firm itself. A vigorous debate in the literature 1985-2003 (according to D'Aveni et al, 2010) has driven researchers to begin decomposing performance (usually returns) into their industry- and firm-specific effects. Competitive dynamics seems to be a way of bridging this gap, so that dynamic capabilities take account of feedback from the market at firm level, i.e. rivalry is important.

Table 8. Theories of Competitive Advantage

(Source: D'Aveni, 2010)

	<u>Sequences:</u> Long-term patterns or themes of multiple advantages over time	<u>Erosion and compression:</u> Short-term duration and magnitude of a single advantage
<i>Action-based advantages</i>	<ul style="list-style-type: none"> • Hypercompetition • Evolutionary theory • Opportunistic search <p><u>Authors:</u> D'Aveni, 1994, 1995a Nelson and Winter, 1982 Cyert and March, 1963 Smith <i>et al.</i>, 1992 Smith and Cao, 2007 Livengood, 2010 (dissertation)</p>	<ul style="list-style-type: none"> • Competitive dynamics (especially response time and type to an action) • Austrian economics • Creative destruction <p><u>Authors:</u> Livengood and Reger, 2010 Chen, 1996 Schumpeter, 1942 Smith <i>et al.</i>, 1991 Ferrier <i>et al.</i>, 1999 Derfus <i>et al.</i>, 2008 Chen, Lin, and Michel, 2009 Young <i>et al.</i>, 1996</p>
<i>Resource-based advantages</i>	<ul style="list-style-type: none"> • Dynamic capabilities • High velocity • New 7S's <p><u>Authors:</u> D'Aveni, 1995b Eisenhardt, 1989 Eisenhardt and Martin, 2000 Helfat and Peteraf, 2003</p> <p>Teece, Pisano, and Shuen, 1997 Zahra and Nielsen, 2002</p>	<ul style="list-style-type: none"> • Resource life cycles • Strengths and weaknesses <p><u>Authors:</u> Sirmon <i>et al.</i>, 2010 Ndofor, Sirmon, and He, Forthcoming Priem, 2007 McGrath, Ferrier, and Mendelow, 2004 (Option theory) Bowman and Hurry, 1993</p>
<i>Performance-related advantages</i>	<ul style="list-style-type: none"> • Volatility • Rarity • Hypercompetitive shift <p><u>Authors:</u> Thomas, 1996 McGahn and Porter, 1997 Wiggins and Ruefli, 2002</p> <p>Thomas and D'Aveni, 2009 Wiggins and Ruefli, 2005</p>	<ul style="list-style-type: none"> • Continuous change • Time compression and duration of superior performance • Self-cannibalization <p><u>Authors:</u> Nault and Vandenbosch, 1996 Pacheco-de-Almeida and Zemsky, 2007 Pacheco-de-Almeida, Henderston, and Cool, 2007 Helfat, 2000 Dierickx and Cool, 1989</p>

D'Aveni et al (2010) summarised the literature (shown above ²) distinguishing between action-based, resource-based and performance-based theories of competitive advantage (which are distinct from firm-specific), and also distinguishing between sustained (strategic) and temporary competitive advantage, where 'equilibrium is impossible or fleeting' (p1374).

Value

Chatain (2011) links value creation to RBV, noting that empirical studies have shown capabilities to be important to firm performance (e.g., Helfat, 1997; Henderson and Cockburn, 1994; Miller and Shamsie, 1996). But there has been little research into the question of how competition affects capabilities and in turn performance. Chatain argues that performance is hard to measure because a firm creates value before it goes on to redistribute it to shareholders in a visible show of performance. Value and performance are not one and the same thing.

It is apparent from the literature reviewed so far that the strategic management struggles to establish measurable outcomes of managerial actions. Rather than tightening up theory, scholars have a tendency to generate new theories (as dynamic capabilities follow on from RBV) which remain abstract. Bowman and Toms (2010) echo Crook et al (2008) and Kraijenbrink et al (2010) by their statement that "RBV has little advice to offer managers" p184.

Bowman and Toms pick up this search for a theory of value as gap in the field. In the RBV "there is an explicit acknowledgement that the theory cannot be fully developed without reference to a consistent and complete theory of value (Miller and Shamsie, 1996, p.539; Makadok and Coff, 2002)." P183. They argue that a resource-based view of the firm requires a labour theory of value creation. (By integrating RBV and Marx's theory of value they make a theoretical join between RBV and our Critical enquiry.) They use the circuit of capital as an integrating framework and introduce the notion of value as socially necessary labour time.

Competitive Advantage Equals Performance in the Public Sector

Boyne and Walker (2010) consider strategic management objectives in the context of the public sector. They ask how strategy varies across public organisations, the impact of internal capacities and external environments,

² References, quoted from D'Aveni in Table 8, contain some inaccuracies: Ndofor, et al, forthcoming is (2011); McGann & Porter should be McGahan; Pacheco-de-Almeida, Henderson & Cool is 2008

and how they constrain performance. The distinction between public and private sector strategies is that the private sector aims to defeat rivals in competitive markets while the public sector aims to improve performance and provide better services. In the public sector the emphasis is upon performance indicators and performance management, and management is results-oriented. They pose a challenge that is hardly addressed in the generic management literature, that in seeking higher performance “it is especially important to focus on organizational characteristics that senior and middle managers can actually influence and shift in more positive directions.”

Miles and Snow (1978) characterized three organisational strategic types. Prospectors are innovative and seek new opportunities to provide services, suited to periods of fiscal largesse. Defenders pursue efficiency, suited to fiscal restrictions. These correspond to the exploration-exploitation duality. The implication is that professionals are prospectors while managers are defenders. Reactors are subject to environmental and regulatory forces. Organisations may be a mix of all three.

Boyne and Walker (2010) make the case that strategy matters within the public sector. Strategic management varies across public organisations and there is evidence that prospecting, defending and reacting are variously chosen by organisations. Zajac and Shortell’s (1989) study of US hospitals, including public organisations, found that prospectors outperformed defenders in changing environmental circumstances.

Value Creation: Interdependence of Private and Public Interests.

Mahoney et al (2009) make a case for theoretical development of ‘global sustainable value creation’ which is about public and private interests working towards the common good. They consider the way private good and public good have been treated separately by scholars and regarded as an either-or choice. An important insight comes to the fore. Namely, competitive advantage is seen as a ‘good thing’ in generic management literature while in public interest type of analysis, competitive advantage is seen as bad. Competition stimulates innovation, according to one lens, or should be curbed and regulated to prevent collusion, according to another.

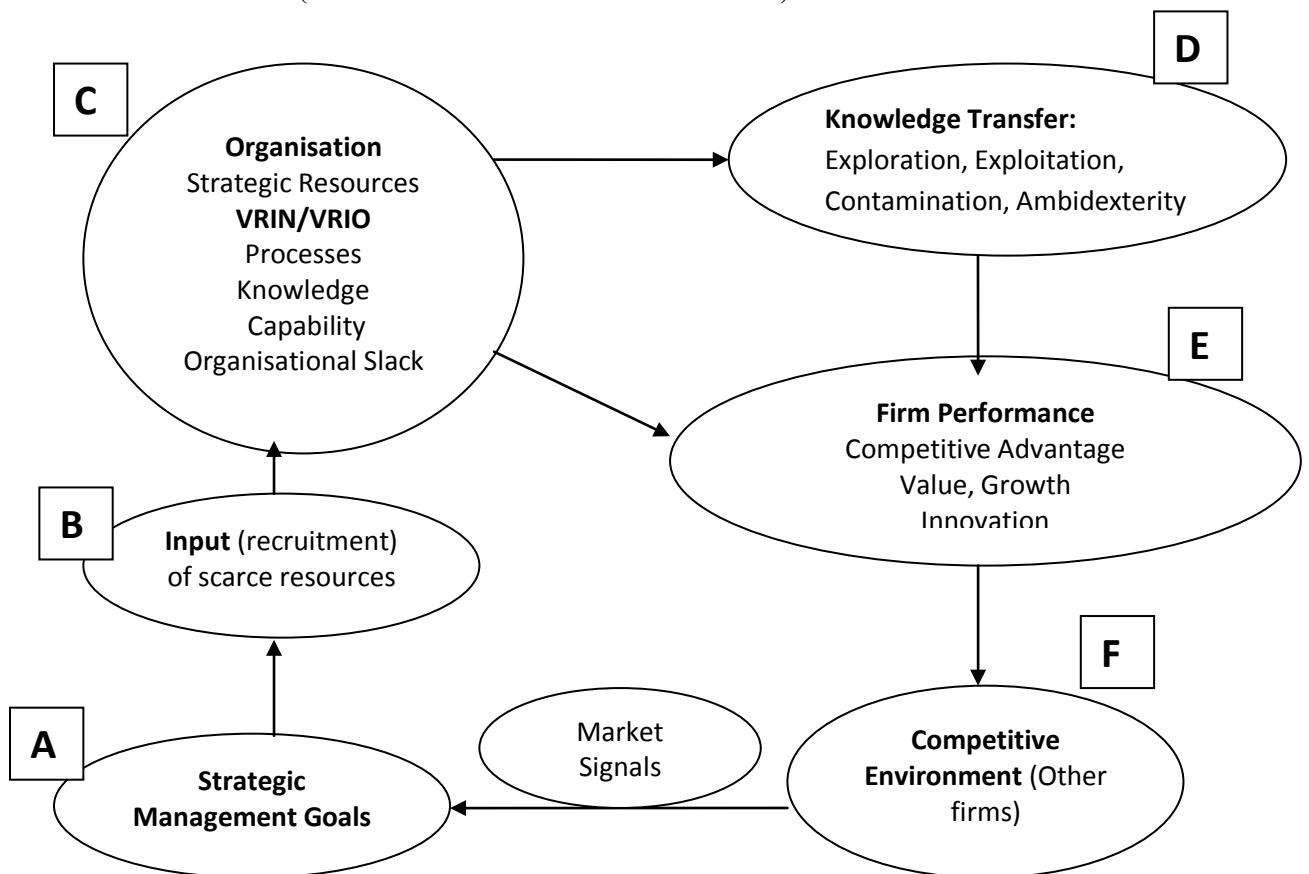
Mixed economies blur the public-private distinctions. In the case of privatisation of prisons, is competitive advantage in the private or public interest? Are capabilities created in both the public and private interest? Do private interests collude to make profits at the expense of the people? Their paper is a call for research at the intersection of business and public policy, with the objective of cultivating “innovation and creativity along the

lines of Penrose (1959) to support a process of sustainable wealth creation (Pitelis, 2007)” p1041.

2.6.3 Analytical Framework Derived from the Review

Dynamic. The literature review suggests an analytical framework that encompasses RBV, dynamic capabilities and Porter’s conduct-structure-performance paradigm. It is derived largely from the antecedents - content (resources) – consequences relationships described already. The dynamic element, e.g. amending strategic goals in response to environmental feedback, is consistent with dynamic capabilities. The impact of competition on performance and strategic goals is also consistent with SCP. By setting up a cycle it is possible to isolate the drivers for each theory. It then becomes apparent that RBV, AC and SCP share the same components but that they attribute differing levels of impact upon performance, i.e. firm-specific vs. environmental or structural factors.

Figure 13. Dynamic Model of Performance
(Derived from the RBV Literature Review)



The theoretical dynamics are as follows:

- RBV moves from A (strategic management goals) through to E (performance), with C (strategic resources within the organisation) as the main driver;
- Porter's structure-conduct-performance paradigm starts with F (environment) and moves round the loop through to E (performance);
- Dynamic capabilities takes in the whole cycle starting from A (strategic management goals) through to F (competitive environment), which provides feedback to the organisation, adjusting goals and altering inputs;
- Ambidexterity specifies whether exploration or exploitation is the mode of knowledge transfer at D en route. RBV would favour exploitation while Porter's SCP is characterised as favouring exploration. Ambidexterity suggests that there is no need for trade-off and that both should happen.

Hierarchical. Table 9 employs a hierarchical (rather than dynamic) structure to forge a link between the unit of resource or level of analysis (organisation, top management, staff group, individual) and specific health-relevant examples, e.g. doctors as a staff group.

Table 9. Hierarchical Model of Resources

Structural Component (Level of Analysis)	Example	Knowledge Capability or Process	Example of Authors	Specific Health Examples
Organisation	<ul style="list-style-type: none"> • Hospital • Knowledge Intensive Firm • Professional Service Firm 	<ul style="list-style-type: none"> • Growth • Innovation • Organisational Slack • Exploration and Exploitation • Exploitation and Contamination • Ambidexterity 	<ul style="list-style-type: none"> Penrose (1959) Andriopoulos (2009) Bierly et al (2009) Empson (2001) 	<ul style="list-style-type: none"> • Interdependence Between Specialties, e.g. critical care
Top Management	<ul style="list-style-type: none"> • Chief Executive • Board 	<ul style="list-style-type: none"> • Leadership • Advice Seeking 	Alexiev et al (2010)	
Staff Group or Discipline (professionals and managers)	<ul style="list-style-type: none"> • Doctors • Nurses • Managers 	<ul style="list-style-type: none"> • Relationship Between Power Groups • Communities of Practice • Professional Routines 	<ul style="list-style-type: none"> Doolin (2004) Brown & Duguid (2001) Styhre (2011) 	<ul style="list-style-type: none"> • Colorectal surgery • Radiology • Midwifery • Accountancy
Individuals	<ul style="list-style-type: none"> • Motivation, incentives and behaviour 	<ul style="list-style-type: none"> • Labour theory of value • Micro 	<ul style="list-style-type: none"> Bowman and Toms (2010) Foss et al (2010) 	
Environment	<ul style="list-style-type: none"> • Economy • Market 	<ul style="list-style-type: none"> • Flows in and out; entry and exit • Competitive Structure 	Porter (2008)	<ul style="list-style-type: none"> • Regulatory framework (DoH, Monitor)

Table 9 goes on to make a connection with the knowledge capability or process associated with this level of analysis: exploration and exploitation and organisational slack is considered at the level of organisation; professional routines are linked to professional groups, which fit neatly with theories of situated learning summed up as the communities of practice theorem. Individuals and their motivation are not really present within RBV and knowledge mobilisation studies (as Foss et al, 2010, identified). The overall environmental perspective has been captured by the structure-conduct-performance paradigm associated with Porter and industrial organisation economics. The table picks up potential health examples at each level.

2.7 Conclusion

This chapter sets up the RBV theory to provide a detailed reference point and to build up a theoretical base. It is taxing to read and reflects the source material which is abstract, specialist, and somewhat impenetrable. In the Scoping Review we noted that RBV had not translated to the health sector because it had not been picked up in health or public sector journals. This marks a gap between generic and healthcare literature, which we bridge through this work. There is a further divide that exists between academic and practitioner communities. Though difficult, an ambition of this review is to test the relevance of RBV on behalf of the practitioner community.

The chapter patterns the material, looking for gaps, weaknesses and strengths. It is timely because the generic literature has been doing the same thing (e.g. Kraajenbrink et al, 2010), concluding that 'strategic resources' and 'value' are ill-defined and that dynamic theories that take feedback from the environment, e.g. dynamic capabilities, absorptive capacity and ambidexterity, are welcome developments.

Our overview of resources demonstrates how knowledge can be conceived of as a resource and how healthcare, by dint of professional knowledge, can connect with RBV.

The outcome of this chapter is an analytical framework that breaks down the elements of RBV, together with antecedents and consequences, and sets them in a simple dynamic schema. It shows how apparently competing theories (e.g. Porter's Structure-Conduct-Performance paradigm vs. RBV) can be accommodated. It provides a framework that can be mapped to health sector experience. The next chapter uses narrative search methods to undertake this mapping exercise.

3 Applying RBV to Health Care

This chapter takes the RBV dynamic model of performance drawn up in Figure 13 and maps it to healthcare settings. We use a narrative approach (as specified in the proposed project plan (Appendix 1) and outlined in Chapter 1). It involves interpreting terms, e.g. 'sustainable competitive advantage,' to consider their application to the NHS and other health care systems.

Unlike the Knowledge Research Evidence (KRE) chapter, which also reviews healthcare literature, this narrative search starts with an analytical framework and then actively draws literature from the field, one reference at a time (described by Greenhalgh and Peacock (2005) as 'snowball sampling'). All the structured searches (RBV3, CP6, OF2, KRE) started from the other end, by taking a set of terms, generating a large mass of references, and then whittling or sculpting them into shape.

A further difference is that the dynamic model locates Knowledge as a strategic resource within a larger framework whereas the KRE chapter looks outward from the focal point of Knowledge Research and Evidence.

The sections that follow begin with strategic management goals (marked A in Figure 13) and work around the schema, through the organisation and its strategic resources, knowledge transfer, performance, and round to the external competitive environment. A feedback loop of market signals sends information to the organisation that stimulates it to modify the strategic management goals.

3.1 Strategic Management Goals

Exponents of the Resource Based View of the firm, Barney and Clark (2007), noted that economic value and competitive advantage can be used interchangeably (p25) as strategic goals. 'Performance' is a catch-all term to describe success in the firm's strategic goal, as in "Resource-based theory is an efficiency-based explanation of sustained superior firm performance" (pv).

The question of what strategic goals motivate healthcare organisations remains a live one, especially since 'sustainable competitive advantage' has

no immediately obvious correlate in the English NHS. Performance in the public sector, according to Boyne and Walker (2010), is less about defeating rivals and more about providing better services. The NHS-market in its current form, according to the analysis of Propper (2012) and Hurst and Williams (2012), encourages competition based on quality rather than cost.

Klein (2010) charts the formation of the NHS, based on over 700 sources, using events to highlight the relationship between professions, managers and regulators, to build up a sense of power distribution and what constitutes 'performance'. Ultimately, he concludes, "patient safety trumps balancing budgets" (p293).

Porter's work on healthcare is relevant here (Porter & Teisberg, 2006). Value creation is a strategic goal (Barney & Clark, 2007) and theorists have noted that a workable definition of value is one of the key pieces of the chain that is missing in the theory of RBV. Porter provides a healthcare-specific metric that plugs this gap. 'Value' is the outcome after dealing with "the patient's particular medical condition over the full cycle of care". Advocating pay for performance, "the results that matter are patient outcomes per unit of cost at the medical condition level". "Competition on value must revolve around results". (Porter and Teisberg, 2006, pp5-6).

Porter argues that competition in healthcare operates at the wrong level and focuses on the wrong things. Healthcare suffers from cost and quality deficiencies and high rates of dissatisfaction which he ascribes to dysfunctional competition that attempts to reduce costs by restricting services. His analysis is based on the US system which he critiques, e.g. for limiting payments to physicians and to hospitals, cost-cutting through managed care which stimulates countervailing bargaining power, the Clinton Plan (consolidation and vertical integration between plans and providers). On the subject of quality and pay for performance he observes that "safety, error reduction, and (to a lesser extent) quality of care have finally been brought into the mainstream of health care reform," but that "most 'pay for performance' is really pay for compliance." (pp85-86). He denounces process-based performance based pay with a specific example:

"Focusing on just a few visible process steps creates a checklist that providers can address, but oversimplifies the problem. A good example is the administration of tPA (tissue plasminogen activator) to stroke patients. While tPA is very beneficial to some patients, it is usually ineffective in addressing clots in a large vessel, unnecessary for some patients whose obstruction will be addressed naturally, and dangerous to others in whom it may cause brain hemorrhage." p87

The strategic consequence of Porter's argument is to develop centres of excellence, rather than 'lifting all boats'. This conclusion was also reached by Ara Darzi, a notable surgeon, who conducted a strategic review of the NHS (Darzi, 2008). Specialisation and centralisation of hospital services would be necessary at one end of the spectrum, he argued, and localism would be developed at the primary care end, through development of polyclinics. District General Hospitals in the middle would have a diminishing role. Academic Medical Centres (later Academic Health Science Centres), combining R&D and clinical practice, would sit at the top of this specialist-generalist pyramid.

Porter is specific in the implications of value-based competition on results. Competition is regional or national, not local, so that value-based competition would lead to subspecialisation, tailored facilities, and dedicated teams with high levels of experience. The consequence would be consolidation, with particular clinical services being provided by fewer providers. Gaynor and Town (2011) have observed this to be happening in practice.

3.2 Strategic Organisational Resources and VRIO

Strategic organisational resources lie at the heart of the RBV construct. Knowledge, routines, processes, capabilities are interchangeable forms of strategic resource. This was apparent from the analysis of professions as a vehicle for knowledge sharing (e.g. Styhre 2011). The human resources of a healthcare facility are therefore indistinguishable from know-how and routines (because we accept that much valuable knowledge is tacit).

A theme emerging through Porter & Teisberg (2006) and Darzi (2008) is the role of specialist clinical knowledge and how it provides the link between strategy and performance (value creation). By implication the spectrum of local-centralised, general-specialist, goes from low VRIO to high VRIO. The more specialist and distinct are clinical capabilities from competing organisations, the more differentiated (rare) and the more protected from imitation are they. Porter & Teisberg (2006) articulate this by pouring scorn on general services:

"The absence of clear strategies among health care providers is perhaps understandable, given the community service orientation in the field and the strong influence of physicians who tend to want to do a little of everything" (p151).

"Most hospitals and clinics are nonprofit organizations overseen by well-meaning volunteer boards, mindful of their mission in the community and their legal obligation to serve" (p153).

They suggest that the typical range of service is too broad, service delivery approach is too narrow and the geographical focus is too localised. "Hospitals, especially, are prone to try to be one-stop shops and maintain a full line even if the number of patients in a service line is small compared with experienced providers" (p152). The authors are quite clear that value means high quality outcome, based on expertise gained through sub-specialisation over a large volume of patients. "Value is driven by provider experience, scale, and learning in medical conditions" p111.

In summary, RBV and the idea of VRIO as a framework for describing strategic resources suggests that large specialist centres of excellence, covering large populations, have a better strategic future than small, numerous, generalist community centres. Hospitals are encouraged to pursue these goals of specialisation according to both Porter and the RBV framework. While it may be beneficial to the organisation itself, at the system level (i.e. at the population level) there may be costs. Loss of a hospital (identified earlier as potential social capital), personal cost of access to a more remote location, reduction in utilisation associated with this (see Hurst & Williams, 2012) are all costs that the organisation does not bear but the patients do. It is apparent the VRIO is an analysis that applies inside the organisation, rather than outside.

3.2.1 VRIO and Strategic Plans

Appendix 9 draws a thumbnail sketch of organisational features drawn from strategic plans of several Foundation Trusts (Forward Plan Strategy Document for Foundation Trusts as Filed With Monitor for the Year Ending 31 March 2012). Based on information in the public domain, the exercise is an attempt to draw out internal strengths and weaknesses, external opportunities and threats, i.e. a SWOT analysis, together with elements that might be linked to VRIO strategic resources. The sketch is an attempt to derive a practical and worked NHS-based example that should be of interest to the NHS managerial community.

In practice we struggled to map the plans to strategic resources that are valuable, rare, inimitable and organisational. The Forward Plans provided the reader with limited insight into VRIO factors. Yet according to RBV theory it is these qualities, rather than the shared external opportunities and threats, which differentiate organisations and mobilise their strategic direction. It suggests that there is scope for organisations to give greater focus to their bundle of resources or capabilities and to analyse them against VRIO criteria.

3.3 Knowledge Transfer and Performance

Knowledge transfer describes the process of knowledge acquisition and sharing, motivated by performance improvement. Walshe et al (2010) give a detailed account of the connection between knowledge and performance in public services, distinguishing between organisational learning models of absorptive capacity, and audit models of performance measurement that constitute knowledge transfer.

Absorptive capacity describes the organisation's ability to access, assimilate and apply new knowledge. Harvey et al (in Walshe et al, 2010) describe a case study of absorptive capacity in an NHS ambulance trust. The organisation was failing against performance measures, and had received a zero star rating. The researchers found that the ambulance trust was demotivated and resistant. It did not believe the performance information, so refused to assimilate the knowledge and made no improvements in its performance.

Exworthy et al (2010) consider the difference between formal and informal performance. Formal performance (eg. activity or finance metrics) provides a safety net for poorly performing organisations but offers weak incentives for high performing organisations. Informal performance (eg. reputation, trust) substitutes for and/or complements formal performance. In the terminology of knowledge mobilisation, formal and informal corresponds to explicit and tacit modes. The distinction between explicit, codified, measurable knowledge and tacit knowledge is reflected in two types of scrutiny: performance indicators, rating and targets on the one hand, and scrutiny of professionals and behaviour on the other.

Hurst and Williams (2012) have conducted a major literature review as part of the Nuffield Trust's Quest for NHS Efficiency programme, drawing on nearly 200 health-related sources. They suggest that use of benchmarks for performance management within organisations yields positive results, showing the distance that they need to travel to reduce variations in day case rates, length of stay and other productivity indicators. The evidence on external, top-down performance management appears to be somewhat mixed, even though estimates of hospital inefficiency average between 10 per cent and 20 per cent in many countries, including the UK (p18).

3.4 External Competitive Environment

If long-run survival (as identified by Rothschild, 1947; Handy, 1994) is the ultimate objective of a business, then we need to be explicit about the difference in market environments between health care and private enterprise (e.g. Le Grand et al, 1998). Electorates vote for local members of parliaments and communities value their hospitals, placing greater trust in clinicians than in politicians and managers (Klein, 2010, p293). This inhibits 'market exit' making market failure difficult or impossible. As well as barriers to exit, there are barriers to entry due to high level of investment, or sunk costs (Bain, 1956; Sutton 1991), required to set up a service.

When it comes to healthcare, we are familiar with the notion of competition. Propper (2012) states that over the last two decades 'competition has been widely advocated as a reform model, on the delivery side, or the insurance side, or on both' (p33) and that the UK has been a leader in trying competition on the delivery side. Competition is intended to encourage efficiency, improve productivity and raise quality. Detailed reviews on the role of competition in health care (Gaynor and Town, 2011) and Dranove (2011) show how the US market has been consolidating through merger, concentrating specialist services among a smaller number of providers. Propper locates theoretical and empirical work in healthcare within the Structure-Conduct-Performance (SCP) paradigm (originating from oligopoly theory and associated with Porter), which predicts that concentrated markets allow cooperative behaviour, leading to higher prices and profits.

The NHS has faced different modes of competition which appear to have provoked different reactions (Propper, 2012). The 'first internal market' introduced by the Thatcher government in 1991 encouraged price-competition between hospitals, putting downward pressure on costs and improving productivity. In competitive areas, observable quality (measured by waiting times) improved while unobservable quality (mortality) deteriorated. The 'second internal market' introduced by the Blair government from 2004 used fixed-pricing through tariffs based on DRG/HRG payments. Competition was encouraged on quality rather than price and patient choice was increased. Propper (2012) notes that better quality hospitals tended to be chosen more often.

In terms of the external competitive environment, the distinction between open and closed systems is important, as stressed by Krugman (1999, reissued 2009) in his classic paper "A Country is Not a Company". Companies can aim for higher market shares and growth, but there is a cap on the total amount of money in the system. Companies operate in an open system but countries

function as closed systems. Likewise, the NHS, which allocates funds from a single payer (government via taxpayer), is cash-limited at the system-level. The recent structural changes, however, raise the question about whether the NHS is an open or closed system. Changes to Foundation Hospital status, allowing them to raise significant income from private patient sources, mark a potentially significant step towards fiscal openness at the system level.

3.5 Feedback Loop: Conflicting Signals

The RBV analytical framework marks a strategic cycle that acts as a feedback loop, since the competitive environment sends signals (potentially conflicting) that modify strategic goals. Examples of conflicting pressures have been documented by Hurst & Williams (2012). For example, there appears to be a conflict in the literature between cost-cutting measures, taken to be essential for financial health in bad times of fiscal constraint, and the evidence that suggests that more staff yields better quality.

Our analytical framework can deal with the productivity/quality tension by separating out the goals of the different actors, i.e. payer and provider. We use firstly the concept of 'organisational slack' and, secondly, Krugman's distinction between an open and closed system, or multiple levels, derived from the RBV search.

The notion of 'organisational slack' suggests that organisations which are rich in resources will have more headroom to innovate, grow and perform. The healthcare literature substantiates this. Valdmanis et al (2008) studied 1,377 US hospitals in 2004 and found that high-quality hospitals tended to have too many staff (organisational slack) while low-quality hospitals had too few.

The system view makes a distinction between the purchaser, with a limited budget and a closed fiscal system, and the provider who may be in a position to increase market share and so, to all intents and purposes, operates in an open system.

3.6 Concluding Discussion

'Relevance to healthcare' is a challenging test due to: (a) the theoretical nature of RBV and (b) its lack of presence in the healthcare. We have met this challenge by mapping healthcare evidence to an analytical framework drawn from our review of the literature. Certain authors, notably Porter, have blazed a trail by migrating from generic competitive theory to healthcare.

Porter's prominence in the study is unexpected because his theoretical position is generally depicted as being in opposition to RBV. Barney and Clark (2007) emphasise the contrast between internal (RBV) and external (structure-conduct-performance) factors emphasised by Porter as sources of competitive advantage. The rationale for incorporating Porter is fourfold. First, his work was generated through the search (Porter, 2008). Second, Wernerfeld (in Lockett et al, 2008) made it clear that his resource-based view was a reaction to Porter's work, encouraging a dualist approach. Third, according to our analysis, the two concepts are not mutually exclusive; they just start from different points in the dynamic chain. RBV suggests that capabilities within the firm, i.e. firm-specific advantages, produce competitive advantage among rivals. SCP suggests that competition is the driving force that leads organisations to improve and develop their internal capabilities. The sense of chicken and egg is conveyed in the analytical framework that we derived from the review. Fourth, Porter's concept of value makes an important theoretical contribution since one of the main weaknesses of RBV in the generic literature is its lack of a coherent notion of value³.

3.6.1 Implications for Reflective Practitioners

So what does it mean? RBV in a narrow sense (VRIO qualities) encourages managers to identify the strategic resources of the organisation or make decisions that play to these strengths. The more optimistic authors (e.g. Teece, 2009) suggest that 'managers matter' and that organisation-specific factors outweigh market conditions, accounting for 22% of variation in performance premium (Crook et al, 2008). Proposition 1 itself is confirmed by our study. Our conclusion is that (a) the NHS does need to consider how knowledge and information can be used to improve productivity, innovation and performance proposition, and (b) RBV does have application to the healthcare sector, notwithstanding new theoretical developments (dynamic capabilities, absorptive capacity, ambidexterity). It has predictive value, indicating that organisations with valuable and rare (specialist) expertise, that is difficult to imitate, will have a strategic advantage. It also suggests that 'organisational slack' provides headroom for innovation and growth within organisations. This poses a challenge to the productivity or 'more for less' efficiency agenda operating within organisations in the current fiscal climate.

³ We are aware that there is growing interest in the field. The Health Foundation is currently funding a number of Value Based Commissioning projects in the UK NHS

4 Critical Perspective

PROPOSITION 2: "The health sector should make greater use of critical perspectives – especially labour process and Foucauldian perspectives - in understanding the fate of knowledge management systems. The importance of power contests among occupational groups in health systems makes it appropriate to temper positivistic and purely technical approaches to knowledge management with scepticism."

This chapter undertakes a review of recent Critical Literature on knowledge management in knowledge intensive organisations. It addresses the proposition above, set in opposition to the positivistic and functional Resource Based View of the firm.

4.1 Introduction

After reviewing the RBV based literature, we now consider a different strand of literature: papers with a critical perspective on the knowledge management movement in relevant professionalised (e.g. law, management consulting) as well as health care settings. These papers often come from a sociological frame of reference rather than the industrial economics found in RBV. Unlike RBV, they do not assume a unitary, functionalist and performance based model of the firm/organisation but see it as characterised by competing interests and internal power struggles. Securing or retaining control over knowledge may be a key struggle in knowledge based organisations. It may be rational for them to hoard rather than share knowledge, if that makes them indispensable to the organisation. So knowledge management systems may be contested, adapted, resisted or rejected by professionals rather than accepted. (This vocabulary is radically distinct from the RBV stream).

