GLOBALISATION IN INFORMATION TECHNOLOGY:

THE IMPACT OF IS OFFSHORING

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Declaration of Authorship

I certify that the work presented here is, to the best of my knowledge and belief, original and the result of my own investigations, except as acknowledged, and has not been submitted, either in part or whole, for a degree at this or any other University.

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Abstract

This research is about the phenomenon of IS offshoring, which involves distributed software development, defined as occurring when teams of geographically dispersed individuals work as part of a global virtual team across national boundaries. The research identifies the phenomenon as an aspect of globalisation, enabled by availability of skilled resources in offshore locations (where the cost of labour is relatively low), and affordable high-speed telecommunications services in these locations. The research develops explanatory theories for aspects of offshoring, commenting on its impact on IS organisations and practitioners, both onshore and offshore.

For IS organisations, it concludes that while the cultural, organisational and operational impacts of offshoring are low, the economic impact is significant and is leading to the emergence of the modern heterarchy, a new form of multi-national enterprise (MNE). Both onshore and offshore IS organisations are adopting this organisational form as their strategic intentions converge.

For IS practitioners, the cultural, organisational and operational impacts are similarly muted. The economic impact is more pronounced for offshore IS practitioners, with direct evidence of increased reward and opportunity. The economic impact of offshoring on onshore IS practitioners is less conclusive; although the research highlights a rebalancing of IS skills between onshore and offshore locations.

The research adopts an interpretive and qualitative research paradigm, and uses grounded theory techniques to analyse the data and develop theory. Two projects from the financial services industry in the UK, conducted by Capgemini, are used to provide empirical data.

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1 Motivations and scope of the research

1.1 An introduction to the research

The subject of this research is the effect of offshoring on its participants. Offshoring is a form - or perhaps consequence - of globalisation, a term like offshoring that is subject to multiple interpretations. Both offshoring and globalisation are sometimes presented as new phenomena, but they have in fact been in existence for a long time. Chanda (2007) evokes an image of technology-driven globalisation over centuries, describing how the domestication of camels in 200 BCE led to the opening of new trade routes between India and the Eastern Mediterranean; how the adoption by the Venetians of the Arab lateen sail and the Chinese sternpost rudder increased the frequency and safety of long voyages in the middle ages; and how cheap fibre-optic cables linking Europe, the Americas and Asia drove the rapid growth of the Internet in the latter part of the 20th century. Similarly, offshoring – in its simplest form the use of labour from lower-cost economies to provide output in higher-cost economies – has been in existence as long as there has been disparity in labour costs between locations. People have moved across great distances in search of higher wages: in the 18th century, labourers crossed the Irish Sea from Ulster to the Scottish lowlands to pick potatoes; in essence these people are no different to the skilled software engineer travelling from Bangalore to New York in search of higher paid work in the present day.

Nor is globalisation limited to commerce: others aspects include, for example, the spread of ideology, of religion and of technology. The successive waves of empire over the past two millennia have brought in their train trade, standards, methods, ideas, tools, politics and skills. Globalisation is a consequence of the human capacity for curiosity, interaction, communication and expansion. What is different now is that because of

technology, the capacity for globalisation is greater, and its effects and consequences more visible. It is also more pervasive, extending across many industries. For example, the future of health care - traditionally a local business - is becoming increasingly global, with doctors, nurses and patients travelling across borders to give and receive medical treatment (The Economist, 2008 (i)).

This research is concerned with a particular form of globalisation – the relatively new business of offshoring Information Systems (IS) development. IS offshoring refers to the practice of using low cost labour in distant countries (usually newly industrialising countries) to provide IS products and services for use in developed economies.

IS offshoring has in the past been limited by supply of skilled offshore resources, poor and expensive enabling technology such as telecommunications, and general lack of expertise in the conduct of distributed application development (Ravichandran and Ahmed, 1993). Now it is deployed extensively and is regarded by many as a mature and cost-effective approach to application development and maintenance (Gannon and Wilson, 2007). The National Association of Software and Service Companies (NASSCOM), an Indian trade body for the IT-BPO industry in India, estimates that offshore spending in India alone in 2009 will exceed $71 billion (NASSCOM, 2009).

In consequence, suppliers of offshore IS services have graduated from simple sourcing models such as providing individuals to do specific tasks to complex and sophisticated cross-border contractual and resourcing arrangements with their customers. New multi-national enterprises (MNE) have emerged, originating in newly-industrialised countries and dedicated to exporting labour and IT-enabled services to developed economies. New project and organisational structures are required to take account of the dislocation of staff, which in turn demands new ways of managing activities. Cultural traditions are

often disrupted, both for offshore practitioners who come to reside in an onshore location and for the onshore individuals who encounter them.

This chapter commences with a discussion of the nature and scope of the study, followed by a definition of key constructs and terms used. The motivations for the research are described and the chapter concludes with an overview of the structure of the thesis.

1.2 Nature and scope of the research

In less than a decade, the practice of using geographically and temporally dispersed teams to work jointly on software development activities has become commonplace. Offshoring is having a profound impact on many aspects of the IS environment in developed countries. Although it is experiencing more interest in recent years, as evidenced by the special issue of MIS Quarterly in June 2008, it has not yet been the focus of significant research activity (King and Torkzadeh, 2008).

The perspectives that do exist present a wide range of opinion, from Farrell (2005) who asserts that offshoring offers huge benefits to both organisations and the economy, to Levy (2005) who presents a more cautious view of the benefits of offshoring.

This research seeks to investigate further the phenomenon of IS offshoring. The problem area (in the sense defined by Strauss and Corbin (1998) whose techniques of grounded theory are used in this research), is the practice of offshore IS and the researcher's primary interest is in understanding the impact of this phenomenon on IS practitioners and on the organisations they work in. Various perspectives are considered, for example, the attitudes of onshore practitioners who experience offshore IT development, and the types of skills they will need in the future. Similarly it examines, for example, the

changes that may result to the structure and composition of offshore IS companies, and the forms of distributed multi-national organisations that may emerge in the future.

By assessing the impact of IS offshoring on individuals and organisations affected by it, the research seeks to add to the body of knowledge in this area. The methodology for the research follows Gregor (2006) and develops explanatory theories (type II in Gregor's categorisation) which are concerned primarily with explaining how, why, and when things happen. In choosing an epistemological position, the research adopts the interpretive approach taken by Galliers (1992) that IS comprises computer systems embedded in a social context, and not just hardware and software. Two recent examples of large offshore IS development projects conducted by Capgemini in the financial services industry in the UK are used to provide the data for the research. While the categorisation of participants is necessarily high-level, it is sufficiently clear to provide a basis for developing explanatory theory.

1.3 Context and domain of research

The phenomenon of IS offshoring is the focus of this research, and it falls within the domain of Information Systems. The particular aspect of IS research with which it is most closely associated includes the study of distributed or global software development, an area that has attracted increased interest in recent years. The contextual landscape will be particularly familiar to researchers of global IS sourcing, since offshoring is frequently treated as a subset of IS outsourcing. (The terms are often used synonymously, since IS offshoring is usually – though not necessarily – outsourced). Although relatively new, many renowned researchers have studied IS offshoring, and it is now regularly featured in the leading academic journals in the field of IS. Thus, this research makes reference to the works of Dibbern, Willcocks, Lacity, Carmel, Hirschheim, Agarwal, and Fitzgerald, and others who have conducted research in this field.

Dibbern *et al* highlight the relevance of this research to IS offshoring studies:

> "We believe that research on these "new" phenomena such as offshore outsourcing, application service providing and business process outsourcing would benefit from 'standing on the shoulders' of what has already been accomplished in the field of IS outsourcing." (*ibid*)

However, while this research takes as a starting point such accomplishments on outsourcing and global sourcing, it does not employ the frequently-cited construct of transaction cost theory (Williamson, 1979). This is because this construct has less explanatory power when there is a clear disparity between production costs and transaction costs, as in the case of offshoring. Put simply, transaction cost effects are assumed to be almost negligible in offshoring compared to production costs. While this assumption may be challenged in the future, as costs in offshore locations such as India rise, it is sufficiently clear from this research that the assumption is valid, and therefore transaction cost theory is discounted.

A second contextual reference point for the research is the field of international business. In contrast to offshoring, globalisation and international business have long been the focus of research, comprising, in effect, elements of multiple disparate disciplines. Perspectives include political, cultural, and economic dimensions, illustrated with studies that are company, industry and temporally specific. Because offshoring is a very obvious and topical example of globalisation, this research uses constructs from the field of international business to provide insights and to help develop an explanatory framework. Prominent researchers in this field include Williamson, Perlmutter, Hofstede, Hedlund, Ghoshal and Bartlett, and their works are cited in this research.

Because the nature of IS offshoring involves commercial activity across political and geographic borders, research in this area will inevitably at times cross the boundary between IS studies and studies in related disciplines such as international business. This research fits more comfortably in the domain of IS because it is concerned primarily with the impact of offshoring on IS companies and on IS practitioners. The conclusions and outcomes of the research are primarily intended to inform stakeholders who are engaged in IS research or practice. Moreover, constructs from the field of international business used in the research are for the most part familiar to researchers of IS offshoring, such as those to do with culture or knowledge transfer. If the research happens to have relevance also in the field of international business, then this is a useful but secondary outcome.

1.4 Definitions of terms used in the research

Various phenomena and concepts are used in this research, and form a core part of the narrative. Some of these terms are familiar because they are used frequently in academic research and in the wider media. This does not necessarily mean that they have the same meaning for all; in fact, a term like 'globalisation' is subject to a broad range of interpretations. Because certain of these terms refer to constructs and phenomena that form an essential part of the research, and because they are subject to multiple interpretations, they are defined below. This definition is deliberately specific to this research, and is presented at this stage of the thesis because it sets the scene for subsequent discourse.

Globalisation

Chanda (2007) describes globalisation as:

> "...a growing sense of interconnectedness and interdependence of the world." (Chanda, 2007)

He notes that this is an ancient historical process. In fact, globalisation could be viewed as a consequence of the human propensity to move from place to place to seek resources, to share knowledge, to trade, to satisfy curiosity, and otherwise to interact with their fellows. In this respect, Marco Polo could be viewed as an instrument of globalisation in that his journey took him, his ideas and his trade across many borders to remote parts of the world (at a time when most Western thinkers presumed the world was flat).

Others view the concept of globalisation more cynically, as jargon invented by marketers to describe international expansion of trade and commerce in recent times. A more sinister interpretation sees globalisation as a tool of colonialism; a convenient banner to allow the developed economies to continue their exploitation of people, resources and the environment in less developed parts of the world (Chanda, 2007). Whatever view is taken, there is an important construct here.

For the purpose of this research, globalisation refers to the trend of an increasing integration and interdependence of the world noted by Chanda. It uses a definition from Narayana Murthy, the cofounder of Infosys Technologies, who sees globalisation as:

> "Sourcing capital from where it is cheapest, sourcing talent from where it is best available, producing where it is most cost effective and selling where the markets are, without being constrained by national boundaries." (*ibid*)

This is predominantly an economic perspective, and one that is used because it highlights the aspects of globalisation that have particular relevance to the phenomenon of offshoring. Also, in some cases, offshoring is seen as direct consequence of – and even synonymous with - globalisation:

> "The new buzzwords that have come to replace globalization in public discourse are specific consequences of the same trend, such

> as ‘outsourcing’ of jobs and ‘offshoring’ of manufacturing facilities from the developed to the developing world.” (*ibid*)

Culture

The concept of culture is used widely in this research. It is an essential element in many diverse disciplines, including anthropology, sociology, history and politics, and has various meanings that can be applied at multiple levels depending on the perspective of the researcher. For example, anthropologists look at culture in a broader human context:

> “Culture or civilisation, taken in its wide ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society.” (Tylor, 1871)

Others refer to culture as it is manifested in the arts and in belief systems, or as it occurs in everyday activity of individuals or groups of people. What is consistent in the many definitions of culture is that it is an extremely broad and encompassing construct that has potential to explain a wide range of human belief and activity.

In the literature relating to IS sourcing, culture tends to be much narrower in scope. Some research suggests that the anthropologically-derived concepts of culture cannot be applied to the global economy (Barham and Heimer, 1998), and others view the scope as restrictive:

> “So far, with the exception of a few papers who used other cultural perspectives (i.e. Walsham, 2002), most IS/IT studies have used Hofstede’s approach (Myers and Tan 2002). In addition, outsourcing studies have used the term culture to examine issues that differ in their nature from time and language through to trust and motivation, while, in both the practitioner and the academic literature, culture is discussed as part of a bigger framework and has not been analyzed exclusively and in depth. … Moreover, the

> same few aspects of culture are repeated in most studies." (Tsotra and Fitzgerald, 2007)

This research addresses culture as it applies to commercial organisations and to the individuals that work in them. This is a view of cultural interaction that is predominantly work-related and commercial in nature, and while it is undeniably a narrow perspective on a complex and varied construct, it considers corporate, social and national aspects of culture. It adopts the interpretation of culture taken by researchers such as Winkler *et al* (2006) and Tsotra and Fitzgerald (2007), who look at culture in the context of its impact on distributed software development. This does not diminish its value in assessing the impact of offshoring on organisations and individuals, but it is important to note that there are other, wider aspects of culture that may have implications beyond those that have emerged from this research.

Outsourcing

Dibbern *et al* note that:

> "The generic notion of outsourcing – making arrangements with an external agency for the provision of goods or services to supplement or replace internal efforts – has been around for centuries." (Dibbern *et al*, 2004)

In fact, the concept is one that is fundamental to human commerce, and is a consequence of specialisation, or division of labour. Adam Smith's observation is an acknowledgement of the human propensity to outsource activity:

> "When an independent workman, such as a weaver or shoemaker, has got more stock than what is sufficient to purchase the materials of his own work, and to maintain himself till he can dispose of it, he naturally employs one or more journeymen with the surplus, in order to make a profit by their work. Increase this surplus, and he will naturally increase the number of his journeymen." (Smith, 1776)

Outsourcing is not limited to journeyman workers: it exists at very fundamental human levels – for example, in the diverse practices of wet-nursing and mercenary soldiering. Outsourcing is necessary for much of the enterprise that extends beyond the scale and capability of the individual.

In the parlance of modern economics, outsourcing refers to the firm's use of third parties to provide products or services that it chooses not to provide internally. Lacity and Hirschheim provide a simple, generic definition:

> "…the purchase of a good or service that was previously produced internally." (Lacity and Hirschheim, 1993)

IS outsourcing is a comparatively recent form, and at its most basic involves the firm:

> "…turning over to a vendor some or all of the IS functions…" (Apte *et al*, 1997)

Fitzgerald and Willcocks define it more comprehensively:

> "… the commissioning of a third party (or a number of third parties) to manage a client organization's IT assets, people and/or activities (or part thereof) to required results." (Fitzgerald and Willcocks, 1994)

Outsourcing thus covers a range of activities and practices, from the use of contract resources to perform specific, specialist tasks under the direction of internal managers ('body-shopping') to the wholesale transfer of assets, staff and responsibility for IS delivery to a third party vendor ('total outsourcing') (Lacity and Hirschheim, 1995). There are many different implementations of outsourcing along this continuum – (Millar (1994) defined a taxonomy that comprises four basic types) – but they are essentially variations of the same theme.

Offshoring

Grossman and Rossi-Handsberg highlight the link between Smith's specialisation and the emergence of the factory, and note that physical proximity between specialised workers was essential:

> "But without proximity, it would have been impossible to coordinate the efforts of the various workers or to combine their inputs into a single product. Communication required physical travel. Transportation of intermediate inputs or partially processed goods was slow and costly. The economic geography of the time pointed to agglomeration in production, not fragmentation. Specialization implied geographic concentration. So factories produced goods, which were shipped to final consumers. If the consumers happened to reside in a different country, there was international trade." (Grossman and Rossi-Hansberg, 2006 (i))

Offshoring allows the severance of this link. It occurs when a company engages resources from another country – most often an economy where the cost of labour is significantly lower - to conduct business activities on their behalf. This is made possible by advances in transportation and communications technology:

> "…that have weakened the link between labor specialization and geographic concentration, making it increasingly viable to separate tasks in time and space." (Grossman and Rossi-Hansberg, 2006 (ii))

There is an obvious relationship between offshoring and globalisation, made explicit in the following definition:

> "Offshoring, or trade in tasks, refers to the possibility of unbundling the production process of goods or services by assigning tasks to individuals, or teams, in different global locations. The study of offshoring is then the study of how globalization affects individuals." (Beverelli, 2007)

IS offshoring

IS offshoring involves distributed software development and maintenance, defined as occurring when teams of geographically dispersed individuals work as part of a global virtual team across national boundaries (Edwards and Sridhar, 2002). Offshoring activities may be insourced, where the resources used are employees of the parent organisation, or outsourced, where resources are employees of a third party supplier. The reason most often cited for such distribution of IS activity is to allow companies in developed economies to take advantage of the significant disparity of labour costs between onshore and offshore countries (Dibbern *et al,* 2004).

Tsotra and Fitzgerald (2007) describe three categories of 'offshore' outsourcing as 'nearshore' (sourcing from countries close to the client company); 'offshore' (sourcing from countries characterised by similar culture, economic status and technological capabilities); and 'farshore' (sourcing from countries far away). Offshoring is taken in this research to include all of these types of IS sourcing.

Onshore and offshore IS MNEs

The rapid development of the IS offshore industry has resulted in the creation of large MNEs. Some have originated in developed ('onshore') economies – recent manifestations of systems integration (SI) or management consulting firms, which typically provide offshore software development as part of a wider portfolio of 'multi-shore' consulting, technology and outsourcing services. Examples of such firms – termed onshore IS providers in this research - are IBM, Capgemini and Accenture, which have sizeable operations in newly industrialising countries ('offshore') but have their origins and headquarters in developed economies.

Others - so-called ‘pure play’ offshore IS providers such as Wipro and Infosys - have originated in newly industrialising countries (‘offshore’) and for the most part export labour and IT-enabled services to developed economies (‘onshore’). Onshore and offshore IS firms use similar approaches to meet their clients’ sourcing demands, such as their use of a global development model (GDM) to provide consistent IS services.

As the market for offshore IS services expands, the distinctions between these types of firms are blurring as each adopts the more successful tactics of the other. For example, offshore IS providers are developing significant operations in developed economies, and onshore IS providers are presenting pure offshore propositions to their clients.

Onshore users of offshore IS services

Onshore users of IS offshore services are typically IT departments (often referred to as ‘in-house’ IT departments) of commercial organisations in developed economies that are engaged directly in implementing offshoring IS solutions using processes and methodologies adapted for distributed IS development. The onshore IS practitioners considered in this research regard as their home location one of the developed economies.

Some onshore firms have set up their own, fully owned subsidiary in offshore locations dedicated to providing offshore IS services to that company alone. This is typically a wholly-owned subsidiary of western companies, sometimes termed a ‘captive’ offshore operation. It represents a classic example of vertical diversification for the traditional MNE – establishing of a specific business function (in this case IT processing) in a given location to capitalise on location-specific advantages (generally lower cost of labour).

1.5 Motivations for the research

Understanding the motivation behind the research requires an answer to more than just why the research is interesting or problematic; it is necessary also to identify those who will find the research to be of interest. Moreover, the topic must have relevance in the longer term for it to prove worthy of research.

The researcher's personal interest stems from a desire to understand what Liebenau and Backhouse (1990) term the informal side of IS, namely the everyday behavioural aspect of information technology. (This is in contrast to the technical and formal aspects, which pertain to the artefacts and rules of IT respectively). The interest is directed largely at understanding the social and cultural impact of change in IS development practice, such as that effected by offshoring. In this respect, IS offshoring is a compelling phenomenon to research.

Why IS offshoring is interesting

In the description of the history of sourcing of IS in chapter two of this report, it becomes clear that although the practice of offshoring is not new, its widespread adoption by corporations represents a change in how IS activities are conducted. Traditional manufacturing and distribution models are breaking down, and new models for supply of IT and IS services emerging. Such change is invariably interesting, not least to the parties affected by it, and will remain relevant as long as the phenomenon causes instability. In this respect, the scale, rapid adoption and pervasiveness of the phenomenon merit particular attention.

Moreover, offshoring is generating a sense of dislocation and unease for many IT practitioners in developed economies, and associated challenges for their managers,

reminiscent of that described by Zuboff in her research on early computerisation in the USA:

> "It also poses fundamentally new choices for our organisational futures, and the ways in which labor and management respond to these new choices will finally determine whether our era becomes a time for radical change or a return to the familiar patterns and pitfalls of the traditional workplace." (Zuboff, 1988)

In a similar way, offshoring represents a different way of working for many organisations in developed economies. Work practices and methodologies at every stage in the lifecycle of an offshore development project differ from traditional software development practices. Development techniques and approaches can be different, and there is greater reliance on tools that enable remote working, like email and instant messaging. New organisational structures are required to take account of new business processes. Career paths for onshore and offshore staff are changing, as skills migrate from location to location. The traditional interfaces between IT and business users, and between IT and customers of the corporation are also changing – indeed, some companies offshore their help desks and call centres, which involves direct contact between the company's customers and individuals based in offshore locations. Costs and productivity can be affected: the disparity of cost means that a consumer of offshore services can do more with less. Moreover, the impact of the phenomenon in developed economies is not limited to IS workers: the attention given in the UK media to a report of an Indian call centre closure (BBC News website, 2006) highlights the sensitivities associated with offshoring from a customer perspective: the topic is charged politically and socially.

This is true also in developing economies, where IS offshoring is often a driver for social and economic change. For example, the establishment of India as the leading centre for offshore IS services is having a measurable impact:

> "…the IT/ITES industry's contribution to the country's GDP has been steadily increasing from a share of 1.2% in FY98 to 5.2% in FY07; it has contributed to foreign exchange reserves of the country by increasing exports by almost 36% and its direct employment has grown at a CAGR of 26% in the last decade, making it the largest employer in the organized private sector in the country.
>
> In addition…the IT/ITES industry has significantly contributed through socially relevant products/services and community initiatives in human resource development, education, employability, health, encouraging women empowerment and employment of differently abled and 'out-of-the-mainstream' candidates." (NASSCOM, 2008)

Why IS offshoring is problematic

Many of the reasons that make offshoring interesting make it problematic. It is difficult, for example, for people to adapt to the changes demanded by new ways of working. When this is compounded by the need to accommodate new cultural perspectives, as it often is in IS offshoring, these difficulties can become severe. The rapid adoption of the practice of IS offshoring has caused some hostility in western countries, where workers fear that their jobs will migrate to lower-cost locations. The mobilisation of professional and industry bodies against indiscriminate use of offshoring highlights the seriousness with which this threat (and opportunity) is viewed (British Computer Society, 2006). Moreover, the use of offshoring to provide IS services and products is not failsafe. There are many risks involved, as described in the literature. The cost-effectiveness of IS offshoring – the most often cited reason for its adoption - has been questioned (Dibbern *et al*, 2008) and, in the light of the current global economic downturn, in a study by Goel *et al*:

> "The production of high-tech goods has moved steadily from the United States to Asia over the last decade. But soaring oil prices, a falling dollar, and rising wages are undermining some of the reasons manufacturers moved offshore. For managers of global supply chains, the question now is whether or not to consider scaling back offshore production by returning operations to, or closer to, the United States." (Goel *et al*, 2008)

Another very visible manifestation of negative sentiment to offshoring comes from the advertising by companies in the UK that their call centres are not offshore – an explicit acknowledgement of the negative perception of the phenomenon in the UK (Scott, 2007).

While some view offshoring as problematic, others see it as a benefit. Taleb describes offshoring (in a general sense, and not just related to IS) as a mechanism that allows developed economies:

> "…to specialize in the creative aspects of things, the production of concepts and ideas, that is, the scalable part of the product, and increasingly, by exporting jobs separate the less scalable components and assign them to those happy to be paid by the hour." (Taleb, 2007)

He argues that this is a benefit directly linked to a better standard of living:

> "The American economy has leveraged itself heavily on idea generation, which explains why losing manufacturing jobs can be coupled with a rising standard of living." (*ibid*)

Taleb's comments show that whether problematic or not, offshoring is certainly contentious.

Why IS offshoring is important to academics

IS offshoring is an emerging field of research, and that is likely to grow in importance for academics. Although is changing the way in which IS development is conducted, there is yet no theory of offshoring (Beverelli, 2007). Moreover, the phenomenon is expanding rapidly in developed economies, and seems likely to remain for some time. The question of persistence is particularly pertinent in the field of IS, which has witnessed the emergence and demise of influential corporations and products in relatively short periods of time. For example, in 1970 the largest US software services company by revenue was Universal Computing Corporation; in 1987, the largest personal computer software company was Lotus (Campbell-Kelly, 2004): neither exist in 2009. However, it seems likely that IS offshoring will prove to be long-lived, mostly because of the economic factors that are causing the rapid adoption of the practice. Western companies buy offshore IS services primarily because they are inexpensive (Dibbern *et al*, 2004): it is difficult for commercial organisations not to consider the option of doing software development offshore when such large variations in production costs exist between onshore and offshore locations. While the preferred destination for offshore services will almost certainly change over time, the practice of offshoring will continue as long as the disparity in production costs between onshore and offshore locations remains large. For this reason, it is logical to assume that the phenomenon will be relatively stable, and that research in this area will be of enduring value.

Why IS offshoring is important to practitioners

For onshore organisations looking to optimise the efficiency of all parts of their operations, and in particular the IS function, the research will highlight important aspects of IS offshoring practices. Suppliers of IT services will have a direct interest in any changes in the form, behaviours or attitudes of their primary customers. Similarly,

onshore and offshore IT practitioners, whose careers, work practices and perspectives are affected by this phenomenon, will learn from this programme of research.

1.6 The structure of this thesis

This thesis is divided into nine chapters, the first of which begins with a description of the motivations and scope of the study, and the domain of research to which it refers. It defines the main terms used, and outlines the structure of the thesis.

Chapter two constitutes a literature review and opens by describing the approach taken to the review. This is followed by a short history of IS sourcing in general to provide an overall context for the review. Subsequent sections address four main bodies of literature: on outsourcing, offshoring, international business and IS organisation. The chapter concludes by assessing completeness, deficiencies and gaps in currently published research.

In chapter three, the rationale for selecting a particular theoretical framework is described. Aspects of theory, ontology and epistemology are presented, and the logic of how these lead to selection of an interpretive and qualitative research paradigm is set out in detail. This leads to a description of the research methodology, in which a review of research methods is presented, drawing primarily on interpretive traditions.

Empirical material forms the body of chapter four. This is drawn from narratives of two offshoring projects completed by Capgemini, a global IS services provider. Factors specific to each project are identified and a comparison between them is presented with a particular emphasis on the differences in circumstance and outcome for each.

Having described the empirical context, chapter five sets out how the research was designed and conducted. This presents the research plan, and the techniques and tools used in data collection and data analysis. The progression from data to theory is described, together with the analytic devices used to stimulate this process at various stages.

Chapters six and seven present an elaboration of the main themes emerging from the data as they pertain to a particular stakeholder. In chapter six, the impact of offshoring on IS organisations is considered, and in chapter seven the impact of offshoring on IS practitioners is described. Themes are validated against data and theoretical antecedents and - with a view to ensuring a practical contribution from the research - include an exploration of the relevance of emergent themes. In this way, the scene is set for a presentation of theory and a critical reflection on the achievements of the research.

Chapter eight presents that reflection and sets out the conclusions from the research. These are elaborated and discussed in turn, and a general defence and possible explanation of the emerged theory is presented.

The thesis is concluded in chapter nine, which provides an overview of the central arguments and a description of the theoretical, methodological and practical contributions of the study. It considers the implications of the research approach and describes limitations and adequacy of the theoretical framework. The final part of the chapter sets out options for further research in this area.

2 Literature Review

2.1 Introduction

In their comprehensive paper summarising the literature on IS outsourcing, Dibbern *et al* note that the growth of outsourcing and the concerns raised over its efficacy and appropriateness as a sourcing solution highlight a major change in the IS environment:

> "What appears to be happening is that an important change is taking place in the sourcing of IS activity. Fundamentally, companies need to consider how best to obtain the needed IS services – this is the so-called 'sourcing dilemma'." (Dibbern *et al*, 2004)

The rise of offshoring is further evidence of this dilemma, and an understanding of how offshoring has emerged as a phenomenon necessitates an understanding of how IS sourcing evolved. Accordingly, the history of IS sourcing from the emergence of modern computing after the Second World War to the present day is summarised here, providing a contextual framework and a starting point for the subsequent literature review.

Having provided an historical framework, the literature review then addresses four research strands. The first of these covers IS outsourcing in general, which is addressed by a substantial body of literature. A second body of research addresses offshoring directly, which represents a sub-set of the literature on outsourcing. The third strand of the literature review covers international business, since it intersects with studies of offshoring, which is essentially a manifestation of globalisation. The final area of literature review is on IS organisations. Theory and constructs applied in this field provide insight on how corporate IS organisations are accommodating the offshore

sourcing model. The chapter concludes by highlighting deficiencies of currently published research.

2.2 A short history of IS sourcing

In the early days of modern computing (from 1945 until the mid 1950s), companies could obtain software in three ways: they could write it themselves, they could get it from a computer manufacturer or they could share programmes with other companies (Campbell-Kelly, 2004). Corporate computing comprised a rare and expensive set of services that could only be provided by highly-skilled and specialised technicians. This led to the creation of 'data processing' or information technology departments staffed by computer programmers whose job was to write application programmes. Such departments were usually small: programming staffs of 20 or more was normal (*ibid*). Often, because many firms lacked computer skills or did not want to acquire them, they turned to external specialists to provide them with software. This gave rise to a market for software contractors and 'software houses' that expanded rapidly in the 1960s. Most of these were based and operated exclusively in the USA, although some computing services companies were established in Europe, notably in the UK.

As more companies began to buy and use computers, so the demand for computer programmes grew. Computer services companies developed 'pre-packaged software' to meet this demand. These were often formalised generic versions of software programmes that had been developed for specific clients. Pre-packaged software was sold or licensed to companies for their customisation and use, and in this way a software product market was created, again predominantly in the United States.

Over the years, IT departments became institutionalised. Headed by an IT Director or Chief Information Officer (CIO), they were often staffed with large numbers of highly

skilled professionals who increasingly developed software solutions by customising 'commercial off the shelf' (COTS) software packages and who operated the IT infrastructure (the computers and telecommunications that run the software). Traditional IS activity in a corporation was centralised and served primarily a 'manufacturing' role.

> "This typically involved configuring and operating a production facility consisting of large scale hardware and systems software as well as establishing and maintaining a sizeable in-house application software development group." (Zmud, 1984)

Now there is a global industry dedicated to providing computer software, hardware and related computer services, and a correspondingly wide choice of sourcing options available to consumers of these products and services. Software can be built by employees of the company – 'in-house' – or it can be bought from external suppliers. It can be procured as an integrated programme or suite of programmes, or it can be custom-built to user specifications. Programmes can now be licensed on a per user basis and distributed over the Internet – the Software as a Service (SaaS) model - or provided free by the many writers of 'freeware'.

The emergence of IS outsourcing

Initially, IS outsourcing involved a computer services company providing a single business function to a customer - often the operation of its data centre. Now, outsourcing can involve complex arrangements involving multiple vendors and multiple clients, with complex commercial arrangements. Outsourcing has existed in some form or other since the beginning of the modern computer age. Campbell-Kelly (2004) describes the emergence of the contract IS worker in the 1950s but the real growth in outsourcing occurred later.

> "Outsourcing of information systems began to evolve in 1963 when Ross Perot and his company Electronic Data Systems (EDS) signed an agreement with Blue Cross of Pennsylvania for the

> handling of its data processing services. This was the first time a large business had turned over its entire data processing department to a third party." (Dibbern *et al*, 2004)

Other researchers (Lacity and Willcocks, 1998) have identified the deal signed by ISSC, IBM's services organisation, with Kodak in 1989 as a landmark event for IS outsourcing. Whether or not this signifies the start of the outsourcing business, it is certain that it has grown since then. This is largely because in recent years there have been significant changes in the way that corporations perceive their IT departments and the services they provide to the business. Specifically, while there is recognition that IT is critical to how commercial organisations do business, it is acknowledged that not all IT functions need to be performed inside the organisation (Luftman *et al*, 2006). Further, increasing global competition across all business sectors has resulted in an ongoing focus on the efficiency of IT solutions, and in the emergence of a more professional and knowledgeable approach to IS sourcing. Lacity and Willcocks (2001) identify two phenomena – refocus to core competencies and the perception of IS as a cost burden – as key drivers of outsourcing.

At the same time, broad shifts in the IT supplier landscape mean that corporations have greater choice in how they procure, implement and use computing products and services:

> "Besides short-term selective outsourcing forms, strategic partnerships and alliances, often referred to as transformational outsourcing (Linder 2004), have become an emerging trend. In this context risk-sharing models and collaborative service development of innovative IT services have begun to shape customers' expectations towards the IT service provider." (Jahner and Krchmar, 2007)

More recently, a new area of IS outsourcing has emerged, where companies provide applications directly to customers on the Internet. This form of outsourcing – termed "software as a service" or SaaS – is usually priced on a usage basis: customers pay a

monthly tariff for each customer that uses it – and it is therefore scalable to match business demand. SaaS is growing because it provides an affordable way for companies to get access to software that would otherwise be too expensive to install and run. A successful example of SaaS is the customer relationship management service provided by Salesforce.com. SaaS differs from earlier applications delivered over the web because it is designed to take advantage of native web technologies, such as the browser.

The emergence of IS offshoring

Offshoring of work in some industries – for example, in manufacturing and textiles - has been an accepted practice for some time. For example, in the mid-1980s, in response to escalating wages and other labour costs at home, Japanese manufacturers exported labour-intensive assembly tasks to nearby East Asian nations (Beverelli, 2007). The offshoring of service work – for example, processing of insurance claims – started in the US in the 1970s, with some firms sending paperwork to the Caribbean by ship to be processed (Metters and Verma, 2008).

Offshoring of IS is a relatively new phenomenon. Before the 1990s, few organisations in developed economies used offshore IS resources in any capacity. Similarly, the export of software development services from low-cost locations was rare. For example, India's software exports in 1985 totalled US$24 million (Rajkumar and Dawley, 1997). Since then, however, there have been three distinct phases of development of the offshore IS business.