We divide the 30 critical papers selected for inclusion according to their basic theoretical orientation. Sometimes the papers use a pluralist or mixed theoretical framing and these are discussed in their primary conceptual 'home', with brief reference to them made elsewhere where appropriate. Most papers include an empirical element, typically based on organisational level case studies rather than quantitative methods. Most papers are placed in a body of social science theory or rather a range of different theories. We also discuss some relevant books.

4.2 Professions, Managerialisation and Power Relations

Some papers draw on the fundamental sociology of the professions based on the work of Freidson, Abbott and kindred authors on broad themes of professional dominance, multi professional systems, internal restratification within professions and the reactions of the professions to a challenging New Public Management (NPM) movement.

One angle is the difference between healthcare professions in their approach to knowledge and evidence. Broom et al (2009) explore doctors' and nurses' reaction to the EBM project and introduction of evidence based guidelines within two contrasting Australian oncology and haematology settings. They found that EBM implementation depended upon its reception by particular medical disciplines: a more experimental and riskier tradition, haematology, appeared more likely to accept poorer quality evidence (as defined by EBM) than oncology. EBM also had effects on the internal restratification and the professional division of labour, deskilling junior doctors but increasing the power of an elite of senior clinicians, influential in deciding which guidelines were to be adopted locally. They called for more research into how clinical practice is changing under EBM, how sites of resistance and translation (important concepts which reoccur) emerge and the character of locally differentiated responses.

Quinlan's (2009) ethnographic exploration of 'knowledge work' in Canadian multi-disciplinary primary health care teams critiques existing literature for its lack of attention to role shifts and power relations between health care professions around knowledge processes: *'there is little consideration of the relationship between knowledge and the social organisation of power.'* The study found processes of dialogue between different team members about dominant knowledge (here Evidence Based Practice) within clinical teams to be critical: EBP knowledge could be challenged as over-technical and cognitive and as devaluing tacit clinical knowledge. Nurse Practitioners were negotiating a wider role in dialogic 'knowledge work' around local interpretations of key texts. These key texts could be (re)constructed in team discussion in a local 'evolving order'. However, such team discussions were still in some settings dominated by doctors, drawing attention to inter professional power/knowledge dynamics. The study concluded (pp637/8): *'in this new form of work organisation, knowledge work is made collective and involves an interplay of text and task.'* The teams did not only receive formal texts but also articulated tacit forms of knowledge in local discussions. Another key conclusion was that: *'knowledge is a collective not a private good, embedded in a set of social relations'*, which may well include elements of inter professional power hierarchies. Quinlan (2009)

clearly relates to the articles on socially situated models of knowledge considered later in the chapter.

A second major theme explored is the well known professional dominance (vs) managerialisation debate. A formal Knowledge Management system can be a mechanism for increasing managerial surveillance and control over professions. Currie *et al's* (2008) (see also Waring and Currie, 2009) exploration of clinical 'resistance' (note the conflictual language) to a NHS Knowledge Management system was theoretically based in the sociology of the professions literature which suggested typical defence of professional knowledge bases and 'jurisdictions' against a challenging managerialisation. A claim to expert and esoteric knowledge is a major basis of professionals' demand for autonomy. Such knowledge can consist both of explicit and accredited forms of knowledge but also different forms of tacit and experiential knowledge.

They empirically examined a new dedicated incident reporting system (the National Reporting and Learning System) in the field of patient safety in a case study hospital through this theoretical prism. A centralised incident reporting system was introduced through a standardised 'tick box' form. A central Risk Management Department (with several Risk Management Officers) at a corporate level introduced processes to store, analyse and manage reported information (for example, producing 'risk scores' to guide resource investment decisions). These risk management officers reported to a corporate risk management committee (including some senior doctors) which then attempted to deflect the causes of incidents back onto management – rather than clinical - failures. Clinicians were supposed to record key information relating to patient safety incidents which would then be passed to this new group of corporate 'risk officers' for assessment and then up to the National Patient Safety Agency.

Root Cause Analysis techniques were used in the diagnosis of the causes of major incidents. Importantly, clinical knowledge changed its appearance and nature as it moved up through this system: *'the technical narratives and experiential knowledge reported by clinicians were systematically recoded as distinct risk variables. This included the reclassification of free text accounts into codes and risk factors'* (Waring and Currie, 2009, 763-764). So the balance within the KM system between free text and coded information emerged as a major issue.

This system initially promised: *'routine managerial surveillance of clinical performance and quality.'* It was seen informally by clinicians as a vehicle for allocating visible blame, despite formal protestations of a blame free and learning orientated. It captured only explicit, readily recordable,

knowledge and missed tacit professionalised knowledge: *'the reports, in other words, only capture knowledge that is explicit and amenable to circulation and codification, with learning unlikely to follow because knowledge captured within the reporting system is decoupled from actual practice.'* This distinction between different forms of knowledge (tacit/explicit; local/centralised) recurs in various papers.

In practice, clinicians hoarded rather than shared knowledge, given low trust of the managerial 'other'. Doctors engaged in various successful responses to reassert control over the knowledge management system: this suggests caution about the more extreme versions of the deprofessionalisation thesis. They did this in part by recording information selectively. In discussing root causes, they shifted blame from clinicians to managers and systems (e.g. lack of enough beds). They even established their own internally controlled reporting system which was more clinically linked and from which they excluded other groups. The case suggested the continuing power of doctors to protect and hoard knowledge and to exclude other groups.

Their fieldwork suggested that doctors supported 'patient safety' in principle, yet were sceptical of the Knowledge Management system's ability to understand clinical practice. Local behaviours also varied by department and went beyond a simple acceptance/resistance dichotomy to include examples of co-option (where new local risk reporting procedures were controlled by doctors), adaptation (where a local form was produced in addition to the corporate form) and circumvention (where a department refused to use the corporate system on the grounds that its own track record was superior). They concluded that a process of 'reverse colonisation' might be evident (p775) whereby: *'managerial expertise can be detached from managers and drawn downwards into professional practice. This enables professionals to avoid management interference in work and to extend their influence over management'*. This conclusion differs from a simple managerialisation process and illustrates the continuing power of the medical profession to (re) shape new KM systems. There was a question of whether such managerial logics are eventually internalised by clinicians, leading to identity shifts (linking to Foucauldian analysis examined later).

4.3 Labour Process Based Papers

Labour process analysis comes from a distinctive neo-Marxist analytic perspective, typically focussing on themes of tightening management control, worker deskilling and the intensification of work, including

intensifying emotional labour (as in nursing) with an expected loss of autonomy and worker solidarity. Labour process analysis is an important strand in the sociology of work, expanding from its original stress on manual to non manual work. For instance, Coombs and Jonsson (1991) discuss the process of automation of clerical work in clinics in Swedish hospitals. Their analysis stressed the low impact of such new technologies, reflecting distinctive conditions created by the continuing 'dual structure' of reporting to (frequently absent) doctors as well as conventional line managers. So they did not find empirically the work intensification often predicted by this literature.

Fewer labour process informed papers were found in the search than initially expected. Smith et al (2008) present an interesting study, empirically analysing the work experience of nurses in two call centre settings (NHS Direct) which we report at some length. For labour process scholars, the rapid emergence of the call centre can be seen as a discontinuous form of work organisation (unlike the old factory) where work can be stretched both spatially and temporally. The call centre is an emblematic site analysing new work organisation which includes a computer mediated interaction between caller and worker (p582): *'workers are tied to computer generated scripts and work knowledge could be said to be within the machine and not within workers as an occupational group. In classical labour process terms, the conception of work (design, planning, scheduling and intellectual content) has been concentrated within technology controlled by management and their allies, while workers become 'operators' of tasks where knowledge is fragmented, specialised and curtailed, and any formal sense of an occupational community engaging with holistic work processes eliminated.'* Their central research questions were: (i) how nurses as a professional group mobilised to restrain the 'transformative' features of call centres with their associated managerial control regimes and (ii) what practices of knowledge production were evident.

Despite some internal variation, Smith et al (2008) suggest the dominant form lies in the mass production call centre model, stressing low costs and lean production. Call centre based working might well rely on explicit, codified and rationalised forms of clinical knowledge rather than tacit or holistic forms. There are potentially important differences between the routine private sector service settings often analysed and the more professionalised setting of NHS nursing (so the theme of professionalism reemerges). For example, some nurses moved back and forth between face to face nursing and tele nursing, preserving their previous work identity rather than moving to a permanent new identity as a tele nurse.

In their case study sites, nurses worked to an electronic Clinical Assessment System (CAS) which provided a series of algorithms. In one reading, this could produce: *'further rationalisation of knowledge through computerisation and automation controlled by non nurses'* (p585). Certainly, the CAS fragmented the assessment process and narrowed the clinical reasoning that could be readily employed. On the other hand, nurses could under-ride and over-ride the highly cautious CAS system, on the basis of clinical experience (e.g. nurses were reluctant to send all the callers who reported back pain to A and E). Such exceptions were formally recorded so that the CAS central team could revise the software later. Nurses also reshaped the algorithm's formal language back into lay terms, especially in paediatrically related calls. There were informal and formal learning and training opportunities available to broaden nurses' general nursing knowledge (so multi skilling rather than deskilling).

Smith et al (2008) concluded that tele nurses had not been reduced to interchangeable and disposable labour, unlike staff in banks' call centres. Their professional identity and knowledge protected them against deskilling and work intensification. They remained the dominant group in the call centres (there being no doctors present); although more managerialisation might occur in the future. The CAS system did not subordinate the 'embrained' knowledge of nurses to the codified knowledge of the software programme. Unlike in conventional call centres, nurses retained a certain freedom to utilise their practical, occupational, knowledge to reshape CAS abstract knowledge: they could take time out during calls for conversations with colleagues or consulting texts. In this 'hybrid' state, codified knowledge co-existed with nurses' embrained knowledge, although there were signs of more emphasis on productivity as the organisation matured that might shift this balance.

4.3.1 Intellectual Capital and Liabilities

Labour process based studies in critical accounting consider how to measure and value immaterial labour in the post Fordist economy where knowledge becomes a critical asset. So Intellectual Capital (IC) may be the key asset in knowledge intensive organisations, as opposed to (say) traditional assets such as machinery or land. One puzzling question is: how can IC be valued in financial accounting terms, especially if there have been no prior transactions in the market? This stream represents a radical counter-point to RBV literature by making the definition of 'value' problematic.

Gowthorpe's (2009) review of this problem sees IC accounts which are increasingly appearing in some company annual reports as designed to

reduce high levels of managerial uncertainty in companies which are light on conventional physical assets and as 'fundamentally unsound.' She also introduces the notion of 'intellectual liabilities' (e.g. a contaminated brand) to complement the usual notion of 'intellectual capital'. A health care example might be a lack of change management or organisational development based knowledge that might enable a NHS organisation to 'turn around' repeated poor performance in publicly visible league tables that harm its external reputation.

Spence and Carter (2011) adopt a Marxist 'autonomist' theoretical position which insists on a certain autonomy of labour vis a vis capital. The transition to a post Fordist economy displaces material by immaterial labour, notably 'knowledge' or symbolic analysis. They note a new stream of mainstream Intellectual Capital Accounting work (citing Gowthorpe) which seeks to valorise immaterial assets. They contest the individualisation of such knowledge; *'knowledge is a bien communs – something that is held, developed and generated collectively. It only becomes atomised once it is expropriated by capital in the valorisation process.'* They conclude that measuring IC is an *'impossible task'*.

4.3.2 Critical Management Education (CME)

CME offers another substream of literature with a neo-Marxist framing. Knights and Willmott (1999) critique mainstream textbooks for management students ('against the text') for treating their readers as passive and ignorant subjects. Knowledge (pp9/11) is far more than a collection of pieces of information but includes the development of deeper understanding through providing a conceptual basis and an exploration of the relevance of such information for particular work contexts. They suggest using novels as alternative texts which illuminate work organisations in a more creative way than textbooks.

4.4 A Cluster of Foucauldian Papers

A large cluster of papers draws on Foucault, particularly themes of panopticon control and (self) surveillance but also the 'trajectory of the self', governmentality and discursive forms of control as applied to knowledge management systems. Foucault's work is complex, evolves through different periods, is capable of various interpretations and has generated alternative schools of interpretation. One major theme developed is the operation of 'governmentality' or the way in which socially marginalised populations are managed and made docile through various indirect control mechanisms which go beyond the crude use of force.

Another major theme is the internalisation of discipline and the development of 'new selves' who may eventually embrace surveillance from a remote yet watching centre ('the gaze').

A major contribution is 'panopticon control' (Foucault, 1977). This refers to a reforming prison imagined by Jeremy Bentham where the prisoners could be kept under perpetual observation by a warder in a central observing tower. While they can all be seen by the warder, they cannot see into the tower. They do not know whether the warder is present or not at any one time, but there is a credible threat that he may be. Isolated in a total institution and subject to possible perpetual micro surveillance, they may eventually engage in self surveillance and adopt desired forms of 'reformed' conduct as new identities develop.

In an important monograph, Zuboff (1984) applied 'panopticon control' to control mechanisms within the informing organisation, where new ICTs were creating new electronic reporting and performance management systems: *'Information systems that translate, record and display human behaviour can provide the computer age version of universal transparency that would have exceeded even Bentham's most outlandish fantasies'*. (Zuboff, 1984, p322). Zuboff argues that the contemporary counterpart of the central tower is the video screen. This panopticon does not require physical enclosure or even human observers but can flexibly operate across time and space and through machines programmed to collect information in a certain way. This electronic panopticon changes conventional superordinate/subordinate relations, providing more routine information about subordinate behaviour to the centre. It absorbs functions of traditional middle management and lessens face to face engagement. Transparency and visibility emerge as important organising concepts. At a substantive level, the organisational requirements of informing organisations (Zuboff, 1984, p413) involve work improvement programmes, typically emphasising high commitment, self managed teamwork and decentralisation (albeit under electronic surveillance from the centre). Middle management is delayed and replaced by electronically based reporting systems.

Reviewing the critical accounting literature, Martinez (2011) draws on ideas from Foucault (and also Deleuze's ideas of a 'society of control') to explore changing macro surveillance in contemporary society. A first argument is of a major shift from surveillance located within the old bounded and enclosed institutions (such as prisons) to a new 'society of control', with ICT based surveillance that speedily tracks an individual across conventional organisational boundaries. These systems are both pervasive and have high velocity. Martinez stresses: *'the movement of information across what used*

to be confined systems of control; the importance of speed and the ubiquity of monitoring devices' (p208). There is now less concern with surveillance within a focal firm/organisation and more with a loose network. A second implication is that various surveillance systems may co exist and interact: so a NHS Knowledge Management system may interact with other electronically based surveillance systems operating at the same time, perhaps with unexpected or perverse effects.

Empirically informed studies in this cluster explore different reactions in the field to novel surveillance technologies. Essen (2008) questions the dystopian imagery of the 'electronic panopticon': her study of the views of a group of older people in Sweden who lived with electronic monitoring devices to ensure rapid access to care when needed found nearly all of them welcomed the greater security and reported that they felt more looked after.

Framing the debate in terms of professional dominance (vs) New Public Management, Levay and Waks (2009) explore the reactions of Swedish clinicians to new 'transparency technologies' in health care in two case studies of the accreditation of laboratories and national quality registries. Rather than simple resistance, there was a more complex picture of adaptation and of learning through time whereby clinical professionals were both monitored by these networks but also used their considerable social capital to shape the evaluation criteria used: *'in both cases, professional involvement took the form of translation and negotiation in expert networks, restrained by a certain resistance to external monitoring but driven by an interest in legitimating and developing professional work'*. Their analysis was informed by Courpasson's (2000) concept of 'soft bureaucracy' and by Miller and Rose's (1990) Foucauldian influenced governmentality based perspective of how the advanced neo-liberal state 'governs at a distance', using novel indirect steering technologies.

Empirical studies explore the extent, nature and effects of KM systems in professionalised and knowledge based organisations beyond health care. Working to a surveillance theme, Brivot and Gendron (2011)'s empirical case study of a Paris law firm examined how lawyers reacted to a new computerised Knowledge Management System in which a record of every client engagement was supposed to be uploaded for indexing and tagging (one partner refused to comply). The KMS invoked fears of perpetual electronic surveillance from the managing partner who dismissed them as 'Big Brother fantasy' (but retained in principle the capacity to 'dip in' to examine texts at will). More unexpectedly, the rank and file lawyers developed a 'proliferation of lateral networks of surveillance' where there were various strategies: (i) games of high visibility and showing off one's

work (ii) observation or lateral voyeurism and (iii) secrecy, or hiding one's work from the KMS, to create a hidden market in knowledge.

Also using a Foucauldian perspective, Brown and Lewis (2011) studied how a new Management Information System (MIS) designed to record billing information reconstructed lawyers' work identities in a large UK law firm. All lawyers were supposed to record time spent on cases in six minute intervals and at the end of the day post this information on an electronic database (called LawSoft), with a descriptive narrative for each job. This billing information was reviewed by senior partners and the Director of Finance, for partners. It informed promotion decisions in the case of junior lawyers. The target was for fee earners to log seven hours of work each day (in 70 six minute units) and achieve 1300 billable hours per annum (although in practice this was not always met). So the MIS was a transparent, disciplining and normalising technology that made good and poor performance visible.

How did lawyers react to this surveillance routine and how did it affect their professional identities? Brown and Lewis (2011) move beyond a crude power/resistance binary to examine the ways in which lawyers appropriated work practices. They both complied and reinterpreted the time/billing routine: *'the picture that emerges is one of lawyers seeking to establish and protect professional identities as institutionally productive but self reflexive and quasi autonomous individuals'*. While there was little overt resistance, the system was used in an ambiguous and collusive way, enabling lawyers to preserve personal relations with clients (given their intuitions about the right price for a job or how much a particular client would pay).

Iedema and Rhodes (2010) offer a different 'take' on the effects of video based surveillance of clinical work which gets beyond traditional surveillance theory. They investigated the behavioural effects of video based recording of a spinal surgical team in an attempt to reduce infection. The intervention was combined with feedback sessions. They found that the intervention prompted reflection, interaction in the team and the development of new work practices. They used the Foucauldian notion of the 'care of the self and others' to explain this process, so that while they did not use traditional surveillance theory, they drew on other aspects of Foucault's work.

Kärreman and Alvesson (2009) explore themes of consent, obedience and resistance in a case study of consultants in a prestigious management consulting firm as: *'a case where knowledge workers appear subject not only to a managerial division of labour but also to what they experience as*

extreme work conditions, in particular long working hours, and yet they subject themselves willingly'. In contrast to some accounts of Knowledge Intensive Firms (Alvesson, 2004) which stress extensive delegation and control through socialisation and strong corporate cultures, there were here well developed systems and processes (e.g. selection; appraisal; unified package of methods; extensive knowledge management systems) as well as cultural control. These processes represented a strategy of 'counter resistance' by the firm which appeared to be effective. Many of the consultants were young (under 30), recruited from elite universities and at the junior levels of a well defined career ladder where there were strong incentives to conform to make partner status.

A major theme was the formation of new identities within the firm. Identification with the corporation happened quickly – reinforced by strong HRM systems – and there was little overt resistance. There were two broad narratives (Ambition vs Autonomy) revealed in interview but the Autonomy narrative tended to go underground in corporate settings. There was an engrained culture of extreme working hours. Indeed, time sheets were faked to under-report (rather than over-report) overtime to protect margins and secure good evaluations. They concluded: *'the mix of carefully vetted, evaluated and self defined individuals; the emphasis on shared norms and understandings mediated through structures and processes; the heavy emphasis on teams and group work and the impulse to counter resist, combine to create a context in which compliance is not only desirable, it is almost irresistible.'*

Also in this broadly Foucauldian tradition, Costea et al's (2008) overview of contemporary managerial practices highlights a 'cultural turn' within 'soft capitalism.' Knowledge here becomes the key factor in the mode of production, leading to increasingly explicit attempts to manage it. Knowledge Management systems try to capture the tacit knowledge found in multi disciplinary communities of practice and codify it. New mechanisms are created to mobilise and integrate individual and corporate knowledge. Individuals are exhorted to release through 'confession' their personalised knowledge into the corporate realm: *'new forms of confessing one's thoughts, in the name of actively sharing personal and collective knowledge, became central to interactive data base systems as new forms of socialisation.'* Work is repositioned as a subject centred and therapeutic process of continuous development, consistent with a technology of the self perspective.

Rasmussen (2011)'s case study of discursive practices in one meeting of the health and safety committee of a Swedish chemical plant suggested: *'workers are trained to improve upon themselves and change their*

supposedly unsafe behaviours into safe ones. Theoretically, the analysis drew Foucauldian 'governmentality' (indirect technologies of government), distinctively combined with a close analysis of discursive strategies. 'Discourse' referred to long range beliefs and ideas that are politically significant. Such behaviour-change strategies suggest the importance of psychology as a knowledge resource underpinning individual improvement efforts, citing Rose (1999). The conclusion was that: *'governmentality is exercised through the mobilisation of discursive strategies in the area of occupational health and safety.'*

Randall and Munro (2010)'s exploration of work practices in a multi disciplinary mental health care team working with victims of sexual abuse took a Foucauldian approach based on the concepts of conventional clinical normalisation (vs) an alternative 'technology of the self' binary. The team – including some psychiatrists – moved away from conventional clinical practices and knowledges (diagnosis; medication; 'disclosure work') towards more pragmatic and exploratory approaches, discussed in a team forum. The analysis suggested such exploratory and localised approaches to knowledge production are more difficult to capture within formal knowledge management systems.

McGivern and Fischer (2012) use a Foucauldian framing (e.g. surveillance; self surveillance; normalisation) to investigate clinical reactions to 'regulatory transparency' in the distinctive fields of psychotherapy and counselling (where new regulatory regimes are being established by the NHS). Psychotherapy has a strong tradition of case studies, of practitioner reflexivity and tacit or intuitive knowledge ('process notes'). They built on Espeland and Sauder's (2007) earlier work on academic reactions to transparent standards in ranking American law schools which distinguished two 'reactivity mechanisms': (i) rankings act as a self fulfilling prophecy so that even an inaccurate measure can change behaviour which then makes the original definition become true and (ii) 'commensuration', so that comparisons become based on simplified measures (e.g. position in the league table) rather than wider quality. It is possible that those ranked internalise the measures, suffer status anxiety and 'game' around the rankings.

McGivern and Fischer's (2012) empirical work highlighted some important (often unanticipated or negative) shifts within clinical practice as a result of new regulatory regimes. Therapists were now expected to demonstrate competence against evidence based standards. In addition, clients now had access to officially filed notes. So therapists moved away from keeping full (but disclosable) process notes or now kept a private diary alongside but separate from official documentation, eroding traditionally prized

therapeutic reflexivity. Clinical supervision moved away from a 'formative space' to a more managerially based caseload model. They concluded that greater regulatory transparency acted to decontextualise therapy practice.

While some therapists helped design the new systems, they had less impact in cushioning their impact than in Waring's acute sector based work as they found (p755): *'therapeutic practices overwhelmed by a discourse of performance and external scrutiny which they felt incapable of mitigating sufficiently to maintain the integrity of professional practice.'* They found strong emotional reactions (e.g. anxiety) to the new regulatory systems with a fear of practitioner scapegoating. So the new regulatory transparency regimes could generate unexpected or even perverse 'reactivity effects', compounded by the distinctive nature of the therapy field.

Overall, we found a significant cluster of Foucauldian papers, including some empirical studies, looking at knowledge management systems and other transparency technologies drawn both from health care and cognate professionalised settings. The main themes explored were: the electronic panopticon, surveillance and self-surveillance; governmentality; transparency and visibility; 'soft management', identities, identity shifts and the technology of the self; discursive control strategies and, finally, notions of resistance and counter resistance.

In a relevant and interesting book, Styhre (2003) also draws on Foucault (along with other social science orientated authors) to develop a critical and post modern critique of orthodox and reductionist models of knowledge management. Knowledge (p148) is here seen as located in social communities, local practices, in culture, in local routines and standard operating practices. Knowledge is entangled with power, embodiment, emotions and representation and cannot be understood outside of its social relationship.

4.5 Other Themes and Concepts

4.5.1 Producing Organisational Blindness as Well as Transparency

Knudsen (2011) explores the growing literature on 'transparency regimes' in health care and other public services settings. Much literature looked at how such visibility devices are constructed, in the pursuit of transparency (reviewed above). But what becomes visible and what (the novel focus here) is blinded or becomes invisible? How do organisations become inattentive to highly relevant and signalled issues and problems? He

conducted a retrospective analysis of the long-winded development of a national quality model in the Danish health care field, examining how the 'communication system' (borrowed from Luhmann) revealed in documentation around producing this model failed to reflect important basic questions raised in the underpinning literature (e.g. the contestability of the evidence) from which it might well have been expected to draw.

The revealed communication system was 'inattentive' to these concerns raised by the basic literature because they were potentially destructive items of information which threatened the extant communication system evident producing the national model. So we need to examine how (health care) organisations can create invisibility, blindness and inattentiveness as well as visibility and transparency. Problematic information and issues may be screened out in designing a knowledge management system, even if they are well known to the designers. Theoretically Knudsen (2011) is of interest because it does not draw on Foucault but rather Goffman's (1990) notion of a latent secret (potentially destructive piece of information) and Luhmann's (1995) work on meaning and communication systems.

4.5.2 Boundary Objects

Work in the tradition of Science and Technology Studies (STS) explores the nature of so called 'boundary objects' as artefacts (including but going beyond a KMS) which lie on organisational and occupational boundaries and which can potentially facilitate knowledge sharing at such boundaries. Citing texts by Star (1989) and Carlile (2002), Barrett and Osborne (2010) undertook an ethnographic and longitudinal analysis of boundary objects (here software specifications and project management tools) in a cross cultural software development team. In order to cross such boundaries, such objects were almost bound to contain strong ambiguity which in turn produced tensions as they reflected a range of different working practices and tacit knowledges. They noted how boundary objects seemed to play distinct roles in different phases, being associated with cooperation in one phase but conflict in another. Quinlan (2009) notes how primary health care teams' collective knowledge work revolved around the interpretation and enactment of an increasing number of higher level health policy documents which can also be seen as boundary texts.

4.5.3 Various Knowledges within Health Care Organisations

Some papers explore the range of different types of knowledge apparent within health care organisations and how they coexist or clash, typically getting beyond formalistic definitions of knowledge. Drawing on Nonaka's work on the articulation of tacit knowledge, Quinlan (2009) draws attention

to the tacit and practice based forms of knowledge found in her ethnography of Canadian multi disciplinary primary health care teams. She rejects conventional technical and cognitive models of knowledge management in favour of dialogic notions of tacit knowledge creation across professional boundaries. Waring and Currie (2009) focus on how tacit clinical knowledge changes as it moves from the field and becomes codified in a 'tick box' risk management form produced by patient safety regimes and also the strong clinical resistance to this translation process.

Waring (2009) contests what he calls the 'measure and manage' orthodoxy of patient safety research. Waring takes a constructionist approach to defining such knowledge: how are narratives of patient safety constructed and reconstructed? He brings in ideas of 'sense making' (drawing on the work of Weick) and of 'story telling' (drawing on the work of Andrew Brown) from a social constructivist viewpoint. Waring (2009) examines three different narratives: first, narratives produced by clinicians in talk before the production of formal reports which are local and emotionally rich; secondly, how this narrative is reconstructed in a formalistic written report; and, thirdly, how these narratives are reconstructed for a second time by central risk managers to fit with distinctive categories used for their own reporting which completely removed detail and emotional content. The three narratives displayed distinctive approaches to what constituted patient safety 'knowledge'. In addition, clinicians' narratives made sense in a way which protected the identity of their own professional group but deflected blame onto 'others' (such as managers or nurses). Although Waring and Bishop's (2010) main analytic focus is on the dynamics surrounding the implementation of a Lean change programme in an acute hospital, an interesting sub theme is the extent to which the metrics and knowledge generated by Lean were contested by clinicians.

4.5.4 Socially Situated and Practice Based Theories of Knowing

The growth of practice theories of knowledge is an important general development in the organisational studies field and is apparent too in this subfield. Building on the earlier work of Blackler (e.g. 1993, 1995, 2000, 2009; Blackler et al 1999; , Blackler and McDonald 2000; Blackler and Regan 2006), Greig et al (2012) apply activity theory to Knowledge Translation (KT) efforts in complex health care settings. They note first of all the strong influence in the UK of concepts of organisational learning and knowledge management, but argue they may be difficult to apply in health care settings characterised by a diverse and distributed knowledge base. Conventional knowledge management theories are too linear and rationalistic so they advocate a move to a practice based perspective in

which knowledge (or, better still, 'knowing') is seen as collective, social and situated in nature.

They develop their preferred approach of Activity Theory (AT). AT *'concerns the study of practices and considers knowledge – or knowing – to be achieved through participation in practice'* (p306). It looks at the whole 'activity system' around knowing which includes: the mutual aim of practice (the object); all actors involved in working towards it (the subjects); the material and psychological tools used; governing rules and mode of organisation and the wider communities of practitioners. Various activity systems may be in operation at any one time, with possible tensions between them. The object of activity may not be harmonious, but reveal negotiation, contest or even transformative contradictions between different stakeholders.

They take as a worked example the Scottish government's introduction of Rapid Response Teams (RRTs) to reduce inappropriate admissions of elderly people to hospital. One local programme was supposed to be 'rolled out' across Scotland. Conducting an ethnographic study in three such teams, they explored respondents' reactions to a vignette of an 80 year old woman living alone and in increasing levels of difficulty as an 'object of activity'. Their case study data suggested major problems in implementing a transformative RRT innovation. While a KT perspective sees this in linear terms as a failure of implementation, an AT perspective illuminated the different activity systems in play (clinicians, local managers and national policy makers). On occasion, alignment may be achieved as actors form so-called 'knots'. On the other hand, tensions and even contradictions between the different activity systems can also be expected: some GPs could be persistent in making hospital referrals. So there were underlying tensions and even contradictions between stakeholders about how to shift the GP/hospital balance which emerged in the process. Local variation is in their view to be regarded as normal and 'rolling out' of a standardised innovation as doomed to fail. So they seek to identify and capitalise on local solutions and advocate moving away from a linear KT based transfer approach to a looser inquiry based approach which could increase policy and practice dialogue and learning: *'this approach is an inquiry based approach rather than a transfer approach, focussing on learning from local practice and developing a repertoire of alternatives rather than evaluating conformity'* (p311).

Ward et al (2012) similarly critique over-rationalist, linear but dominant Knowledge Exchange models in health care. They empirically studied new knowledge brokers in three mental health teams in a large UK mental health organisation and the knowledge exchange processes evident.

Essentially, they develop a more fluid, interactive, socialised and contextualised approach to Knowledge Exchange activity. Accessing existing literature, they broke the Knowledge Exchange process into five separate components. However, they found that they did not occur as separate or discrete events but could occur concurrently or at several different stages of the process. For example, problem-definition activity did not occur merely at the start of the process (contrary to received PDSA models) but was open to continuous revision and evolution over time. They found (p302) that the process was social and group-based more than an individual and cognitive one: *'Knowledge Exchange is a social and political rather than behavioural phenomenon which involves professional identities and norms as well as individual beliefs.'* Knowledge exchange activity could be contested or resisted as well as accepted.

Rather than there being a simple evidence based 'message' to implement, they point to the indeterminate and distributed knowledge in health services which requires dialogue and debate across professional boundaries and knowledge bases. These differences were not necessarily insuperable. They found (p302) that although: *'the knowledge which the teams drew on did indeed come from a range of sources (including their own experience) and that different teams and team members rated certain types of knowledge more highly than others, they still managed to integrate different assessments in a way that enabled them to move through the knowledge exchange process'*. There was a reflexive capacity in multi disciplinary teams which enabled them to move from initial uni professional knowledge bases. So knowledge exchange activity should be redirected from formal, discrete, interventions to working with the naturalistic processes already going on within health care teams.

4.6 Concluding Discussion: Overview and Implications

The papers reviewed here stand in sharp contrast to the earlier RBV stream. They typically reject its unitary and functionalist assumptions of the firm/organisation and explore the socio and organisational as well as the technical components of KMS. They suggest various possibilities of professional enrolment, reinterpretation, superficial compliance and overt resistance to developing Knowledge Management systems: the reaction of the professions to KMS is one major theme; power relations and their impact on knowledge flows form a second major theme.

These studies are strongly based in social science theory, but draw on basic concepts from sociology and organisational studies, rather than industrial economics. Many papers are empirically as well as theoretically based,

exploring work in professionalised organisations (law and consulting firms as well as health care). In terms of methods, the papers overwhelmingly use qualitative designs, especially longitudinal case studies (individual and comparative) rather than quasi experiments, modelling or large scale surveys. Papers are international rather than narrowly UK based and authors include European scholars (more so than American ones). While these studies are empirical, they are not empiricist. They draw extensively on social scientific literature(s) and can only be understood within their distinctive theoretical emplacement.

So what were the main theoretical directions on offer? The large number of Foucauldian papers found is interesting and significant. Smith et al (2008) use a labour process approach to analyse control regimes in UK health care call centres but there were fewer examples of this genre than initially expected. Some authors draw on alternative theoretical frames which we had not anticipated. Knudsen (2011) uses the work of Goffman and Luhmann to look at (non) communication systems in Danish health care organisations. Barrett and Osborne (2010) draw on STS based concepts of boundary objects. Work using socially and situated notions of knowledge exchange is also evident (e.g. activity theory) (Grieg et al, 2012).

4.6.1 Implications for Reflective Practitioners

The first and major contribution of the critical stream is that it puts professional behaviours centrally back in the frame of analysis in a way not so apparent in the RBV stream. Professionals still retain considerable influence within the operation of KMS and may display a range of reactions. These reactions go beyond a simple acceptance/resistance binary to include adaptation and translation. One implication is a need to involve professionals effectively in the design of KMS to build up levels of professional ownership.

The papers secondly draw attention to different forms of knowledge, such as explicit and tacit. There are coding and recoding issues to be considered in the operation of KMS – specifically, how does knowledge move around the system and how is it transformed (e.g. lose its tacit character) as it does so?

These papers finally suggest that health care practitioners could usefully learn from studies and examples in analogous professional settings, such as law and consulting, where similar issues about professional reactions to KMS are apparent.

5 Organisational Form

PROPOSITION 3: "NHS Boards should take a clear view on organisational design elements needed to support knowledge mobilisation. We suggest partnership and network-based organisational forms are more effective at knowledge sharing than markets or hierarchies. There is payoff in collaborating."

This section of the review reports on the Organisational Form search. The methods chapter shows that we had two iterations and used a string of terms badged OF2. The underlying question is 'what organisational form best facilitates knowledge flow?'

5.1 Introduction

Out of 83 papers selected, the largest group (31) came from the general management category of ABS, a similar number (29) came from public sector and social science with most of the balance (19) coming from organisational studies journals. A small number (4) came from strategic management. The two journals with the largest representation in the sample are *Journal of Management Studies* (15) and *Research Policy* (15). 80 papers were recovered and nearly half (36/80) were empirical.

Each paper was read and themed (in accordance with the structure of content in this chapter). 17 papers were starred as important potential contributors to this chapter because (a) they exemplified a theme, (b) they had particular relevance to health, (c) they provided a useful overview of the field by reviewing the literature, or (d) they contained empirical findings that were relevant to the proposition. 41 papers have been referenced in this chapter. A further 146 snowballed references have been cited.

This chapter brings together the diverse field by describing aspects of organisation structure and then considering processes and consequences in terms of performance and competitive advantage. The link between organisational form and performance illustrates the similarity of purpose and focus between much of the organisational form stream and the earlier RBV stream. They are both emplaced in a competitive setting. Sections are divided into: (a) trends in the literature; (b) structural features including units of analysis and types of organisation; (c) networks, which are a particular focus of interest; (d) processes including knowledge transfer flows; and (e) consequences which include the transformation or change that occurs due to knowledge sharing, particularly with regard to innovation.

5.2 Trends in the Literature: Fluid & Ambidextrous

Current literature is preoccupied with adaptation, with emphasis upon ambidexterity. Schreyögg & Sydow (2010) bring together many of the themes of our review by surveying organisational literature over recent years and showing how RBV, absorptive capacity and dynamic capabilities have overtaken the discussion on organisational form. They stress the importance of organisational fluidity as a stream of thought, where scholars advocate a move from hierarchies to networks (consistent with our proposition) and from vertical lines of command to horizontal or lateral paths of communication. Speed and adaptability are bywords (Kellogg et al, 2006), with a range of new forms that might deliver this, e.g. “temporary organization (Lundin and Söderholm 1995), latent organization (Starkey et al. 2000), modular organization (Sanchez and Mahoney 1996, Schilling 2000, Hoetker 2006), project-based enterprise (DeFillipi and Arthur 1998, Lindkvist 2004), virtual organization (Davidow and Malone 1992, DeSanctis and Monge 1999), boundaryless organization (Ashkenas et al. 2002), cellular form (Miles et al. 1997), and heterarchy or N-form (Hedlund 1994)”.

Behavioural features have begun to attract interest, such as absorptive capacity, competencies, dynamic capability to respond to change (Teece et al. 1997, Eisenhardt and Martin 2000, Helfat et al. 2007), and the ability to create new knowledge quickly. “High-performing organizations are seen as constantly redesigning and reinventing themselves, with increasingly fuzzy and eventually dissipating boundaries” (p1252). Change drivers which push organisations include globalization, hypercompetition, and complexity of social interactions, adding volatility to consumer preferences and choices. IT companies, e.g. Cisco, 3M and Microsoft, are used to illustrate this accelerated pace of change which demands full flexibility or being “chronically unfrozen”.

Organisational ambidexterity is the term that is used to describe this core dynamic capability. The definition by Schreyögg & Sydow (2010) highlights the impenetrable nature of much of the literature for a non-academic (or indeed any) readership: “the synchronous pursuit of adaptable fluidity and efficient stability by designing organizational subunits intended to be either efficient *or* innovative. The result is a highly differentiated and nevertheless somehow integrated organization with substantially diverse competencies and specialized structures for coping with both flexibility and pattern maintenance (e.g., Gilbert 2005, O’Reilly and Tushman 2008).” (p1257). The idea is that individuals are not constrained by routines and bureaucratic control and that instead they ‘do whatever it takes’ to get results.

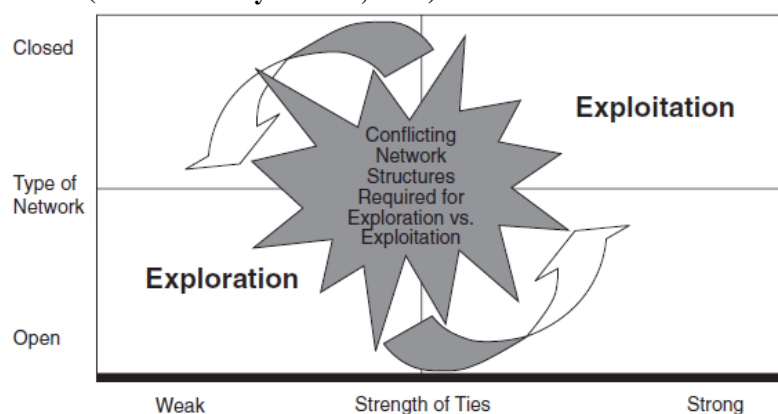
A more straightforward description of ambidexterity is given by Harryson et al (2008) as securing long term survival by addressing needs of existing customers (exploiting existing knowledge) while simultaneously innovating to ensure identification of new customers (exploring new knowledge).

Schreyögg & Sydow (2010) are critical of the idea of organisations as relentlessly changing systems, branding it as too abstract and too optimistic, not relating to how organisations and people really function. They also argue that the stability-as-old-hat argument can result in ever-decreasing circles, with no commitment to long term investment. Their review is a useful starting point because it describes recent streams of thought while cautioning against their limitations.

5.2.1 Moving from Exploration to Exploitation In Networks

Harryson et al (2008) focus on the tension between stability of the old order and the need to learn and develop new technology, but are less iconoclastic than Schreyögg & Sydow. They test theory using Volvo as an empirical case study to look at innovation and the role of networks, arguing that industries with a complex knowledge base will learn and innovate through networks rather than individual organisations. They characterise ambidexterity – the need to specialise in the present and diversify in the future - as a challenge to technological leadership. Stability and experience can lead to ossification, so how can a firm continue to exploit and refine its current knowledge while exploring new technologies?

Figure 14. Exploration and Exploitation
(Source: Harryson et al, 2008)



They contrast open networks (where a firm has direct social contacts with all their partners but these partners do not communicate with each other) with a closed network (where everybody has links with everybody else).

An open network has lots of structural holes with weak ties whereas a closed network is the opposite: tightly closed and coupled with strong ties. They theorise that closed networks with strong ties are best for exploitation while open networks with weak ties are best for exploration (schematised above). The Volvo case study confirmed the open-closed theory, and also indicated that as firms shift over time from exploration to exploitation, so too does do the strength of collaborative ties.

Volvo Cars Corporation needed to rely on networked forms of organisation to develop the Volvo C70. Unit volumes were set to 16,000 per year, a very small run, and they were short of in-house development capacity as it was being used up by other models also being launched in the same year. At a dinner during the Detroit Motor Show 2002, the CEO of Volvo agreed with the CEO of Pininfarina to engage in a joint innovation project. The joint venture involved 60% of responsibilities, including manufacturing, going to Pininfarina and 40% to Volvo. By making Pininfarina responsible for implementation of design, through the manufacturing process, the JV ensured that Pininfarina took responsibility and ownership of the process. It avoided a blame-game. Volvo retained responsibility for developing the car concept, including target market, sales forecasts, business case, technical specification.

The Volvo project director shuttled back and forth between Gothenburg and Turin to steer design and coordinate the project. An internal design competition was battled out between Volvo design offices in Barcelona, Gothenburg and California. The California office won and the head of design moved to Sweden, "consistent design being one of the core competences retained by Volvo and representing the major unique selling point of the project" (p756). This way they avoided engineering compromises, aspiring to 'great' rather than 'good'. It was a small team dealing with detailed technical decisions, e.g. retractable hard-top roof that needed a specialist German roof supplier. Contracts and design specifications were used to codify information which zoomed up the vertical channels of the Pininfarina hierarchy (which had a lean rather than bureaucratic structure). They used the Volvo Quality Tracking System to keep problems and solutions on line. The disparate teams socialised frequently: "In the week, we would go to town for dinner and in the weekends, we went snowboarding" (p763).

The case study bore out the theory that strong and weak ties complement each other over time, with one form giving way to another. Weak ties were good for the speedy exploratory phase where knowledge was not complex whereas strong ties were needed at the point when highly complex knowledge needed to be exploited for innovation.

Harryson et al (2008) distinguish between creativity networks and transformation networks. The creativity networks include outside players, e.g. Bang and Olufsen. Transformation networks have the responsibility for making things happen, converting creativity into processes by implementing it, e.g. through manufacture. The transformation network takes over the concept and merges it back into the home organisation, enabled by individuals who belong to both, bridging the network and the organisation. The management implication is that organisations can prevent technological leadership from getting stuck in a rut by introducing external creativity, rather than developing it in-house. A few key people can act as 'spidermen' by building networks that can generate knowledge to be transferred into the firm. The transferring is done by a second type of person, members of the transformation network, who have three characteristics: knowledge, credibility within the parent organisation, and open for a new challenge. Both types need strong social skills.

5.3 Units of Analysis & Types of Organisation

Knowledge in an organisation can be studied at the level of the individual, group, firm or collective such as alliance or network. Nicolini (2011) moved between these levels by using shared activities as the unit of analysis. It is closely linked to the concept of Communities of Practice (CoP) which situates learning within an artisan grouping.

5.3.1 Communities of Practice

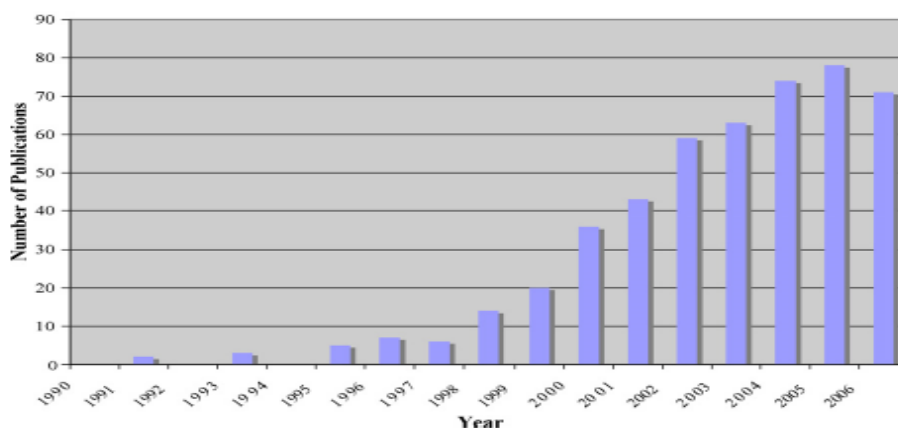
The Scoping Review noted that Communities of Practice is a concept that crossed over into health a decade ago (e.g. Bate and Robert, 2002). It is a popular theory, that groups of like-minded people learn through common purpose and through doing, making it hard to transfer knowledge outside the community. Brown and Duguid (2001) suggest that too much emphasis is placed upon community and not enough on practice. The term lends itself to occupational groupings, e.g. doctors, nurses and managers, and the CoP framework has frequently been used in healthcare research (e.g. Gabbay et al, 2003; Lathlean and Le May, 2002). The idea of knowing in practice (Orlikowski, 2002) describes the process of situated learning that happens when people interact and work together. Lave and Wenger (1991) used anthropological and ethnographic methods to observe the social worlds of midwives, tailors and Alcoholics Anonymous. They highlighted the idea that knowledge lives in social relations and that tacit knowing means becoming an insider in a community of practice (Gherardi,

2001). Amin & Roberts (2008) describe key characteristics of CoP (p354, based on Wenger, 1998, pp125-126) as follows:

- Sustained mutual relationships—harmonious or conflictual
- Shared ways of engaging in doing things together
- The rapid flow of information and propagation of innovation
- Absence of introductory preambles, as if conversations and interactions were merely the continuation of an ongoing process
- Very quick setup of a problem to be discussed
- Substantial overlap in participants' descriptions of who belongs
- Knowing what others know, what they can do, and how they can contribute to an enterprise
- Mutually defining identities
- The ability to assess the appropriateness of actions and products
- Specific tools, representations, and other artefacts
- Local lore, shared stories, inside jokes, knowing laughter
- Jargon and shortcuts to communication as well as the ease of producing new ones
- Certain styles recognised as displaying membership
- A shared discourse reflecting a certain perspective on the world

Amin and Roberts (2008) complain that treatment of CoP has become reified and homogenised. Over 17 years the number of publications on CoP has been expanding, (see Figure 15 based on EBSCO data, August 2007) but what started out as a “critique of orthodoxy explaining economic creativity and innovation as the alchemy of different knowledge inputs (from skills and competences to patients, technology and R&D capability)” (p353) is in danger of becoming a new orthodoxy.

Figure 15. The Expanding Literature on Communities of Practice
(Source: Amin & Roberts, 2008, p355)



They studied 300 publications to offer a typology of knowing with four distinct properties: task/craft based, professional, epistemic/highly creative, and virtual. They differ along the dimensions of knowledge used,

nature of social interaction, the kind of innovation undertaken and the organisational dynamic or interaction. The typology is based on the original sense of 'situated learning' developed by Wenger.

The 'professional knowing' dimension has direct application to healthcare, mobilised in large hierarchical managed organisations (e.g. hospitals) or small peer managed organisations (e.g. legal practices). It contrasts with virtual activities (such as Nicolini (2011)'s telemedicine) which are mediated remotely by technology.

Table 10. Typology of Communities of Practice

Activity	Type of Knowledge	Social Interaction	Temporal aspects	Nature of social ties	Innovation	Organisational dynamic
		Proximity/nature of communication				
Craft/task-based	Aesthetic, kinaesthetic and embodied knowledge	Knowledge transfer requires co-location—face-to-face communication, importance of demonstration	Long-lived and apprenticeship-based Developing socio-cultural institutional structures	Interpersonal trust—mutuality through the performance of shared tasks	Customised, incremental	Hierarchically managed Open to new members
Professional	Specialised expert knowledge acquired through prolonged periods of education and training Declarative knowledge Mind-matter and technologically embodied (aesthetic and kinaesthetic dimensions)	Co-location required in the development of professional status for communication through demonstration. Not as important thereafter	Long-lived and slow to change. Developing formal regulatory institutions	Institutional trust based on professional standards of conduct	Incremental or radical but strongly bound by institutional/professional rules Radical innovation stimulated by contact with other communities	Large hierarchical managed organisations or small peer managed organisations Institutional restrictions on the entry of new members
Epistemic/creative	Specialised and expert knowledge, including standards and codes, (including meta-codes) Exist to extend knowledge base Temporary creative coalitions; knowledge changing rapidly	Spatial and/or relational proximity Communication facilitated through a combination of face-to-face and distanced contact	Short-lived drawing on institutional resources from a variety of epistemic/creative fields	Trust based on reputation and expertise, weak social ties	High energy, radical innovation	Group/project managed Open to those with a reputation in the field Management through intermediaries and boundary objects
Virtual	Codified and tacit from codified Exploratory and exploitative	Social interaction mediated through technology—face-to-screen. Distanced communication Rich web-based anthropology	Long and short lived Developing through fast and asynchronous interaction	Weak social ties; reputational trust; object orientation	Incremental and radical	Carefully managed by community moderators or technological sequences Open but self-regulating

5.3.2 Communities of Practice and Boundary Objects

The concept of 'boundary objects' has been developed (e.g. Carlile 2002) to describe the things that people use to communicate across boundaries, including: repositories such as databases; standardised forms and methods; objects, models and maps. They represent a shared syntax and set of meanings, and give something concrete to gather around.

The idea of communities of practice and boundary objects had been combined by Swan, Bresnen, Newell & Robertson (2007) in biomedical innovation. Oborn and Dawson (2010) connected the notion of CoP as a site of learning and boundaries in their study of cancer specialists working within multi-disciplinary teams (MDTs). They found that the separateness of professionals from different CoPs was reinforced by the MDT and that they struggled to negotiate meaning across boundaries. "As such, multidisciplinary collaboration is not so much to learn *from* each other's talk, but to learn *to* talk in this new arena." (p843). Previous work on MDT contexts described learning through hierarchical structures of authority (e.g. Edmondson, 2003), through projects and team deliverables (e.g. Bechky, 2003; 2006) or through collaboration between networks of specialist communities (e.g. Addicott, McGivern & Ferlie, 2006) where the outputs may not be explicit. MDTs fall within this latter category of tribal groups forced to work together (in this case through the UK Cancer Plan, 2001). Oborn and Dawson were surprised by the 'remarkable consistency in the findings' of their ethnographic study, and even went back to reanalyse their data to double check their accuracy.

Their main finding was that MDTs do enhance learning between surgeons, GPs, oncologists, nurses, pathologists, radiologists and other members of the team. The setting forces professionals to work together, to organise discussions, to acknowledge other perspectives and to challenge assumptions. A theme that ran throughout the paper was the power, authority and dominance of surgeons in the team, over and above other professions (e.g. nurses) and other medical specialists (e.g. oncologists). They concluded that 'the power dynamics that enabled and constrained the boundary processes' might be a fruitful area for further research (p856):

"The boundaries of practice [between disciplines] are a very, very very large potential source of conflict." (Surgeon, Suburb) (p847)

"Consultants have classically been a single practitioner, making their *own* decisions, for their *own* patients. Very much in control. That is how they are trained to be." (Surgeon, his emphasis, Metropolis) (P847)

"We are different tribes of Indians and we have to behave in a tribal fashion to get the job done And the different tribes are moving along at different rates." (Surgeon, Metropolis) (P848)

"I was pointing out to the surgeons that maybe they should audit how much breast cancer there is left when they do a mastectomy, but that experience led me to believe that [questioning the surgeons] is not my role – it was a very bruising experience." (Oncologist) (P853)

Although the focus of the work was not intended to be professional dominance and autonomy, it emerged as a major theme, consistent with other streams of literature on sociology of the professions.

5.3.3 Practice and Sites

Nicolini (2011) focuses on practice and relationships as the site of knowing, as opposed to individuals and actions, building on the work of other theory builders (Lave and Wenger 1991, Chaiklin and Lave 1993, Cook and Yanow 1993, Blackler 1995, Orr 1996, Engeström and Middleton 1996, Cook and Brown 1999, Gherardi 2001, Engeström 2001, Brown and Duguid 2001, Carlile 2002, Orlikowski 2002, Bechky 2003, Nicolini et al. 2003, Swan and Scarbrough 2005, Handley et al. 2006, Gherardi 2006, Suchman 2007, Chia and Holt 2008, Nicolini 2009). Nicolini draws on philosophical concepts of epistemology and ontology to advance the practice-based approach, arguing that 'phenomena such as knowledge, meaning, human activity, and sociality are aspects and effects of the total nexus of interconnected human practices (Schatzki 2001, p2)" (p602). He elaborates the abstract relationship between practice, knowing and 'site' where organisational knowing is 'neither a substance nor a static capability' but is processual and relational, "more an accomplishment repeatedly produced in and through social practices" and "has as much to do with the body as it does the 'mind' (Bourdieu, 1990)" (p605).

Nicolini then grounds the theory in a carefully observed study of telemedicine in G. – a small highly specialised unit that telemonitors chronic heart failure patients within G's hospital – which he compares with an alternative method of doing telemedicine within the town of M. Transcripts of patient-professional encounters demonstrate how 'the knowing transpires through the sayings and doings and in what is said and done" (p609). The site, whether the ward or the patient's home, affects the relationship between clinician and patient. A cardiology patient that phones in his/her clinical readings from home is in a greater position of power and has more discretion than when lying in a hospital bed. The patient becomes the expert, with knowledge that other people want, when

at home, but is more dependent upon the voice of others when visited by the doctor and nurse in the ward. He uses Foucault's view that "to govern is to structure the possible field of action of others" (Foucault 1982, p221; quoted p616), and shows how differing regimes of empowerment are produced by the two practices of telemonitoring. The example below shows how a nurse brokers power between the patient and doctor through the medium of a meeting:

"The nurse, for example, is reluctantly mediating the knowing of the patient for whom Lasix (a powerful diuretic) is causing immense hardship. Lasix has a laxative effect, so a patient should always be within reach of a toilet. The patient has enlisted her family doctor to help find a way to take the medicine in one dose, instead of two or three as prescribed. For the patient this means an enhanced freedom of movement and autonomy. The nurse here is a mediator who translates the knowing in practice of the patient into the meeting. This knowing clashes, however, with that of the cardiologist, who in turn knows that in this way the medicine will have less of the desired effect (he is also annoyed because the patient will have her way). The meeting becomes the place where these two different ways of knowing conflict and where a clear hierarchical priority between the two is established." (p614)

The study deliberately shifts the basic unit of analysis of organisational knowledge from individuals to practices by taking 'bundles of real-time practices and their relationships' as the site of knowing. Telemedicine shows how knowledge is distributed through different people, things and practices. In common with studies of boundary objects he starts from "the fact that the hard work of interlocking behaviours is often delegated to such mundane objects as a well-designed piece of paper" (p617). Like Oborn and Dawson (2010), Nicolini concludes that power and knowing are linked, referring to labour process literature (Knights and Willmott 1990) that views knowing as "a major source of both value and resistance" (p618).

5.3.4 Knowledge Intensive Firms

Knowledge Intensive Firms (KIF), Professional Service Firms (PFS) and consultancy organisations represent a particular organisational form that is of interest to us because of the parallels with professional occupational groupings that work in health care. This subject matter also features in the critical perspectives literature stream which deals with sociology of the professions.

Sturdy et al (2009)'s paper is located within social sciences literature on management consultancy (e.g. Kipping and Engwall, 2002; Clegg et al, 2004), studies of inter-organisational knowledge flow (e.g. Argote et al,

2003) and boundaries (e.g. Merton 1972; Haracleous, 2004). Two views of consultancy are described. The dominant one sees consultants as innovators, bringing new management ideas and practices into organisations, either functionally as carriers of knowledge or more critically as proponents of contemporary capitalism, e.g. "as the shock troops of the new age – the 'generator and distributor of new knowledge', as 'capitalism's commissars' (Thrift, 2005:35; 92)" or "skilled promoters of new management fashions which, when implemented, rationalise away jobs and firms (O'Shea and Madigan, 1998)" (p629). The second, less prevalent perspective, is of consultancy as legitimators of existing client knowledge (e.g. Saint-Martin, 2004).

Either way, the leverage of consultants as skilled knowledge brokers is enhanced because of their status as expert outsiders, 'marginality', 'burden of otherness' (Kipping and Armbrüster, 2002), independence, or even physical location outside the boundaries of the firm.

Sturdy et al use this polarity of innovation-legitimation as a starting point to develop a framework of knowledge flow based on boundaries. They describe physical, cultural (cognitive/emotional) and political boundaries. This accommodates both a functionalist (e.g. basic information transfer through boundary objects (Carlile, 2004) and Szulanski's (2003) absorptive capacity) and a critical view of knowledge flows shaped by power relations.

Von Nordenflycht (2010) developed a taxonomy of professional service firms by isolating three distinctive characteristics: knowledge intensity, low capital intensity and a professionalized workforce. He knitted these into four types of knowledge intensive firms: (i) technology developers, e.g. biotech, R&D labs; (ii) neo professional service firms, e.g. consulting and advertising; (iii) professional campuses, e.g. hospitals; and (iv) classic or regulated professional service firms, e.g. law, accounting and architecture. He links these types and characteristics with a range of managerial challenges and opportunities, e.g. 'cat-herding', muted competition. Von Nordenflycht's paper is original and potentially powerful because he combines all dimensions to predict a likely type of organisational response. Hospitals, due to muted competition, would typically be expected to operate with slack and inefficiency.

An interesting application of this work is the association of workforce type (here, knowledge intensive workforces in hospitals) with organisational ownership. Commercially oriented ownership is minimized in hospitals in favour of trusteeship. This is both predicted by the taxonomy and also borne out empirically. In a US sample, 3 hospitals are publicly traded and 22 are not, even though professional campuses require significant capital

investment. These are either nonprofits (including those run by religious organisations) or state owned. Von Nordenflycht suggests that “distinctive ownership outcomes are driven more strongly by workforce professionalization than by low capital intensity” (p169).

For our purposes this is a significant contribution, because it makes a systematic link between knowledge and organisational form with specific application to health care. It has consequences for public policy which may try to alter ownership forms and energise competition, only to find that the industry does not conform to conventional competitive theory by becoming more efficient and trimming costs.

Figure 16. Organisational Characteristics & Responses

(Source: Von Nordenflycht 2010)

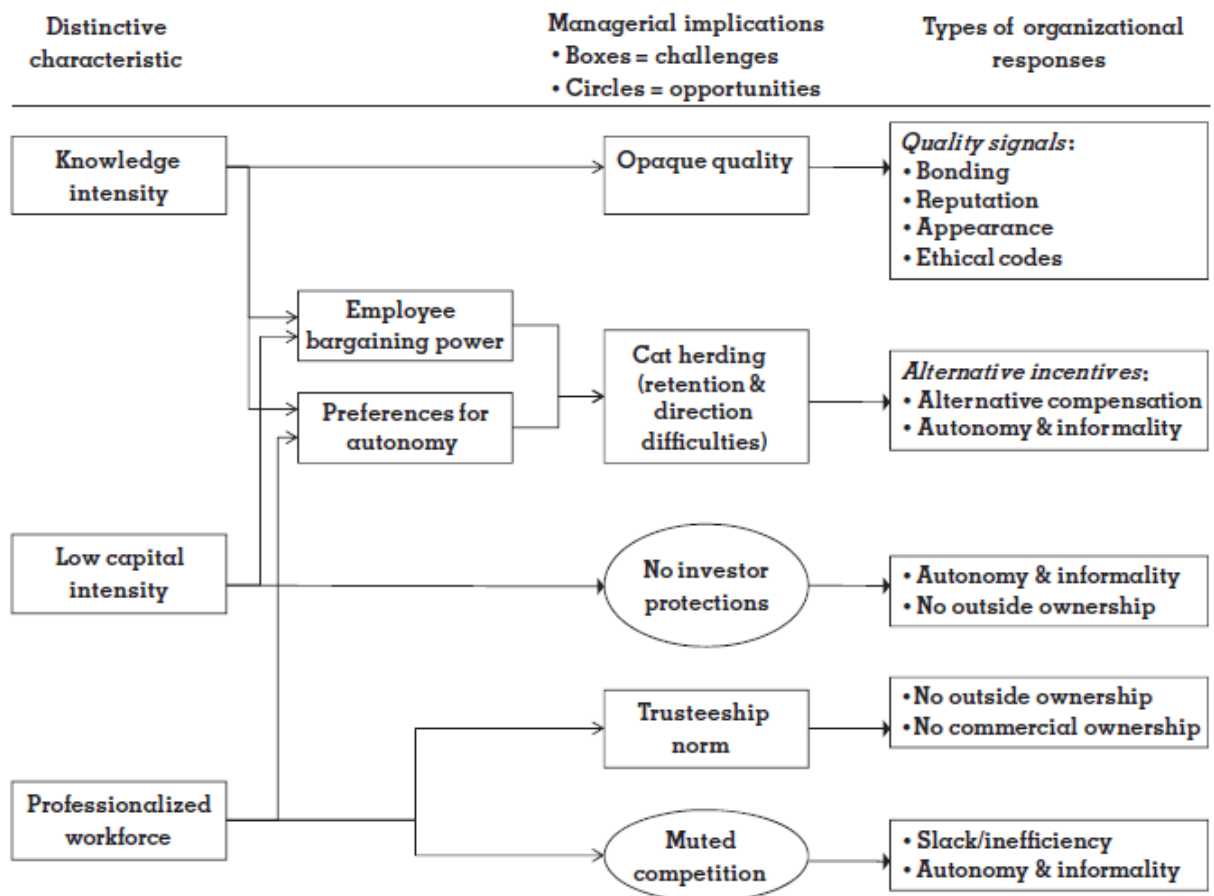


Table 11. Organisational Type and Characteristics, Challenges & Responses
(Source: Von Nordenflycht 2010)

	Characteristics			Challenges & Opportunities					Organizational Responses			
	Knowledge Intensity	Low Capital Intensity	Professionalized Workforce	Cat Herding	Opaque Quality	No Investor Protections	Trusteeship Norm	Muted Competition	Alternative Compensation	Autonomy & Informality	No Outside Ownership	Slack
Technology Developers Biotech R&D labs	x			✓	✓				✓	✓		
Neo-PSFs Consulting Advertising	x	x		✓✓	✓	✓			✓✓	✓✓✓	✓	
Professional Campuses Hospitals	x		x	✓✓	✓		✓	✓	✓✓	✓✓✓	✓	✓
Classic PSFs (or Regulated PSFs) Law Accounting Architecture	x	x	x	✓✓✓	✓	✓	✓	✓	✓✓✓	✓✓✓✓✓	✓✓	✓

5.3.5 Knowledge Type & Organisational Structure

The Scoping Review cited Lam (2000) as an important paper that linked organisational form to type of knowledge, using Mintzberg's (1979) typology. Professional bureaucracy was linked to 'embrained knowledge' in which the knowledge of highly trained individual experts is co-ordinated and standardised by formal education and training. Machine bureaucracy is linked to 'encoded knowledge', in which specialisation, standardisation and control are used in a hierarchical organisation to achieve efficiency and control. Operating adhocracies use 'embodied knowledge' which is individualistic but collaborative. The firms are organic forms with little standardisation, relying on individual experts operating in market-based project teams, e.g. management consultancies. Bureaucracies are pyramidal and hierarchical, involving division of labour and delegation whereas 'the operating adhocracy is the most innovative and yet is the least stable form of organisation' (Lam, 2000, p497).