The first phase, lasting throughout the 1980s, largely consisted of exporting personnel ('body shopping') from low-cost locations. The type of work assigned to offshore programmers was predominantly low-level, mainframe-based application conversion tasks (Soota, 1994; Murty, 2004). A second phase, lasting from the early to late 1990s,

involved the gradual expansion and acceptance of the role of the offshore programmer. Although the offshore work remained relatively compartmentalised, it expanded in range to cover multiple platforms and applications, often from the offshore locations linked to the onshore site via telecommunications links. The peak in demand for IT resource in the years leading up to the year 2000 caused a rapid expansion of the offshore industry, as described by a practitioner working for Tata Consulting Systems at the time:

> "I think the big, big event for India in software companies was Y2K, because at that point in time they came into their own. TCS - and I talk a little more about TCS because I've been there, I worked with them for some time - set up a Y2K factory. They had the best tools, the best filters, you know, which would take code, and almost mechanically helped convert it. And at that point they used to employ, five, seven, ten thousand people doing Y2K. And that was unheard of. Today, of course, TCS is 71,000 people, 7,000 of them servicing the UK market, being based in the UK." (Munsif, 2008)

The subsequent dotcom boom and bust reinforced this growth, initially to satisfy huge demand for skill and subsequently to help reduce the cost of IT in developed countries. This growth in offshore business was greatly assisted by government deregulation and tax policy: countries such as Ireland and India actively sought to attract offshore technology-based work by offering reduced tax rates to American corporations, and by reducing import duties on technology products:

> "Government - non-regulation on the part of the U.S., and governmental activism on the part of other governments - was also required. Had India continued with a basic socialist framework and 150% tariffs on computer equipment, the offshoring landscape may have looked far different today. Certainly, the extraordinary efforts of the Irish government were responsible for Ireland being the largest BPO offshoring destination as late as 2001." (Metters and Verma, 2008)

A further necessary condition noted by Metters and Verma was the acceptance by businesses that process could be commoditised:

> "The changing viewpoint of the business community towards service processes was also needed. Service processes needed to be seen as potentially de-coupled, which only gained strong momentum in the late 1980s and early 1990s with outsourcing and shared services." (*ibid*)

IS offshoring is now increasingly popular as a way of building and maintaining software applications (Carmel and Agarwal, 2002; Farrell, 2005). It can involve wholesale outsourcing of IS activity to remote locations, to deployment of staff from offshore locations working onshore with local IS staff for at least a part of the development cycle - a process defined in this research as 'multi-shoring' (Gannon and Wilson, 2007). Multi-shoring differs from other forms of offshore service provision in that it uses both offshore and onshore outsourced staff, often co-located, in the development teams – sometimes referred to as staff augmentation.

Despite its growing use, offshoring is not universally popular. First, because it is perceived by some as a threat to jobs in developed countries, there is a reluctance to embrace the offshore method fully, particularly in politically sensitive areas such as the public sector (British Computer Society, 2006). For example, it is estimated that 3.3 million US jobs will move offshore by 2015 (McCarthy, 2002). Second, IT workers in developed countries are often ambivalent about its effectiveness, citing the risks and shortcomings associated with a largely remote and culturally disparate workforce. Indeed, some organisations use the fact that they do not employ offshore outsourcing to provide customer service as a market differentiator (Lauchlan, 2006), again highlighting the social sensitivities associated with the practice. Third, offshoring does have associated risk, and this has led to caution in some circles. Despite the absence of substantial empirical

evidence to show that offshoring is more risky than traditional development methods, some managers are reluctant to engage offshore suppliers because of perceived concerns about quality (Rottman and Lacity, 2004).

2.3 Literature on IS outsourcing

In a comprehensive review, Dibbern *et al* explore and synthesise the academic literature on IS outsourcing. They describe the rapid pace of development in this field and note that:

> "…outsourcing research has grown so fast that there has been scant opportunity for the research community to take a collective breath, and complete a global assessment of research activities to date." (Dibbern *et al*, 2004)

In response, they define a roadmap of the IS outsourcing literature, and develop a conceptual framework comprising five streams corresponding to what they define as the major sourcing issues: why to outsource, what to outsource, which decision process to take, how to implement the sourcing decision, and what is the outcome of the sourcing decision. They also discuss explanatory theory and theoretical underpinnings, describing the main reference theories adopted in the outsourcing literature, and combine these into three categories: strategic, economic and social organisational:

> *"Strategic theories* focus on how firms develop and implement strategies to achieve a chosen performance goal. Reference theories of this type include: game theory, resource based theory, resource dependency theory, and strategic management theories. *Economic theories* focus on the coordination and governance of economic agents regarding their transactions with one another. Reference theories on this type include: agency theory and transaction cost theory. *Social/organisational theories* take an entirely different focus. Eschewing rigidly rational views of organizations, these theories concentrate on the relationships that

> exist between individuals, groups, and organizations. Reference theories of this type include: social exchange theory, innovation theories, power politics theories, and relationship theories." (Dibbern *et al*, 2004)

Dibbern *et al*'s research provides a comprehensive reference point for the literature on outsourcing and highlights a number of implications for research. The first concerns the definition of outsourcing success – a dependent variable which is open to multiple interpretations. They note that an assessment of financial benefits alone may be insufficient to determine the success of an outsourcing initiative. A second implication directly concerns the lack of research from the perspective of the outsourcing supplier. This current research looks to redress this in part in that it explicitly identifies the offshore IS supplier as one of the main parties impacted by the phenomena, and seeks to quantify this impact. Other implications in Dibbern *et al*'s research concern the paucity of research concerning the relationship aspects of an outsourcing contract and the need for greater understanding of the outsourcing process and for more comparative studies of outsourcing. In a final note concerning areas for future research in this field, the authors explicitly endorse the approach taken in this study, which is to look to the literature on outsourcing as one of the main sources for identifying antecedents and theoretical frameworks that could be applied to the area of IS offshoring (*ibid*).

To cover all of the relevant outsourcing literature in this review would be impractical. However, there are a number of landmark studies that provide insight and guidance. Loh and Venkatraman (1992) analysed the diffusion of IT outsourcing in the aftermath of Kodak's decision to outsource its IT operation; Lacity *et al* studied outsourcing decisions in 40 European and US organisations, and identified some of the best practices in outsourcing IT (Lacity *et al*, 1995); and McFarlan and Nolan presented views on managing IT outsourcing alliances (McFarlan and Nolan, 1995). In the UK, John Cross's

study of outsourcing at British Petroleum remains one of the most in-depth and informative articles in the field (Cross, 1995); Currie and Willcocks (1998) in their research at the London Stock Exchange, ICI, CRESTCo and the Royal Bank of Scotland identified four distinct sourcing approaches (total/ strategic alliance/ multiple supplier/ insourcing), which are still relevant; and Willcocks and Fitzgerald (1993) identified the most favourable conditions for IT outsourcing in a cross-sectoral study in the UK.

2.4 Literature on IS offshoring

A smaller but growing body of research addresses IS offshoring directly, and covers themes that address specific aspects of offshore development - for example, the role of development methodologies (Ramarapu *et al*, 1997) – and wider aspects of the overall phenomenon, such as the rate of growth and maturity of IS offshoring. A particular theme is concerned with describing the rationale for offshore development, its associated benefits, the risks of offshore development and key success factors. Although there are studies that address specific aspects of offshore development - for example, the role of development methodologies (Ramarapu *et al*, 1997) – more often scholars describe the rationale for offshore development, its associated benefits, the risks of offshore development, offshore project management challenges and key success factors from the perspective of the offshore services consumer. There is less research available on the strategic positioning and interaction among organisations competing to provide offshore IS services (Kumar and Willcocks, 1996), although this gap is filled to a certain extent by industry commentators (the so-called 'grey' literature).

Growth and maturity of IS offshoring

Most research in this field begins by noting that offshoring is one of the fastest growing phenomena in IS in recent years. For example, NASSCOM reports the following in its Strategic Review in 2009:

> "Steady growth in outsourcing spend was driven by increased adoption of global sourcing. While the global sourcing market size has increased threefold in the period 2004-2008, the addressable market is more than five times the current market size, signifying the immense opportunity at hand." (NASSCOM, 2009)

It estimates that:

> The Indian IT-BPO industry is estimated to achieve revenues of USD 71.7 billion in FY2009, with the IT software and services industry accounting for USD 60 billion of revenues. During this period, direct employment is expected to reach nearly 2.23 million, an addition of 226,000 employees, while indirect job creation is estimated to touch 8 million. (*ibid*)

Further, the growing number of offshore firms reaching level 5 of the Software Engineering Institute's Capabilities Maturity Model (CMM) suggests that the industry is no longer in the early stages of development but is in fact well established as an accepted component of modern software development practice. Indian firms in particular have aligned their internal processes and practices to international standards such as the International Standards Organisation (ISO) grades, CMM and Six Sigma and are seeking to increase further the quality and productivity benchmarks for remote service delivery (NASSCOM, 2006).

Benefits and risks of IS offshoring

The fundamental business question associated with offshore software development is whether the associated risks are outweighed by the benefits (Delmonte and McCarthy, 2003). The literature shows that the primary rationale for companies using offshore services has been the search for cost efficiencies through labour arbitrage. There remains a significant disparity in labour costs between developed and developing economies (Carmel and Agarwal, 2001; Delmonte and McCarthy, 2003; Moore, 2005). Indeed, while transaction cost economics is frequently employed as a theoretical basis for

outsourcing and offshoring research (Williamson, 1979; Lacity and Willcocks, 1995; Whitaker *et al*, 2005; Jurison, 1998), there is an implicit acknowledgement in the market that in the case of offshoring, the production cost advantage (the significantly lower cost of offshore resources such as programmers and analysts) greatly outweighs the associated transaction costs. Other advantages of offshore development include quality of output, increased access to leading-edge (and legacy) technologies and skills, the increased labour pool flexibility and access to international markets (Ravichandran and Ahmed, 1993).

There is consensus also on the main categories of risk associated with offshore development. McFarlan (1981) describes four categories of risk associated with any systems development project – size and complexity of project, project structure, technology used and user factors (number of user interactions and number of user sites) – and these apply equally to offshore projects (Rajkumar and Dawley, 1997). Ravichandran and Ahmed (1993) identify three special problems associated with distributed software development as language barriers, differences in laws and regulation, and fragile infrastructure. The same problems are cited by Ramarapu *et al* (1997), in addition to economic issues and hidden costs. Herbsleb and Moitra (2001) categorise the issues of offshore development problems as strategic (primarily in deciding how to divide up the work across sites, and addressing organisational resistance to offshore development); cultural issues; inadequate communication; knowledge management; process and project management issues; and technical issues. Dubé and Paré (2001) name the key issues in implementing global virtual teams as people related (culture, language, IT proficiency) and technology related (accessibility, reliability and compatibility, and appropriate technology use). Khan *et al* (2003) similarly identify a set of offshoring fundamentals that consist of contact, quality, project management,

expertise, trust and security, culture, infrastructure and trade policy. Dibbern *et al* note that:

> "When examining the emergent literature on IS offshoring, it is also striking that the majority of research has focused on how to best manage offshore projects…" (Dibbern *et al*, 2008)

Mathrani *et al* (2005) also identify project management, coordination and control and quality processes as a key variable linked to success, amongst other factors such as culture, communication, relationship building and types of contracts. Delmonte and McCarthy (2003) note that offshore development presents new management challenges that are often not considered when costs are analysed. Other key success factors in global software development are derived from an analysis of the risks. Thus, four "critical success factors" are defined as maturity of the management team; level of strategy and commitment demonstrated by senior management; maturity of the organisation's processes; and clarity of the objectives and level of preparation (*ibid*).

Finally, while there are studies that look at offshoring from the perspective of the offshore services provider (Gopal *et al*, 2003 (i); Gannon and Wilson, 2007), and proposals to look at alternative offshore sourcing options (Evaristo *et al*, 2005), there is little reference to the strategic positioning and interaction among organisations competing to provide offshore services. Mathrani *et al* (2005) take a detailed look at offshore development from an outsourcer's perspective and provide a comprehensive summary of the key success variables. They note that the practitioner community has led in highlighting IS offshoring, and that much primary research has been conducted by consulting firms such as Forrester Research and IT industry lobby groups such as NASSCOM. In particular they note that:

> "…much of the literature of information systems outsourcing and offshore software development of applications considers a

> customer perspective or global perspective rather than the offshore software suppliers' perspective." (Mathrani *et al*, 2005)

This aligns with the King and Torkzadeh's comments on the submissions they received for the special issue of MIS Quarterly in June 2008:

> "In sum, the 43 papers reveal that rigorous research in IS offshoring is still in its nascent phase. Most research is still qualitative and/or exploratory. Indeed, most of the extant literature in the area is opinion-based, prescriptive, and/or anecdotal." (King and Torkzadeh, 2008)

Doh (2005) and Levy (2005) look at some of the less positive implications of offshoring. Farrell *et al* (2005) note that it is a sensitive topic:

> "The topic of offshoring generates extreme differences of opinion among policy makers, business executives, and thought leaders. Some have argued that nearly all service jobs will eventually move from developed economies to low-wage ones. Others say that rising wages in cities such as Bangalore and Prague indicate that the supply of offshore talent is already running thin.
>
> To a large extent, these disagreements reflect the confusion surrounding the newly integrating and still inefficient global labor market. Much as technology change is making it possible to integrate global capital markets into a single market for savings and investment, so digital communications are giving rise to what is, in effect, a single global market for those jobs that can now, thanks to IT, be performed remotely from customers and colleagues." (Farrell *et al*, 2005)

2.5 Literature on globalisation and the multinational enterprise

Globalisation and international business have long been the focus of research (Grosse and Behrman, 1992). This ranges from early studies of the theory of the MNE (Hymer, 1960;

Dunning, 1973; Perlmutter, 1969; Buckley and Casson, 1976; Teece, 1977) to more recent work by Tolentino (2002) and Rugman and Verbeke (2003). According to Grosse and Behrman, no definitive international business theory exists:

> "International business has existed as a distinct field of study for the past three decades, but it does not have a widely accepted explanatory theory on which to base its uniqueness as a discipline. David Ricardo's theory of comparative advantage, Raymond Vernon's product life cycle, John Dunning's eclectic theory and all others are essentially explanations of business between domestic firms or regions, as well as international firms. They explain "multidomestic" investment and intra-national trade. Those theories offer important insights into the functioning of firms in business anywhere, including international firms, but they fail to focus on the distinguishing characteristics of business operating among different nations." (Grosse and Behrman, 1992)

Buckley (2002) presents a succinct overview of the history and primary themes of research in the field of international business. He identifies the main research agendas as explaining flows of foreign direct investment (FDI); strategy and organisation of MNEs; and internationalisation and globalisation of business. In this research, three similar perspectives - economic, organisational and international business - have been identified to categorise the literature in this field. Economic theories help explain how and why global organisations evolve and function, particularly with respect to their investment and economic decisions (for example, what drives them to invest in a particular location). Organisational theories are mostly concerned with explaining how multi-national companies are organised and managed. International business theories concern aspects of global organisations that depend on cultural affinity and difference between parts of the organisation, and the challenges associated with knowledge transfer across inter-organisational boundaries. This latter research strand has particular resonance for those interested in IS offshoring.

These categories are not exclusive, and overlap sometimes considerably, but are presented as a convenient way of summarising this extensive body of research. Most important, this categorisation helps isolate theories and constructs that provide particular insight on the global IS organisations that are emerging to provide IS offshore services.

The economic perspective

Early work focused on economic and competitive models of the MNE (Hymer, 1960; Vernon, 1966; Caves, 1971). Using Coase's (1937) general framework explaining the existence of the firm, it identified how international corporations or MNEs came into being, and why FDI came about. Hymer (1960) first states the theory of FDI, noting that the firm internalises or supersedes the market. Caves (1971) identifies the two principal features of FDI by the MNE as ordinarily effecting a net transfer of real capital from one country to another and representing entry into a national industry by a firm established in a foreign market. Buckley and Casson (1976) were concerned also with generating a theory that would predict the future growth and structure of MNEs. They identified five factors to account for the growth of MNE activity after the Second World War which again emphasised the theory of internalisation as a driving force for the creation of MNEs.

A related stream of research is the body of work on the product cycle model and literature related to the internationalisation of industrial research and development (Vernon, 1966; Ronstadt, 1977). Internalisation arises as a response to imperfections in intermediate product markets, including various types of knowledge and expertise (which can be embodied in patents, human capital and so on). Buckley (1988) describes the internalisation theory as resting on two general axioms: first, that firms choose the least cost location for each activity they perform and second, that firms grow by internalising

markets up to the point where the benefits of further internalisation are outweighed by the costs. It is clear that the theory of internalisation is related to transaction cost theory (Williamson, 1979). However, Doz and Prahalad (1991) note that the assumptions used in transaction cost theory are too restrictive and culturally bound to do more than highlight managerial issues, and that their primary use is as a starting point in considering boundaries and control issues.

A more recent body of research takes a purist approach and applies economic theory to the phenomenon of offshoring. An example is Beverelli's general equilibrium analysis of offshoring and manufacturing employment (Beverelli, 2007). Grossman and Rossi-Hansberg (2008) propose a theory of the global production process that focuses on what they call tradable tasks and use it to study how falling costs of offshoring affect factor prices in the source country. These studies consider offshoring in its widest context (that is, not limited to IS offshoring), but the conclusions drawn - and the analogies and precedents cited – help inform the discussion on technology offshoring.