Sheaff et al (2012) found that organisations such as professional partnerships, co-operatives and similar non-hierarchical organisations (NHOs) play a larger role in health care than is usually recognised. General practices are professional partnerships that handle over 80% of patients' first contacts with the NHS and co-operatives provide much out-of-hours primary care. They deviate from hierarchical corporations because their structure is democratic, with leadership roles allocated through election or by taking turns. Sheaff et al note that fewer than one percent of published research studies examine these forms of organisation and the

studies which do exist raise two main questions: are these types of organisation 'efficient', compared to hierarchies, and do they tend to 'degenerate' over time, reverting to hierarchy?

Wasserman (2008) addressed these questions to some extent by taking Lam's (2000) framework and applying it to 1997-2000 data for 317 professional services firms within the field of venture capital. He postulates that a pyramid, i.e. few senior people and many junior staff, is the most appropriate structure where tasks are codified, divided up and delegated. Firms that invest in later-stage companies fit this mode, since they are travelling a well-trodden path where concrete historical information is readily available to be distributed and analysed by junior staff. Firms that evaluate early-stage candidates for investment are involved in novel decisions where information collection and assessment is part of the learning curve. An inverted pyramid is more likely, where senior staff do everything and delegate little, in an organisation where knowledge cannot be codified and made explicit and where tasks cannot easily be divided up. Here partners rely on tacit knowledge and subjective evaluations. Wasserman provides evidence for the assertion that "it is not products that design organizations, Knowledge does" (Brusconi and Principe 2006, p186).

For healthcare the implication would be that greater autonomy and exposure to new information needs senior input, supporting the idea that 'front-loading' the Emergency Department (described by Edmondson, 2008) by senior clinicians is appropriate.

Wasserman's interpretation is that: "knowledge-based organizations with low knowledge separability jeopardize the quality of their decision making when they go too far in decomposing their work into discrete subtasks, codifying those subtasks, and employing secondhand data collection, in short, in evolving into pyramidal organizations." (p255). He sees a timeline in PSFs (including legal, investment banking, accounting and consulting), in which firms start as counter-pyramids and then transition into the larger, pyramidal organisations that dominate the industries today. This, Wasserman says, indicates that the firms found ways to separate and codify knowledge, freeing up the time of senior partners by deepening division of labour. Or perhaps they were simply prepared to jeopardize quality.

Alliances

Al-Laham et al (2008) look at dynamics of alliances by studying termination of old alliances and initiation of new ones. Roughly half of all alliances end up failing because partners are overoptimistic about the partners' potential

contributions and underestimate the resources needed to manage the alliance. But in knowledge intensive industries, e.g. IT and biotechnology, firms enter into more than one alliance simultaneously. The authors find that the experience of managing alliances in general is more important than the characteristics of specific partners. And firms that have formed previous alliances are likely to enter into new alliances more quickly. It is a learning experience which requires resources, but practice makes perfect, so that “subsequent alliances require fewer resources than past alliances.” It would appear from this study that organisations benefit from polygamy rather than monogamy, since ‘engaging in as many alliances as possible also enables firms to select partners more efficiently, therefore further increasing the overall experience benefits from alliances’ (p360).

Jiang and Li (2009) conduct an empirical study of 127 German partnering firms to show how alliance characteristics (alliance scope and governance) promote knowledge sharing and creation which in turn contributes to innovative performance. We describe their approach in some detail as it gives an insight into the way research in this area of organisational form is typically conducted. Jiang and Li’s study is grounded in theory, identifies a gap in the theory, and then develops hypotheses that can be tested through carefully designed ‘operationalised’ measures. It uses a research framework that links together structure, knowledge transfer and innovation.

Figure 17. Conceptual Framework: Alliances, KM & Performance
(Source: Jiang and Li 2009)

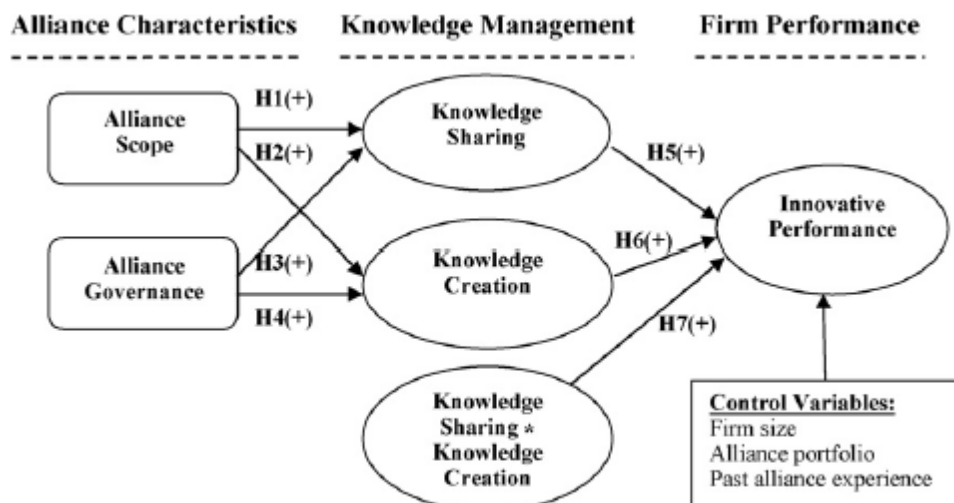


Fig. 1. Conceptual framework.

Their conceptual framework, summarised above, drove seven hypotheses (H1-H7) which they tested against a range of indicators linked to constructs in the framework. *Alliance scope* is a hazy concept, they conceded, but it was operationalised (measured) by using number of activities out of (i) joint R&D, (ii) manufacturing, (ii) marketing. *Alliance governance* was defined by whether an alliance was a joint venture or a contractual alliance. JVs involve equity participation and the establishment of a legal entity or new firm while contractual alliances are a weaker form that do not involve equity participation, the establishment of a legal entity or a new firm. *Knowledge sharing* is measured through surveys covering communication, managerial techniques, R&D progress, product/process development, manufacturing process, marketing expertise. *Knowledge creation* means the motive for knowledge-creation, new operational ideas, new ways to perform the task, new product-specific technologies, new manufacturing – specific skill, new marketing expertise. *Innovative performance* is measured by R&D expenditures, patent counts, patent citations, new product counts.

Their results show that joint ventures (involving equity participation) as opposed to contractual alliances are better at mobilising knowledge. They also show that this mobilisation does have a significant impact upon innovative performance. Previous research supports the idea that alliances involving transfer or pooling of technologies and knowledge will improve performance, both theoretically (Doz and Hamel 1998; Dyer and Singh, 1998) and empirically (e.g. Stuart, 2000; Kale et al., 2002; Zaheer and George, 2004). Jiang and Li contend that alliance-performance relationship continues to be a black-box that does not explain how the process of performance improvement actually works. They try to fill this gap by drawing on knowledge management concepts that (a) alliances facilitate the transfer, sharing and generation of critical information and knowledge (Inkpen, 2000; Simonin, 2004; Gomes-Casseres et al., 2006) and (b) organisational learning provides competitive advantage and produces improved performance for the firm (Grant, 1996; Nonaka, 1994; Jiang and Li, 2008). They also add that 'performance' itself is difficult to operationalise and get around it by using process measures of 'innovative performance'.

5.3.6 Boundaries and Transaction Costs

Much of the debate about organisational form, e.g. comparing networks, hierarchies and markets, is linked to economic theory of the firm (Cowan and Jonard, 2009). Kachra and White (2008) explain how economic theory is used to predict that organisations will set boundaries at the point where transaction costs make it worthwhile to keep knowledge within the firm:

"Organizational and transaction cost theorists argue that information and know-how transfers are best handled within a firm's boundaries, where the transaction costs associated with know-how exchange may be lower than between firms (Allen and Cohen, 1969; Tushman, 1977; Von Hippel, 1987; Zucker *et. al.*, 1996)." (p426)

5.4 Networks

The Organisational Form literature review is interested in the benefit of networks compared to other organisational forms. Over a quarter (22/80) of the papers that emerged through this search were concerned with networks. Turrini et al (2010), in their overview of the literature in the field, define a network as "a set of organizations (and not individuals or parts of organizations) that coordinate their joint activities through different types of peer-to-peer relations" (p529). Weber and Khademian (2008) more generally define networks (p334) as a set of enduring exchange relations established between organisations, individuals, and groups. The two definitions highlight the lack of agreement on unit of analysis, identified by Isett et al (2011) as a problem that has yet to be resolved. If the network is a group of actors that produce an output that no actor could produce alone (Alter and Hage 1993; Isett and Provan 2005; Koppenhan and Klijn 2004), then is the actor an organisation, a professional group, or an individual?

Network or social capital characteristics that impact upon knowledge transfer include: (i) structural (number of relations to other firms, centralized position within a network); (ii) relational (trust, tie strength reflecting closeness of relationships between partners); and (iii) cognitive (shared vision and systems, and cultural distance which hampers transfer to foreign markets). Effectiveness and typologies of networks are considered below.

5.4.1 Effectiveness

Weber and Khademian (2008, p344) show how networks are privileged in the literature, "gradually nudging hierarchies and markets as the foremost means to organize to address complex problems, share scarce resources, and achieve collective goals (Kickert, Klijn, and Koppenjan 1997; Peters 2001; Podolny and Page 1998; Powell, Kopet, and Smith-Doerr 1996)."

Networks, as a means of managing public programmes, e.g. in health, social care, local development and education, have become 'more the rule than the exception' (Milward 1996; O'Toole 1997b; Agranoff and McGuire

2001a, b; 2003a, b; Milward and Provan 2003; Ferlie and Andresani 2000). The rationale is that integration of fragmented services through a network of providing agencies will make the system more effective, improving outcomes through better co-ordination. There are nevertheless doubts about whether these public sector networks really do work (e.g. Provan and Milward, 2001). Turrini et al (2010) argue that these concerns are justified because so far there is no unifying theory about network effectiveness and its determinants. This is in spite of "the exceptional upsurge in theoretical and empirical works on public networks and public network effectiveness since the early 1990s (Mandell 1984, 2001; Agranoff 1986, 1991; Gage and Mandell 1990; Marsh and Rhodes 1992; Alter and Hage 1993; Bardach 1994; Ferlie and Pettigrew 1996; Kickert *et al.* 1997)" (p528).

Turrini et al (2010) adapt Provan and Milward's (1995) study of mental care networks, regarded as a benchmark, to characterise determinants of network effectiveness. They used this framework to review the literature, using keywords that illustrate the diversity of network forms: organisational networks, inter-organisational coalitions, public private partnerships, community partnerships, organisational partnerships, intergovernmental, interlocal, interagency, collaborative initiatives, alliances, consortia, multi-organisational. They concluded that there was no definitive answer to the question "which structural form is best for fostering innovation in networks?" Nor did they find systematic research about the relationship between environmental factors (e.g. resource distribution, political support) and types of network management behaviour. They saw future lines of enquiry as usefully examining network sustainability, ability to achieve goals, innovation and change.

UK healthcare experience shows how previous theories have been superseded. Early thinking argued that unstructured, informal, professional networks were better than hierarchies at knowledge diffusion (Thompson et al, 1991) and that stable structures were counterproductive for the transfer of innovations (Osborne and Browne, 2005). More recent work underlines the importance of professionals in transferring knowledge (Ferlie et al, 2005), consistent with managed or light structured networks. NHS managed clinical networks in the UK (Addicott et al, 2006) mark a shift in this direction, with the qualifier that: "the external control of the national agency has 'corrupted' this managerial tool by directing efforts and attention towards organisational restructuring rather than knowledge sharing (Addicott *et al.* 2007)" (p547).

Klijn et al (2010) discuss effectiveness by considering whether managerial strategies matter for outcomes and which type of strategies are most effective. Their conclusion is that network management does matter and

that dynamics (relationships) are more important than organisational forms. They start by drawing up a typology of network management strategies, styled as 'exploring, connecting, arranging and process design', based on a literature review. Then they conducted an empirical study, surveying individuals involved in environmental projects in The Netherlands, using perceptions of respondents to relate management strategies to outcomes. Their results confirmed the findings of earlier case study work by Meier and O'Toole (2001) (which looked at Texas educational districts), and others (e.g. Walker et al, 2007) that stressed that networking and embeddedness (Huang and Provan, 2007) were positively related to outcomes. In terms of strategies, 'connecting' was the most effective: "for a network manager to identify which actors are crucial in the network and then activate and connect these actors in the network, a manager must have 'connective ability' " (p1076). Organisational form determined by governance process agreements was relatively unimportant. They concluded that "management matters far more than organization."

5.4.2 Effectiveness of Relational Markets

The distinction between a network and a relational market is perhaps only semantic when we are referring to producers' supply chains. Dyer and Hatch (2006) studied the car industry and found that firms using identical supplier chains received different levels of quality and performance. Suppliers to Toyota reduced defects by 50% while the same suppliers serving Ford, Chrysler and General Motors reduced defects by only 26%. Toyota taught the "Toyota Production System" (also called Lean production) to its US suppliers, developing relationships and routines to share learning and improve performance. Toyota was not worried about knowledge spilling over to competitors. The company knew that some of it would, but that capabilities are not easily transferred and the time lag involved would reduce the competitive threat.

5.4.3 Effectiveness, Public Sector and Wicked Problems

Weber and Khademian (2008) link effectiveness to the need to deal with wicked problems in public administration and policy, e.g. reducing drug abuse and teenage pregnancy. Wicked problems are characteristically: unstructured moving targets; cross-cutting through hierarchy and authority structures, policy domains and political interests; relentless, as "similar to a stone dropped in the water, the ripples spread rapidly to have an impact other issue areas." (p336). Weber and Khademian's message is motivational rather than empirical. Effectiveness of networks is dependent upon building collaborative capacity, and a particular mindset is required to foster this collaboration, e.g. a commitment to govern within the rules yet

think creatively; an understanding of the intrinsic inseparability of performance and accountability in wicked problem settings; a persistent commitment to the collaborative process.

A more data-dependent approach is adopted by Askim et al (2008) who combine public sector performance and organisational learning in an empirical study of Norwegian municipal benchmarking networks. They found that benchmarking networks did lead to organisational learning but that, contrary to expectations, large networks did not produce better learning environments, i.e. there was no significant positive relationship between size and learning outcomes. They also identified a political dimension, finding that political competition enhanced organisational learning from benchmarking.

Ferlie et al (2011) used empirical methods to consider networks and their potential for handling wicked problems. They investigated whether or not there had been a radical transition from hierarchical to network forms, drawing evidence from eight different public policy networks within the UK National Health Service. Full transition from hierarchy to network, according to the literature, required support from three key domains: (1) cross-organisational Information and Communication Technologies /databases (where the team found little change); (2) strong Inter Organisational Learning (where the team found little change); and (3) a shift from vertical management to lateral leadership (where the team found more change). The team concluded that there had been a partial transition from hierarchical to network forms. They also contended that the case for network forms "to handle a pervasive 'wicked problems problem' remains compelling". The paper concluded that networks "are a nascent solution that needs more time to develop. Our study provides a (qualified) defence and cautions against a wholesale tilt back to quasi markets" (p322).

5.4.4 Typology of Networks

Isett et al (2011) take an overview of scholarship in networks which, they say, are partly a response to deficiencies in NPM in the face of wicked problems. "Networks are an alternative when markets and bureaucracies fail" (Pi159). They also note that some studies are sceptical of networks on the grounds of performance and accountability (e.g. Freeman 1965; Hecló 1977; Laumann and Knoke 1987; McCool 1989, 1990). They identify three types of network research: (a) policy networks, (b) collaborative networks and (c) governance networks.

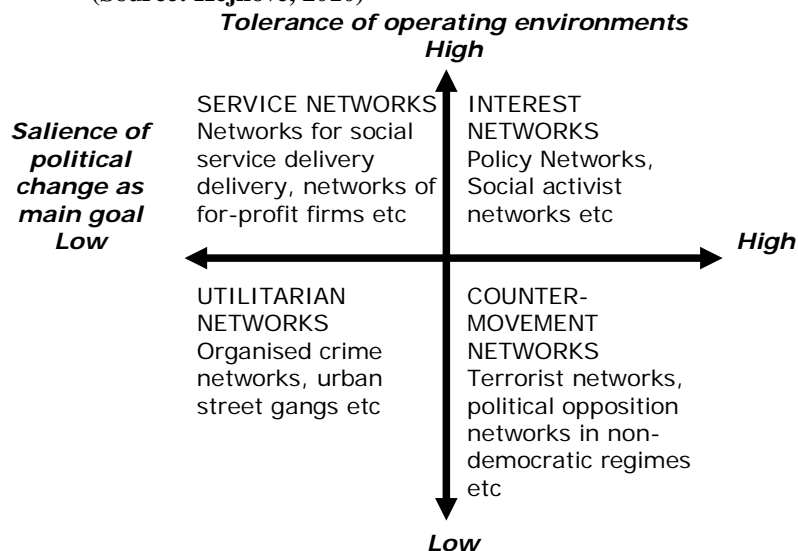
Policy networks, the oldest literature stream, are concerned with decisions on public resource allocation. Collaborative networks are collections of

organisations that provide a service (Agranoff and McGuire 2001b, 2003a; Mandell 2001; Nelson 2001; O'Toole 1997c). Governance networks are co-ordinating mechanisms that focus on a common goal and fuse provision with policymaking, e.g. business improvement districts, environmental projects (Bogason and Musso 2006; Klijn and Koppenjan 2000; Klijn and Skelcher 2007; Rhodes 1997; Sorensen and Torfing 2005).

Hejnove (2010) proposes a typology of networks that step outside the organisational form that we are familiar with at the corporate level. She goes beyond Isett et al's policy/collaborative/governance typology of networks to absorb the dark side, including organised crime and counter-movements such as terrorist networks. A scale of 'tolerance of operating environment' allows policy networks to be polarised against political opposition networks. The tolerance scale reflects the outside-in perspective, i.e. the environment is intolerant and threatens the existence of the network. Political salience is another axis. Urban street gangs, arms traders, human traffickers and for-profit service deliverers are classed as less politically motivated than terrorist groups, opposition groups in authoritarian countries and policy networks. Application of this analysis locates Al Queda in the counter-movement network quadrant, drug trafficking as a utilitarian network, global justice and transportation policy in interest networks and specific local networks in Syracuse and New York in the service network quadrant.

Figure 18. Classification of inter-group networks

(Source: Hejnove, 2010)



Dantas and Bell (2009) produce a typology of networks based on a case study of an oil company, using longitudinal data to examine how knowledge networks change over time. They observe that the analysis of

technological learning has shifted from a focus on capability building in individual firms in the 1980s and 1990s to a study of learning and innovation systems. This translates to a shift from the resource-based and dynamic capabilities approach towards organisational learning approaches, styled elsewhere as absorptive capacity. They characterize the progression from passive learning network to active, to the innovative and finally to strategic. At the start, network members are passively engaged in acquiring knowledge as a by-product of activities. They become an active learning network when they set about using networks to achieve learning objectives, e.g. by adapting technology. Innovation sets in when novel technologies are designed and created through network sharing of knowledge. Finally, in the same company, as the network matures it is used to acquire capabilities and also to distribute it outside the firm's boundaries, based on strategic intent.

5.4.5 Networks, RBV and Power

Tallman and Chacar (2011) define certain types of subsidiary-networks within multi national enterprises as Communities of Practice and show how learning transfers to the Internal Network of Practice. They then make a link with RBV by showing how valuable and rare knowledge can be turned into novel knowledge as a source of competitive advantage.

Rethemeyer and Hatmaker (2008) assess scholarship on network management to be 'resource dependent theory'. Organisations must exchange resources with one another because none possess all the skills they need and supply chains need to be extended. Power coalition processes set in where members cooperate to deny resources to one or more dominant organisations.

Material-institutional resources, e.g. money, staff, knowledge, are distinct from social structural resources, i.e. ties (relationships and communication channels) and roles based on authority which are an outcome of the material-institutional resources. That is to say, positions of authority within a network are dependent upon having more money, more knowledge, more leverage. Ties are set up to mobilise resources and also to cope with interdependence.

While Rethemeyer and Hatmaker explicitly adopt a resource-based perspective to networks, they introduce the critical perspective of authority to consider how things happen in practice. The authors use the network management functions outlined by Agranoff and McGuire (2001b, 2003a) and their relationship to the games and networks context identified by Klijn and Teisman (1997). Their point is to argue that network management

involves competitive behaviour inherent in gaming and is not just about collaboration. They would thus reject the 'collaborative mindset' approach proposed by Weber and Khademian (2008) and introduce a more political and exploitative sensibility.

5.4.6 Social Network Analysis (SNA)

Network structure or Social Network Analysis (SNA) is a stream of work which is theoretically based and highly quantitative in its empiricism. The field is sufficiently well-established to have spawned a substantial secondary literature (e.g. Scott, 2000; Wasserman and Faust, 1994). It is convergent rather than divergent, seeking a bottom-line or answer to a hypothesis, and is logical in its approach. Surveys are used to capture density (sparseness), structural holes, nodes and ties or relationships. The relationship between ties and density, drawing on Burt and Coleman, is a current preoccupation in the literature.

Coleman (1988) highlights solidarity benefits, dependent upon the quality of relationships (tie strength); 'the closure of professional networks makes actors more willing to share tacit knowledge (Adler and Kwon, 2002)'. Burt's (1992, 1997a, 1997b, 2002) view pays attention to the structural configuration of relationships (structural holes), focusing on information and control benefits; sparse networks with many structural holes provide access to diverse information.

The rationale for 'ties' is straightforward as it describes relationships built on trust. The idea is that strong ties are good for transferring detailed tacit knowledge while weak ties are good for more generalised codified knowledge transfer (Hansen 1999, Polanyi 1966 in McFadyen et al, 2009). Weak ties (Kijkuit & van den Ende, 2010, p454) link people belonging to different social circles with diverse information. They consume less time and are easier to maintain, allowing creation of large networks with access to even more diverse information. Weak ties give freedom to generate novel and unorthodox ideas. Tortoriello and Krackhardt (2010) on the other hand found that ties need to be reciprocal (Simmelian) and embedded in a clique to be innovative.

Kijkuit & van den Ende (2010) challenge the low density/weak tie form that they say is favoured by the literature. In a study of networks of 17 ideas for new product development, they emphasise the importance of strong ties in advancing adoption of ideas, with quality of ideas being more important than quantity. They suggested that managers should encourage employees to discuss ideas with good colleagues and friends from other units, before submitting them for review, similar to IBM's 'idea-catalysts' or social

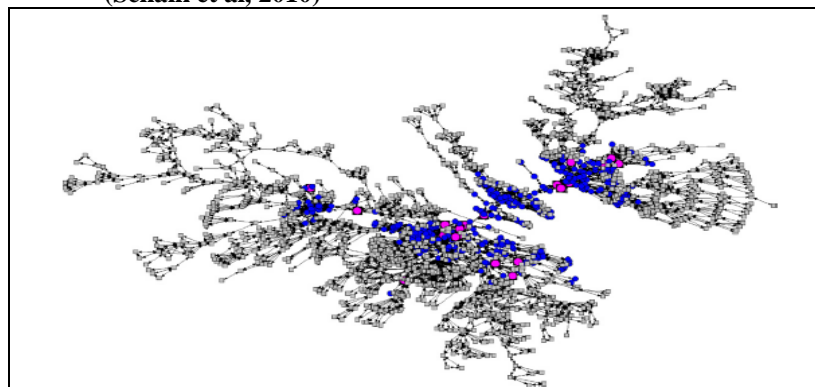
networks (Van den Ende and Kijkuit, 2009). Rost (2011) likewise suggests that strong ties work best when combined with weak network architectures, e.g. structural holes or decentralised positions. These actors, benefiting from trust through strong relationships, come up with the most innovative solutions because they recognise the value of available knowledge and take steps to access it.

Schalk et al (2010) use econometric regression methods to measure strength of strong ties in Dutch higher education. Similarly, van Beers et al (2008) use regression methods to model R&D collaboration in universities and Finland and the Netherlands.

The empirical method used by Rost is typical of researchers in that it uses: (a) patents as a measure of innovation (in this case using forward and backward citations of patents) in a technological area; patent citations, patent co-invention, scientific co-authorship and R&D alliances are common measures used to capture network properties (Cowan and Jonard, 2009); (b) questionnaire survey to operationalise measures such as number and strength of ties or ego networks; (c) regression methods to model and analyse the survey data.

The Figure below is shown here to illustrate how work is frequently presented in this stream of SNA literature. The methods are quite different from those of qualitative research, e.g. case studies used in network enquiry or critical studies of power.

Figure 19. Patent collaboration network (Schalk et al, 2010)



"Patent collaboration network of the study. The figure shows the patent collaborations between 1788 inventors forming the largest component of the collaboration network identified by the snowball method. Pink circle-in-boxes indicate inventors identified in the first stage of the snowball method, that is, involved in collaboration patents between large German automotive firms. Blue circles indicate inventors identified in the second, third, or fourth stage of the snowball method. Pink and blue inventors, overall 515, constitute the study sample. Grey squares indicate inventors identified in the fifth stage of the snowball method." p392

5.5 Knowledge Transfer Processes and Consequences

Knowledge transfer (KT) deals with processes or flows within and between organisations. The theory (summarised by Parent et al, 2007) has developed from knowledge as object to knowledge transfer as capacity. It started with a traditional linear model of knowledge as an asset that could be produced and moved around. Increasingly a relational perspective has been used, taking account of the complexities of human behaviour and thought. Communities of practice and network models of knowledge sharing are based on the concept of knowledge as tacit and ‘sticky’ (Szulanski 1996), based in practice, making it difficult to transmit. The ability of the receiving unit to learn and receive the new knowledge depends upon its absorptive capacity (Cohen & Levinthal 1990) which is “typically found in environments that possess prior related knowledge, a readiness to change, trust between partners, flexible and adaptable work organizations and management support” (Parent et al, 2007, p87).

‘Knowledge sharing’ or ‘exchange’ highlights the social two-to-tango nature of knowledge transfer. There is a large literature on resistance or barriers to knowledge sharing (e.g. Currie and Kerrin 2004, Doolin 2004). Empson (2001) described barriers in a merger of professional services firms as ‘fear of contamination’ and ‘fear of exploitation’. Konstantinou & Fincham (2011) focus on the give-and-take or motivational aspects of knowledge transfer, looking at the balance between sharing and counter-processes. They emphasise the role of ‘exchange’ by using the framework of gift relations, obligation and reciprocity developed by Mauss (2002) as described below.

Table 12. Knowledge Propositions Derived from Mauss

(Source: Konstantinou & Fincham, 2011, p828)

Proposition from Mauss	Application to Knowledge Sharing
A process of constant give and take	Reciprocity underlies knowledge sharing behavior. Even where knowledge appears to be freely shared, underlying reciprocal expectations should be expected.
Exchange embraces contradictions and multiplicity of behavior	People may both give knowledge and withhold it. Negative behaviours (withholding knowledge) may interact with and occur alongside positive sharing.
Gifts given are not inactive	An interest in the transferred knowledge may be retained by the donor. Knowledge creation creates its own demands and needs.

They studied 58 knowledge workers in the Greek subsidiaries of five multinational firms in the commercial, pharmaceutical and telecommunications sectors, all based in Athens. Some workers started as

open-minded and ended feeling discouraged after seeing knowledge fall on stony ground.

Not to share knowledge is an act of small-mindedness . . . It is insane to say that I will hide behind this piece of knowledge and that I will put walls around me so that nobody can know what I know. Of course I will share my knowledge and experience . . . there has been no instance that has discouraged me from sharing knowledge. (Product Manager)

Yes, there have been incidents that have deterred me from sharing my knowledge and that is when I transfer knowledge, I discuss and they don't use it and freeze it. After a second or third time I give up and think that they know what I know, they can come and ask if they want it. (Sales and Marketing Manager)

Sammarra and Biggiero (2008) looked at the nature of knowledge by comparing exchange of three types: technological, market and managerial knowledge. They applied social network analysis to the aerospace industrial cluster of Rome and found that the three types of knowledge were unevenly distributed and exchanged, concluding that the process of exchange is knowledge-specific. Pérez-Nordtvedt et al (2008) considered knowledge characteristics by applying the RBV framework of valuable, rare, inimitable and non-substitutability and found that the RBV characteristics improved willingness to learn. If knowledge was deemed to be valuable then it was more likely to be perceived as attractive and then put into practice, i.e. more effective.

5.5.1 What is Necessary to Make KT Work?

Sheaff et al (NCCSDO, 2004) reviewed the literature to look at the relationship between organisational form and consequence. They found that there was no consistent or strong relationship between organisational size, ownership, leadership style, contractual arrangements for staff or economic environment (competition, performance management) and performance.

In a more recent review, Van Wijk et al (2008) tried to bring a range of features together – characteristics of knowledge, nature of relationships, and effectiveness – in a study of antecedents and consequences of knowledge transfer. They undertook a meta-analytic review of 75 articles selected from 19 journals to look at intra- and inter-organisational knowledge transfer. Antecedents were identified as characteristics of knowledge, organisation and network. They then looked at the relationship between consequences, i.e. performance and innovativeness, and knowledge transfer.

Knowledge ambiguity refers to “the inherent and irreducible uncertainty as to precisely what the underlying knowledge components and sources are and how they interact” (p833), linking tacitness, specificity and complexity of the knowledge which is to be transferred. Van Wijk et al find that knowledge ambiguity is the most important predictor characteristic of knowledge transfer; the more ambiguous the knowledge, the more difficult it is to transfer. It hinders knowledge acquisition more than knowledge exchange, suggesting that it does not leak accidentally but can be communicated through collaboration. This gives a degree of control to the organisation.

Organisational characteristics captured in empirical studies include age of organisation, size, amount of decentralisation and absorptive capacity. The effect of size is mixed but on balance the verdict was that larger organisations have more resource to devote to KT and may also have more diverse knowledge resources. (This also links to absorptive capacity which increases, the greater the existing experience and related knowledge there is in the organisation). The idea that younger organisations are more adept at learning than older organisations is not really supported by the evidence which is inconclusive on age. Theoretically, decentralisation is expected to make knowledge transfer easier by broadening communication channels, aiding motivation and freedom of exchange. Decentralisation is no longer regarded as important in recent empirical work, although older research suggests a positive relationship between decentralisation and organisational KT. Absorptive capacity, the third and most prominent organisational characteristic to be considered, refers to “the ability to recognize, assimilate and apply new external knowledge (Cohen and Levinthal, 1990; Lane et al, 2006; Zahra and George, 2002)”. The empirical evidence is regarded as being clearly in support of absorptive capacity.

Van Wijk et al (2008) find that knowledge transfer does improve a firm’s performance. The firm is able to develop capabilities which are difficult to imitate and, by learning about customers, competitors and regulators, are better able to respond to their environment. The main benefit, however, appears to be through KT within firms rather than between firms. This suggests that strategic alliances are less important than the internal ability to refine and exploit knowledge.

The Van Wijk et al paper is helpful in summarising the large body of quantitative empirical work that appears in academic literature and patterning it. They note methodological issues, e.g. most work is cross-sectional rather than longitudinal; 80% rely on surveys; non-survey studies use patent citations as a common measure for both knowledge transfer and innovation, calling measurement definitions into question. The managerial

implication (consistent with Klijn et al, 2010) is that firms need to focus on the strength and quality of relationships within the organisation, improving the level of trust and cooperation. This will enhance the internal flow of knowledge and will restrict leakage outside as it will still be ambiguous to rivals. Cognitive capital is also crucial, not least to enabling organisations to assimilate and apply knowledge through absorptive capacity.

5.5.2 Cognitive Knowledge Transfer – Organisational Learning

Amy Edmondson (2008) urges organisations to hone their competitive edge by creating a safe learning environment. She contrasts the performance of General Electric, which posted a profit of \$22.5 billion in 2007 with that of General Motors which posted a record loss of \$38.7 billion in the same year. GE's success is associated with 'execution-as-learning' whereas GM is regarded as something of a dinosaur that pursues 'execution-as-efficiency'.

The message is that an organisation needs to give space to employees to reflect, experiment and make mistakes if it is to thrive. A psychologically safe environment is essential. There needs also to be enough time to learn (consistent with the RBV idea of organisational slack, required for innovation and growth). A safe environment will prevent people from hoarding ideas and knowledge. Edmondson sets out four approaches to day to day work needed to 'figure out how to learn quickly while maintaining high quality standards,' using examples from health services:

- Use the best knowledge available to develop specific process guidelines – a health care organisation with over 100 facilities, including 21 hospitals, developed detailed processes for disease treatment among 60 teams of experts; "Children's Hospitals and Clinics of Minnesota convenes teams to review and standardize different types of care, using principles of lean manufacturing" (p66);
- Enable employees to collaborate by providing real time information – this involved developing an IT infrastructure to co-ordinate patient care, e.g. through automated alert functions when prescribing drugs to a patient;
- Capture process data to discover how work is being done;
- Study this data to find ways to improve.

An Emergency Department was used as a classic case of knowledge-based environment that needs to learn quickly. In this sort of setting, "when work is interdependent and in flux" then fear can be dangerous:

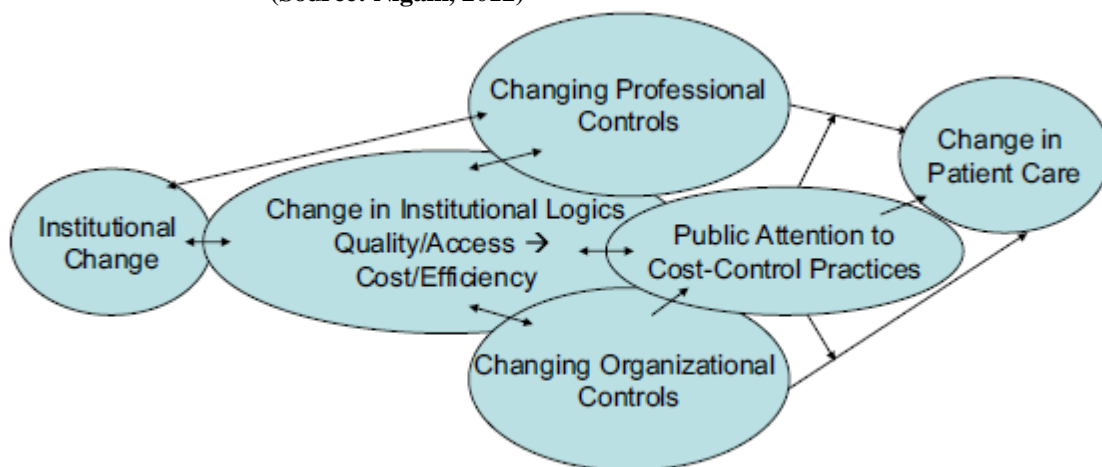
"At any moment, a patient with a previously unheard-of set of symptoms might walk in, and specialists from several departments – reception, nursing, medicine, laboratory, surgery, pharmacy – need to coordinate their efforts if the patient is to receive effective care. These people must

resolve conflicting priorities and opinions quickly. As in most knowledge organizations, room to maneuver is extraordinarily high. People rely on their own and their colleagues' judgement and expertise, rather than on management directions, to decide what to do." (p63)

Edmondson (2008) noted in passing that the Children's Hospitals and Clinics of Minnesota used principles of Lean manufacturing. Radnor et al (2012) studied the application of Lean principles in healthcare in the UK public sector. They found significant differences between the public-private contexts which inhibited full use of Lean systems. The first relates to value: payer and customer are one and the same in the private sector but, in the UK health sector, care is free at the point of delivery; payment comes via the government as a single payer. The concept of value is therefore less clear-cut than in the private sector. Secondly, healthcare is designed to be capacity-led, with limited discretion to innovate with freed-up resources. They concluded that organisational features, rather than professional-managerial tension, limited health services' ability to exploit Lean.

Using a different national context, Nigam (2012) develops and tests a model that links institutional change, organisational and professional controls, public attention to cost-control practices and patient care in the US. She finds that managed care insurance promotes the diffusion of cost-effective patient care practices. The implication is that the multiple payer insurance model found in the US provides levers that can drive change in organisations, professions and performance. (Porter and Teisberg (2006) make this point but conclude that cost-control measures are chasing the wrong outcome, favouring efficiency over results, as discussed earlier in relation to RBV).

Figure 20. Impact of institutional change on patient care
(Source: Nigam, 2012)



5.5.3 Informal Routines

Wilkesmann et al (2009) conducted a survey within German hospitals to produce examples of learning and processes of knowledge transfer, based on motivation. They found that intrinsic motivation to share knowledge for the benefit of the patient is important and real (Osterloh and Frey, 2000). Their conclusion was that the most important factors for learning were culture (consistency, i.e. a fair and trustworthy culture, for doctors; and empowerment for nurses) and informal breaks (for both doctors and nurses).

While the idea of 'breaks' might sound trivial, we are building up a picture through multiple studies that links organisational learning to spare time, described in RBV as organisational slack, and a trustworthy or consistent culture.

5.5.4 Innovation

We omitted the term 'innovation' from our search for three reasons: (i) organisational form rather than innovation is the focus; (ii) we piloted its inclusion and found that it generated a vast number of references; (iii) the field has been ably surveyed by Greenhalgh et al (2004, 2005). Nevertheless, despite its exclusion, it emerged as a major theme in this search.

Innovation represents both a process and a consequence. It is used as a description of outputs and outcomes in terms of products and performance, as a process for making it happen (knowledge creation), as a mechanism for transferring (networks and alliances) but also as a change process in the organisations themselves, e.g. networks may represent an innovation as well as being a means for diffusing innovative knowledge. At least a quarter of papers retrieved are directly concerned with innovation, often in the form of:

- Structures: 'innovation networks' (e.g. Baum et al, 2010; Cowan and Jonard 2009; Sammarra and Biggiero 2008) or 'social networks for innovation' (Kijkuit and van den Ende, 2010); alliances (e.g. Phelps 2010);
- Flows: innovation being spread through knowledge transfer, e.g. cognitively through organisational learning (Nielsen and Nielsen, 2009), or through ties within networks, (e.g. McFadyen et al, 2009; Tomlinson 2010);
- Generation: innovation as a form of knowledge creation, for example through the mechanism of social capital (Rost 2011); innovation linked

to performance (Maurer, Bartsch & Ebers, 2011; Martinez-Sanchez et al 2009)

Tether and Tajar (2008) describe three modes of innovation: product-research mode, process technologies mode and organisational-cooperation mode. The product-research and technologies are technological modes of innovation that, they say, is well established in the literature. The third mode is a form of organisational innovation which is less well explored. Through an empirical survey of the innovation orientations of 2500 European firms, they established that high-technology firms are more likely to engage in product-research, low-tech firms in process-technologies, while the organisational-cooperation model involves supply-chain practices in trade and distribution services. Innovation in services is 'soft' rather than technological, involving organisational and relational changes within supply-chains or networks. This points up the way organisations are both a conduit for innovation and the result of innovative practices. Tether and Tajar explicate their logic in diagrammatic form below.

Figure 21. Modes of Innovation
(Tether & Tajar, 2008)

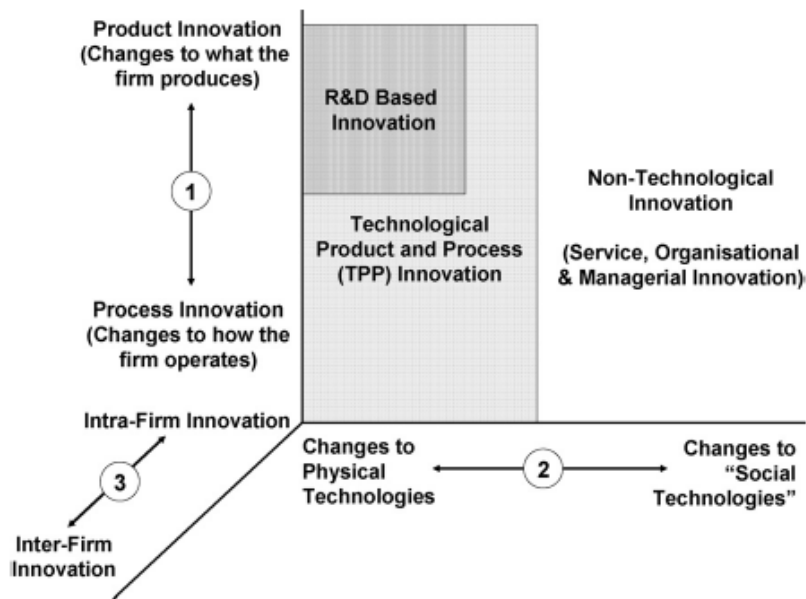


Fig. 1. A simple model of firm-based innovation and its measurement.

This modal distinction, they argue, is relevant to workforce skills. The science-based/R&D mode of innovation relates to a supply of elite labour in the form of highly trained scientists and engineers and is important to R&D firms and universities. The devolved form of innovation, on the other hand, described by the organisational-cooperation mode, relates to a form of knowledge which is more distributed than in the classic R&D mode and requires greater involvement from the general workforce in innovation and problem solving activities.

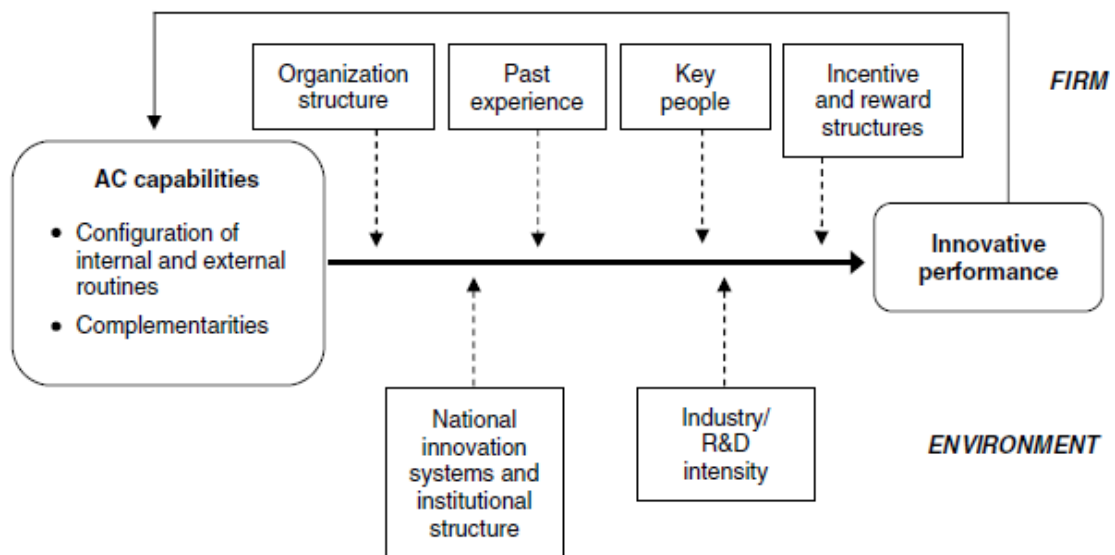
Tether and Tajar's paper is useful in making a distinction between specialised knowledge and the diffuse and ill-defined (summed up as tacit) knowledge that is used to solve problems at organisational level. It calls to mind Kijkuit & van den Ende (2010)'s notion that ideas-catalysts among friends and colleagues (with strong ties) are a good vehicle for innovation.

5.5.5 Absorptive Capacity Routines & Innovation

Absorptive capacity (AC) has emerged as an important theme throughout this review. It is captured explicitly within the RBV search and has also been thrown up by this search relating to organisational forms, allied to learning as a form of knowledge transfer.

The ubiquity of AC is explained by Lewin et al (2011) because it has acquired the characteristics of an umbrella concept (Hirsh and Levin 1999, Meyer 1991) in literature that has proliferated to over 10,000 published papers, chapters and books over a period of 20 years since Cohen and Levinthal (1990) introduced the construct in a paper in the Economic Journal entitled 'Innovation and Learning: the two faces of R&D'. The specific nature of AC routines, however, remains a black box. Lewin et al assess the validity of AC as a bundle of routines that can be separated into internal capabilities and external capabilities.

Figure 22. A Model of Absorptive Capacity and Innovation Performance (Lewin et al., 2011, p92)



Their paper is highly theoretical and carefully argued, working through the micro-economic components that support the concept of routines and processes as capabilities within a firm. While placing AC within abstract

theory, the logic is quite simple: internal processes, such as sharing knowledge and superior practices across the organisation, are distinct and need to be combined with external meta-routines such as learning from partners, suppliers, customers, competitors and consultants. The schema above shows how AC capabilities link innovative performance, through the medium of organisation structure, experience, key people and incentive and reward structures.

Lewin et al's analysis is consistent with Harryson et al's (2008) depiction of 'spidermen' and other key people as knowledge mobilisers, and it is also consistent with Edmondson's (2008) idea of the execution-as-learning in a safe learning environment. The difference is that the focus of AC here is upon the activities themselves, i.e. the routines or processes, rather than the organisational structure, the actors (people) or the environment. Lewin et al are trying to get away from indirect proxy measures that are often used in the literature, e.g. R&D expenditure, patents and patent citations, that are not very useful in industries that do not use formal R&D processes. By focusing on practice, there is greater kinship with Nicolini's (2011) account of telemedicine as a site of knowing and learning.

5.6 Concluding Discussion: Overview & Implications

The literature reviewed in this chapter proved to be diverse, covering a range of organisational forms (consistent with our search terms that included network, partnership, hierarchy, market, knowledge intensive firm, professional service firm, communities of practice and strategic alliance) and academic disciplines, from philosophical to econometric. The literature deals with flows or knowledge transfer across these structures, e.g. through social relationships or learning processes.

There is a large body of theoretical work supporting the intuitive idea that organisations built on relationships of trust, rather than hierarchical bureaucracies, are better at mobilising knowledge. This continues to be refined and developed. Empirical analyses of network structure, using Social Network Analysis, are usually highly quantitative, involving statistical regression models that link a measure of knowledge creation (e.g. patent citations) with number and spread of ties and relationships. Neither the quantitative nor qualitative empirical work, based on interview, observation and case study, provide hard and fast evidence to support the proposition that networks are best. The message that seems to be emerging, both empirically and theoretically in relation to organisational form, is one of fluidity and transition, in effect a need to be adaptable or 'ambidextrous'. It is difficult to point to a single well defined structure, take a snapshot and

judge it to be superior to an alternative well defined structure. If a generality can be made it seems to be that relationships trump structure/form.

This is not inconsistent with the idea that networks are effective, but it allows for the possibility that a hierarchy/market that exploits good relationships is better than a network that harbours poor relationships. Power, authority and resource hoarding may feature in networks (e.g. Rethemeyer and Hatmaker, 2008) whereas relational markets can foster cooperation and innovation (Dyer and Hatch, 2006). It links with the resource-based view which argues that processes, routines, resources, capabilities (which includes relationships and social capital) are more important than structure.

In summary, contrary to Proposition 3, organisational design appears to be less important than we anticipated. Rather than focusing on organisational design, the message from the literature is that Boards would be well-advised to place their energy into fostering strong relationships of trust and psychological safety within the workplace.

5.6.1 Implications for Reflective Practitioners

Themes that emerge are:

- Nature of knowledge: exposure to new information needs 'front-loading' by senior clinicians (e.g. Emergency Department). Knowledge-based organisations need to be cautious about breaking up tasks into too many discrete subtasks. This is a warning that developing a pyramidal structure and codifying professional tacit know-how may compromise quality. It counters the trend over some years to delegate and cascade discrete components of work to lower grades.
- 'Management matters far more than organisation'. Connective ability of individuals is more important than organisational structure when it comes to making organisations effective.
- Knowledge acquisition is enhanced, i.e. people are more willing to learn and put it into practice, if they perceive the knowledge to be valuable.
- The strength and quality of relationships within the organisation will enhance the internal flow of knowledge and will prevent it from leaking outside.
- The most important learning factors are culture (consistency for doctors and empowerment for nurses) and informal breaks (for both doctors and nurses). It resonates with the idea of retaining organisational slack or head-room for innovation and growth.

6 Knowledge, Research & Evidence in the Healthcare Literature

This chapter addresses a gap that emerged following the journal searches into RBV, critical perspective and organisational form. The strategy of using high impact peer reviewed journals had ensured that we accessed good quality contemporary literature. We were aware, however that (a) it provided insufficient reach to health service literature, and that (b) by drilling into the three domains, the enquiry risked becoming detached from more practitioner and health care based papers on the Knowledge Mobilisation question which had motivated the study.

We remedied this by repeating the database search into Knowledge, Research and Evidence which had been undertaken in the Scoping Review. The same search terms and databases were deployed (Appendix 2) but the period was updated: 2008-2011, compared to 2000-2008 in the Scoping Review. The literature was analysed in the light of the three domains being explored in this review and structured accordingly.

This chapter uses terms that were drawn from the Scoping Review (e.g. knowledge exchange, knowledge translation, research utilisation) and so are not redefined here. The papers have been coded to a range of fields, e.g. nature of knowledge, type of knowledge, context of the study such as organisation or staff discipline. A strong pattern, consistent with the Scoping Review, is emergence of 'Research Evidence' as the major Nature of Knowledge category. It accounts for half of the sample of papers (24/46 or 30/66 where papers were coded to more than one domain). Production of Research and Evidence distinguishes health care knowledge mobilisation papers from generic studies, where 'Knowledge' dominates and 'Research Evidence' rarely features.

6.1 Resource based view of the firm

This review explores healthcare papers that illuminate and challenge how the resource based view could be aligned with healthcare organisations. Apart from its neo-positivist assumptions, the RBV becomes problematic as it is aimed at private sector firms with a principal motive of gaining competitive advantage. Given the increasing marketisation and reforms of the NHS, some of these assumptions may be valid in the context of future reforms. However, the starting point of this review is to examine what the RBV conditions may mean in a healthcare setting:

A **valuable** resource is one that will allow a firm to improve its efficiency and effectiveness. In order to achieve this value creating condition, the organisation is assumed to outperform its competitors or overcome some of its weaknesses. In a healthcare setting, this implies any resource or capability that will enhance the overall efficiency and effectiveness of operations.

A **rare** resource is one that has value due to its scarcity under market forces which enables the resource to gain above average returns and, in turn, secure competitive advantage. For competitive advantage in a healthcare setting, we translate a rare resource as a scarce resource that allows specialisation and/or the improvement of patient health outcomes beyond existing norms.

An **inimitable** resource is an idiosyncratic resource that cannot be imitated easily and is normally held by one firm. What makes the resource inimitable is that it is knowledge based or socially complex where making any connection between the resource and a firm's performance becomes causally ambiguous. There may be cost disadvantages for other healthcare providers duplicating such resources or capabilities.

An **organisation** resource is the capability and capacity of organisational processes to exploit resources. This can include formal reporting structures, management control systems and compensation policies. In a healthcare setting, we examine those organisational processes that allow exploitation of valuable, rare and inimitable resources.

6.1.1 Valuable resources in a healthcare setting

The valuable resource in most healthcare settings (in the context of this Knowledge Research Evidence search) is clearly the research evidence as shown in Table 13. What is less clear is how best this resource can be utilised in the hands of professionals on the ground. Many scholars adopt a unidirectional 'sender-receiver' model of knowledge translation and explore the most appropriate medium to bring this about. For instance, Tanna et al. (2011) surveyed 803 physicians internationally to see if e-mail alerts could make a difference to research utilisation. Their findings showed that while familiarity with medical literature improved, most physicians did not feel their medical knowledge improved with this intervention. Part of the problem lies in the lack of interactivity, reinforcement or feedback with other colleagues. Awareness in itself does not lead to behavioural change. It is the socio-cultural context that is missing. It is unclear whether e-journal clubs or any other web-based application would improve knowledge

translation unless the underlying social, cultural and political dimensions are taken into account.

Baumbusch et al. (2008) consider a participatory approach to knowledge translation; a 'knowledge interaction' rather than a 'knowledge sharing' approach. This involves collaboration between researchers and practitioners but the outcomes could be fuzzy. At one end, this approach may result in little more than a 'sender-receiver' model with little commitment on either side to any encounters whereas, at the other end, there are possibilities for real dialogue and exchange leading to new understandings for both parties. This approach moves beyond the 'push' motive of researchers to disseminate their findings and the 'pull' motive of practitioners to engage their decision making more fully in evidence based medicine. This collaborative approach implies mutuality and reciprocity from both sides. The power dynamics and potentially unequal power relations between researchers and practitioners were acknowledged but the difficulties in achieving a common goal were downplayed. Gagliardi et al.'s (2008) study emphasised group dynamics in the knowledge exchange process and the important role played by socio-emotional issues, clinical decision focus, use of facilitators and disagreements. The symbolic interactions and power interplay between professionals was less evident in this analysis.

This theme of collaboration is further explored by Mitchell et al. (2009) who propose a diversity of partnerships between researchers and decision makers. In order to enhance knowledge exchange, they propose different conceptual dimensions for studying partnerships: decision maker involvement in research and researcher involvement in decision making, investigator vs decision maker driven research, stages of research and decision making, discrete programs vs long term reciprocity, formality and structure of linkages, active and passive involvement and concentrated vs diffuse linkages. No firm conclusions are provided apart from capacity building on both sides and the need for funding bodies to consider core funding of research centres rather than individual programme funding. The levels of involvement are most problematic in this conceptual model. What levels of capacity building are needed to get researchers and decision makers participating fully in each other's activities? What are the most appropriate levels of formal and informal linkages in a particular context? The issue of informal linkages is partially addressed by a conceptual framework for electronic communities of practice proposed by Ho et al. (2010). A prescriptive set of guidelines is forwarded including problem focused, distributed leadership and shared identity. The emergent qualities of communities of practice are not favoured or the complexities of power relations between interprofessional learning and practice.

Networks provide a valuable innovative resource in bringing researchers and practitioners together but are often characterised as complex and continuously evolving. The interests and goals of actors within these networks can be dynamic and diverge over time. There is a role for independent 'knowledge brokers' such as the UKCRC Centre for Excellence for Public Health (McAneney et al., 2010) to bring these divergent interest groups together to aid knowledge translation and foster intra and inter network connections. The goal of such knowledge brokers to facilitate transdisciplinary research is open to question. There are few incentives or reward and recognition schemes in universities or hospitals to promote and encourage greater involvement and engagement between potentially disinterested professionals.

Technological innovations can provide valuable resources in healthcare helping to improve clinical decision making, patient care and other organisational processes. However, the adoption and assimilation of new technologies can be quite low. Robert et al.'s (2010) meta-analysis of 99 empirical studies emphasised the formal and informal decision making processes at individual and collective levels. They argue that process models are needed to better understand adoption and assimilation processes and how they become part of organisational routines in practice. These processes are complex and situated and not well understood. Adoption of innovations is likely to be slow at national levels as little is known on how collaborative routines emerge in organisations as there is a lack of consensus in findings from different theoretical perspectives. Similarly, Jbilou et al.'s (2009) quantitative study of 942 decision makers in Canadian healthcare organisations found that individual factors were more important in ICT utilisation and organisational innovation development. Their findings showed that leadership abilities, social networking skills, attitude and independence helped to stimulate innovation. Organisational factors were found to have no impact on innovation. Despite these surprising results, the main interventions proposed are to promote cultural change to aid technological adoption rather than individual personal development.

A study on health information technology innovativeness in Canada (Pare et al., 2010) found that clinical systems were not widely adopted in hospitals even though they were valuable in reducing errors and improving security and clinical decision making. Financial barriers and competing priorities provided the greatest challenges to their implementation. This was most evident in the implementation of emerging technologies such as bar coding for patient identification, biometry and bedside terminals.

Table 13. Valuable resources in the healthcare literature

Citation	Nature of knowledge	Type of knowledge/ knowing	Type of Paper	Context	Knowledge Mobilisation Theory	Research Utilisation Theory	RBV Properties
Baumbusch (2008)	Research evidence	Knowing as Process	Qualitative	Nursing	Interactive model	Process and content	Valuable
Boivin et al. (2008)	Clinical guidelines	Knowing as Process	Qualitative	Healthcare	Socio-political dimensions	Decision technologies	Valuable
Currie et al. (2008)	Patient safety	Knowing as Process	Qualitative	Teaching hospital	Systems thinking	Political and cultural	Valuable
Gagliardi et al. (2008)	Collaborative problem solving	Knowing as practice	Mixed	Healthcare	Knowledge exchange	Knowledge exchange barriers	Valuable
Orendorff et al. (2008)	Research evidence	Taxonomic	Qualitative	Hospitals	Sender-receiver	Trust and interaction	Valuable
Jbilou et al. (2009)	Research evidence	Taxonomic	Quantitative	Healthcare decision makers	Knowledge networking through ICT	ICT utilisation and organisational innovation	Valuable
Mitchell et al. (2009)	Research evidence	Taxonomic	Qualitative	Health service partnerships	Involvement and capacity building	Partnerships	Valuable
Ash et al. (2010)	Best practice	Taxonomic	Qualitative	Clinical sites	Use of clinician leader	Clinical decision support systems	Valuable
McAneney et al. (2010)	Research evidence	Taxonomic	Quantitative	Healthcare	Collaboration around mutual goals	Knowledge brokerage	Valuable
Ho et al. (2010)	Research evidence	Taxonomic	Conceptual	Healthcare	Interprofessional collaboration	Electronic CoPs	Valuable
Pare et al. (2010)	Research evidence	Taxonomic	Quantitative	Hospitals	Structural, financial. Leadership	Health information technology	Valuable
Robert et al. (2010)	Tacit-Explicit	Taxonomic	Systematic review	Adoption of new technology	Actor-network theory	Routinisation theory, structuration theory	Valuable
Tanna et al. (2011)	Research evidence	Taxonomic	Quantitative	Healthcare	e-journal clubs	E-mail alert service	Valuable

Clinical decision technologies have been a valuable resource resulting in significant impact on practice; in particular clinical practice guidelines and patient decision aids. This is about summarising research into clear, concise and user friendly formats. However, Boivin et al. (2008) argue that such decision technologies are value laden in terms of clinician and patient values rather than being value free. Such technologies need to be seen in their social context especially in terms of the normative assumptions of any professional or patient community. Contradictions may arise in terms of patient needs and what is considered 'best for them' by policy makers and the professional communities; coined as the 'politics of effectiveness'. The complexities acknowledged here go beyond the quest for optimal individual characteristics of the sender and receiver for the transfer of clinical guidelines or best practice (Orendorff et al., 2008). Ash et al.'s (2010) ethnographic study emphasised the successful implementation of clinical decision support systems relied on adopting best practice in the field and the need for clinical leadership. However, the socio-cultural and historical backgrounds of the hospital were ignored.

6.1.2 Rare resources in a healthcare setting

Our starting point here is to explore scarce resources that are likely to improve efficiency and effectiveness in healthcare settings (see Table 14). This may mean specialisation that allows healthcare providers to achieve patient outcomes beyond the norms or it may imply new capabilities or capacities found in a few organisations. We argued that partnerships provide a valuable resource in the knowledge translation process. However, intersectorial partnerships (Boydell et al., 2008) are considered rare between different agencies and government bodies. Where this occurs it allows bodies to emerge from their 'silo mentality' and engage in constructive dialogue and enhance their capacity to act. Accumulating evidence for its own sake is seen as missing the point. Instead intersectorial partnerships such as Health Action Zones allow different agencies to come together to address the needs of deprived communities and reduce inequalities in health. They make new sense of the world through engaging in different perspectives and changing the world view of the underlying problems and potential solutions. These partnerships are seen as generators of intangible assets and increase the conditions of greater impact through enhancing the possibilities of 'connecting-learning and acting'. This builds on Foucault's (1970) 'conditions of possibility' and goes beyond the instrumental 'input-output-outcome' frames of policy development and evaluation.

Carr and Clarke (2010) develop our understanding of intersectorial partnerships by exploring the role of managers in different forms of

entrenched and engaged approaches to learning. It is about breaking free from entrenched patterns of practice that maintain the status quo towards a more questioning and engaged approach towards knowledge mobilisation. This study shows that managers can play an important role as knowledge brokers and facilitate learning activities to help change mindsets. Opportunities to network can spark lively debate and engage participants to go beyond expected norms. Managers can also encourage 'error harvesting' by developing new insights on what didn't go well and exploiting such missed opportunities in a predominant culture that values success.

Doane and Varcoe (2008) shift the debate of evidence based healthcare more towards inquiry based approach that is embedded in everyday practice. Epistemologically this is about knowing in action where each entity is mutually constituted. Instead of focusing on a theory-evidence-practice notion of knowledge translation, they argue for a re-orientation of knowing in practice. Following Ricoeur (1991), the 'knowing nurse' follows routines and actions that are situated in practice. Action is privileged over thought and espoused mental models. The ideology that connects theory, evidence and practice together is the notion of the expert professional possessing the power and authority 'to act professionally'. Embodied knowing is considered central to inquiry based practice and evidence is considered in the context of knowing processes of how best to act in a given situation. Action is reshaped when a gap between theory and practice arises. This conception of knowing in practice is rare (in this KRE search) as much of the literature is focused on a taxonomic approach associated with tacit and explicit knowledge.

Ferlie et al. (2012b) provide a theoretically novel perspective on evidence based medicine. Based on managed clinical cancer networks, they show that governance of new forms of health care organisations are better conceptualised through a Foucauldian perspective rather than 'new public management', professional dominance or market led perspectives. Such a perspective illuminates evidence based medicine (EBM) as a power/knowledge nexus and the 'technologies of the clinical managerial self'. By focusing on actions, the power/knowledge nexus acknowledges the privileging of elite knowledge producers over consumers and patients who take a peripheral role. Clinical managerial hybrids, namely clinicians who were drawn into managerial hybrids, were found to be engaged and enthusiastic as local governing agents. This was interpreted as a form of subjectification and their identity or 'technology of self' was seen to shift from pure EBM values towards other knowledge bases such as service improvement mentalities.