The organisational perspective

In her analysis of the impact of Hymer's work, Tolentino (2002) notes that the intellectual focus of academic work in the theoretical stream of managerial strategy, organisational structure and systems or processes in the literature:

> "…has typically revolved around determining the strength and direction of the relationship between organisational structure and managerial strategy; the use of appropriate control mechanisms; and the adoption of a proper fit of the organisation with the environment." (Tolentino, 2002)

This is an advanced perspective: early research tended to view international organisations simply. Buckley and Casson, for example, define the MNE as:

> "…an enterprise which owns and controls activities in different countries." (Buckley and Casson, 1976)

Perlmutter (1969) describes three types of multinational – ethnocentric, geocentric and polycentric - defined in terms of the headquarters orientation towards its subsidiaries. Behrman (1974) also identifies three types of international organisation - the 'classic investor', who invests abroad for export or to procure supplies; the 'international holding company', that produces goods in a specific country for supply in that country only; and the 'multinational enterprise', that supplies multiple markets through a network of integrated and co-ordinated facilities in different countries. Porter (1986) examined firms in the context of their industries, which he categorised as 'multi-domestic', where the competitive advantages of the firm are specific to each country, and the firm operates independently from country to country; and 'global', where competition extends across borders and the firm's competitive positioning in one country is affected by its position in another. Perlmutter's (1969) 'ethnocentric' and 'polycentric' description of the MNE - essentially corresponding to centralised and decentralised operating models - offered a radically different perspective. The network-based MNE model described by Prahalad and Doz (1987) builds on Perlmutter's definition of the 'geo-centric' organisation. All of these typologies arose from a particular perspective on international business. For example, Behrman's definition refers to how and where the organisation sources materials and produces goods (Behrman, 1974).

In their book 'Managing Across Borders', first published in 1989, the authors Christopher Bartlett and Sumantra Ghoshal define 'multinational, 'global', 'international' and 'transnational' businesses - characterised by the relative emphasis placed by the organisation on how it configures its assets and capabilities (decentralised, centralised, or a mix of both); by the role it assigns to its overseas operations (autonomous and locally focused; directed from the centre; or adapting parent company strategies) and by the way

in which it exploits its knowledge and intellectual property (developed and retained in local units; developed and retained at the centre; developed in the centre and transferred to overseas units). 'Multinational' businesses are those that:

> "…have developed a strategic posture and organisational capability that allows them to be very sensitive and responsive to differences in national environments around the world." (Bartlett and Ghoshal, 1998)

The Philips consumer electronics business is cited as a multinational because it has traditionally given its subsidiaries a large degree of autonomy and encouraged self-sufficiency.

The 'global' business, by comparison, is driven by the need to achieve global efficiency, and tends to be more centralised in its strategic and operational working:

> "Products and strategies are developed to exploit an integrated unitary world market". (*ibid*)

Typical global organisations are Japanese consumer electronics firms like Matshusita (now trading as Panasonic).

The 'international' business is defined thus:

> "We call industries … where the key to success lies in one's ability to transfer knowledge (particularly technology) to overseas units and to manage the product life cycle efficiently and flexibly, international industries." (*ibid*)

The international company adopts a strategy of transferring and adapting core expertise to foreign markets. In this model, the parent company exercises some control, and the national organisations have freedom to modify products and services that originate in the centre. In this respect, the international company's strategy in Bartlett and Ghoshal's

taxonomy lies between the multinational approach of greater local autonomy and the global strategy of tighter central control.

The 'transnational' organisation is different, according to Bartlett and Ghoshal, because it has 'multidimensional strategic requirements' – that is, it is not defined by any single dominating attribute, but takes account of a variety of business demands. Thus, for example, transnational organisations operate an integrated network of assets and capabilities, and encourage contribution by overseas units to integrated worldwide operations. Their business is driven by simultaneous demands for global efficiency, national responsiveness and worldwide learning, and they exhibit traits of each of the international, multinational and global firms.

Research from the 1990s onwards, such as Bartlett and Ghoshal's, has tended to place less emphasis on a hierarchical view of the MNE (headquarters controlling subsidiaries directly) and more frequently takes the view of the MNE as a network of differentiated intra- and inter-firm relationships (Tolentino, 2002). This acknowledges that foreign subsidiaries have resources and expertise that gives them greater independence, and enables them to play a greater and more active role in the success of MNEs, for example by creating firm-specific advantages (FSAs). Further, more effective organisation of knowledge and innovation and more widespread sharing of technology across the network help diffuse new learning quickly across boundaries. This perspective assumes a distributed labour division among subunits of the MNE arranged in an integrated network configuration (*ibid*).

Hedlund's description of the 'heterarchical' organisation describes this networked model, which he saw as differing from the geo-centric model in terms of strategy and structure (Hedlund, 1986). The strategic difference is that the heterarchical company seeks to

exploit competitive advantage from any part of the global organisation, and not just from the 'home' market. The structural differences are more complex, and posit that the heterarchical company has many centres; that subsidiaries and their management are equally capable of contributing strategic thinking and value; that organisation is normative (that is, collaborative in nature) rather than coercive, and generally that each part of the organisation is a reflection of the whole. This latter point implies that every member of a heterarchical organisation is aware of all aspects of the firm's operation – although Hedlund modifies this by presenting his model as 'radical', and more as a theoretical construct than an actual manifestation of reality. He predicted that such organisations might emerge in the future, possible in newly developing countries (*ibid*).

The international business perspective

Theories of globalisation take a strategic view of the world as a single market in which to do business (Tallman and Fladmoe-Lindquist, 2002), and rest upon the basic premise that replication throughout the firm of advantageous, intangible, knowledge-based assets is a prerequisite for success (Martin and Salomon, 2003). This research stream represents a rich and varied perspective on the theory of the MNE. Kogut and Zander (1993) promote the idea that:

> "The multinational corporation arises not out of the failure of markets for the buying and selling of knowledge, but out of its superior efficiency as an organisational vehicle by which to transfer this knowledge across borders." (Kogut and Zander, 1993)

One of the core constructs in the theory of MNEs has been how companies transfer their FSAs across borders – the assumption being that the primary advantage that a firm brings to foreign markets is its possession of superior knowledge.

> "Foreign direct investment is the transfer of an intermediate good, called knowledge, which embodies a firm's advantage, whether it

> be the knowledge underlying technology, production, marketing or other activities." (*ibid*)

Elaborating on this, Kogut and Zander note that the characteristics of knowledge influence the ability to transfer it, and hence influence direct investment flows. Much of the research in knowledge transfer differentiates between tacit knowledge – that which is implicit and unwritten in the operation of the firm – and knowledge as a public good, or explicit knowledge – which can be codified and methodically structured and taught and is thus easily (and in theory freely) transferred and hard to protect. Empson (2001) distinguishes between technical knowledge - shareable skills such as programming or knowledge of firm-specific process, derived from formal learning or experience – and client knowledge – relating to functional understanding of an industry sector and personal knowledge of a specific client and of the people and politics of an organisation. Lam (1997), in her wide-ranging empirical analysis of high-technology collaborative ventures between a British and Japanese firm, argues that many of the problems associated with knowledge transfer lie in the nature of knowledge itself, and its 'social embeddedness'. Nelson and Winter (1982) make a similar case, noting that much of human knowledge is essentially tacit in nature. Wieandt (2007) argues that tacit knowledge is only learnable through experience and social interaction.

Research shows that cross-border movement of tacit knowledge is possible but not easy and is assisted by formal and informal corporate mechanisms for integration. In an empirical study, Teece (1977) estimated that the costs of technology transfer ranged from 2% to 59% of total project costs, these costs arising from the efforts of codifying and teaching complex knowledge to users.

Buckley and Casson (1976) comment on the increased expenditure required where the personnel responsible for encoding and decoding the information have different

backgrounds or operate in a different environment, thus introducing implicitly the concept of cultural distance (CD). This widely used construct helps measure the extent to which cultures are similar or different (Johanson and Vahlne, 1977; Hofstede, 1980; Shenkar, 2001). Cultural distance is analogous to what Johanson and Vahlne termed 'psychic distance', which they viewed as one of the main factors determining the pace and direction of internationalisation of business:

> "The psychic distance is defined as the sum of the factors preventing the flow of information from and to the market. Examples are differences in language, education, business practices, culture and industrial development." (Johanson and Vahlne, 1977)

Shenkar (2001) notes that the construct of cultural distance has been applied to most business disciplines to provide insight into a range of research questions from global expansion to subsidiary performance. He sets out some of the limitations of thinking on cultural distance, attributing these to a series of illusions and false methodological assumptions that tend to distort empirical results. He suggests replacing the 'distance' with 'friction' as the underlying metaphor for cultural differences to underline the point that cultural differences matter only when different cultures come into contact.

Finally, Fan and Phan (2007) note that there is a new perspective on the MNE emerging in the field of international business that examines the 'born-global' firm:

> "The growing literature on these so-called 'born-international' (or 'born-global') firms (e.g. Hedlund and Kverneland, 1985; Rialp *et al*. 2005) positions itself in contrast to the more established, staged-internationalization literature of Hymer (1960, 1968), Johanson and Vahlne (1977, 1990) and others (e.g. Dunning, 1988; Melin, 1992)." (Fan and Phan, 2007)

The born-global firm is, as its name suggests, present in multiple markets from its inception. Earlier views of internationalisation of the firm have looked on the process as sequential:

> "In the former view, firms start up internationally or focus on international markets shortly after inception, bypassing the maturing process that accompanies domestic development. In the latter view, firms adopt an international strategy as a result of a sequential process (also known as the Uppsala model of staged internationalization) that begins with building markets and capabilities at home before venturing abroad (Johanson and Vahlne, 1977; Chang, 1995). (*ibid*)

Neo-colonial literature on globalisation

The idea that globalisation is heralding a form of economic and cultural homogenisation is not new. Lévi-Strauss, writing in 1955, before the Internet and widespread presence of television, bemoaned the sterility of what he viewed as humankind's inevitable destination:

> "Mankind has opted for monoculture; it is in the process of creating a mass civilisation, as beetroot is grown in the mass." (Lévi-Strauss, 1992)

Schiller (1991), studying workers in India's metropolitan areas, makes the same point. Bhabha (1994) likewise presents a concept of 'hybridisation':

> "This interstitial passage between fixed identifications opens up the possibility of a cultural hybridity that entertains difference without an assumed or imposed hierarchy'". (Bhabha, 1994)

Gopal *et al* (2003 (ii)) examine globalisation as a form of colonialism, and identify three characteristics of colonialism that are shared by offshore organisations: standardisation, invisibility and conditioning effects. Other researchers, commenting specifically on

offshoring, take varying perspectives on the colonial theme (Ramesh, 2004; Taylor and Bain, 2005; McMillan, 2006; Cohen and El-Sawad, 2007).

2.6 Literature on IS organisations and maturity models

A further category of literature concerns IT organisational structures and scale. Zmud (1984) deals with the theme of volatility in IT organisations, and the responses required in organising IT resources and activities to meet fast-changing business demand; another example is the work done on the transformation of the IT function at British Petroleum (Cross, 1995). These studies have relevance for the present research because they are concerned with the impact of large scale outsourcing on those affected by it, primarily in the IT department. More recent work has investigated the changing shape of the IT organisation in the networked or digital age (Reich and Nelson, 2003; Guillemette and Paré, 2005; Sambamurthy and Zmud, 2000). Agarwal and Sambamurthy (2002) ask the direct question: "How should contemporary firms organize their IT function?" Linking directly to this research is the study on organisational forms that are emerging in response to an increasing prevalence of outsourcing and offshoring (Carmel and Agarwal, 2002).

Beulen (2007) investigates some of the problems (differences in time zone, language and culture, and geopolitical risks) facing IS organisations in sourcing IS globally and concludes that the IS function needs greater business and interpersonal skills to address these risks. He concludes that IS functions need to retain project and programme management capabilities and that the scale of the IS function will grow rather than diminish, at least in the short term:

> "…the IS function must be and remain of sufficient size in order for them to be able to manage their global sourcing partnerships in the future too. If companies engaging in such partnerships cannot

> fulfil this condition, their global sourcing partnerships will not be able to grow as they otherwise might." (Beulen, 2007)

A related strand of the literature addresses IS maturity models. Various maturity models have been used in research and in practice to help describe the evolution of complex IS organisations and thereby predict and avoid potential problems (Greiner, 1972; Gibson and Nolan, 1974; Galliers and Sutherland, 2003). These constructs, such as the six-stage growth model developed by Nolan (1979), provide a perspective on the characteristics and behaviours of IS organisations as they evolve, where the IS organisation comprises the part of the company that develops IS solutions for the company as a whole (the IT department). In this tradition, Wilson (1997) describes a maturity model as 'an abstraction of the normal life of a class of objects that we wish to study', noting that it is formed by identifiable stages in the object's development, where characteristics, or facets, of the object may change from stage to stage. Three concepts define such models: the need for a set of identifiable stages occurring in a given sequence; the conditions causing a change from one stage to the next; and the characteristics that identify the object or organisation to be in a specific stage. Wilson further notes that progression through the stages is normally in the same linear sequence.

More recent models focus specifically on the maturity of users of offshore services. An example is the Sourcing of IT Work Offshore (SITO) stage model developed by Carmel and Agarwal (2002), which provides a framework for assessing the relative degree of maturity of a company in its use of offshore sourcing of IT. These studies take a company-wide view of maturity characterised by capability, internal dynamics and so on. Gannon and Wilson (2007) assert that the market for offshore IS service suppliers follows a four-stage maturity model analogous to that for offshore consumers. Their model is described in terms of Wilson's three 'concepts of interest' (Wilson, 1997) - the maturity

stage and sequence, the characteristics or facets displayed at each stage, and the conditions that trigger change.

These maturity models are distinct from the Capability Maturity Model® Integration (CMMI), which is defined by the Carnegie Mellon Software Engineering Institute as:

> "…a process improvement approach that provides organizations with the essential elements of effective processes. It can be used to guide process improvement across a project, a division, or an entire organization. CMMI helps integrate traditionally separate organizational functions, set process improvement goals and priorities, provide guidance for quality processes, and provide a point of reference for appraising current processes." (Software Engineering Institute, 2008)

CMMI is about process maturity and relates to software engineering, and is a sub-set of the Nolan/Greiner maturity models, which are about organisational maturity and relate to IS planning and structure. CMMI is often used for the commercial validation and benchmarking of supplier capability and imply management-driven transitions to ever more desirable states.

2.7 Deficiencies of currently published research

Although the literature concerned with outsourcing and international business is very rich, and has provided a solid departure point for the research, there are various gaps.

First, because it is relatively new, there is limited research on offshoring and the literature that exists tends to focus on the risks and challenges associated with distributed development. Other aspects of offshoring, such as how it is changing IS development practice, have received less attention and there are few examples of robust empirical work

in offshoring. This was acknowledged by the editors of MIS Quarterly in a special edition on IS offshoring:

> "The offshoring of information systems and services has been one of the most discussed phenomena in IS in recent years; it has significantly influenced the thinking of both academics and practitioners. The extent of offshoring of information technology-related services has been significant and the trend seems likely to continue in the foreseeable future.
>
> Yet, there has been little in-depth study of information systems offshoring and its apparent impact on the nature of the work of, career options in, and the management of the information systems function. Although domestic IS/IT outsourcing has been prevalent for 15 or more years, there is only minimal research related to these issues in that context as well. The new realities of outsourcing and offshoring present information systems executives with legal, cultural, and managerial challenges that are not yet fully understood and educators with questions concerning appropriate curricula for the new environment." (King and Torkzadeh, 2008)

It seems likely that this omission arises more from lack of opportunity than neglect, but it nonetheless presents a challenge for the IS researcher.

Second, although globalisation is a word much used in the general media and in the literature, there is surprisingly little research on recent global trends, and on the impact of greater coupling of capital and resource in an increasingly interconnected world. Buckley, in a plea for revitalisation of what he regarded as a stalled research discipline, describes the need for:

> "…further explanation (or deconstruction) of the concept of globalisation, with predictions for its future …" (Buckley, 2002)

Buckley considered that the pace of research on international business and globalisation had slowed, and the momentum developed in the latter part of the last century had vanished. One of the primary themes concerned the nature and organisation of the MNE, an area in which there has been significant change (Doh, 2005). Yet this has not resulted in new research and insights, and gaps remain. For example, many early commentators viewed MNEs as product companies despite the existence of global service organisations, and there is limited literature on the latter. Vernon (1979) and Boddewyn *et al* (1986) noted that no agreement on the definition of a service MNE exists. However, it may be that the aforementioned economically-focused research on offshoring (Beverelli, 2007; Grossman and Rossi-Hansberg, 2008) may help redress this deficiency.

Perhaps most surprising is the limited application of frequently-cited international business constructs and themes to disciplines outside international business. In particular, few scholars have applied international business theory to offshore companies, or to this sector as a particular example of globalisation. Since international business theory and associated constructs have proven valuable in understanding how aspects of established global businesses function – for example, in the area of strategic human resource management - it may be that they can be used to provide similar insights for newer offshore IS organisations. The constructs of knowledge transfer and cultural distance, frequently cited in international business studies, are of particular relevance to IS offshoring, which typically involves actors who are physically and culturally separated and who depend greatly on effective knowledge transfer across borders and time zones. Buckley agrees:

> "The interplay of national cultures and organisational cultures, including the organisational culture of multi-national organisations which might augment, transcend or conflict with particular national

> cultural traits, represents a research agenda with much life left in it." (Buckley, 2002)

Moreover, the literature in international business assumes a starting point for MNEs that is not typical of offshore IS organisations. Hedlund, for example, notes that:

> "Almost all now existing firms have started on a national basis and only gradually developed international ties. Foreign business was initially marginal, more so for companies from large nations than for those with small 'home markets'." (Hedlund, 1986)

However, the recent interest shown by researchers such as Peng (2004) and Fan and Phan (2007) indicate that research on the born-global firm is generating new ideas and perspectives. Knight and Cavusgil define born globals as:

> "…business organisations that, from or near their founding, seek superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries." (Knight and Cavusgil, 2004)

However, even they limit their research to 'traditional' MNEs – that is, primarily industrial, product based MNEs. The sample of firms selected in their article on the 'born global' firm highlighted this:

> "In all, 18 of the business marketed various industrial products, and the remaining six sold consumer goods." (*ibid*)

Thus, while the notion of a born global firm and associated thinking seems particularly relevant to IS offshoring firms, few researchers appear to have taken note of this.

2.8 Conclusion

In summary, there is a large body of research that can inform this analysis of IS offshoring, ranging across multiple disciplines. Outsourcing literature remains the more relevant, but there are important perspectives also in the field of international business,

particularly with regard to organisational strategy. Research on IS offshoring as a form of outsourcing is growing.

The intent in this chapter of the thesis is not to provide an exhaustive review of the theoretical and empirical literature, but to highlight how a few key studies in these streams contribute to the present research. It seeks to identify constructs, antecedents and perspectives that might prove useful in setting an approach to this research, and in framing the conclusions. This is consistent with the approach suggested by Webster and Watson (2002), who note that the review of literature on an emerging topic is necessarily short.

In the next chapter of this thesis, the theoretical approach to the research is discussed in some detail, and the research paradigm defined. This provides a framework for subsequent research design and execution, and sets the scene for a description of the research methodology and approach to the fieldwork.

3 Theory and Research Method

3.1 Introduction

The review of the literature summarised in the previous chapter highlights the multiplicity of theoretical and methodological perspectives on offshoring and related fields of research. The methodological perspective is important: it sets the context of the research, and provides a framework within which the objective, conduct and outcome of the research can be evaluated. Moreover, it provides guidelines that help in doing the research, for example in identifying what types of questions are appropriate, what data are valid, and how data can lead to theory.

The theoretical and methodological approach and the associated research methods chosen to conduct this research are set out in this chapter of the thesis. This starts with the rationale for selecting a particular theoretical framework. Aspects of theory, ontology and epistemology are presented, and the logic of how these lead to selection of an interpretive and qualitative research paradigm is set out in detail. The path from research paradigm to practical research method is then described.

Regarding categories of research (using the definition from Orlikowski and Baroudi (1991)), there has been lively debate for some years regarding interpretivism and positivism in IS research (Walsham, 1995 (i)). Various cases have been made for the adoption of one or other approach; Lee (1991) made a strong case for integrating both methods. This chapter does not dwell on this debate, which is in any case not one that is easily resolved. Rather, it presents the reasoning behind a choice of interpretative methods for this research, and the rationale that led to the use of grounded theory techniques.

3.2 The relationship between theory and research paradigm

This reasoning starts by describing the relationship between theory and research paradigm. The purpose of this research is to assess the impact of IS offshoring on individuals and organisations that are affected by it, and thereby to develop theories about IS offshoring that will add to the body of knowledge in this area. Gregor's broad definition of a theory is the one used in this thesis:

> "Thus, the word theory will be used here rather broadly to encompass what might be termed elsewhere conjectures, models, frameworks, or body of knowledge." (Gregor, 2006)

This research presents an observation - 'here is a new way of conducting IS activities', and seeks to discover what this will mean for particular participants in the process. This is the point of departure for the research, consistent with Gregor's view that everything starts with the research problem:

> "The approach recommended for theory development is to begin with the research problem and research questions and then determine which type of theory is appropriate for the problem, given the current state of knowledge in the area and using the classes depicted here as a guide. An epistemological approach and research method are then chosen as a further step." (*ibid*)

In using research to develop theory, social scientists adopt a certain worldview that is informed by their beliefs about reality. This is their ontological perspective. Further, researchers will make assumptions about what can be known or determined about the phenomenon under investigation – this is their epistemological stance. The researcher's ontological and epistemological position dictates to a large extent the research method chosen, since it is consistent with the researcher's beliefs about what constitutes reality and what can be known about it. The construct of a research paradigm embodies the philosophical approach taken to guide the inquiry. A research paradigm is defined as:

> "…a construct that specifies a general set of philosophical assumptions covering, for example, ontology (what is assumed to exist), epistemology (the nature of valid knowledge), ethics or axiology (what is valued or considered right) and methodology." (Mingers, 2001)

To ensure that the theories developed as a result of the research are credible and robust, they need to be placed within a recognised ontological and epistemological framework or paradigm. Similarly, the research method must be appropriate for conducting the fieldwork and analysis and for facilitating the development of coherent theory. This progressive selection of theory, research paradigm and research method is not straightforward. A brief analysis of the literature on qualitative research highlights its diverse nature and the many different viewpoints, categories and definitions that exist.

Because the decisions about theory, research paradigm and research method are of fundamental importance to the nature, conduct and validity of any research programme, and because it is a complex area to navigate, the rationale for the choices made in this particular instance are set out at some length. This starts with theory - drawing heavily on the work of Gregor (2006) and Walsham (1995(ii)) - and identifies the nature of the theory the researcher hopes to develop. From there it is possible to proceed to the philosophical underpinnings of the research, setting out the ontological and epistemological beliefs; and these are used to guide the choice of research paradigm. This draws on the work completed by Chua (1986) and Orlikowski and Baroudi (1991) on research paradigms. This analysis is used to frame a discussion on research methods, and on the practical aspects of collecting and analysing the research data.

3.3 Aspects of theory

In her description of the nature of theory in IS, Gregor identifies five theory types, categorised in Table 3.3 with a description of distinguishing attributes:

Theory Type	Distinguishing Attributes
I Analysis	Says what is. The theory does not extend beyond analysis and description. No causal relationships among phenomena are specified and no predictions are made.
II Explanation	Says what is, how, why, when, and where. The theory provides explanations but does not aim to predict with any precision. There are no testable propositions.
III Prediction	Says what is and what will be. The theory provides predictions and has testable propositions but does not have well-developed justificatory causal explanations.
IV Explanation and prediction (EP)	Says what is, how, why, when, where, and what will be. Provides predictions and has both testable propositions and causal explanations.
V Design and action	Says how to do something. The theory gives explicit prescriptions (e.g., methods, techniques, principles of form and function) for constructing an artefact.

Table 3.3 Taxonomy of Theory Types in IS Research (Gregor, 2006)

Type I theories are primarily descriptive and state 'what is' (Fawcett and Downs, 1986). Such descriptions can go beyond basic statements to include analysis of relationships among individuals, groups, constructs or events. Such theories are needed when nothing or very little is known about the phenomenon in question and can include taxonomies, classification schemas and frameworks. It must be noted that in this context, the term 'descriptive' differs from the same term used by Orlikowski and Baroudi when they talk

of a specific subset of positivist studies that present 'factual' or 'objective' accounts of events (Orlikowski and Baroudi, 1991).

Type II theories are concerned primarily with explanation: how, why, and when things happened. In other words, it is a 'theory for understanding' and relies upon analysis of process. While such theories can result in testable predictions, this is not the primary concern. They have:

> "…an emphasis on showing others how the world may be viewed in a certain way, with the aim of bringing about an altered understanding of how things are or why they are as they are." (Gregor, 2006)

Type III and type IV theories offer predictions and testable propositions. They vary in the extent to which they provide causal explanations. Type V theories provide a method or technique for doing something, and are explicitly repeatable. Computer Science is situated squarely in this category.

Walsham (1995(ii)) has written on theory as it is applied in interpretive studies, and particularly in IS studies. Like Gregor, he views theory as a departure point for any research:

> "A key question for researchers in any tradition, regardless of philosophical stance, concerns the role of theory in their research." (Walsham, 1995)

Walsham analyses Eisenhardt's three distinct uses of theory (Eisenhardt, 1989). These comprise theory as:

> "…an initial guide to design and data collection; as part of an iterative process of data collection and analysis; and as final product of the research." (*ibid*)

The first of these uses of theory involves the construction of a theoretical framework or viewpoint *before* the data is gathered and analysed. The essential point is that it:

> "…takes account of previous knowledge, and (which) creates a sensible theoretical base to inform the topics and approach of the early empirical work." (*ibid*)

Walsham points out one of the main pitfalls of using theory in this way, namely that such a framework can constrain thinking and result in a limited, even strait-jacketed, view of the data, leading inevitably to a sub-optimal outcome. The second use of theory gets around this problem by maintaining flexibility throughout the course of the research, and by developing and modifying theory as the research progresses. This fluid approach:

> "…results in an iterative process of data collection and analysis, with initial theories being expanded, revised or abandoned altogether. A simple metaphor for this latter case is the use of scaffolding in putting up a building, where the scaffolding is removed once it has served its purpose." (*ibid*)

The final use of theory – as a final product of the research – is self-explanatory, although Walsham notes Eisenhardt's positivist stance, which demands that the resulting theory be validated using positivist techniques. This is a contentious point, and while a full description of this debate is beyond the scope of this research, it is important to set out the ontological and epistemological approach taken in this study.

3.4 Ontology, epistemology and research paradigms

Orlikowski and Baroudi (1991), following Chua (1986), define three research paradigms, or categories of research - positivist, interpretive and critical – and describe each of them in terms of their ontology, epistemology and their beliefs about the relationships between theory and practice. There are no clear-cut distinctions between these categories, and many varied research paradigms are described in the literature.

Positivist Research

The positivist world view is shaped by a belief that the social and physical worlds exist independently of humans, and that the dimensions of this reality and associated phenomena can be characterised directly through observation and measurement. This approach has its origins in the philosophy known as 'logical positivism' or 'logical empiricism'. Lee notes that:

> "A major tenet of logical positivism is its 'thesis of the unity of science' (Hempel, 1969, Kolakowski, p.178), which maintains that the methods of natural science constitute the only legitimate methods for use in social science." (Lee, 1991)

Orlikowski and Baroudi classify IS research as positivist if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from the sample to a stated population. Lincoln and Guba define more comprehensive criteria:

- "The phenomenon of interest is single, tangible and fragmentable, and there is a unique, best description of any chosen aspect of the phenomenon.

- The researcher and the object of inquiry are independent, and there is a sharp demarcation between observation reports and theory statements.

- Nomothetic statements, that is, law-like generalizations independent of time or context, are possible, implying that scientific concepts are precise, having fixed and invariant meanings.

- There exist real, uni-directional cause-effect relationships that are capable of being identified and tested via hypothetic-deductive logic and analysis.

- Inquiry is value-free."

(Lincoln and Guba, 1985)

The positivist stream of research is dominant in natural science (Orlikowski and Baroudi, 1991). It requires adherence to rigorous standards of quality that ensure validity and replicability. However, there is a widely held view that the positivist approach has limitations, particularly when applied to the social sciences. Orlikowski and Baroudi note that:

> "The design and use of information technology in organisations, in particular, is intrinsically embedded in social contexts, marked by time, locale, politics, and culture. Neglecting these influences may reveal an incomplete picture of information systems phenomena." (Orlikowski and Baroudi, 1991)

Lee (1991) describes how the interpretivist approach maintains that the methods of natural science – the positivist paradigm – are inadequate to the study of social reality.

Interpretive Research

Interpretive research takes an ontological perspective that assumes people create subjective meanings as they interact with the world around them. In the field of information systems, interpretive research is:

> "…aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context." (Walsham, 1995)

Klein and Myers define interpretive research thus:

> "IS research can be classified as interpretive if it is assumed that our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools, and other artefacts." (Klein and Myers, 1999)

This approach is in direct contrast to the positivist view, which looks at "objective" or "factual" accounts of events and situations. The criteria Orlikowski and Baroudi adopt in classifying interpretive studies are:

- "evidence of a nondeterministic perspective where the intent of the research was to increase understanding of the phenomenon within cultural and contextual situations;

- where the phenomenon of interest was examined in its natural setting and from the perspective of the participants; and where researchers did not impose their outsiders' *a priori* understanding on the situation."

(Orlikowski and Baroudi, 1991)

There is a belief that interpretive approaches and methods are well suited to research in IS because they address contextual, process-related and other aspects of IS activities (Avison and Myers, 1995; Boland, 1985). Walsham investigates the claim:

> "…that interpretivism is a valuable approach to studying IS in organisations, or more strongly that it is a better method than positivism for this purpose." (Walsham, 1995)

However, interpretive research has been criticised for lacking validity, for producing context-dependent insights that are probably not generalisable and for confusing appropriate methodologies with political issues (Silverman, 1998). Fay (1987) identifies four deficiencies of the interpretive approach: its neglect of conditions that give rise to specific meaning and experience; its failure to explain the unintended consequence of action; its failure to address structural conflicts and contradictions in organisation; and its inability to take account of historical change.

Critical research addresses some of these deficiencies. It is essentially revolutionary in nature and focuses on the oppositions, conflicts and contradictions in society, and seeks to eliminate the causes of alienation and domination. Critical studies look to expose perceived structural contradictions within social systems, and thus transform the restrictive social conditions that give rise to them. The criteria adopted by Orlikowski and Baroudi in classifying critical studies are:

- "evidence of a critical stance towards taken-for-granted assumptions about organisations and information systems;

- a dialectical analysis that attempts to reveal the historical, ideological, and contradictory nature of existing social practices."

(Orlikowski and Baroudi, 1991)

These criteria highlight both the strengths and weaknesses of critical theory. It represents a different (and in some cases more comprehensive) view of the world than those of the positivist perspective. It emphasises a holistic view of phenomena that takes account of historical, economic, social, and political influences on the nature and development of phenomena and of the potential of humans to change their immediate situation:

> "…organisations cannot be studied in isolation of the industry, society, and nation within which they operate, and which they in part constitute." (*ibid*)

On the other hand, critical theory takes as a starting point theories and beliefs that socio-economic factors are the primary determinants of antagonistic social relations. This is a somewhat extreme viewpoint, and is based on a tradition that some regard as uncertain. Chua states that:

> "Critical theorists do not share common philosophical standards for the evaluation of theories. What is acceptable theory or explanation is still debatable." (Chua, 1986)

Pluralism and multi-method research

There are differing opinions on the suitability of various paradigms to different problems areas. In the 1980s and early 1990s the predominant research approach was positivistic, which led to questions about the completeness and diversity of IS research (Orlikowski and Baroudi, 1991). The response was a wider acceptance of non-positivistic (or post-empiricist) research (Lee, 1999), and a call for methodological pluralism (Banville and Landry, 1989; Lee, 1991; Avison and Myers, 1995). Lee believed that positivist and interpretive approaches could be combined. For example:

> "…an interpretive organisational researcher who needs to choose among competing interpretive understandings might narrow down the possibilities with the help of empirical and logical rigours of positivism." (Lee, 1991)

Mingers (2001) goes further and advocates what he calls 'strong pluralism', stating that reality is "ontologically stratified and differentiated". Thus, he argues, since different paradigms focus on different aspects of a situation, multi-method research is necessary to deal with the real world. Further, since IS phenomena often proceed through different phases, different research perspectives are more useful in some phases than in others. Minger's definition of pluralism is broader than a simple combination of positivist and interpretive approaches, and incorporates temporal, cultural and contextual considerations:

> "This (a pluralist approach) means that in designing the methodology for any research study consideration should be given to the different dimensions of a real situation, material, social, and personal; to the tasks involved in the different stages of a research

> study; and to the research context (including the capabilities and characteristics) of the researcher(s)." (Mingers, 2001)

By contrast, there is the 'strong constructionist view' which holds that:

> "Interpretive research is seen to be based on philosophical assumptions which are essentially different from those of the positivist perspective. The role of interpretive research, then, is not to complement positivist investigations, but to replace them." (Orlikowski and Baroudi, 1991)

Walsham (1995 (i)) is strongly biased towards this view, although he concedes that he was unable to find a paper published in the IS literature that argues explicitly for the demise of positivism and its replacement by interpretivism.

3.5 Choosing a research paradigm

Such variety in philosophical perspectives presents a complex choice for the novice researcher. Each approach has its merits, and is potentially applicable to some - if not all – aspects of the proposed research. Although this admission could be read as favouring a pluralistic approach, a rationale for adopting a solely interpretive paradigm is set out below.

First, the researcher shares the view taken by Galliers (1992) that IS comprises computer systems embedded in a social context, and not just hardware and software. Moreover, it is often the social context that gives rise to the most interesting and problematic aspects of IS (Hirschheim and Newman, 1991; Newman and Robey, 1992). Klein and Myers point out that:

> "Interpretive research can help IS researchers to understand human thought and action in social and organisational contexts; it has the potential to produce deep insights into information systems

> phenomena including the management of information systems and information systems development." (Klein and Myers, 1999)

This applies particularly to phenomena like outsourcing and offshoring, which are almost exclusively concerned with commercial, social and organisational arrangements of IS. If this position is accepted, an interpretivist approach is the most logical choice of paradigm, since it investigates the social constructs and arrangements that constitute reality.

Second, the primary research interest is to understand the nature of the offshoring phenomenon and its impact on those who experience it by describing, analysing and explaining it. Thus, the research should develop a type II theory in Gregor's categorisation, which is concerned primarily with explaining how, why, and when things happened. Although Gregor rejects the notion that the theory types necessitate a specific ontological or epistemological position, she concedes that some proponents of specific theory type favour some forms of theory more than others. For example, she notes that research approaches that can be used to develop type II theory include interpretive field studies.