Table 14. Rare resources in the healthcare literature

Citation	Nature of knowledge	Type of knowledge/ knowing	Type of Paper	Context	Knowledge Mobilisation Theory	Research Utilisation Theory	RBV Properties
Boydell et al. (2008)	Tacit embodied knowledge	Taxonomic	Qualitative	Health Action Zones	Connecting, Learning, Acting	Deliberative democracy	Rare
Carr and Clark (2010)	Medical and social	Knowing as Process	Qualitative	Health Action Zones	Entrenched & Engaged managers	Nurse manager	Rare
Doane & Varcoe (2008)	Knowing in Action	Knowing as Practice	Conceptual	Nursing	Inquiry based practice	Situated theory	Rare
Kerner (2008)	Research evidence	Taxonomic	Systematic review	Healthcare	Partnerships	Contextual & Population fit	Rare
Jansson et al. (2010)	Research evidence	Taxonomic	Qualitative	Non-profit organisations	Involvement of frontline practitioners	Institutional partnerships and brokers	Rare
Ferlie et al. (2012)	Research evidence	Knowing as Practice	Qualitative	Cancer services	Subjectification, technologies of the self and clinical managerial hybrids	Foucauldian governance	Rare

In order to address the complexities of translational research, Kerner (2008) focuses efforts on knowledge integration where the explicit evidence knowledge base is brought together with the tacit contextual factors of practitioner and patient experience. The study argues that partnerships are best placed to reduce the discovery-delivery gap as they allow individuals and agencies to go beyond silo mentality. Even though these partnerships are rare, such engagement is more likely to make health research more practical, relevant and ultimately utilised. A longitudinal study of partnerships between non-profit organisations and academics found that collaborations established open and safe forums for mutual support and the co-production of knowledge (Jansson et al., 2010). These partnerships were resource intensive but allowed collective action towards a common goal of helping vulnerable groups with health and social care. Hands-on practitioner knowledge was fused with evidence based academic knowledge. Both sides were involved in co-presenting findings at conferences, co-organising workshops and collaborating on scholarly publications. Knowledge brokers have helped facilitate challenges in such long term collaborations by acting as consultants, advisory board members, research assistants and volunteers for each side of the partnership.

6.1.3 Inimitable resources in a healthcare setting

In competitive environments, inimitable resources are particularly valuable as they prevent competitors from imitating resources. It is often assumed that such resources are knowledge based, complex and socially or culturally embedded in the organisation. However, this raises a problem in healthcare settings as it is precisely these inimitable resources that may offer significant advantages for research utilisation. One such culturally complex resource that is difficult to replicate are communities of practice (CoPs). Prescriptive strategies to modify social norms such as promoting active empathy or greater mutual tolerance (Austin et al., 2008) are likely to have limited effect as the underlying values and beliefs are much harder to change and require much long term interventions. Values such as reciprocity may act to counter the very knowledge interaction and exchange processes they are designed to promote. Individuals and groups may enact a zero sum game through a fear of exploitation if they believe the costs of any knowledge exchange outweigh their benefits. Organisational interventions and forms of control may destroy the very informal networks they are trying to cultivate.

Bentley et al. (2010) recognise the conceptual and practical challenges communities of practice provide in healthcare settings. In the Canadian context, CoPs have been shown to facilitate quality improvements resulting in greater buy-in from doctors and, in turn, enhanced knowledge

translation of research into clinical practice. However, CoPs are relatively new within healthcare and considerable ambiguities remain. There is lack of clarity about the concept apart from acting as some form of organic informal network. Little is known about how power influences such networks. Nor are there any instruments to measure the performance of such practice based learning to promote accountability. There is considerable debate on whether 'top-down' (greater formal structure) or 'bottom up' (more informal networks) approaches are best placed for knowledge sharing and enhancing learning and quality improvements. Adopting complex systems and network theory, Rangachari (2010) argues that 'top-down' approaches will promote greater organisational learning and improvement in the case of hospital infection prevention. This is really a hypothesis and no evidence is provided to support such claims.

The complexity of knowledge exchange systems in healthcare can be considered as inimitable resources. In their systematic review of current literature, Contandriopoulos et al. (2010) discovered three dimensions of context that were most pertinent for knowledge exchange processes: the levels of polarisation (politics), cost-sharing equilibrium (economics) and institutionalised structures of communication (social structures). Without a clear analysis of these contextual factors in any given setting, the efficacy of knowledge use or re-use would be limited. Individual or collective action is embedded in systemic relations associated with interdependency as no individuals have the power or autonomy to translate knowledge directly into practice. Different models of knowledge use emerge in the literature depending on whether the knowledge exchange costs are assumed by the user or producer of the research and the level of polarisation or political climate in the organisation.

In the context of mental health, Ward et al. (2012) found that knowledge exchange was a dynamic rather than a linear process. They identified five components that can occur separately or simultaneously in the knowledge exchange process: problem, context, knowledge, activities and use. Even though their conceptualisations of 'knowledge' and 'context' lacked clarity, their findings supported Contandriopoulos et al.'s (2010) importance of contextual factors in the knowledge exchange process. Scott et al. (2008) drew attention to their findings that research use was irrelevant unless the key contextual element of uncertainty was managed in a paediatric intensive care unit. Uncertainty shaped nurses' behaviour along four dimensions: the precarious state of seriously ill patients, the unpredictability of nurses' work, the complexity of teamwork and the changing management environment. They argued that a more complex and dynamic appreciation of healthcare context was required to understand research utilisation behaviours. De Leeuw et al. (2008) propose seven

different models to manage the contextual complexity and recognise research utilisation as a political process between researchers, policy makers and practitioners, each with their own interests and rationalities. No theoretical framework is privileged over the other. Instead a coming together of the three communities is encouraged to increase the uptake of research.

The nature and scope of collaboration and co-production of knowledge can be difficult to imitate across healthcare organisations. Involvement of parents and children exploring academic research in a child and adolescent mental health setting, highlighted that knowledge useful to service users was often overlooked by professionals and service providers (Croom and Procter, 2008). Reciprocal trusting relationships were developed which allowed tacit knowledge to be externalised as a valuable organisational resource. In their empirical study of two mental health units, Lavoie-Tremblay et al. (2008) found that social support among interprofessional groups and latitude to make individual decisions had a significant effect on the utilisation of medical evidence in practice. A study exploring social interactions between researchers and different healthcare professionals in care homes found that knowledge translation processes were enhanced through the co-creation of knowledge embedded in the local context (McWilliam et al., 2008). This allowed interactions to go beyond the traditional 'push-pull' conceptions of knowledge translation and encouraged greater responsibility and accountability of all parties to the processes and outcomes. However, it was recognised that interaction came at a cost of being a more resource intensive process. Such resource intensive interactions can be facilitated by a 'knowledge broker' who can help bridge the gap between researchers and practitioners (Ward et al., 2009a). Best et al. (2009) adopt systems thinking and propose co-production of knowledge so that any interventions are responsive to context and enable knowledge or evidence to be better translated into action. A similar approach is adopted by Jensen (2008) who argues that systems thinking can improve patient safety where knowledge translation processes are about preventing future errors in the system rather than apportioning blame prevalent in healthcare.

In an ethnographic study of clinical decision making, Quinlan (2009) confirms that dialogic exchange between professionals is essential for articulation of tacit knowledge and that the interaction allows space for the creation of new knowledge. Such knowledge processes are mutually constituted through the social, communicative and organisation of power in those organisations. Orzano et al.'s (2008) study of family medicine practices found that social interactions at work were central to the diffusion of innovation and enhancing practice performance; more so than any technological intervention.

Table 15. Inimitable resources in the healthcare literature

Citation	Nature of knowledge	Type of knowledge/ knowing	Type of Paper	Context	Knowledge Mobilisation Theory	Research Utilisation Theory	RBV Properties
Austin et al. (2008)	Tacit knowledge/ Practice wisdom	Taxonomic	Conceptual	Health services	Communities of practice	Rewards/ Leadership	Inimitable
Croom & Proctor (2008)	Practice knowledge	Knowing as Practice	Qualitative	Child mental health	Reciprocal knowledge transfer	Modified scientific knowledge	Inimitable
De Leeuw et al. (2008)	Research evidence	Knowing as Practice	Conceptual	Healthcare	Research, Policy, Practice Nexus	Context Dependent	Inimitable
Jensen (2008)	Patient safety	Knowing as Practice	Conceptual	Healthcare	Systems thinking	High Reliability Theory	Inimitable
Lavoie-Tremblay et al. (2008)	Research evidence	Taxonomic	Quantitative	Mental health units	Socio-emotional support and collaboration	Context and work environment	Inimitable
McWilliam et al. (2008)	Research evidence	Taxonomic	Qualitative	Home care	Knowledge co-creation	Social interaction	Inimitable
Orzano et al. (2008)	Research evidence	Taxonomic	Qualitative	GPs	Finding-Sharing-Developing	KM processes and tools	Inimitable
Scott et al. (2008)	Advanced practice knowledge	Knowing as Practice	Qualitative	Pediatric intensive care	Managing uncertainty	Reducing uncertainty in context	Inimitable
Best et al. (2009)	Research evidence	Taxonomic	Conceptual	Health services	Co-production of knowledge	Linear, Relationship, Systems	Inimitable
Ward et al. (2009 a)	Research evidence	Taxonomic	Qualitative	Mental health	Diffusion of innovation	Knowledge brokers	Inimitable
Quinlan (2009)	Research evidence	Collective good	Qualitative	Nurses and GPs	Dialogic interaction	Social and communication	Inimitable
Bentley et al. (2010)	Tacit-Explicit	Taxonomic	Qualitative	Healthcare	Communities of practice	Communities of practice	Inimitable
Contandriopoulos et al. (2010)	Research evidence	Knowing as Practice	Meta-analysis	Healthcare	Polarisation of context and KE costs	Individual-Interdependency	Inimitable
Rangachari (2010)	Tacit-Explicit	Taxonomic	Conceptual	Hospitals	Knowledge sharing networks	Brokerage and hierarchy rich networks	Inimitable
Ward et al. (2012)	Research evidence	Taxonomic	Mixed	Mental health	Importance of problem definition and context	Problem, context, knowledge, activities, use	Inimitable

6.1.4 Organisation resources in a healthcare setting

Organisational resources refer to the processes that allow the exploitation of valuable resources at a firm's disposal. In our case, it is about exploiting valuable resources that will enhance research utilisation (see Table 16). Rather than focus on individual processes, many scholars argue that a systems approach is likely to provide the greatest impact. Little is said about how the system is conceptualised especially in the context of open systems or who will benefit from the system. Do systems so engineered become a locus for control and totalisation? Is a rationalistic, positivist and technocratic orientation privileged over other perspectives and ideologies? For instance, Zigan et al. (2010) concluded their analysis of a hospital case study that senior managers had 'under-developed' knowledge management systems and activities. A broad definition of knowledge management was adopted as 'any systematic process designed to acquire, conserve, organize, retrieve, display and distribute what is known' (p.119). In their analysis of nursing, Anderson and Wilson (2009) argue knowledge management systems can provide an optimal source for translating nursing knowledge into practice and enhancing 'continual quality improvements' in healthcare. In order to improve paper-based tools for enhancing utilisation of clinical practice guidelines, they propose clinical decision support tools to enhance clinical management, patient education, patient self-management and, ultimately, patient outcomes.

While acknowledging the value of knowledge management systems in their emphasis on organisational context issues, Sin (2008) highlights how 'power and conflict' can sometimes be downplayed. In the context of the former Disability Rights Commission, he argues that systems and procedures need to be co-constructed so that a shared understanding of due processes are developed linking strategy to action. Corrao et al. (2009) maintain a systems approach and offer a new paradigm of an 'evidence based knowledge management' approach to improve clinical governance and decision making. What is lacking is an articulation of the precise processes that would allow this to happen in such an analysis of Italian healthcare. In a quantitative study of 370 US hospitals, Gowen et al. (2009) found that transformational leadership and quality management have positive impacts on knowledge management systems. These findings would suggest that exploitation of valuable resources arises from improvements in quality management programmes and having strong charismatic, intellectual and concerned healthcare leaders. The dependent variable of organisational performance is noteworthy and includes quality improvements, increase in customer satisfaction, net cost savings, reduced

frequency of errors and reduction in the severity of errors. Little is said about the nature of quality processes that achieve these quality outcomes.

In an international study of health funding agencies, Tetroe et al. (2008) found that the engagement and linkages between agencies, researchers and decision makers were instrumental in the knowledge translation process. While the strength of linkages varied between countries, the evidence base to show clear effectiveness of such linkages was poor. The 'push-pull' approach to knowledge translation (KT) was more dominant with funders where the most common allowable expenses for KT activities were workshops, publication and dissemination rather than longer term activities that fostered the co-production and integration of knowledge. Instead, the further exploitation of knowledge was fostered through networks but their influence was unclear.

Learning processes to exploit valuable resources are central to Austin's (2008) conception of a learning organisation for healthcare. The emphasis is on those organisational processes that will enhance individual capabilities to engage with research and make continuous improvements, though the exact nature of these processes remained undefined. This shortfall is addressed by Berta et al. (2010) who apply absorptive capacity and extant theory to explain how new knowledge is adopted in an organisation. In the context of care homes, they argue that new research evidence follows three complex and iterative organisational processes: contextualisation, replication and retention of new knowledge. However, leaders and champions with the necessary capabilities are essential to successful knowledge translation processes. In order to understand the socially mediated contexts of healthcare, French et al. (2009) argue that a toolkit of instruments is needed to assess an organisation's absorptive capacity. The results from these operationalised instruments could be used to assist networks and communities of practice on the state of learning or non-learning to better exploit valuable resources.

Theoretical underpinnings underlying dissemination processes appear to be converging around diffusion of innovation, persuasive communication and social marketing theory (Wilson et al., 2010). It is argued that dissemination processes and activities could be guided by these frameworks to help improve research uptake. But there is divergence between the dissemination and knowledge transfer literature. For instance, Ward et al. (2009b) privilege a number of dimensions of the knowledge transfer process: nature of knowledge/research, the problem, utilisation, interventions and context. In a Canadian study of GPs (Grad et al., 2008), one intervention that was found to be particularly successful was when new knowledge delivered by email as research synopses involved a two-way

exchange between the research providers and family doctors. Reader feedback obtained from family doctors allowed providers to better target their research to meet individual cognitive needs. This was particularly the case when participants reported 'no impact' or 'I learnt something new' from research evidence. Gagnon (2011) reinforces the need for a clear dissemination plan focused on the needs of a particular audience. She goes further in suggesting the co-creation of research messages rather than research synopses to better meet the needs of the user. Processes that foster this active collaboration between researchers and knowledge users are likely to be most beneficial.

To enhance health inequities and social justice, Reimer-Kirkham et al. (2009) adopt a critical perspective and advocate theoretical pluralism as a knowledge translation strategy. This means going beyond 'quick fixes' and adopting organisational processes that are more critical, reflexive and enact power and resistance to prevent any underlying oppression. Clearly articulated processes remain elusive in the literature.

Table 16. Organisation resources in the healthcare literature

Citation	Nature of knowledge	Type of knowledge/ knowing	Type of Paper	Context	Knowledge Mobilisation Theory	Research Utilisation Theory	RBV Properties
Austin (2008)	Evidence/ Information of value	Taxonomic	Conceptual	Health services	Learning organisation	Systematic RCT reviews	Organisation
Grad et al. (2008)	Email Synopses	Taxonomic	Quantitative	GPs	Cognitive impact	Instrumental - Conceptual - Legitimizing	Organisation
Sin (2008)	Tacit-Explicit	Taxonomic	Qualitative	Disability Rights Commission	Technology driven explicit knowledge	Shared systems and procedures	Organisation
Tetroe et al. (2008)	Research evidence	Taxonomic	Qualitative	Health funding agencies	Interaction with different stakeholders	Push-Pull, Linkage & Exchange	Organisation
Anderson & Wilson (2009)	Tacit-Explicit	Taxonomic	Conceptual	Nursing	Clinical audit and mentoring	Clinical decision support systems	Organisation
French et al. (2009)	Research evidence	Taxonomic	Systematic review	Evidence based practice	Developing measurement tools	Promoting organisational attributes	Organisation
Corrao et al. (2009)	Research evidence	Taxonomic	Conceptual	Drug prescription	Organisation and technology	Evidence-based healthcare system	Organisation
Ward et al. (2009b)	Research evidence	Taxonomic	Systematic review	Health services	Awareness, Agreement, Adoption Adherence	Context and interventions	Organisation
Gowen et al. (2009)	Tacit-Explicit	Taxonomic	Quantitative	Hospitals	Transformational leadership	Quality management	Organisation
Reimer-Kirkham et al. (2009)	Socially organised	Social justice	Conceptual	Health services	Individual and structural contexts	Research partnerships	Organisation
Berta et al. (2010)	Clinical guidelines	Taxonomic	Qualitative	Care homes	Absorptive capacity	Knowledge application capacity	Organisation
Wilson et al. (2010)	Tacit-Explicit	Taxonomic	Systematic review	Healthcare	Diffusion of innovation	Persuasive communication, social marketing	Organisation
Zigan et al. (2010)	Tacit-Explicit	Taxonomic	Qualitative	Hospital	Open dialogue and communication	Strong networks and relationships	Organisation
Gagnon (2011)	Research evidence	Taxonomic	Conceptual	Healthcare	Collaboration and exchange	Knowledge brokers, networks and CopS	Organisation

6.2 Critical Perspective

A number of scholars have questioned the rationalist, positivist assumptions of research utilisation. The fact that research can be 'pushed out' to practitioner and policy audiences or certain motivations can be developed to enhance the 'pull' of research from those same audiences. Even the more enlightened 'co-production of research' has been questioned. Research for whom and whose interest does it ultimately serve? Does it principally serve funders' concerns or certain professional groupings or is it emancipatory allowing patients to get better health services and live more fulfilled lives? For instance, knowledge sharing across organisational and professional boundaries, openness and increased collaboration is seen as part of a managerialist agenda (Currie et al., 2008) which ignores institutionalised boundaries that exist in the NHS. Knowledge, itself, is open to question, especially its philosophical underpinnings that go beyond a preoccupation with tacit and explicit knowledge. Efforts to enhance knowledge exchange through cultural change interventions are seen as part of the same normative control to engineer certain norms, values and beliefs in the organisation. It is about people from the same managerialist 'tribe' supporting each other in these forms of control.

Table 17 shows power and conflict issues related to research utilisation in the healthcare literature. The critical perspective acknowledges that knowledge and power are intertwined. Knowledge and to a large extent knowledge sharing is controlled by those in power in organisations. In particular, major power differentials exist between doctors and other professional groupings. Doctors control whether certain levels of knowledge or evidence are shared, hoarded, subverted or discouraged. Clearly power relations between different occupational groups will determine their political behaviours and the level to which any new research is utilised. Professional identity shaped through everyday customs, rituals and years of common professional development can hinder attempts at sharing of knowledge or new evidence across professional groupings. In a study exploring hospital patient safety systems, Currie et al. (2008) found that managerialist interventions had limited influence if no recourse was made to institutional power and politics and the dominant role of doctors.

Table 17. Power and knowledge mobilisation in the healthcare literature

Citation	Nature of knowledge	Type of knowledge/ knowing	Type of Paper	Context	Knowledge Mobilisation Theory	Research Utilisation Theory	RBV Properties	Power Dimension
Bentley et al. (2010)	Tacit-Explicit	Taxonomic	Qualitative	Healthcare	Communities of practice	Communities of practice	Inimitable	CoPs are places where power, discourse and norms operate
Gagliardi et al. (2008)	Collaborative problem solving	Knowing as practice	Mixed	Healthcare	Knowledge exchange	Knowledge exchange barriers	Valuable	Critical volume of non-clinicians
Boydell et al. (2008)	Tacit embodied knowledge	Taxonomic	Qualitative	Health Action Zones	Connecting, Learning, Acting	Deliberative democracy	Rare	Deliberative democracy
Sin (2008)	Tacit-Explicit	Taxonomic	Qualitative	Disability Rights Commission	Technology driven explicit knowledge	Shared systems and procedures	Organisation	Differential power relations
Ferlie et al. (2012)	Research evidence	Knowing as Practice	Qualitative	Cancer services	Subjectification, technologies of the self and clinical managerial hybrids	Foucauldian governance	Rare	EBM as a power/knowledge nexus
Reimer-Kirkham et al. (2009)	Socially organised	Social justice	Conceptual	Health services	Individual and structural contexts	Research partnerships	Organisation	Enacted through structures and politics
Currie et al. (2008)	Patient safety	Knowing as Process	Qualitative	Teaching hospital	Systems thinking	Political and cultural	Valuable	Institutional Power & Politics
Boivin et al (2008)	Clinical guidelines	Knowing as Process	Qualitative	Healthcare	Socio-political dimensions	Decision technologies	Valuable	Normative and value judgements
De Leeuw et al. (2008)	Research evidence	Knowing as Practice	Conceptual	Healthcare	Research, Policy, Practice Nexus	Context Dependent	Inimitable	Politics of action modalities
Quinlan (2009)	Research evidence	Collective good	Qualitative	Nurses and GPs	Dialogic interaction	Social and communication	Inimitable	Social organisation of power

In order to go beyond professional dominance and the New Public Management, Ferlie et al. (2012) apply Foucault's concept of 'governmentality' to explore the power/knowledge nexus and subjectivity (described as 'technologies of the self') to healthcare. In a study of English cancer services, they found that the power/knowledge nexus gives certain professional groups greater power than others; the experiential knowledge of patients wields the least power. In the case of clinical managerial hybrids (doctor-managers), the shifts in their identities and consequent 'subjectification' showed that they were more dynamic, change oriented and patient centric in their outlook. Partnerships as a form of governance between healthcare organisations and their patients need to be mindful of the power dynamics that may socially exclude certain groups (Boydell et al., 2008). Rather than paying lip service to patients, partnerships can evoke 'deliberate democracy' to engage in dialogue and shared understandings between the different stakeholders.

Technology development and its use in research utilisation is seen as value laden rather than being value free or considered as scientifically 'pure' conduits for evidence-based decision making. Boivin et al.'s (2008) study of clinical decision technologies in Canada and the UK found that normative judgements and socio-political issues influenced technology use and the notion of 'good decisions' that emerged from the technology was strongly contested. Social legitimacy of decision technologies is required especially when competing interests, norms and values co-exist in a healthcare setting. Disinterest among decision makers and competing professional responsibilities can have an adverse effect on any research utilisation efforts (Gagliardi et al., 2008). Repository based information systems need to embed the issues of differential power relations and conflict that co-exist in any organisation (Sin, 2008). Collective decision making comes from negotiation of knowledge claims by people who may use technology but, ultimately, such negotiations are situated in the social organisation of power (Quinlan, 2009).

Reimer-Kirkham et al. (2009) argue for critical inquiry of knowledge translation that goes beyond instrumentalist perceptions of knowledge, objectivity and political neutrality. Building on postmodern and post-structural theory, they recognise that dominant systems of knowledge have subjugated and oppressed certain communities. Social systems are shaped by social, cultural, political, economic, ethnic and gender values over time. The knower and knowledge are inseparable and power is enacted through structures. As such, knowledge as neutral, discrete entities in the knowledge translation literature becomes problematic. Knowledge from randomised controlled trials is privileged over other forms of knowledge. Instead of focussing on individualistic interventions, they argue for a more

inclusive consideration of structural and contextual influences on knowledge translation. They advocate theoretical pluralism in knowledge translation concerned centrally with issues of social justice and equity. Current conceptions of communities of practice (CoPs) in the knowledge translation process are challenged as they ignore the role of power. Following a Foucauldian analysis, Bentley et al. (2010) argue that power in communities is generated through everyday social practice; the way we talk, investigate and write about topics. To ignore the power, norms and discourses that operate within CoP, is to deny that individual or professional interests and identities influence how knowledge is made, discarded, utilised or valued. Communities of practice can become their own cliques based on their unique power relations and hinder rather than aid the research utilisation process.

6.3 Organisational Form

The evidence base in the healthcare literature on the influence of organisational form on research utilisation is limited (see Table 18) and in need of considerable future research. The current focus has been on networks and network structures that can bring researchers, policy makers and practitioners together. In their analysis of complex evolving networks supported by the UKCRC Centre of Excellence for Public Health (Northern Ireland), McAneney et al. (2010) found that the strength of network ties varied considerably between stakeholders. This is partially explained by the difference in goals between academics and non-academics. Academics placed greater emphasis on peer reviewed publications and internal interdisciplinary collaboration rather than knowledge brokerage activities of public health agencies. In terms of network structure, this was evident among the academic groups lacking intra-network connections, reciprocal arrangements and engaging predominantly in unidirectional arrangements. This raises questions on how best to engage academics in reciprocal arrangements when their reward and recognition structures do not recognise the values of networks and networking.

Sin (2008) argues that any application of knowledge mobilisation practices from the private sector to the public sector needs to acknowledge the diversity of governance structures, functions and outputs. One sector is shareholder driven whereas the other is stakeholder driven. An analysis of research utilisation across the former Disability Rights Commission found that co-location of policy, media and research services considerably increased the consistency and intensity of research use. The organisational structure was recognised to condition what constituted 'evidence' and the responsibilities for evidence. However, a neglect of differential power

relations and conflict in the organisational context would hinder any progress in knowledge translation activities. This sentiment is echoed by Reimer-Kirkham et al. (2009) in their theoretical pluralist approach to knowledge translation arguing that structural and contextual factors enact power relations through which knowledge is either valued, utilised or discarded.

Following Mintzberg's (1989) notion of organisational structure, Corrao et al. (2009) argue that the 'technostructure' is instrumental in knowledge translation through the implementation of clinical decision support systems. The technostructure has a vital role in connecting the strategic apex (where strategic decisions are made) with the operating core; its strategic importance comes from controlling resource utilisation and promoting organisational growth. In their analysis of a clinical virtual library database used in the Lombardy region of Italy, no evidence for the value or functioning of the 'technostructure' is provided to support these claims.

Table 18. Organisational form & KM in the healthcare literature

Citation	Nature of knowledge	Type of knowledge / knowing	Type of Paper	Context	Knowledge Mobilisation Theory	Research Utilisation Theory	RBV Properties	Organisational Form
Sin (2008)	Tacit-Explicit	Taxonomic	Qualitative	Disability Rights Commission	Technology driven explicit knowledge	Shared systems and procedures	Organisation	Informs what constitutes evidence
Reimer-Kirkham et al. (2009)	Socially organised	Social justice	Conceptual	Health services	Individual and structural contexts	Research partnerships	Organisation	Paralysis of structural constraints
Corrao et al. (2009)	Research evidence	Taxonomic	Conceptual	Drug prescription	Organisation and technology	Evidence-based healthcare system	Organisation	To promote better clinical governance
McAneney et al. (2010)	Research evidence	Taxonomic	Quantitative	Healthcare	Collaboration around mutual goals	Knowledge brokerage	Valuable	Trans sectoral networks

7 Conclusions

We have described the results of four separate literature searches in the preceding chapters. Here we consider their interaction and their relationship with the propositions. We also go back to the original intentions of the proposal and examine our success or otherwise in delivering its aims. Finally, we put the review in the context of the wider healthcare research agenda and try to draw out the implications for reflective practitioners.

7.1 Linking the Domains

The review has been driven by the title: “Knowledge mobilisation in healthcare organisations: Synthesising evidence and theory using perspectives of organisational form, resource based view of the firm and critical theory”. It is grounded in three propositions, one for each perspective or domain, which propagated three separate literature searches. We added a fourth search, locating Knowledge, Research and Evidence in a wider healthcare literature.

7.1.1 Typologies of Three Domains Based on Dualist Taxonomy

Lewin et al (2011) describe a trajectory of ideas-development which moves from ‘initial excitement’ at the concept to validity-testing through operationalisation and then, to avoid dilution to an ‘umbrella term,’ typologies are drawn up. We set out typologies below as a way of making sense of the relationship or connectedness between the domains. The table below outlines five typologies A-E based on a dualist taxonomy, showing that RBV is polarized against the Critical Perspective, while Organisational Form tends to straddle the divide.

Table 19. Typology of Three Domains Based on Dualist Taxonomy

Three Domains Under Review	Typology A	Typology B	Typology C	Typology D	Typology E
	Public-Private Interface	Power Source	Transactional	Motivation & World View	Discourse Based on Teleology
1. Resource Based View of the Firm (RBV)	Private Sector Competition	Management	Market	Rational self interest	Consensus
2. Critical Perspective (CP)	Public Sector Organisation	Professional (resistance, enrolment)	Hierarchy	Conflict	Dissensus
3. Organisational Form (OF)	Designing Organisational Form to Bridge the Gap	Policy	Networks	Both	Pragmatic

The first, Typology (A), contrasts private sector with public sector ideas of strategy and knowledge mobilisation, either of which can be harnessed by organisational form. Typology (B) separates out the power structures of managers vs. professionals. Typology (C) is transactional, linking markets, hierarchies and networks to the three domains.

RBV comes from strategic management literature, rooted in positive economics, while the Critical Perspective addresses power through a sociological approach. They represent two separate dispositions (functional vs. critical) with different views of human motivation. Typology (D) depicts actors in RBV as motivated by rational self-interest (*homo economicus*) while actors within the critical discourse are motivated by conflict and power-struggle against vested interests. Again, the third domain of organisational form accommodates all types of motivation through competitive firms and power coalitions within networks.

Finally, the underlying discourse or teleology (whether moving towards convergence or divergence) differs between the three domains. Typology (E) shows that RBV, the rational, positivist, functional domain, belongs to a discourse of consensus (Schulze & Stabell, 2004). The critical outlook of conflict and suspicion against vested interests can be described as one of dissensus. The organisational form domain represents a pragmatic position, accommodating both types of discourse.

7.1.2 Where Does KRE Fit In?

The domains were defined on the basis of three propositions relating to (i) the resource based view, (ii) the critical perspective, and (iii) organisational form. So where does Knowledge Research Evidence come in? We answer the question with reference to (a) the search strategy and (b) epistemological differences.

Search Strategy. The KRE search was required for three reasons:

- **Healthcare Organisations.** First, the title of the review includes “knowledge mobilisation in healthcare organisations”. Our research strategy, based on high impact peer reviewed journals, was focused on the three domains and their capacity for knowledge mobilisation. The KRE search, applied to healthcare databases, broadened the organisational focus to the health sector.
- **Knowledge.** Second, the three domains describe literature streams that contain Knowledge. KM is effectively a subset of RBV, CP and OF.

In contrast, KRE is focused on Research Utilisation and KM, rather than being a strand within a larger field.

- **Research Utilisation and Evidence.** We learned from the Scoping Review that generic literature featured 'Knowledge' but not 'Research', 'Research Utilisation' or 'Evidence'. These terms were solely the concern of healthcare literature. The KRE search ensures that we capture literature covering these nouns.

Epistemology. When we look at the findings that emerge from the four searches, there is an epistemological difference between KRE and the RBV, CP and OF streams. KRE is dominated by research and evidence, a type of knowledge that is largely created by others (researchers) and is 'over there', on the other side of the practitioner-researcher divide (see Caplan, 1979; Wingens, 1990). Much of the literature is concerned about how to draw Research Evidence into practice.

The nature and role of Knowledge within RBV, CP and OF is quite different. It is embrained (Lam, 2000), embedded (Orlikowski, 2002), forms an integral part of the resource base to create value driving competitive advantage (Barney and Clark, 2007), is located in processes and routines (Lewin et al, 2011), is enacted by professionals (Styhre, 2011), and is located in the site of action (Nicolini, 2011). The whole emphasis is about how best to mobilise (or prevent leakage) of knowledge that gives the organisation an edge over others.

7.1.3 Structure, Process/Content and Consequences

The three domains can be compared if we organise ideas using a systems approach, showing antecedents and consequences as inputs and outputs to the central theory. We use the headings Structure – Content/ Process – Consequences to locate the themes emerging in the three domains.