Third, because the interpretive research paradigm facilitates a process-based description of change in its organisational context, it seems appropriate to the study of the offshore phenomenon, which is heavily process-based and organisationally dependent.

Finally, it is the researcher's view that positivist paradigms are less suitable for this research. Offshoring does not lend itself to:

> "…the manipulation of theoretical propositions using the rules of formal logic and the rules of hypothetico-deductive logic so that the theoretical propositions satisfy the four requirements of

> falsifiability, logical consistency, relative explanatory power, and survival." (Lee, 1991)

Accordingly, the positivist paradigm is rejected in favour of interpretivist methods for use in this field of study.

Similarly, critical theory is viewed as unsuitable for this research. This is despite the fact that it has the potential to provide a transformational perspective, since offshoring can be viewed as something like a 'disruptive' technology. (It introduces – among other things - fundamental change to the social context of software development). However, critical theory involves the examination of a phenomenon in the context of a predefined theoretical framework. This is of limited value for the questions being asked here, and since the objective of the research is to develop a descriptive and explanatory theory of the offshoring phenomenon, critical theory has been discounted.

This preceding discourse highlights the fact that there is no single 'right' approach to a research question. In selecting an interpretive approach at the outset, the researcher does so with the awareness that there are other ways of looking at the problem. This awareness is maintained throughout the course of the research, on the assumption that the value of keeping an open mind outweighs the benefits of strict adherence to formal research guidelines. Further, this approach is in keeping with the researcher's aptitudes and predispositions, and therefore follows the advice given by Orlikowski and Baroudi:

> "… researchers should ensure that they adopt a perspective that is compatible with their own research interests and predispositions, while remaining open to the possibility of other assumptions and interests. They should understand and acknowledge the extent to which the perspective they adopt will focus their attention on some things and not others, and bias their perception of the phenomena they study." (Orlikowski and Baroudi, 1991)

Describing the views on interpretive research in IS studies, Walsham (1995 (i)) analyses 'the use of rhetoric in interpretative claims.' He identifies various levels of rhetoric concerning the validity of interpretivism, ranging from weak - for example, where the claim is made that the research is designed to develop 'exploratory theory', presumably to be validated subsequently by positivist research – through complementary, where the use of both positivist and interpretivist approaches is condoned – to strong rhetoric, which argues for the replacement of positivist research methods with interpretivism.

This research tends towards the use of strong rhetoric. It does not exclude positivist approaches completely: these may be appropriate to certain aspects of IS study – for example, in areas of pure computer science. However, an interpretivist approach is essential for understanding the more complex, social and organisational aspects of IS, and the phenomenon of offshoring is one such aspect. In this regard, this research follows in the interpretivist tradition of Zuboff (1988).

A final point concerns the limitations of inductive reasoning. Taleb (2007) describes what he calls 'Hume's problem' and notes its antecedents in Greek and Arabic philosophy. He cites Sextus Empiricus, the Pyrrhonian sceptic who reasoned that a universal rule could not be established from an incomplete set of particular instances:

> "…when they propose to establish the universal from the particulars by means of induction, they will effect this by a review of either all or some of the particulars. But if they review some, the induction will be insecure, since some of the particulars omitted in the induction may contravene the universal; while if they are to review all, they will be toiling at the impossible, since the particulars are infinite and indefinite." (Taleb, 2007)

This problem has exercised philosophers over the centuries: in more recent times, Popper and Goodman have written about it (Popper, 1959; Goodman, 1955). In essence, the inductive theory can never be proven, only disproven through falsification.

This is an interesting philosophical debate, but one that is to a certain extent irrelevant, since this research seeks to develop substantive theory based on grounded data. Its output is a conceptual framework and related propositions (Eisenhardt, 1989), and does not comprise a nomothetic theory. For this purpose, inductive reasoning is perfectly adequate.

3.6 Choosing a Grounded Theory research method

Mingers provides a definition of research methods:

> "Research is conducted by undertaking particular activities such as administering and analyzing a survey, conducting controlled experiments, doing ethnography or participant observation, or developing root definitions and conceptual models. These basic activities are research methods or techniques (using the terms synonymously)." (Mingers, 2001)

He also notes that:

> "…it is possible to detach research methods (and perhaps even methodologies) from a paradigm and use them, critically and knowledgeably, within a context that makes different assumptions." (Mingers, 2001)

As with research paradigms, the range of research methods available is considerable. Myers (1997) identifies some of the most popular methods for qualitative research, including case study, action research, grounded theory (which in this context comprises a research method as opposed to 'theory' in Gregor's taxonomy) and hermeneutics (or phenomenology).

This research excludes pure action research as impractical in this instance and hermeneutics as primarily a literary endeavour; both draw on a 'hazy theoretical base' (Silverman, 1998). It also excludes the case study approach, which benefits from the prior development of theoretical propositions to guide data collection and analysis (Yin, 2002). This hypothetic-deductive approach is in contrast to an inductive approach that relies on data analysis to develop the theory. Instead, the research adopts a grounded theory method for data collection, analysis and theory development. The reason for this approach is best explained by considering the nature of grounded theory in comparison to other methods of research.

Grounded theory is an example of an inductive research method that seeks to develop theory that is grounded in data systematically gathered and analysed (Myers, 1997). It is

> "…an inductive, theory discovery methodology that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data." (Martin and Turner, 1986)

In her study of the organisational changes resulting from the introduction of CASE tools Orlikowski (1993) adopted a grounded theory approach for three reasons. First, the inductive, theory discovery methodology that is implicit in grounded theory seemed particularly useful in her study because no change theory of CASE tools adoption and use had been established to date. Second, the need in grounded theory to incorporate rather than exclude the complexities of the organisational context into an understanding of the phenomenon (Pettigrew, 1990) aligned with her desire to include and investigate this key organisational element. Third, a grounded theory approach allowed her to generate:

> "…theories of process, sequence, and change pertaining to organisations, positions, and social interaction." (Glaser and Strauss, 1967)

Again, this seemed appropriate because this element had been overlooked in previous CASE tool research. Orlikowski noted that:

> "These three characteristics of grounded theory - inductive, contextual, and processual - fit with the interpretive rather than positivist orientation of this research." (Orlikowski, 1993)

The focus of this research is similarly to develop a context-based, process-oriented description and explanation of the phenomenon of IS offshoring. The reasons given by Orlikowski for using grounded theory apply to the proposed research. First, the inductive nature of the method is appropriate because there is no dominant theory of offshoring to date (although there are, of course, theoretical antecedents for offshoring). Second, a detailed understanding of the organisational context for offshoring is essential to developing a robust set of conclusions. Third, a research method that facilitates a process-based description of change in its organisational context seems appropriate to the study of offshoring, which is heavily process-based and organisationally dependent.

Moreover, the grounded theory approach is comprehensive, and comes with a pre-defined method of analysing the data (which Myers terms 'mode of analysis'). Although there are various interpretations of how this can be achieved (Miles and Huberman, 1994), there are reasonably clear guidelines and techniques available that help with the process of theory development, such as those expounded by Turner (1983) or by Strauss and Corbin (1998).

There is however, a significant factor which might be seen to preclude the use of pure grounded theory in this research. Glaser and Strauss take a strong position on the extent

to which theory can be developed prior to the research. In their view, the less that is known about the phenomenon under research before the research starts, the better. For example, they argue for a very limited literature review prior to research:

> "…carefully to cover 'all' the literature before commencing research increases the probability of brutally destroying one's potentialities as a theorist." (Glaser and Strauss, 1967)

This goes to the heart of grounded theory: taking the purist view, emerged theory can only be valid if it is untainted by existing theory or even by antecedent thought. This presents a problem to this research programme: the researcher has worked in IS development as a practitioner, and some of this time has been spent working on offshore IS projects. Even without conducting a literature review, it is impossible for the researcher to adopt a completely dispassionate and uninformed view at the outset.

Walsham regards the purist view as extreme, and argues that:

> "It is possible to access existing knowledge of theory in a particular subject domain without being trapped in the view that it represents final truth in that area. Glaser and Strauss's warnings are valuable for reflection, but they surely tend towards approaches which risk ignoring existing work." (Walsham, 1995 (ii))

He cites Layder (1993), who argues that researchers should draw on general theories and employ them in empirical research:

> "…the grounded theory approach must break away from its primary focus on micro phenomena. The very fixity of this concentration is a factor which prevents grounded theory from attending to historical matters of macro structure as a means of enriching . . . research on micro phenomena." (Layder, 1993)

Like Walsham and Layder, the view taken in this research is that it is possible to adopt the essential principles of grounded theory – and importantly, the techniques of analysis

and theory development embedded in the grounded theory approach - even if one has prior experience of the phenomenon under investigation, provided the researcher takes pains to appraise the beliefs of previously embedded communities. For this reason, and for the reasons noted above, this research adopts a research paradigm that follows grounded theory principles, methods and techniques.

The role of the researcher in the research

Having described the philosophical stance of the research prior to the research, it is necessary also to expand on the role of the researcher during the course of this research programme. Walsham stresses of the importance of being explicit about this:

> "Interpretive researchers are attempting the difficult task of accessing other people's interpretations, filtering them through their own conceptual apparatus, and feeding a version of events back to others, including in some cases both their interviewees and other audiences. In carrying out this work, it is important that interpretive researchers have a view of their own role in this complex human process." (Walsham, 1995 (ii))

He identifies two possible roles: that of the outside observer and that of the involved researcher through action research. Neither of these positions can be truly objective, since the researcher's subjective views influence the research at every stage, from collection and analysis of data to development of theory and outcome. Also, he points out that for research that takes place over an extended period, researchers will influence the participants – a process referred to as the 'double hermeneutic' by Giddens (1984).

Notwithstanding this, an outside observer can often gain particular insight because he is not seen to be part of the project, organisational or political environment in which the study exists. Respondees may be more open, since the researcher will not viewed as partisan; and an external researcher can sometimes see issues more clearly than involved

parties. However, the outside observer suffers a major disadvantage in respect to an involved participant: he will not be present for many of the discussions that shape the outcome of the research, or have access to important – perhaps sensitive – data. Nor will he be able to understand the business or project dynamics from the 'inside'.

An action researcher can in some instances get around this problem. Being a temporary or full team member of the case organisation allows him to develop an insider's view. However, he suffers from lack of objectivity, since he will have or appear to have a direct personal stake in the outcome. He may also be regarded as an outsider or be treated with some circumspection by other members of the team. The major disadvantage, according to Walsham, is the difficulty associated with self-reporting, and maintaining a balanced view of one's own contributions without resorting to over modesty or self-aggrandisement.

Whatever stance is taken, Walsham believes it should be explicit, and based on the circumstance:

> "Whatever the decision made by the individual researcher, it is essential that the choice is made in an explicit and reflective way, and that the reasons are given when reporting the results of the research." (Walsham, 1995 (ii))

In this research, the position of the researcher is less clear cut: his position involved both project involvement and outside observation. This is somewhat unusual and so merits clarification.

The research selected two projects (described in the next chapter) which took place over an 18 month period. Both involved the use of an external party (Capgemini) as the prime

developer. For most of the research period, the researcher worked as an employee of this third party, and was intimately involved in the construction of the projects (that is, their planning, resourcing and initiation). He was involved in their execution at a removed level, and had minimal, indirect involvement during the course of the work.

This largely existential stance afforded several benefits. First, by virtue of intimacy with both projects at an early stage, the researcher had direct knowledge of the business of both organisations, and had access to the principal actors and decision makers, and to secondary data sources. Second, throughout the course of the projects, the researcher had access to all project documentation and correspondence even though he was not intimately involved in the projects. In many respects, this offered the best of both worlds – a unique stance that incorporates the benefits of both internal and external observance.

This explains also why relatively few interviews were conducted. Since the researcher had access to documentation at every stage, and deep knowledge of the business, organisational and political environment, it proved unnecessary to conduct extensive interviews: those that were conducted were done more for confirmation of detail rather than as a primary source of information.

Having set out the theoretical and epistemological approach and the research methodology to be followed in this research it is helpful to present the real-life context in which the research was conducted. The researcher was fortunate to have full access to substantial IS offshoring projects in large commercial organisations. These are described in the next chapter.

4 Empirical Material

4.1 Introduction

Empirical material used in the research forms the body of this chapter, and complements the theoretical framework and methodology previously described. Two projects are described and compared, with emphasis on the differences in circumstance and outcome.

The projects were of a similar scale – over 10,000 days of development effort – and used similar development methodologies (IBM's Rational Unified Process (RUP) and Capgemini's Deliver), although in different technology environments (Java for one; Assembler and COBOL for the other). Thus, as for Orlikowski's (1993) selected sites, the projects were philosophically similar, drawing on the same basic software development approach of use cases, separation of process and data, and iterative development phases. Moreover, both projects placed offshore developers from Capgemini's Indian operation on site in the client's offices in the UK.

The differences between the projects are at a higher conceptual level. First, although the organisations operate in the industry that can broadly be described as financial services, one is a UK retail bank (Ariel), a subsidiary of an international financial services institution and the other is a global insurance broker (Atlas), headquartered in the USA with its European headquarters in the UK. The companies differ in size, structure and culture. Ariel is located in the south-east of the England and has a growing, motivated and stable IT workforce. Atlas is much larger and operates from offices in the City of London, exhibiting some of the organisational volatility and pace of change typical in this environment. The most striking difference between the two companies is in their culture: Ariel is fast-moving, with a relatively informal decision-making process and a 'can-do'

attitude to business, reflecting its origin as a successful, marketing-driven start-up. Atlas, by comparison, operates on a much more traditional, hierarchically-sensitive basis, typified by extended lead times for decision making and a risk-oriented approach to business. Finally, one project involved the development of a package-based system to support a new lending product and the other was a custom development of an existing systems software suite.

4.2 The multi-shore systems integrator – Capgemini

In each instance the offshore outsourcing provider selected to perform the development projects was Capgemini, an international computer services company, headquartered in Paris. Capgemini provides technology, consulting and outsourcing services to clients in over 30 countries.

Background

Founded in Grenoble in 1967 as the "Societé pour la Gestion de l'Entreprise et le Traitment de l'Information (Sogeti)", Capgemini's origins mirror those of the early American computer service companies. Its founder, Serge Kampf, was originally the regional manager for the computer manufacturer Bull General Electric in France and set up the new company to provide computer services to Bull's clients. At the time, these services were generally provided by the computer manufacturers, who were primarily interested in making and selling hardware, and who bundled the cost of computer software with the machine price (Gaston-Breton, 1997).

Sogeti grew rapidly: from 1968 to 1971 revenues grew to more than 26 million FF; it remained profitable; and its workforce increased from seven to 136 people. The company's primary business comprised the building of custom application solutions for its clients, although it also provided management consulting, facilities management and

data processing services. In 1970, Sogeti created a joint data processing company with Cofradel, a food processing company, to handle Cofradel's computer activities. This was effectively the company's first major outsourcing project and the joint venture was given the name of Hermes Informatique. Later that year, Sogeti formed an alliance with OBM, a French consulting company, to expand its management consulting capability. Further sizeable mergers with the CAP group and Gemini Computer Systems were negotiated in 1974 and resulted in the creation on 1 January 1975 of the Cap Gemini Sogeti Group, with a workforce of 1,850 staff and annual revenues of 180 million FF.

Between 1975 and 2000, the company continued to grow. It focused its activities on professional services and divested itself of data-processing and facilities management activities; expanded internationally both in Europe and in the United States; and developed skills in systems integration. By the mid-90s it had established a position as a major player in the computer services sector. Further acquisitions were made during this period (including Sesa, Hoskyns, Volmac and Programmator) and in 1985 shares in Capgemini Sogeti were listed on the Paris stock exchange. By 1989 Capgemini's revenues exceeded 2.2 billion FF; in 2000, Capgemini's acquisition of Ernst and Young consulting created the world's fifth largest computer services company, employing almost 60,000 staff in over 30 countries (*ibid*).

Capgemini Offshore

Although outsourcing represented a significant part of the company's activities from early days (and in 2001 represented 22% of revenues), offshoring of software development is a relatively recent activity for Capgemini. It is mentioned in its Annual Report for the first time in 2002, almost as an afterthought:

> "Lastly, there is the arrival in the market of extraordinary skills coming from developing countries (with India in the forefront),

> which will have a profound impact on production methods within our services industry. We are prepared for this and, flush with some early successes, we expect to be pioneers in this field as in many others. A particular case in point is our development of the "Rightshore" concept of delivery, to combine most effectively the best interests of our clients with the talents of the Group, whether they may be found in our traditional geographies, in neighbouring countries or far away places". (Capgemini annual report, 2002)

This annual report also highlighted the fact that despite a decline in headcount in its Asian operations, (it represented 2% of the company's overall workforce by the end of 2002), it planned to grow the offshore capability significantly.

> "For consulting and systems integration operations, the emphasis is being placed on more systematic and coordinated use of the worldwide network of applications development centers, several of which are located in areas where labor costs are lower. In particular, the Group is planning to more than double its production capacity in India in 2003 (up from the current level of 600 employees) and to strengthen them in certain European countries such as Spain and Poland." (*ibid*)

The emphasis here is important: offshoring for Capgemini was not simply a matter of moving jobs to India. Rather, it involved deploying staff where costs are lower, but in a manner designed to make 'systematic and coordinated use of the worldwide network of applications development centres'. This approach is at the heart of Capgemini's 'Rightshore' policy. Between 2002 and 2006, Capgemini grew its Rightshore capability rapidly, and by 2005 had almost 5,000 employees in Asia, most of these located in India and China.

In 2006, Capgemini acquired Unilever India Shared Services Limited (Indigo), a provider of financial shared services, and Kanbay International (Moore *et al*, 2006). Together,

these acquisitions increased Capgemini's headcount in India to 12,000 employees. By the end of 2008, the headcount had grown again, as noted in the Group's audited results for that year:

> "Between December 31, 2007 and December 31, 2008, the headcount grew by 8,113 people, with almost half of new recruitment being carried out in offshore countries. Essentially concentrated in India, but also in Poland, China, Morocco and South America, offshore employees represented 28% of the total Group headcount (25,275) people out of a total 91,621 on December 31 2008." (Capgemini Audited Results, 2008)

This shows that Capgemini, like IBM, Accenture and other large global systems integrators, has changed fundamentally its business model to emphasise the dependence on offshore IS development.

Configuration at the time of the research

At the time of the projects described in this thesis, Capgemini was at an early stage of adopting a fully-fledged offshoring approach. The UK organisation was largely responsible for determining the resourcing of its projects, and was under no compulsion to use offshore staff. Such resourcing decisions were jointly agreed by the client account manager, responsible for pricing, and the client delivery director, responsible for the execution and profitability of the project. The projects in this research had different account and delivery directors, but both chose to use predominantly offshore staff to complete the work.

4.3 The Mars project narrative

Ariel

As the direct banking arm of a leading international financial services organisation, Ariel's ambition is to be a top-quality, low-cost provider of financial services in mature

markets by offering its clients best value for money and excellent service via call centres and the Internet. It uses a high-rate savings account as an entry product, and once it has established a brand presence and reached a necessary minimum scale, it follows this with a mortgage product. In addition, it sells other wealth accumulation products such as mutual funds, e-brokerage, pensions and life insurance.

The bank's strategy is to grow by providing excellent customer service and by innovative marketing. It uses customer databases to maximise cross-selling in the direct channel as well as through agents and brokers. The call centre is the main channel, but the use of the Internet as an alternative channel is growing. After account opening, more than 75% of customer interactions are performed through these fully automated channels, and products are designed so that they can be sold via direct channels. The bank places strong emphasis on operational efficiency, and views this as a sustainable competitive advantage.

This strategy has been successful. In May 2003, the bank started operations in the UK, and has grown rapidly since then: by 2004, it had over 300,000 customers and deposits of €11.5 billion. As with its other operations, the bank offered a single low-cost savings product for the first year. This product was supported by a variety of off-the-shelf software products customised to fit the bank's environment. This broadly followed the approach taken by Ariel's Canadian operation. Early in 2004, the Ariel UK board decided to launch a mortgage product: this initiative was the basis for project Mars. The target launch date was for early 2006 for a basic product (excluding various functions such as a capability to support financial intermediaries). The preferred channel for initial launch was the Internet.

Project Mars

After an initial period of business planning, the IT function was engaged to assess the requirements to support the mortgage product. The business case had assumed that a significant part (50-60%) of the Canadian mortgage system could be reused to support a mortgage system for the UK market. The IT department was led by a very experienced IT director, but – with a small number of exceptions - the skills in the department were light, and most of the staff inexperienced with large scale systems analysis and development. (The systems to support the savings product had been implemented by a third party).

In July 2004, the IT director engaged Capgemini to do a gap analysis of the requirements to assess what really could be reused from the Canadian system. Capgemini adopted a RUP methodology, and treated this engagement as the inception phase. Capgemini concluded that significant re-work was required to develop a front-end solution, and also to integrate the system with the existing back-end systems, so the bank decided to select a third party systems integrator to do this development and issued a request for proposal (RFP). The bank did not request or specify IS offshoring as a requirement or delivery option, and of the various responses to the RFP only two mentioned an offshoring capability: neither of these led with an offshoring proposition. In September 2004, Capgemini was selected.

Subsequently a steering group was set up and Mars was constituted as a business programme with a number of discrete IT projects. The business and IT programme managers were Ariel employees. Capgemini mobilised rapidly, and brought on board a small team comprising onshore and offshore staff, and staff from third-party suppliers.

Further work on the gap analysis highlighted a significant variance between the functionality available from the Canadian system and the functionality required for the UK. The conclusion reached by the project team was that to meet the required functionality, the system would need to be completely rebuilt; an estimate for this work was in the region of 20,000 man-days of effort. The business case was based on an estimate of 5,000 man-days, as described by the Mars programme director:

> "The whole business case was based on the assumption that we could reuse the Canadian mortgage framework called MAPS - Mortgage Application Processing System. So, we only needed about 20% customisation, and the 20% then allowed for, let's say, adjusting to local flavour, because the UK customers may want it slightly different than the Canadian customers, and for the MCOP (*Mortgage Code of Practice*) regulations."

Subsequent reduction in the scope of the functionality brought this total down to about 14,000 days, but this still did not make a good business case. At this stage, Capgemini submitted a proposal to resolve the problem by re-configuring its project team to use predominantly offshore resources. This had the effect of making the total effort affordable, and the bank eagerly accepted this approach. The Capgemini account manager's perception was that this (an offshoring approach) was a welcome novelty:

> "Because when they (*Ariel's UK management*) … fed those figures into their overall plans (it) changed their thinking about the development, the development cost. So that process actually happened in the space of an hour or so in a meeting. And following that when we drew up the contract - the contract was for the individuals - they asked for a replay of the commitments around the pricing for an offshore team. And so the initial discussions were around the ballpark of what it was going to cost for an offshore team. In the contract we had to make firm commitments around what the pricing would be for that offshore team. And when I went back with those firm commitments, again,

> they were very surprised that we were able to reconfirm pricings, because they thought they were very cheap. And when they were reconfirmed in the contract, they were very reassured by that. ”

They also wanted to retain management of the programme, again a new approach noted by the Capgemini account manager:

> “So their style was very much to take overall management of the team. So this was not an outsource project to Capgemini. Capgemini were the development partner, but the key management of it would be undertaken by (the bank). So… it wasn’t body shopping, but neither was it a risk bearing project. It was somewhere in between.”

Project and technology environment

The development was based on linking a series of related specialist products with J2EE custom code. The products include Filenet, for document management, and a mortgage origination product called Omiga, from Marlborough Sterling (subsequently acquired by Vertex). These linked to Profile’s Sanchez banking system (now delivered by Fidelity). For the custom-build components, the development methodology used was a version of RUP, an iterative development methodology, which was modified to accommodate distributed development. This had the effect of making RUP more waterfall-like, but still retained the core principles of RUP. The package providers used their own proprietary methodologies. The Capgemini development team used IBM’s WebSphere Application Development Studio (WASD).

The development team had three components. The first was the Omiga delivery team based in Cheltenham in the UK. Profile had personnel located on-site in Reading, and others offshore in Portugal and Poland. The third component was the Capgemini team, based on-site at Reading and offshore at Mumbai. Capgemini had responsibility for

coordinating delivery across Profile, J2EE and Cheltenham. The bank recognised that this involved risk:

> "As a user, there are obviously risks to offshoring. For us it was new territory, so we did not really know what we were doing. We knew that we needed a high interaction between the various software suppliers that we used. "

Development progressed well until testing highlighted some problems, mostly around performance. This caused the project launch to be delayed from March 2006 to June 2006. Despite this delay, the project was largely considered a success, and the product was reasonably successful when it launched.

4.4 The Europa project narrative

Atlas

Atlas is one of the world's leading risk management, consulting and insurance brokers. Its customers comprise large organisations, for which it provides comprehensive and complex insurance services – for example, it brokers insurance for large tankers, aircraft fleets, and space satellites; and retail customers, for which it brokers less complex products – for example, mobile phone insurance. The company is headquartered in New York and operates globally. It has a thriving European arm, part of the EMEA division.

The brokerage market in EMEA employs different business practices in individual countries for reasons of regulation or choice. Accordingly, much of the information technology used to support the Atlas business was customised for individual country operations. In particular, the business relied on Europa, a large mainframe application developed in the 1980s, to support the retail brokerage business (consisting of about 6,000 users in 25 countries across Europe). Europa was regarded as outdated, since Atlas

had invested little in technology over the years, believing IS to be a back office utility rather than something to provide competitive advantage. Nonetheless, the Atlas business in Europe – and particularly in France, Spain and Germany – was dependant on Europa and it had brought a degree of consistency to business transactions in the region.

Europa was not a typical business application. Rather, it was collection of customisable modules that allowed local operations in European countries to cater for their own needs. It was written in COBOL and was large (comprising almost 30 million lines of code), and was encapsulated by a layer of operating software that had been also been developed by the in-house IT team in Belgium. Europa ran on an IBM mainframe platform using the CICS transaction monitor and accessing VSAM files. There was little documentation, and much of the code annotation was written in Flemish. The Belgian IS centre had approximately 60 staff, primarily tasked with supporting and enhancing Europa. The cost of supporting Europa was increasing, not only because of staff costs but also because of expensive MVS and DOS licences.

In 2003, a new CIO was appointed to head the IT function in Atlas EMEA. She conducted a review of Atlas's IT sourcing approach and concluded that it was necessary to move towards an outsourced model.

> "At the start of my tenure (2003), the senior management team got together to look at what we had in terms of resources and look at what we would like to get to in terms of a sourcing model and I think it was really in those early days of 2003 that we took a view that we wanted to move away from the model that we had which was kind of 70% internal resources - many of whom had been there, as I say, for 15-20 years - through to one of co-sourcing and (to) adopt very much a Gartner IS Lite model of keeping some core competencies and skills in-house and then using either third party

> resources that we bought in from the market and/or partners to do a lot of the commodity work."

At the same time, she recognised the business's dependency on Europa, and that it was limiting future growth because of its inflexibility and cost. She recommended that the existing application suite and its associated infrastructure be upgraded and modernised to provide the required flexibility. It was agreed that there was little choice but to upgrade and modernise Europa rather than replace it, despite the belief that the existing staff in the Atlas IT department in Belgium did not have the skills to do this modernisation, or to support a modernised, web-enabled version of the application in the future. Thus, a Europa modernisation programme was conceived that had two purposes: first, to provide a flexible, cost-efficient and fully functional platform to support future growth and second, to prove and introduce a new IS operating model that was predominantly outsourced. While the benefits of the modernisation were clear to the business, for the IT department the project was set in the context of the sourcing strategy.

Thus, in September 2004, Atlas issued an RFP in which it announced its desire to modernise Europa. It noted its concern about available IT skills and invited companies to bid for a collective transfer of the IT operation in Belgium, provide a managed service for the ongoing maintenance of Europa and conduct the first steps in the modernisation of Europa. Atlas's expectation of the tender process was that it would enable them to close the Belgium IT operation in a managed way, modernise Europa so that it would become the future platform for the EMEA business and subsequently move to an outsourced delivery model. The primary driver was to find a partner with an offshore capability, as described by the Capgemini account manager:

> *"*What they were looking for was a partner. In terms of the actual development work I believe, they were looking for a partner that

> had an offshore capability. But the other thing that was very important to them was that partner had a European footprint."

The RFP was issued to four vendors: Capgemini, IBM, Wipro (partnering with Ordina in Belgium) and Larson and Tubro (partnering with Infosys) and specified in two work packages. The first work package covered the collective transfer of the staff in Brussels and the provision of a managed service for three years and the second work package covered the first phase of modernisation for Europa. The responses were varied: three of the suppliers submitted bids (Larson and Tubro declined to bid) and of these Wipro and Capgemini were shortlisted.

In the end, Capgemini was selected as the preferred supplier to modernise Europa, mostly because of their European credentials. The Atlas CIO summarised this as follows:

> "Wipro fundamentally had the best commercials but they could not satisfy us that they would deal with the human capital issues appropriately either from a soft point of view, transitioning people, demonstrating that they could re-skill and move people on or they could not satisfy us for example that they had a legal trading entity in Belgium which would have been required in order to deal with some of the human capital issues.
>
> I think one of the strongest parts of the (Capgemini) bid - obviously the commercials worked for us - was the fact that they could demonstrate their plans for people and what might happen to them and transitioning them in some cases out of the Atlas business into careers in Capgemini - perhaps working on different accounts. Added to that they had a very strong continental European presence and strong credibility in continental Europe, albeit they're French based."

The approach to modernising Europa

Capgemini developed a strategy to break down the monolithic Europa code into individual component parts, identifying elements that could feasibly be replaced with COTS and then 'modernising' the core retail brokerage functionality by converting the VSAM file structure to a modern relational data base. This would have the impact of updating parts of the code and technology on which the application was based, while keeping the core brokerage functionality. This was deemed a more pragmatic and lower risk strategy than wholesale replacement. The Capgemini delivery director for Europa described the approach in this way:

> "Our vision was that over a period of time we would take various functional capabilities and use a package to meet those needs. Create an integration bus underpinning it and implement those packages and subsequently retire the functional capability within Europa. If one takes that to its logical conclusion what you will eventually end up with is a core set of business differentiating capability which doesn't exist in a package. The final step in the overall modernisation would therefore be to rewrite that much smaller sub-set capability in a modern set of language, whether that was J2EE or .net or whatever the technology's diagnostic and you would subsequently end up with a much lower total cost of ownership, a refreshed database and would have met your underlying objectives of moving off the IBM mainframe."

Capgemini started the programme by running a small pilot project to develop a functional specification for part of the application, together with a plan for removing it from Europa. Three experts from Capgemini India were engaged on-site in London to do this work. The project started on July 7th 2005. (This coincided with a series of bombings in London, causing considerable confusion and stress for the Indian staff). Subsequently, Capgemini used this work to develop an approach and plan for doing the complete transformation.

At this stage, a difference of opinion arose between the client and Capgemini about where the transformation work should take place. Capgemini's view was that the complexity and scale of the programme warranted an onshore team comprising both onshore and offshore staff, with a UK programme manager and architect – this was reflected in the staffing and pricing of the programme presented to Atlas. Atlas's view was that the programme could and should be done offshore at a much lower cost. The Capgemini delivery director was firmly of the view that Atlas was insufficiently experienced in offshoring to attempt it on such a high profile programme.

The ratio discussion

This difference of opinion led to an impasse, which resulted in the client escalating the issue to Capgemini's senior management. This in turn led to a discussion concerning what part of the work could be done offshore and what needed to be done onshore at the client's site.

> "I guess the client was reasonably happy with the initial piece of work that we did but when we got to sizing it then putting a number to the effort I think the client started getting a little concerned about the fact that they weren't going to see the element of low cost impacting their overall investment in the short term so one of the first conversations that I got involved with was around the challenge that they posed us saying: 'we've come to Capgemini to get the lowest total cost of ownership but we seem to be sensing reticence from the project programme team in terms of how much the Indian team was being involved'."

This central issue - the ratio of onshore to offshore staff – was debated in a series of workshops, with the client urging Capgemini to:

> "…start from a position of 100% offshore and work your way back. Only essential elements should be done onshore. So there's your challenge, go away and think from a one hundred per cent perspective."

This approach reflected the concerns of the Atlas IT management team that the costs of the modernisation programme would be unacceptable to the US management team. The Capgemini delivery director for Europa explained this as follows:

> "So I think they (*Atlas*) possibly underrated the whole situation: when they got management approval for the budget that they would have to spend on this application and then suddenly they were going to be told that, 'oh, by the way the numbers are now looking twice as big as they were meant to be'. I think that's where the big challenge that the CIO confronted. She was obviously working for American bosses who had more experience with offshore and who were saying that the numbers didn't add up and they weren't willing to subscribe to any plan that required them to spend more money."

It resulted in Capgemini believing that Atlas did not understand the scale of the problem it faced in modernising Europa, described by the Capgemini account manager:

> "To me the key point, the key telling point in the relationship was when they escalated that issue around the ratios because it told me they didn't understand what they were doing. Atlas really forced us to think about how we would structure an offshore deal. The development of ratios and looking at what roles could be done where was all relatively new to us then, but it's fairly familiar territory now."

In the end an agreement was reached that involved a mostly offshore team, with a core team onshore in the UK and Belgium.

The outsourcing part of the offshoring deal

Throughout, the Belgian IT team was on the whole hostile to the idea of offshored outsourcing. The works council – the organisation's equivalent of a trades union - was by and large supportive, but several of the individuals concerned actively opposed the deal. This was largely because of the threat to their jobs. The CIO's comment on

conclusion of the staff transfer to Capgemini sums up the general attitude of the relevant staff:

> "The majority of the people in the core team had by that time kind of accepted what was going on and indeed some of them were incredibly positive about it. There was a core of probably about five who were incredibly negative and not just incredibly negative were incredibly vocally negative … some of those individuals who stood up and said just the most incredibly rude things and disrespectful things and I was quite shocked by their behaviour but I guess that proves to you at the end of the day some leopards just will not change their spots..."

In fact the UK-based IT management team had had some experience of obstruction from the Belgians. The IT procurement manager described the earlier standoffs on the modernisation project, noting that the systems issues were secondary:

> "...he (*the Atlas technical architect*) felt that he got so little help from the Belgians in trying to move that (*Europa modernisation*) forward, probably at least a year and a half or two years before we actually embarked on the outsourcing. But I think he used to quite often lobby (*the CIO*) to say we need to do something about those Belgians**.** It was more about the people than it was about the system to begin with."