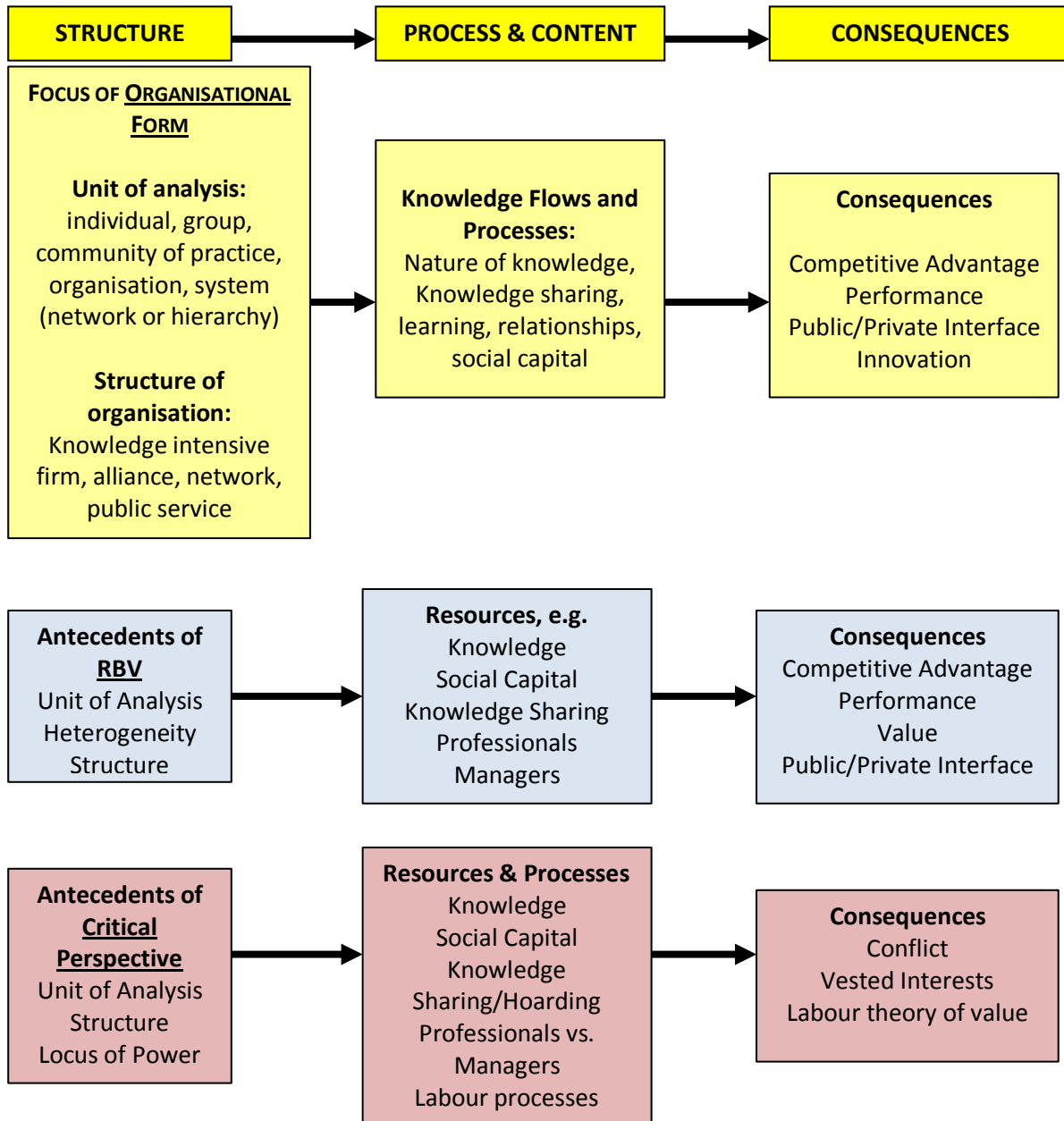
Comparison of RBV and Organisational Form shows a strong overlap between the two domains. Organisational structure is effectively an antecedent of RBV, i.e. it provides the location for RBV's strategic resources. The Organisational Form field generates papers on different types of organisation, building up from individuals within groups such as communities of practice to networks. Many of the same themes appear, such as absorptive capacity. The ultimate consequences or objectives are the same in both domains, since the purpose of improving knowledge mobilisation is to gain competitive advantage or improve performance. In the Organisational Form search, however, we found a strong emphasis

upon innovation. Perhaps the main difference is that, because RBV purports to be a strategic management theory, much of the literature was about building theoretical frameworks. Organisational Form literature, while building on theory, e.g. Social Network Analysis, had a more technical and empirical grounding. Networks were investigated through broad quantitative studies or in-depth through case studies.

RBV and Organisational Form are broadly united in taking a positive view of progress, through innovation, growth and performance. They both operate in an environment that in the long run is expected to achieve equilibrium and consensus, (as described under Typology E above). The critical discourse does not seek resolution but instead is geared towards conflict based on suspicion about motives. Schulze & Stabell (2004) describe it as one of 'dissensus', which sees the world through a prism of justice-injustice, good-evil, guilty-innocent delineations.

RBV lacks a theory of power and authority, even though it takes a behavioural view of firms. There is an assumption that managers have jurisdiction over resources. The critical perspective is more explicit about the conflict that might produce stratagems to thwart knowledge management. The Organisational Form domain, like the Critical Perspective, can accommodate discussions of power. Networks, for example, may contain powerful organisations that harness resources and influence, diverted from weaker organisations. Power may be distributed differently between structures, e.g. doctors have more power (knowledge) in a conventional hospital whereas patients have more power (knowledge) in a home setting through telemedicine (Nicolini 2011). Nevertheless, both RBV and the Critical Perspective are focused on resources which, in the context of this study, is knowledge.

Figure 23. Structure, Process/Content and Consequences

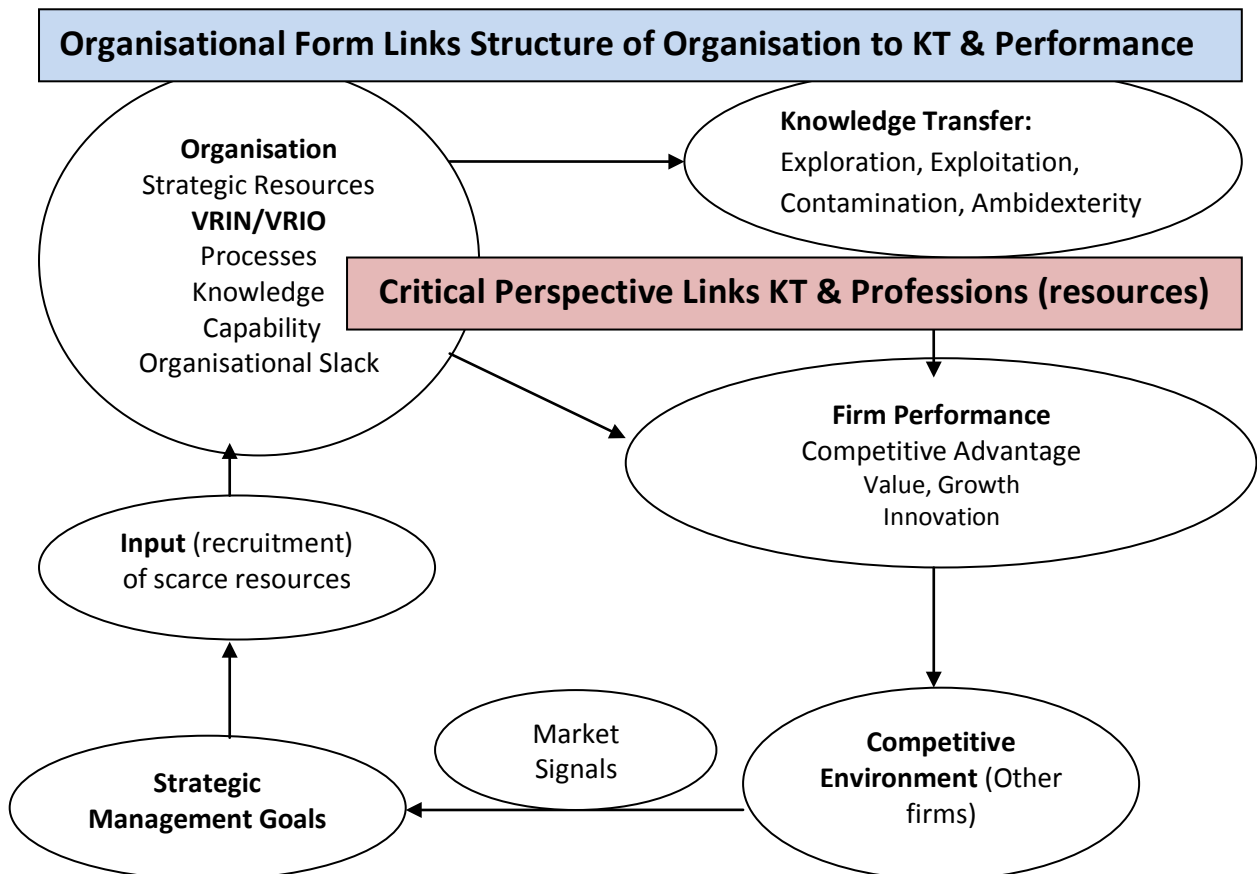


7.1.4 Dynamic Model

If we reprise the dynamic model developed in the RBV chapter, the relationship between the search-domains becomes more apparent. The cycle (below) links strategic management goals to resources, to performance, to environmental feedback that then modifies strategic management goals. It is consistent with RBV, dynamic capabilities and knowledge sharing models of absorptive capacity. While the model is derived from antecedents, components and consequences of RBV and

related theories, we know that it is compatible with the Organisational Form domain, since both RBV and OF are underpinned by an objective of competitive advantage and improved performance. As for the Critical Perspective, the same framework can be mapped and deconstructed: the professions are both a resource and a means of knowledge sharing (Styhre, 2011). However, dissensus, knowledge hoarding, resistance, act as barriers and brakes on management of strategic goals. Perhaps a useful metaphor is that of a bicycle chain. If the RBV cycle represents a smooth chain, then professionals, viewed through critical perspectives, act as extra gears that can slow or speed up the transfer of knowledge and consequent performance. Organisational Form is the overarching structure, i.e. the bicycle. KRE is a signpost ahead, separate from the apparatus.

Figure 24. Dynamic Model: RBV, CP and OF



7.1.5 Is this Approach too Ambitious?

The theoretical framework at first glance appears to have gone beyond the idea of knowledge mobilisation. So should we take a more modest approach and confine the study to the outputs of the literature, without trying to forge links between them in an all-encompassing framework?

An attempt at theory-building is consistent with the intentions of the original proposal which says: “the aim is to forge a link between research and practice by improving its theoretical underpinning, applying the analysis to develop predictive models that can be tested.” The proposal also displays an intention to stretch the boundaries of KM by exploring the relationship with economics that had emerged in the Scoping Review:

“Generic economic theory has been applied to health policy in the past (e.g. internal market reforms introduced by Margaret Thatcher’s government in 1991) and, arguably, is instrumental at the moment in promotion of Foundation Trusts and use of Payment by Results as a pricing and incentive mechanism. Economic theory, and its research utilisation, is rarely filtered through the lens of health sector realities. Whereas generic literature on KM/RU is connected to the disciplines of economics and organisational studies, the connections in health-sector literature are weaker. This study aims to address the deficit.”

So the project was conceived as an exercise in taking a generic theory (RBV) rooted in economics and examining how the realities of health service life (e.g. role of professionals) would act as a moderator. The propositions were constructed on that basis. Knowledge Mobilisation is implicit within RBV, rather than sitting outside as an independent theme. On this basis, development of a theoretical framework is appropriate since the proposal itself set the ambitious objective of theory-building.

7.2 *Strengths and Limitations*

7.2.1 Parsing the Title

Breaking the title into three constituent components helps to pinpoint strengths and limitations of the review: **(1) Knowledge mobilisation in healthcare organisations: (2) Synthesising evidence and theory using (3) perspectives of organisational form, resource based view of the firm and critical theory.**

Our research strategy started from a broad base of high impact (ABS impact rating 4) journals. This is a strength in the sense that we are

directing our attention to good quality peer reviewed work with a robust theoretical base. It addresses '(3) perspectives of organisational form, resource based view of the firm and critical theory' in a solid manner. The proposal and thrust of the line of enquiry generated by the propositions was geared towards (3).

Nevertheless, our approach risked under-representing the (1) 'knowledge mobilisation in healthcare organisations'. We plugged the potential gap by generating a systematic search into 'Knowledge, Research and Evidence' across health-based literature (chapter 6) using electronic databases (rather than a limited selection of journals). 'Research' and 'Evidence' barely feature in generic management literature and but, we know from the Scoping Review, are highly relevant forms of knowledge in healthcare literature. We captured this through the Knowledge Research Evidence search of health sector databases.

The second clause '(2) synthesising evidence and theory' has proved to be the major challenge of this project. The most abstract and theoretical of the three domains is the Resource Based View. It is also currently the least connected to healthcare (as established by the Scoping Review). We bridged theory and evidence by pursuing a narrative enquiry (Chapter 3) in which we explored specific terms, such as performance and competition, and reached across into empirical studies of healthcare. Knowledge mobilisation becomes integral to healthcare strategy through the connection between Knowledge and the strategic perspectives offered by RBV, Critical Perspective and Organisational Form.

7.2.2 Search Strategy

The search strategy has three components. The first is selection of sources. We were faithful to the intention in the proposal to consider high impact peer-reviewed journals in a systematic manner, supplemented by books. It was succeeded by a narrative review that has been incorporated in the RBV chapter.

The risk is always of missing something important. We tried to avert this possibility by spreading the net across a wide range of journals. The consequence was that (a) we considered fewer years than originally described in the proposal but (b) greater volume, because of the profusion of selected journals. The choice was considered carefully by the Advisory Group. The impact of choosing a narrower number of years (2008 – 2011, rather than 2005 – 2011) was mitigated by (i) the Scoping Review that had covered the period 2000-2008 and (b) the possibility of snowballing references to capture previous literature. We felt that the benefits of

going broad outweighed the disadvantages of truncating the search period, and the strategy was deliberately constructed to maximise coverage.

The second component is search terms. We experimented and worked through multiple iterations (3 for RBV, 6 for critical perspectives, 2 for organisational form and 2 for knowledge/ research/ evidence). This in itself was time-consuming. We could have selected a narrow range of search terms and made the search much more efficient by generating a smaller volume of abstracts. The large quantity meant that we spent a lot of time sorting and rejecting material. There was a moment in the project when we were concerned that methods were dominating the process. It was a long time (more than 6 months) before we started reading full papers. This is a serious point. We know from feedback from publishers (relating to output from the Scoping Review: Ferlie et al, 2012a) that teams embarking on systematic-type literature reviews sometimes get embroiled in methods at the expense of ideas. In our case, the consequence was that we were granted permission to extend the project from 15 to 18 months.

A significant challenge in this project has been to deliver something that has traction in healthcare. It propelled us to work across a broad canvas rather than a narrow patch. It was also apparent that RBV had spun off in multiple directions (see Pitelis, 2009). Further, we adhered to the message of proponents (e.g. Barney and Clark, 2007) that RBV was a large theory, incorporating antecedents and consequences such as sustainable competitive advantage, rather than being a single core component defined by the principles of VRIO. To test our concerns we ran a narrow search for RBV and compared the results with those of the wider RBV3 search. We found that some important authors and streams of thought were missing from the narrow search, especially relating to ambidexterity (e.g. Raisch and Birkinshaw, 2008; Raisch et al, 2009) and competitive strategy (e.g. Porter, 2008). These factors suggested that our design, using a broad range of search terms, was defensible.

The third component of the strategy is application of search terms. In principle it would have been possible to engineer a single search that generated a volume of literature that could have been analysed according to the three domains. We would have been awash with titles/abstracts but it would have been one exercise. Instead we carried out sequential searches tackling each domain separately. RBV was undertaken first, followed by Critical Perspectives, then Organisational Form. Finally we carried out a Knowledge, Research, Evidence (KRE) search of healthcare databases, mirroring the Scoping Review. The advantage is that we were clear, thorough and highly methodical in our approach. The potential disadvantage of separate search outputs is that cross-cutting themes, e.g.

absorptive capacity, are repeated in each domain rather than being grouped under a single topic heading. And it also increased the scale of the undertaking.

7.2.3 Weight of Domains

We have addressed 3 propositions and sought to answer each one. The three domains nevertheless do not emerge with equal weight. This is for three reasons. First, it was acknowledged early on (minuted by the Advisory Group) that RBV was likely to require more attention and investment of resources than CP or OF since it was novel and the least explored. The second reason is that RBV is a unified theory which aspires to have predictive power which generated a comprehensive theoretical framework. This is in contrast to Organisational Form which is a diverse topic-based field and the Critical Perspective which uses case studies and tends to be more descriptive than analytical. Finally, RBV had stimulated the enquiry since the Scoping Review drew attention to its importance in generic literature and its absence from healthcare studies. In this sense it underpinned the rationale for the study.

7.3 Addressing the Propositions

Three propositions motivated our review of the literature.

PROPOSITION 1: "The NHS needs to consider how knowledge and information can be used to improve productivity, innovation and performance. The Resource Based View of the firm has application in health."

PROPOSITION 2: "The health sector should make greater use of critical perspectives – especially labour process and Foucauldian perspectives - in understanding the fate of knowledge management systems. The importance of power contests among occupational groups in health systems makes it appropriate to temper positivistic and purely technical approaches to knowledge management with scepticism."

PROPOSITION 3: "NHS Boards should take a clear view on organisational design elements needed to support knowledge mobilisation. We suggest partnership and network-based organisational forms are more effective at knowledge sharing than markets or hierarchies. There is payoff in collaborating."

So, after reading over three million words of text and distilling it to fifty thousand or so words in this report, how would we respond to these propositions? We could summarise our response as (1) Agree, (2) Agree, (3) Disagree. This is amplified below.

7.3.1 Resource Based View: Responding to Proposition 1

The first statement is not controversial since it merely suggests that the NHS 'needs to consider' the impact of knowledge and information. The DIKW spectrum – data, information, knowledge, wisdom – highlights a progression from hard to soft forms of evidence. We have also paid attention to recent interest in knowing-as-practice and professions as institutions of knowledge sharing. The relationship between knowledge/information and productivity, innovation and performance is well documented, e.g. Walshe et al, 2010; Greenhalgh et al, 2004. So the real question is the extent to which RBV (a) links to knowledge with productivity, innovation and performance and (b) has application in health. Our review of RBV, starting from Penrose (1959), highlights knowledge as a strategic resource that contributes to innovation leading to growth in a firm. Terminology has broadened to include resource based theory (RBT) and knowledge based theory (KBT). Nevertheless, the growing body of literature critiqueing RBV identifies 'strategic resources' as an area that has only been weakly and vaguely specified. 'Mystical' suggests Wernerfeld. Another weakness in the RBV construct is the meaning of 'value' that produces competitive advantage.

This study has addressed these deficiencies and used health-related material to plug the gaps. In so doing we are both improving on the RBV theory as it currently stands and also making it distinctly relevant to healthcare. 'Strategic resources' relate particularly to professions and the traditional craft and routines associated with professional knowledge. 'Value' and 'value creation' draws in Porter's theory of value, based on results and outcomes in healthcare. None of these individual components are exceptional in themselves. However, knitting them into a comprehensive framework is novel.

What is not clear is the extent to which theories of competition speak clearly to the English NHS. The initial foray into competitive theory from 1991 (following Enthoven's 'quick tramp' round the service in 1984 (Timmins 1996, p458)) has been described as a 'mimic' market (Klein, 2010) or 'quasi' market (Le Grand, 1991). The best way of conceptualising this is to make a distinction between different levels in the system. Micro-macro would be one stratification. But it is more instructive, perhaps, to distinguish between 'open' and 'closed' systems (Krugman, 1999, reprinted

2009). Broadly this equates to a separation between purchasers and providers. In the English NHS, purchasers operate in a closed system because there is a single payer, via public funds, and a fixed amount of resource. Expenditure in one area means less in another, producing *de facto* rationing. Providers on the other hand, may be successful in increasing their income, so from the provider perspective the system is 'open' and may stimulate competitive behaviour. The openness of the system is further enhanced by the policy decision to lift the cap on private patient income to Foundation Trusts (Health & Social Care Act, 2012).

A final strand that fits with this thinking is the notion of 'slack resources'. Much of the current focus on performance is linked to efficiency and productivity, by doing more for less through cutting costs (e.g. Hurst and Williams, 2012). 'Slack resources' is an important component of RBV, since it provides the head-room needed for innovation and growth. It has been the focus of empirical work that finds that greater profitability is associated with greater organisational slack. There is tension in the system, therefore, between value for money, as required by the commissioner of services on behalf of the public, and retaining enough slack in the baseline to be able to innovate and develop. RBV highlights availability of organisational slack as a strategic objective that is in the interests of the organisation.

Klein (2010) concludes that safety trumps finance, indicating that, in terms of strategic objectives, organisations that get diverted by resource arguments at the expense of safety and quality will ultimately fail. This is consistent with RBV, especially where 'value' is defined as unit cost of outcome (rather than input). It would be wrong to characterise RBV as an imported management theory that adds to the panoply of productivity and efficiency frameworks. Rather, RBV predicts that big, successful organisations will become still bigger and more successful. The Matthew principle at work.

The theory is relevant to healthcare as a predictor that organisations will consolidate and specialise. The more a hospital is able to specialise, the more it will have resources that are Valuable, Rare, Inimitable and Organisationally-specific. Organisations that are less endowed with VRIO resources, such as those providing local general services, according to the theory, will struggle to control their destiny.

7.3.2 Critical Perspective: Responding to Proposition 2

The critical perspective describes an entire discourse that is oriented towards power, exploitation, oppression and conflict. It is explicitly value laden and refuses to accept that functionalist approaches to knowledge,

such as RBV, are value-free. It interprets KM as an attempt to control labour and labour processes. Workers may respond by hoarding knowledge (to retain power) or resisting surveillance attempts.

Sociology of the professions falls within this domain of critical analysis. It is essential to our theory-building because RBV explicitly lacks any notion of conflict or role of authority. Proposition 2 was set up at the outset in the expectation that it would be justified through the literature. This has indeed been the case. The notion of 'strategic resources' encompassing professions marks a point of overlap between RBV and the critical domain.

We may conclude that RBV can have no application to healthcare unless we incorporate (a) the professions as a knowledge-resource, and (b) an acknowledgement of resistance to managerial sources of authority. The critical perspective is a reality check countering RBV's uncritical marketisation. The discourse throws up broader questions about the relationship between public/private provision and ownership. These dimensions go beyond the scope of our knowledge mobilisation brief, but highlight the political nature of healthcare policy that does not apply to other private sector industries such as retail.

7.3.3 Organisational Form: Responding to Proposition 3

In the dualist taxonomy we set up earlier, Organisational Form tends to sit between RBV and Critical Perspective, acting as a bridge or broker. RBV literature is frequently dull to read. It uses either highly abstract strategic management concepts or, when operationalised, applies specific econometric empirical tests. For that reason alone, it is hardly surprising that it has so far bypassed healthcare. The critical literature, in contrast, tends to be engaging, drawing vignettes of human experience through case studies. The organisational form literature contains elements of both camps. Some of it is highly theoretical and applies statistical models to test the theory. Social Network Analysis papers often fall into this group. There is also a tradition, however, of employing qualitative research techniques and using case studies to compare organisational forms. This domain is also more likely to span both public sector and private sector (generic) organisations. Much of the network-based enquiry has focused on publicly provided and funded healthcare.

There has been a burgeoning literature into networks, since the presumption was that relational organisations that relied on lateral connections were more effective at knowledge sharing, and therefore performed better, than hierarchical organisations with vertical lines of accountability and communication. Empirically, this is quite a well worked-

over territory. The conclusion appears to be that relationships are more important than organisational design. Trust, psychological safety giving space to make errors and improve, consistency, were all relational aspects of an organisation's culture that was positively associated with performance. An organisation that cultivated these qualities would, empirically, be stronger than an organisation that lacked them, regardless of structure. Relationships trump design. So the answer to the proposition is 'no', boards do not need to have strong views about organisational design. It is more important that leadership styles and rewards and sanctions in the organisation are geared towards creating an environment that enables strong working relationships based on trust to flourish. Partnership and network organisations offer opportunities for collaboration, and many are only recently formed. But, within the network, power dynamics can lead to knowledge hoarding and weak levels of trust. Relational markets and hierarchies, if highly motivated, may be good for knowledge sharing, contrary to the original proposition.

7.4 Implications for Research

7.4.1 Themes

Themes that emerged across all three domains include (a) relationships and social capital as a form of capability and (b) value creation as a driver of performance. The area of relationships has attracted considerable scholarship (e.g. Klijn et al, 2010; van Wijk et al, 2008). Value Creation, on the other hand, has been highlighted throughout the literature as a gap in research and a weakness in RBV (e.g. Crook et al, 2008; Kraaijenbrink *et al*, 2010). We highlighted Porter's work on value creation in healthcare as potentially filling a theoretical gap. In terms of research, the next step would be to undertake empirical work linked to value in healthcare, e.g.

- How can 'value' be defined and operationalised (empirically measured)?
- What are the implications of using different measures of value?

A research agenda also emerges from the RBV enquiry that asks:

- To what extent can 'sustained competitive advantage' be conceptualised and operationalised within the healthcare sector?
- What are 'strategic resources' within health service organisations?

7.4.2 Developments in the Field

Two current areas of enquiry with scope for development in the healthcare sector are (a) absorptive capacity and (b) ambidexterity. Absorptive capacity concerns organisational learning in relation to organisational

knowledge or capability; past learning enhances future learning. The concept has already been imported into healthcare to some extent, e.g Harvey et al (2010) in Walshe et al (2010).

Ambidexterity, which also goes by the moniker exploration and exploitation, is a current topic that has been summarised by Raisch and Birkinshaw (2008) but so far does not appear to be visible within the healthcare field:

- How can the concepts of exploration and exploitation be applied to the healthcare sector?
- Do organisations benefit by focusing on either exploration or exploitation, or does an organisation need to engage in both activities?

7.5 Implications for Reflective Practitioners

7.5.1 Relevance

The review was envisaged as an exercise in theory-building, so how important is theory to the practitioner community? We have discussed this in seminars with NHS Trust and Foundation Trust Chief Executives. The relationship between theory and practice is indirect, but bringing order to ideas is constructive. The output of this review is intended to contribute to more effective and better informed processes of strategic management within the health care sector. Another way of framing the question is to ask 'what happens when theory is absent?' The answer is 'anything'. Theory gives a framework for marshalling arguments and evidence. At a minimum it helps to understand and explain events. Ideally it can help to predict and anticipate events, guiding future policy decisions.

The notion of Value Creation, essential to concepts of performance and sustainable competitive advantage, is topical in health care at the moment. For example, the former Secretary of State for Health delivered a speech on 9th November 2011 to the Brookings Institute in Washington D.C., advocating a shift towards outcomes measurement, value-based competition, and citing Michael Porter as an exponent⁴. Whether one agrees or not with current policy shifts, the speech marks an intersection between theory and policy, demonstrating a level of relevance.

⁴ [HTTP://MEDIACENTRE.DH.GOV.UK/2011/11/09/SPEECH-9-NOVEMBER-2011-ANDREW-LANSLEY-BROOKINGS-INSTITUTE-WASHINGTON-DC/](http://mediacentre.dh.gov.uk/2011/11/09/speech-9-november-2011-andrew-lansley-brookings-institute-washington-dc/)

7.5.2 Impact

Strategic management theory provides a lens or model of thought for senior managers. When, as part of this study, we asked Chief Executives informally what difference strategic management theory had made to them, the answer was diffuse (consistent with Weiss, 1979) but thoughtful. They valued the range of perspectives offered by strategic management theory which equipped them to behave with greater boldness and imagination in the field. We suggest that further work on exploring which strategic management perspectives are most useful to senior NHS managers may be called for; this appears to be an increasingly important gap.

The Critical Perspective highlights the dissensus that may exist in the organisation, where occupational groups have conflicting goals. The work emerging from the Organisational Form domain suggests that time spent nurturing a consistent and psychologically safe working environment to foster solid working relationships is a better investment than time spent restructuring to find the ideal organisational form.

In terms of the Resource Based View of the firm, the encouraging message from RBV is that 'managers matter' and that organisations are not entirely at the mercy of external forces. It provides a rallying cry to focus on strengths and to plan on the basis of what distinguishes the organisation from others.

7.5.3 Questions

Some possible questions that would emerge from the review for a reflective senior managerial practitioner in the NHS include:

- Which resources and capabilities distinguish your organisation from others? How would you apply the RBV perspective in your organisation?
- What models of strategic management are most useful to you?
- Are the organisation's policies and procedures organised to support the exploitation of its valuable, rare, and costly to imitate resources, including clinically and managerially relevant forms of knowledge?
- Where does organisational slack exist and how can it be used to promote innovation and growth?
- Are the concepts surfaced here of 'absorptive capacity' and 'organisational ambidexterity' meaningful and helpful in the field?
- How are health care professionals engaged with knowledge mobilisation efforts in your organisation? Are there sources of resistance or adaptation?

- Does knowledge flow smoothly through well developed relationships in your organisation?
- Do the concepts of a 'relational market' or 'relational hierarchy' surfaced here make any sense in the field?

7.5.4 Translating Research for a Practitioner Audience

The HS&DR Programme funds research (evidence synthesis and primary research) to improve the quality, effectiveness and accessibility of the NHS, targeted at an audience of the public, service users, clinicians and managers. Here we map our research to some key HS&DR aims to translate the major findings to a practitioner audience.

HS&DR Aim: Address an issue of major strategic importance to the NHS

Our findings are relevant to the current debate about service configuration. The review compares two different theories – the Resource Based View which focuses on an organisation's internal strengths, and Porter's theory which focuses on industry features. They both point towards the same conclusion, namely that competition and search for competitive advantage will lead to specialisation and to consolidation. Larger centres of excellence will flourish and smaller generalised services will struggle, according to these theories.

There are implications here for policy makers. Unlike Porter, who rejects the idea of 'lifting all boats', we are not proposing specialisation and consolidation as a goal. Instead, we are highlighting the strategic impact of competition.

HS&DR Aim: Fill a clear 'evidence gap', and generate new knowledge of direct relevance to the NHS

This HS&DR aim reflects the brief of our project. We identify the Resource Based View of the firm as a strategic management theory that has been researched for 20 years in generic management literature but has not crossed over into health. The study highlights the lack of strategic management theory bespoke for the NHS, and the drawback of importing private-sector concepts wholesale and uncritically into the public sector.

The review finds evidence that supports the following:

- **Organisational slack** - organisations which are rich in resources will have more headroom to innovate, grow and perform. RBV highlights availability of organisational slack as a strategic objective that is in the interests of the organisation. This poses a challenge to the productivity or 'more for less' efficiency agenda operating in the current fiscal climate.

- **Knowledge mobilisation** - important learning factors, resonating with organisational slack, are culture (consistency for doctors and empowerment for nurses) and informal breaks (for both doctors and nurses).
- **Open and closed systems** – We can reconcile the different strategic objectives of providers and commissioners within the economic view of open and closed systems (effectively micro and macro levels). Providers can grow and increase revenue share, operating in an open system, but commissioners work within a closed system or fixed budget.
- **Relationships trump organisational design** - networks may be effective, but a hierarchy/market that exploits good relationships is better at knowledge sharing than a network that harbours poor relationships. Connective ability of individuals is more important than organisational structure when it comes to making organisations effective.
- **Safety trumps finance** - organisations that get diverted by resource arguments at the expense of safety and quality will ultimately fail. This is consistent with RBV, especially if 'value' is defined as unit cost of outcome (rather than input).
- **Knowledge-based organisations** need to be cautious about breaking up tasks into too many discrete subtasks, e.g. exposure to new information may need 'front-loading' by senior clinicians (for example, in an Emergency Department). Our review considered evidence that developing a pyramidal structure and codifying professional tacit know-how may jeopardise quality. It challenges the trend over some years to delegate and cascade discrete components of work to lower grades.
- **VRIO Resources** – the Resource Based View encourages managers to identify strategic resources that are valuable, rare, difficult to imitate, and to foster organisational policies that exploit these resources. Our thumbnail sketch based on Foundation Trust Forward Plans suggests that this is a novel approach which goes beyond a conventional SWOT analysis.
- **Organisation-specific factors** outweigh market conditions, accounting for 22% of variation in performance premium according to some studies (Crook et al, 2008).

7.5.5 Bicycling in the NHS

In 'Bicycling on the Moon' Collins (2007) used the rules of riding a bike (Polanyi, 1958) as an account of tacit knowledge. Rules and instructions are useless. Doing it is the thing.

We too lit on the metaphor of a bicycle in describing the relationship between domains of thought. The dynamic model of RBV is a smooth bicycle chain; professions are the gears adding complexity and resistance; organisational form is the structure of the bike; 'knowledge research and evidence' is an informing signpost. VRIO qualities lie in the capabilities of the machine, e.g. through quality of materials.

Riding the bicycle defies description. Nevertheless, the strategic message coming from this review is that managers matter. Leadership, creation of a consistent and psychologically safe culture, capitalising on strengths, allied with the internal resource base, allow one organisation to outperform another, even over the same rough terrain.

This review is intended to stimulate research and practice that is theoretically informed. We hope it will assist researchers and reflective practitioners in the collective endeavour of bicycling in the NHS.

Appendix 1 - Project Plan in Original Proposal

- (1) **Months 1-2: Exploit the Scoping Review** to develop a preliminary model, addressing the research questions. A preliminary paper will be shared by the research team as a basis for moving into Stage 2. It will summarise the literature already harnessed that is relevant to the three propositions, allowing a more detailed line of enquiry to be developed at the outset. The paper will form an early output that will shape the rest of the project.
- (2) **Months 2 – 3: Devise a search strategy** (structured and systematic), informed by Stage 1: develop a protocol of key words as search terms. We would achieve depth through a structured search of perhaps a dozen high impact peer reviewed journals (using Web of Science high impact factor data to assist in identifying journals) over a seven year period. Breadth would be achieved through a limited systematic electronic database search. Book titles and notable authors would be included.
- (3) **Month 3: Data extract sheet:** design a template to capture characteristics of the literature sources.
- (4) **Ongoing: Narrative enquiry:** snowballing of sources would be achieved with reference to Stage One. Time-based plotlines would be drawn for each proposition, indicating the trajectory of each strand of analysis in health and other organisations. The use of narrative-based approaches would overcome restrictions imposed by structured and systematic search methods (Greenhalgh, 2005). Grey literature that is not captured through the structured or systematic methods would be picked up at this point through a policy context offering historical narratives (exploring path-dependence).
- (5) **Month 3 onwards: Retrieve the Literature.** The librarian will lead on searching for and retrieving the literature as specified. The librarian will also organise the storing and electronic transfer of e-journal based material to the rest of the research team. The first tranche of literature will be retrieved during months 3 – 6. The iterative nature of searching, analysing, writing up and follow-up searching means that there will be a repeated retrieval phase in Stage 3.
- (5) **Months 3 – 6: Refine the Analytical Framework .** The purpose of the literature review is to be analytical rather than simply descriptive. The emphasis of this study is upon mapping a divergent literature, delineated in the Scoping Review, and using it as an evidence base upon which to test the three propositions relating to RBV, power among occupational groups and organisational design. The analytical framework will be used to devise a set of criteria to rate the relevance of papers to the study.
- (6) **Months 6 – 9: Critically Appraising the Literature.** The criteria will be applied to the literature to rank and highlight important papers. Theoretical and empirical contributions will be evaluated.
- (7) **Months 9 – 12: Mapping the Literature.** We have three focal points of literature in relation to research utilisation and knowledge mobilisation, coalescing around RBV, the role of professions and managers and organisational form. Stage 2 of the search is expansive, while Stage 3 is reductive and analytical. Having ranked the relevance of papers, it will be necessary to organise them through a mapping process. Sub-themes will be identified. We would need to make a decision on whether to code and group whole papers according to sub-themes, or whether papers would be mapped to multiple themes/categories.
- (8) **Months 9 – 12: Synthesising the Evidence.** By applying a line of enquiry we aim to define the characteristics of an NHS organisation that lend itself to research utilisation and knowledge mobilisation, supported by empirical and theoretical material. Structure and boundaries of organisations will be considered. Meetings with the research team will take place to link and integrate disparate bodies of work and philosophical underpinnings into cogent frames of reference. This will include analysing compatible and contradictory frameworks, cumulative and discordant insights as well as fresh insights into knowledge mobilisation and research utilisation.
- (9) **Months 10-12: Summary of Stage 3 and Reflection.** The output of Stage 3 will be written up and considered by the research team as a preliminary for the final stage of the project. It is an opportunity to explore new lines of enquiry that have emerged and initiate further searches. It is also an opportunity to update literature sources.
- (10) **Months 12 – 15:** The study will produce a model or range of models with potential applicability to NHS managers and to NHS organisations, taking into account issues of validity and generalisability. The final report of the study will fully discuss implications for policy and practice as well as future research.

Appendix 2 – KRE Search Strategy in Scoping Review

Phase 2 Search Strategy

Search Strategy: Ovid (Medline, Embase, HMIC & CINAHL)

1. knowledge management.mp. [mp=title, other title, abstract, heading words]
2. knowledge transfer.mp. [mp=title, other title, abstract, heading words]
3. knowledge sharing.mp. [mp=title, other title, abstract, heading words]
4. knowledge capture.mp. [mp=title, other title, abstract, heading words]
5. knowledge utili\$.mp. [mp=title, other title, abstract, heading words]
6. evidence utili\$.mp. [mp=title, other title, abstract, heading words]
7. research utili\$.mp. [mp=title, other title, abstract, heading words]
8. knowledge implement\$.mp. [mp=title, other title, abstract, heading words]
9. evidence implement\$.mp. [mp=title, other title, abstract, heading words]
10. research implement\$.mp. [mp=title, other title, abstract, heading words]
11. knowledge mobili\$.mp. [mp=title, other title, abstract, heading words]
12. knowledge exchange.mp. [mp=title, other title, abstract, heading words]
13. knowledge transmission.mp. [mp=title, other title, abstract, heading words]
14. knowledge translation.mp. [mp=title, other title, abstract, heading words]
15. knowledge diffusion.mp. [mp=title, other title, abstract, heading words]
16. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15
17. remove duplicates from 16
18. limit 17 to english language
19. limit 18 to human
20. limit 19 to yr="2000 - 2008"
21. limit 20 to "review articles"
22. limit 21 to humans
23. limit 22 to research

Appendix 3 – Results of RBV Pilot

RBV1 Keywords : "resource based view of the firm" OR competition OR transfer OR "dynamic capabilities" OR performance OR value OR "competitive advantage" OR "social capital" OR innovation OR "productivity gain" OR functional OR "absorptive capacity" OR "core competency"

SUMMARY OF RBV PILOT SEARCH RESULTS

Word Change (lose Innovation, Function), (change dynamic capability and core
Change A = competency)
Change B = AND organisation*or company*or firm

Citation Count

Search Name	Definition	Management Science	Research Policy	Social Science Medicine
RBV1	Original Pilot	297	377	316
RBV2	RBV1+B	174	277	86
RBV3	RBV2+A (= RBV1+A+B)	169	192	58
RBV4	RBV1+A	295	245	189

Difference in Citations Between Searches

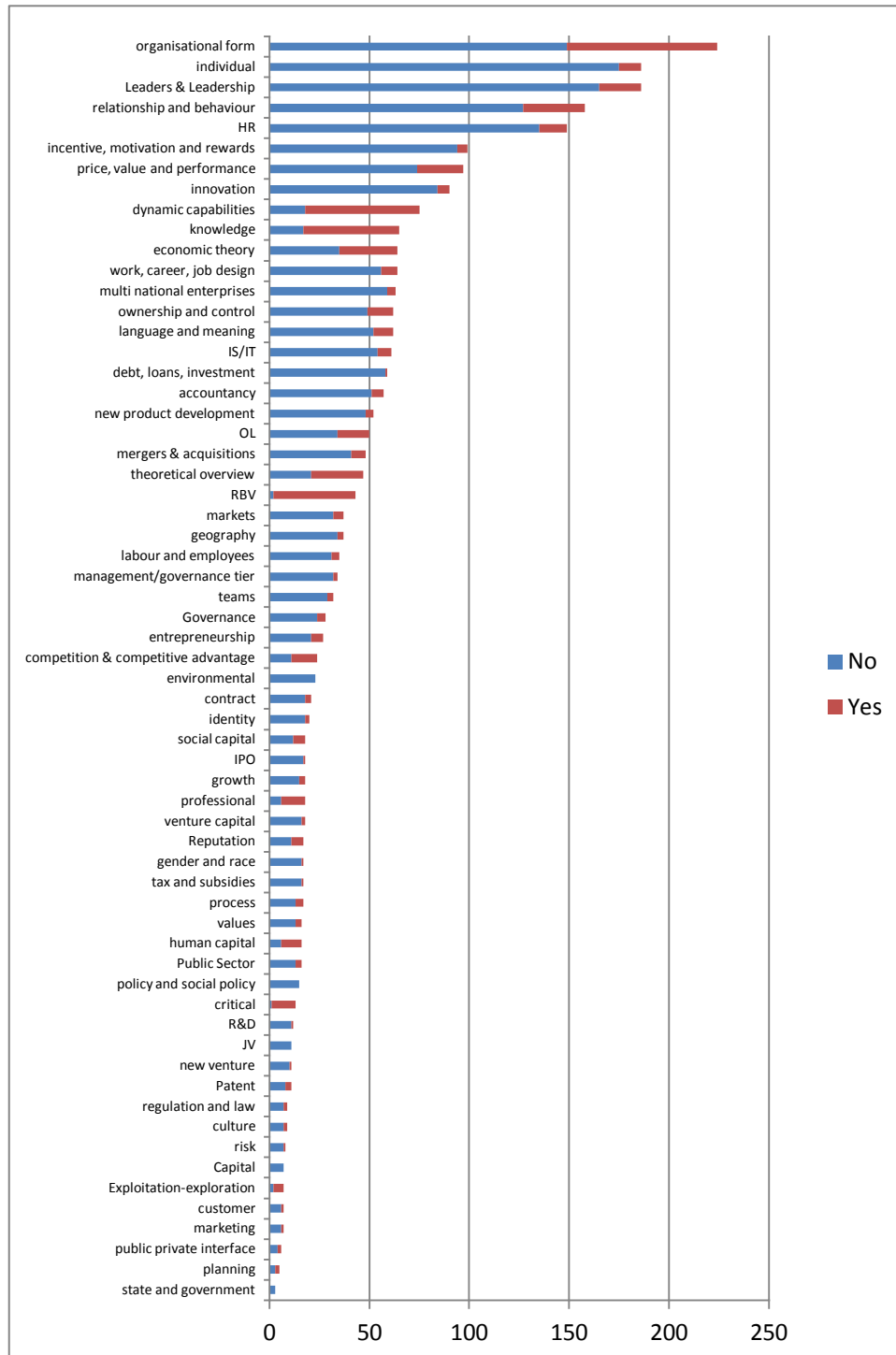
Search Name	Definition	Management Science	Research Policy	Social Science Medicine
RBV2-RBV1	value of B	-123	-100	-230
RBV4-RBV1	value of A	-2	-132	-127
RBV3-RBV1	value of A and B combined	-128	-185	-258

% Difference in Citations Between Searches

Search Name	Definition	Management Science	Research Policy	Social Science Medicine
RBV2-RBV1	value of B	-41%	-27%	-73%
RBV4-RBV1	value of A	-1%	-35%	-40%
RBV3-RBV1	value of A and B combined	-43%	-49%	-82%

Appendix 4 – RBV Categories and First Sift

Graph showing number of references with 'no' for rejection at first sift and 'yes' for acceptance at first sift to go forward to second sift. The list of categories is a loose labelling based on the content of the title and abstract.



Appendix 5 – Data Extraction Sheet

DATA EXTRACTION SHEET V3.1		free text	drop down list	
Basic:	ID Code:			
	Author			
	Year			
	Title			
	Journal			
	Keyword			
Considered:	Title	yes/no		
	Abstract	yes/no		
	Paper	yes/no		
Link with Scoping Review (Domain):		Link 1	Link 2	Link 3
SIFT	Include in the first cut?	yes/no		
If Yes:	Relevance to Proposition 1	high/moderate/low		
	Relevance to Proposition 2	high/moderate/low		
	Relevance to Proposition 3	high/moderate/low		
If No:	Why?			
Scope:	KM or Field - which is the main focus?			
Type of publication:				
	Peer reviewed article			
	Methodological			
	Theoretical			
	Empirical			
	Literature Review			
	Implementation review			
	Book Review			
	Book			
Dominant theoretical lens:		RBV, Labour process, Foucauldian ...		
	1. Dominant			
	2. Secondary			
Discipline:				

Audience:	Academic			
	Practitioner			
	Policy makers			
	General public			
Empirical Methods:				
	Qualitative			
	Quantitative			
Qualitative Methods:				
	Questionnaire survey			
	Case Study			
	Ethnographic			
	Interviews			
	Focus groups			
	Discourse Analysis			
	Documentary analysis			
Quantitative Methods: ??				
	Regression			
	Econometrics			
	Questionnaire			
Unit of Analysis				
	Individual			
	profession			
	group			
	organisation			
	field-wide			
	policy, including national, international, global			
	Macro			
Describe the findings, including relationship with the proposition				
What is the papers's contribution to the study?				
	Typology/Taxonomy?			
	Empirical findings?			
	Methodological development?			
	Summarising the field?			
	Introducing new idea?			
	Pointing to other important literature sources?			
	Substantiates the proposition?			
	Refutes the proposition?			
How does it develop the line of enquiry?				
Other Comments				

Appendix 6 – Summary of Search Methods

	Resource Based View	Critical Perspective	Organisational Form	Knowledge Research Evidence
No. Journals Searched	56	20	25	OVID Database
Pilot Searches	RBV1 (5622) RBV2 (RBV3 (3347, but became 2912 when we put into excel to sift)	CP1 = all terms (523) CP2 = all terms AND Knowledge (72) CP3 = CP1 minus Context (231 refs (no country limits), 198 refs (with country exclusions)). (Context = 365 in SS&M and 940 across all journals) CP4 = CP1 minus Context AND Knowledge (40 refs (no country limits); 31 refs (with country exclusions). CP5 = CP1 minus Context AND (Knowledge OR Information OR Research OR Evidence) = (151 refs (no country limits); 129 refs (with country exclusions)	OF1 (modified terms from 4th July meeting) no. of refs: 2200 OF2 (above with "knowledge OR research OR evidence) no. of refs: 1084	KRE1 (6185) KRE2 (3493) as in Scoping Review Initially using OVID + ABI databases. KRE2Final (274) applied via OVID, exactly replicating Scoping search.
Final search terms	RBV3 = "resource based view" OR "resource based view of the firm" OR competition OR "dynamic capabilit*" OR "knowledge transfer" OR performance OR value OR "competitive advantage" OR "social capital" OR productivity OR "absorptive capacity" OR "core competenc*" AND organi*ation* OR firm* OR compan*	CP6 = power OR surveillance OR Foucault OR Foucauldian OR critical OR resistance OR jurisdiction OR Marx* OR "neo Marxist" OR "labour process*" OR "postmodern discourse*" OR "labour capital" OR "professional regulation" OR "professional control" OR "critical perspective*" AND knowledge OR	OF2: network* OR partnership* OR collaboration OR hierarch* OR market* OR "knowledge intensive firm" OR "boundary span*" OR "professional service firm" OR "communities of practice" OR "strategic alliance*" OR "virtual organi*ation*" OR "organi*ation* form*" with "knowledge OR	Based on: knowledge management, transfer, sharing, capture, utilisation, mobilisation, exchange, transmission, translation, diffusion, implementation; research, evidence

Appendix 6 – Summary of Search Methods

	Resource Based View	Critical Perspective	Organisational Form	Knowledge Research Evidence
		research OR evidence. (2008-2011, with country limits)	research OR evidence (2008-2011 with country limits)	
No. Titles/Abstracts	3347	578	1084	274
Pilot Sift	1 st 100 72% consistency ST&TC Agreed to split the sift		1 st 214 82% ST&TC consistency Nevertheless, conducted full sift with both S&T	Excluded ABI
1st Sift	ST/TC: 629 (411 yes and 218 borderline)	ST: 73	ST&TC: 86% consistency overall, based on rejection rate 239 = 1 yes (ST or TC) 83 = 2 yes (ST&TC) Opted for 2 yes.	ST: 53
2nd Sift	EF: 100	EF/TC: 41	none	none
No. PDFs selected	100	41 + 3 S&M=44	83	53
No. Retrieved		44	80	46
Initial reading of papers?	Yes	Yes	Yes	No
Starred Papers	Up to 24 (not aiming to exclude others)	26 (aiming to exclude others)	17	
No. Referenced	44	25	41	
Analytical Themes	<ul style="list-style-type: none"> • Location (e.g. status) of theory • Strategic resources • Theoretical components: antecedents, content, consequences 	<ul style="list-style-type: none"> • Foucault • Labour process • Sociology of professions 	<ul style="list-style-type: none"> • Organisational structure, e.g. networks, CoP, KIF • Knowledge transfer • Innovation 	
Overlapping Areas	<ul style="list-style-type: none"> • Profession as Resources (CP) • Theory of value (CP) • Innovation & Performance (OF) • Organisational structure (OF) • Performance (OF) 	<ul style="list-style-type: none"> • Knowledge sharing and professions (RBV and OF) • Power and authority in organisations (OF) 	<ul style="list-style-type: none"> • Knowledge flows, e.g. ambidexterity, absorptive capacity (RBV) • Power in networks (CP) • Performance (RBV) 	

Appendix 7 – Journals, Search Terms, Volumes

RBV 3 Search (3347 Refs)

RBV3 Journal Search	
Keywords : “resource based view” OR “resource based view of the firm” OR competition OR “dynamic capabilit*” OR “knowledge transfer” OR performance OR value OR “competitive advantage” OR “social capital” OR productivity OR “absorptive capacity” OR “core competenc*” AND organi*ation* OR firm* OR compan*	
	References
Academy of Management Journal *	122
Academy of Management Review *	58
Accounting, Organizations and Society *	50
Administrative Science Quarterly *	28
American Economic Review *	27
American Journal of Sociology	6
American Sociological Review	9
Annual Review of Sociology	6
British Journal of Industrial Relations	16
British Journal of Management	111
Critical Perspectives on Accounting	30
Econometrica *	13
Economic Journal	26
Entrepreneurship, Theory and Practice	110
Harvard Business Review	141
Human Relations	86
Human Resource Management (USA)	100
Industrial Relations: A Journal of Economy and Society	20
Information Systems Research *	42
International Economic Review	22
International Journal of the Economics of Business	62
Journal of Accounting Research *	47
Journal of Business Venturing	83
Journal of Economic Behavior and Organization	63
Journal of Economic Literature	6
Journal of Economic Perspectives	4
Journal of Economic Theory	12
Journal of Health Economics	11
Journal of International Business Studies	169

Appendix 7 – Journals, Search Terms and Citation Volumes

Journal of Management	116
Journal of Management Studies	162
Journal of Occupational and Organizational Psychology	61
Journal of Organizational Behavior	117
Journal of Political Economy *	9
Journal of Product Innovation Management	105
Journal of Public Administration: Research and Theory	66
Journal of Public Economics	26
Journal of the European Economic Association	17
Leadership Quarterly	97
Management Science *	169
Milbank Quarterly	11
MIS Quarterly *	35
Organization	19
Organization Science *	139
Organization Studies	48
Organizational Behavior and Human Decision Processes	27
Organizational Dynamics	7
Public Administration Review	63
Public Administration: An International Quarterly	29
Quarterly Journal of Economics	19
Research Policy	192
Review of Economic Studies	22
Social Science and Medicine	58
Sociology of Health and Illness	6
Strategic Management Journal	237
Work, Employment and Society	10

Critical Perspective (CP6) Journal Reference Count Total no. of refs = 578

CP6 Search Terms: power OR surveillance OR Foucault OR Foucauldian OR critical OR resistance OR jurisdiction OR Marx* OR “neo Marxist” OR “labour process*” OR “postmodern discourse*” OR “labour capital” OR “professional regulation” OR “professional control” OR “critical perspective*” AND knowledge OR research OR evidence. (2008-2011, with country limits)

Journal	No. of Refs
Accounting, Organizations and Society	14
Administrative Science Quarterly	6
American Journal of Sociology	10
American Sociological Review	12
Annual Review of Sociology	11
British Journal of Industrial Relations	5
British Journal of Management	20
Critical Perspectives on Accounting	87
Human Relations	34
Journal of Management Studies	35
Journal of Public Administration Research & Theory	13
Organization	26
Organization Science	25
Organization Studies	42
Public Administration	18
Public Administration Review	16
Research Policy	22
Social Science & Medicine	126
Sociology of Health & Illness	37
Work, Employment & Society	19

Organisational Form (OF2) Journal Reference Count Total no. of refs = 1084

OF1 Search Terms: network* OR partnership* OR collaboration OR hierarch* OR market* OR “knowledge intensive firm” OR “boundary span*” OR “professional service firm” OR “communities of practice” OR “strategic alliance*” OR “virtual organi*ation*” OR “organi*ation* form*” (2008-2011 with country limits)

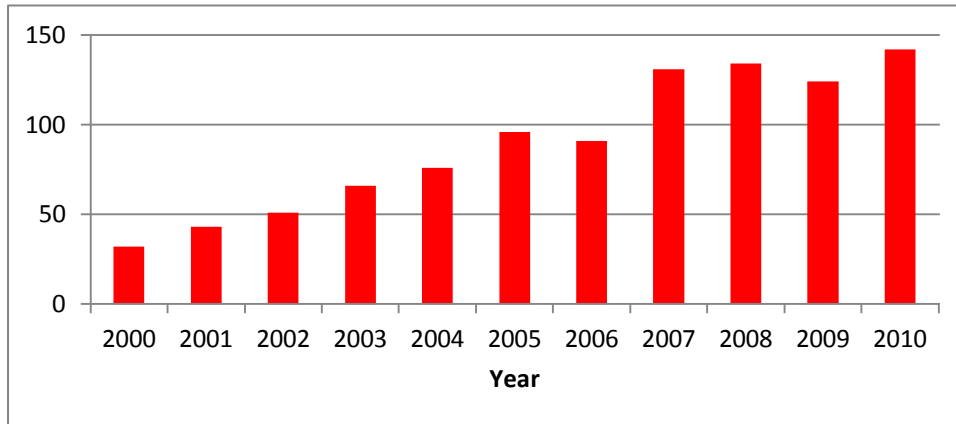
Journal	No. of Refs
Academy of Management Journal	43
Academy of Management Review	13
Accounting, Organizations and Society	24
Administrative Science Quarterly	13
American Journal of Sociology	17
American Sociological Review	27
British Journal of Management	39
Entrepreneurship, Theory and Practice	47
Harvard Business Review	57
Human Relations	25
Journal of Business Venturing	36
Journal of Management	43
Journal of Management Studies	78
Journal of Public Administration, Research & Theory	33
Management Science	92
MIS Quarterly	32
Organization	9
Organization Science	70
Organization Studies	33
Organizational Dynamics	2
Public Administration	33
Public Administration Review	29
Research Policy	166
Strategic Management Journal	107
Work, Employment & Society	17

Appendix 8 – Time Trend RBV Search

RBV Database – Searching on Term “Resource Based View”

- 1058 articles 2000 – 2011
- 985 articles 2000 – 2010

Volume of RBV Articles Published Over Time Period 2000 - 2010



Using Only 2000 – 2010:

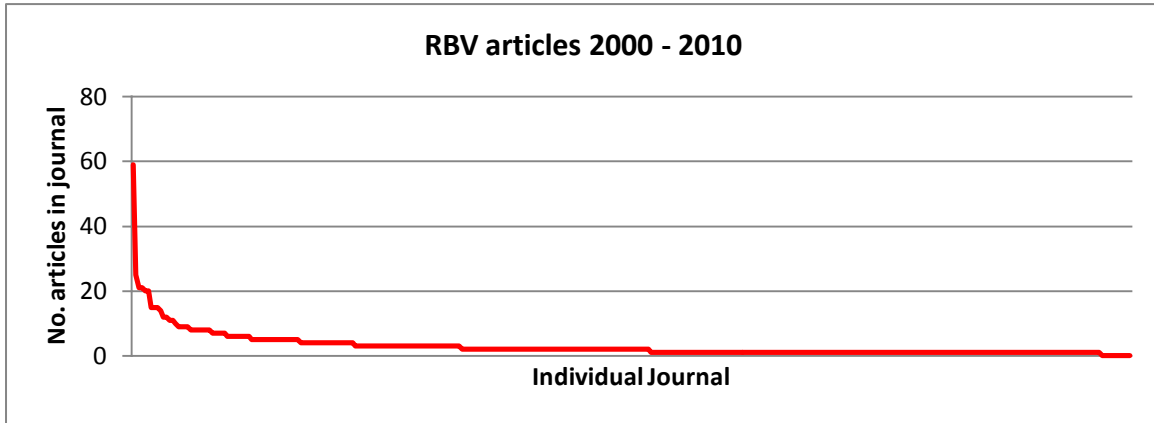
- 985 articles
- 318 journals
- Strategic Management most important = 59 articles
- 15 journals published 10 or more RBV articles over the period.
 - These 15 journals published 29% (281/985) of the total volume
- 303 journals published 1-9 articles over the period.
 - These journals constitute 71% of the output (704/985)

Frequency of Article Volume and Journals 2000 – 2010

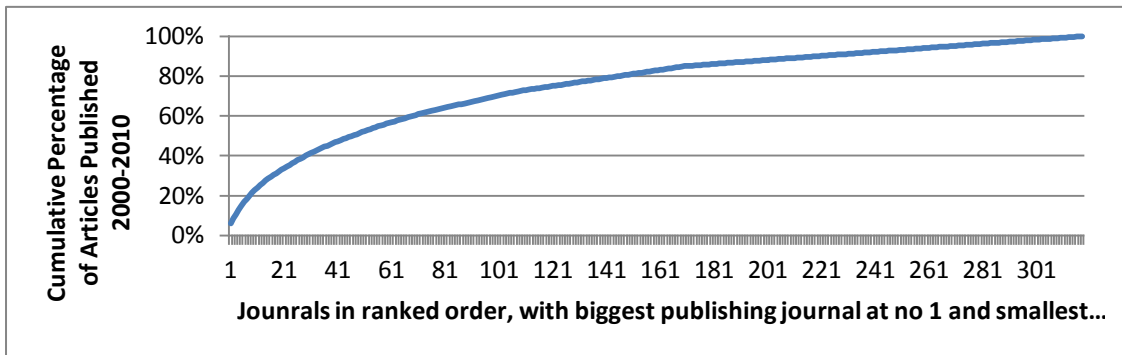
No. Articles	1	2	3	4	5	6	7	8	9	10	11	12	14	15	20	21	25	59	Total
No. Journals	148	62	35	18	16	8	5	7	4	1	2	2	1	3	2	2	1	1	318

This side of the line shows the number of journals that published 9 or fewer RBV articles 2000-2010

This side of the line shows the number of journals that published 10 or more RBV articles 2000-2010



We can see from the distribution below, that 80% of articles have been published in 144 (out of 318) journals.



Journals that published RBV articles in 2000-2010 – the 30 with the highest volume in rank order

	Journal	No. Articles	Cumulative %	Cumulative Total
1	Strategic Management Journal	59	6%	59
2	Journal of Management	25	9%	84
3	Journal of Management Studies	21	11%	105
4	Management Decision	21	13%	126
5	Industrial Marketing Management	20	15%	146
6	Journal of Business Research	20	17%	166
7	International Journal of Human Resource Management	15	18%	181
8	Academy of Management Journal	15	20%	196
9	International Journal of Operations & Production Management	15	21%	211
10	Academy of Management Review	14	23%	225
11	Journal of International Marketing	12	24%	237
12	Journal of Operations Management	12	25%	249
13	Organization Science	11	26%	260
14	European Management Journal	11	28%	271
15	MIS Quarterly	10	29%	281
16	Entrepreneurship Theory and Practice	9	29%	290
17	Journal of International Business Studies	9	30%	299
18	Journal of the Academy of Marketing Science	9	31%	308

Appendix 8 – Time Trend RBV Search

19	Journal of Intellectual Capital	9	32%	317
20	Human Resource Management	8	33%	325
21	Journal of American Academy of Business, Cambridge	8	34%	333
22	International Journal of Management Reviews	8	35%	341
23	International Journal of Technology Management	8	35%	349
24	Journal of Knowledge Management	8	36%	357
25	Journal of World Business	8	37%	365
26	Management Revue	8	38%	373
27	European Journal of Marketing	7	39%	380
28	International Journal of Physical Distribution & Logistics Management	7	39%	387
29	Technovation	7	40%	394
30	British Journal of Management	7	41%	401

Appendix 9 – SWOT & VRIO Based on FT Plans

Threats

- NHS cost reduction of 20%
 - Drive for increased centralisation of services threatens specific specialities
 - Tougher terms in the acute contract
 - Great uncertainty regarding PCT contracts, including prices and tariffs
- Demand management by commissioners, moving more care into the community
- Reduction in Dept. of Health research funding leading to the loss of clinical research posts
- Reduction in MFF
- Increased patient choice
- Any willing provider
- Increased competition because of more tendering by commissioners
- Reduction in funding for staff education and training, ending some specialist programmes
- Local authorities have less money to spend and are “disinvesting” from the Trust
- Reduction in the number of junior doctors
- Clinical quality and innovation at risk because of higher patient throughput

Opportunities

- Building a specialist Centre
- Broaden income base through (a) national and international market growth, including income from private patients, and (b) commercialising expertise in system design and management
- Acquisition of another Trust because of more autonomy for FT mergers & acquisitions
- Successful tendering for community care, following move by commissioners to emphasise care being delivered in the community
- Increase market share of “promising services” (e.g. bariatrics and endoscopy), drawing flows from beyond the catchment area
- Plans to increase operational efficiency
 - Reduce absence due to sickness
 - Less use of agency and bank staff
 - Shorter in-patient stays
 - Enhanced productivity through IT

Strengths

- One of the top-ranked trusts for patient satisfaction and customer service
- Best performing trust for staff satisfaction
- Significant medical technology investment
- Developing a program of personalised medicine
- Largest specialist centre in the region
- Research and Development
- Focus on workforce
 - Producing leaders
 - Engaging staff, including promoting the benefits of change and flexibility

Weaknesses

- High levels of sickness leave
- Weak showing in the National Patient Survey
- Lack of necessary skills amongst senior leadership and professional leadership

VRIO

Valuable (exploits opportunities and eliminates threats)

- Developing specialised, seamless patient care pathways to reduce fragmentation and close gaps
- High levels of employee satisfaction
- IT strategy, including new services to enhance productivity and quality

Rare

- The Trust advocates giving patients a high level of control over their care planning

Difficult to Imitate

- Largest centre for the specialty in the country in the region
- Social capital/partnership building, e.g., new academic partnership

Organisational Ability to Exploit its Competitive Advantage

- Closer working with neighbouring Trusts to realise procurement savings
- Well-defined workforce plan, including a commitment to a stable workforce
- Commitment to enhance innovation via training senior leadership
- Examining options to incentivise clinicians to engage in private work at the Trust
- Undertaken extensive reorganisation, creating Clinical Advisory Groups designed to align clinical, research and training services and giving greater governance responsibility to divisions

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