To compound the problem, the IT employees' business colleagues in Brussels were unconcerned about the fate of the IT department, and for the most part disengaged from the process. The CIO described this attitude:

> "Maybe I've underplayed it, but they (the Belgians) were probably the trickiest customers to deal with apart from the local Works Council in Belgium. They were very, very sceptical, bordering on cynical. They were never truly supportive of the whole process. All they were worried about was any … negative impact on them and all they were seeking was positive impact in terms of pay back,

> buildings being freed up, bothersome employees being off their payroll and so on and so forth, so they were completely unsupportive and gave us problem after problem."

Thus, when the offshore workers arrived in Brussels from India, they were not welcome. The Capgemini programme manager noted that they (along with their UK Capgemini colleagues) worked in a separate area from the main IT department:

> "No....basically we brought a test manager and some core testers to help to produce test scripts. They were doing test scripts at the time, yeah and it was like a ring-fenced implant of a testing team."

It also led to a bizarre episode at the end of their engagement in Belgium, where some disaffected Belgian employees (who had been transferred to Capgemini as part of the outsourcing deal) called up a Belgian TV station to complain about Capgemini breaking the law by bringing Indian staff illegally to work on the development. The Capgemini offshore director describes the event, which highlights the strength of feeling the Belgian workers had towards outsourcing to offshore workers:

> "I guess the concern was that work was possibly being sent offshore and the impact of that on their jobs was what possibly drove our newly acquired Belgian colleagues to basically send word out to the press in Belgium to say that Capgemini was body-shopping people into Belgium and they were not being compliant with the labour laws and were doing things illegally. That was the kind of story that was planted in the press and it generated the wrong kind of publicity for Capgemini on the one hand and a lot of (administrative) work for us because we had to go back and actually refute each of the allegations that had been made. And unfortunately again, or fortunately, I don't know, these allegations surfaced just around the time that the project was being wound down so by the time the press got hold of the story the people had actually finished the project and had already gone back to India."

Business context – the SEC investigation

On October 14, 2004, the Office of the New York State Attorney General (at the time the post was held by Elliot Spitzer) filed a civil complaint against Atlas for fraudulent business practices. The complaint alleged that certain agreements between Atlas and various insurance companies created an improper incentive for Atlas to steer business to these insurance companies. A key point of the allegations centred on the fact that these incentives were not disclosed to Atlas's clients or investors. In addition, the complaint alleged that Atlas engaged in bid-rigging and solicited fraudulent bids to create the appearance of competitive bidding.

The impact of this accusation was devastating for Atlas and for several of its competitors, who were suspected of engaging in similar corrupt practices. The Atlas stock price dropped from approximately $45 per share to a low of approximately $22.75 per share. Ten former Atlas employees pleaded guilty to criminal charges relating to the practices. Numerous lawsuits were commenced against Atlas, including 21 putative class actions brought on behalf of policyholders. On June 13, 2005, the European Commission announced its intention to commence an investigation (a so-called sector inquiry) into competition in the financial services sector. In announcing the investigation, the Commission stated, among other things, that:

> "The Commission is concerned that in some areas of business insurance (the provision of insurance products and services to businesses), competition may not be functioning as well as it could.... Insurance and reinsurance intermediation will also be part of the inquiry." (Atlas Annual Accounts, 2006)

On January 30, 2005, Atlas agreed with the New York State Attorney General to establish a fund of $850 million to compensate its policyholder clients.

Project closure

The action taken by the Attorney General in New York, and the subsequent fall out from the settlement had a significant effect on the Atlas operation, and particularly on its profitability. Not only was it required to set aside $850 million to compensate wronged policy holders, it also experienced a big drop in profitability as a more transparent and keenly priced regime was introduced.

It also had to change its business practices: part of the settlement involved a commitment from Atlas to make substantial changes to how it operated, including among other things a set of business reforms designed to provide transparency to the client around pricing. For example, it undertook to disclose to the client before the policy is signed any compensation it expects to receive for its insurance broking services (either fees, percentage commission or both). It also undertook to implement a formal company-wide code of conduct relating to compensation, and to train relevant employees in business ethics, professional obligations, conflicts of interest, and other related topics.

For project Europa, this crisis provoked a very strong centralising response in the parent company. Once the senior management in the company had been removed and a new team appointed, decisions regarding most important issues were made in headquarters in New York. Particular attention was paid to the operation in Europe, and several top managers in the European organisation were replaced, including the European CIO, the procurement manager, the IT programme managers and many of the IT development staff. Since project Europa represented a sizeable and visible part of the IT budget in the European operating companies, it was closed down, as described by the Atlas procurement manager:

> "I guess the only bit that I remember is that at some point in time (*the CIO*) was asked to leave and the Americans took over the European operations and basically planted one of their own into the mix and the first thing he did was he basically he brought this project to a premature end and said that they were going to reconsider their options and that's perhaps my last involvement with Atlas."

4.5 Outcomes of project Mars and project Europa

Project outcomes

While Mars and Europa shared some similarities, largely as a result of a similar implementation approach adopted by Capgemini, differences in how the Ariel and Atlas businesses viewed the value of information technology in the corporation had a significant impact on project outcome. Further, different approaches and attitudes to offshoring, and different expectations of the benefits and operational impact, may have resulted in the relative ease with which project Mars was conducted and the difficulties experienced at every stage by project Europa.

The outcomes of project Mars and project Europa were very different. Project Mars was finished in time to allow the successful launch of Ariel's mortgage product, and despite overrun on plan and budget, it was considered a success. Project Europa was abandoned shortly after the US management team took control in Europe, and further development was put on hold.

From Capgemini's point of view, the projects were both successful – although Europa to a lesser extent. Both projects were profitable – Mars very much so – and both helped strengthen the company's position in the financial services sector. However, the greatest

benefit was in the successful deployment of offshore resources in scale in the UK, and the learning that resulted from this.

In the case of project Mars, Capgemini learned how to deploy genuinely distributed development teams, and gained experience in the practical management of developers separated in time and space. This provided the confidence and credential for subsequent offshore project deployments, and provided justification for an increased marketing of the Rightshore concept. In project Europa, Capgemini learned much about the difficulties associated with total offshoring (the 100% ratio approach), and about the need for cultural awareness with nearshore colleagues.

Main similarities between projects

Although there were many minor points of similarity between the projects, these related mostly to the detail of how Capgemini's engagement model. Thus, for example, the methodology used in both instances was a modified form of RUP. However, the most relevant similarities were twofold. First, both projects highlight the increasingly complicated multi-shore arrangements common in IS development nowadays. Second, both businesses were clear that the primary driver for offshoring was financial.

The fact that both projects had distributed centres of activity is perhaps unsurprising, since both are typical global corporations. However, this does not always imply that IT is distributed. What was striking in both instances was the easy acceptance of the distributed software development model among all parties. This presented an additional complexity and management overhead that appeared to be absorbed with relative ease.

For example, the Mars project involved five distinct organisations over the course of the development: Ariel's IT organisation (the 'in-house' IT department), managed by Ariel's

CIO; the UK Capgemini project team (the 'lead' systems integrator), based on-site all the time and managed by the Capgemini project director; the Capgemini offshore project team, based onsite in the UK for the most part and latterly in India, reporting to the UK project manager on the project, but with line reporting to Indian managers; the Profile development team, based in Poland for the most part and managed by the Mars project director; and the Marlborough Sterling team, based offsite in Cheltenham for the most part and managed by their own line managers. This is illustrated in Figure 4.5 below.

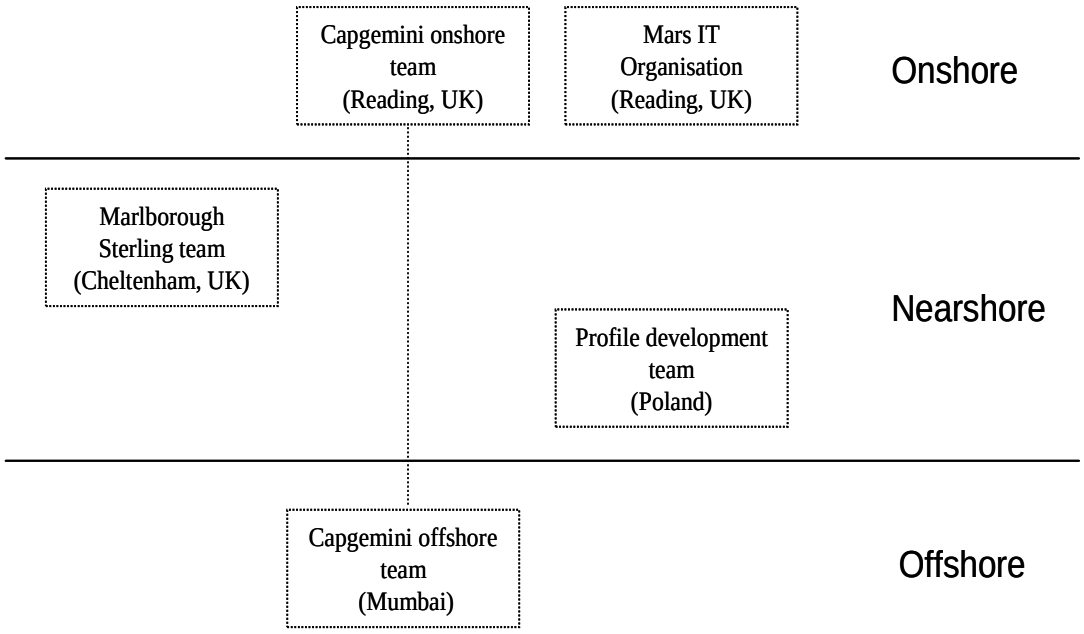

Figure 4.5 a) Organisations involved in project Mars onshore and offshore

There was a similar distributed configuration deployed on project Europa, illustrated in Figure 4.6: the Atlas European IT organisation, based in London, managed by Atlas's CIO; the UK Capgemini team (the lead systems integrator); the Belgian IT developers, based in Brussels and reporting to the European CIO; the Capgemini offshore developers onsite in Brussels; and the offshore Capgemini team based in Mumbai.

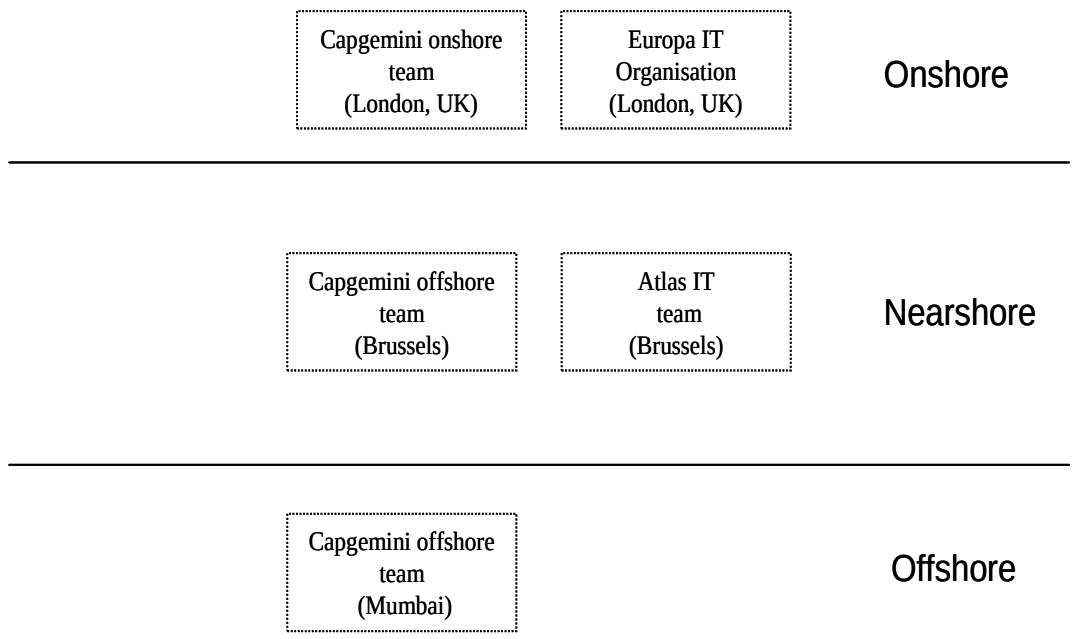

Figure 4.5 b) Organisations involved in project Europa onshore and offshore

Thus, both were truly distributed development projects – and also globally sourced, with outsourced and in-sourced elements; and with on-shore, near-shore and offshore components. This brought an increased demand for communication (perhaps the primary overhead of distributed global organisations).

A further important point of commonality relates to the fact that for both organisations, the business driver for using an outsourced offshore solution was the same: pure labour arbitrage. The Mars programme director describes it succinctly:

> "Well, I think the first thing to say is that the main reason why we took the offshore route was purely based on cost."

This captures the essential viewpoint of business users on offshoring, and it has not changed fundamentally from the emergence of the phenomenon in the early 1980s. It is significant that the negotiations were central to the process of acquiring offshore resource, and that the procurement specialists on both projects were involved from the beginning.

This underscores the fact that this offshoring is primarily a sourcing challenge, and is best managed by procurement (rather than by IT) specialists, although clearly IT specialists need to be involved. It also emphasises the fact that the economic impact of offshoring is a primary consideration for organisations.

Key differences between projects

The most striking difference between the projects concerned the manner and attitude of engagement between the companies and the offshore teams. This played a significant role in determining the outcomes, and reflected attitudes at all levels in the procuring organisations, in IT and in the business. On project Mars, the business believed firmly in the rationale for using offshoring as a sourcing option, and supported strongly their IT colleagues for the duration of the project. In the case of project Europa, the business users were for the most part indifferent to decisions made by the IT department, and were unsupportive when difficult issues arose.

The IT workers, for their part, adopted the same attitudes as their business colleagues. Once the projects were underway as IS offshoring projects, the attitude of the IT practitioners differed significantly in both cases: on project Mars, the IT staff at Ariel were welcoming and collaborative, and embraced the concept and value of an offshore relationship; on project Europa the relationship between onshore (Belgian) and offshore (Indian) workers was mistrustful and hostile, a situation that mirrored the poor relationships between the Atlas UK and Belgian businesses.

This is perhaps related to the fact that the main cultural difficulties faced during both projects were different. For project Mars, cultural friction appeared as a lesser issue compared to the need for increased multilateral communications at every level. On

project Europa, cultural friction reached levels that came close to stopping productive engagement, and at a certain point came to dominate the project.

Comparison of risks associated with Mars and Europa

Comparing the risk profiles for the Mars and Europa project case studies using McFarlan's categories of IT project risk (McFarlan, 1981) provides another perspective, presented in Table 4.5 c).

Risk Factor	Mars	Europa
Size and Complexity	Scale similar to Europa	Scale similar to Mars
Project Structure	Complex – five organisations at four locations	Complex – five organisations at three locations
Technology used	New technology, but standards-based	Old technology and complex system architecture
User Factors	Strong user involvement	Limited user involvement and sponsorship

Table 4.5 c) Comparing risk categories for the Mars and Europa projects

The respective outcomes of the Mars and Europa projects were significantly different: Mars succeeded and Europa failed. In analysing the various risks presented above, the main cause of failure of project Europa was in the end the lack of user involvement and sponsorship more than any other factor. Offshoring does not feature as a significant risk factor. In fact, the respective outcomes of project Europa and project Mars showed that the attitude and financial circumstances of the client organisation had a far more significant effect than any offshore dimension.

4.6 Conclusion

The respective histories of project Europa and project Mars have been described in some detail in this chapter because they form an essential backdrop for the research and a basis for deriving grounded conclusions. Placing the projects in the context of the businesses

they support is equally important, since the behaviour of the actors is predominantly made in response to prevailing business conditions. This may seem a rather obvious point to make, but it is one that is often overlooked by IS practitioners who are focused on complicated and demanding activities of their own that sometimes seem disconnected from other things that are happening in their company. Project Europa, for example, was derailed by an unexpected business crisis. Project Mars succeeded in part because it was so tightly coupled to the success of the bank's core business in the UK.

Having described how the research questions were framed and the plan against which the research was conducted, the process of conducting the work must be placed in context. This - the practical aspects of research design and planning, and the approach used to collect and analyse the data – is described in the next chapter. This sets the scene for the analysis and presentation of results of the research in subsequent chapters.

5 Data Analysis

5.1 Introduction

In this chapter, the process of data collection, analysis and theory development are described, along with the tools and techniques used. This is set out in some detail, since it is the process of analysis that provides the link between data and theory, and it is therefore important that each stage in this analysis is made explicit. Identifying the path from data to theory – the 'audit trail' of the analysis – is at the heart of the research, and allows the researcher to draw conclusions that lead to an explanatory theory which can be presented with confidence. The design of the research work plan – the research tasks and the order of their execution – is also described here.

5.2 Research planning

One of the less obvious aspects at the outset of a programme of research is the potential for expansion of the scope of the investigation. The outlines sketched at the beginning during the literature review are gradually filled in and coloured by data, and further unexpected patterns and candidate lines of enquiry surface. This offers the potential to consume all of the available resources, and to extend the timeframe of the research to unmanageable proportions. For that reason, a research plan is necessary to guide the research through a deliberate channel of investigation.

The research plan developed for this research programme is illustrated in Figure 5.2. It is a three-stage process that involves planning (stage one); data gathering (stage two); and data analysis (stage three). The main inputs and outputs for each stage are also highlighted.

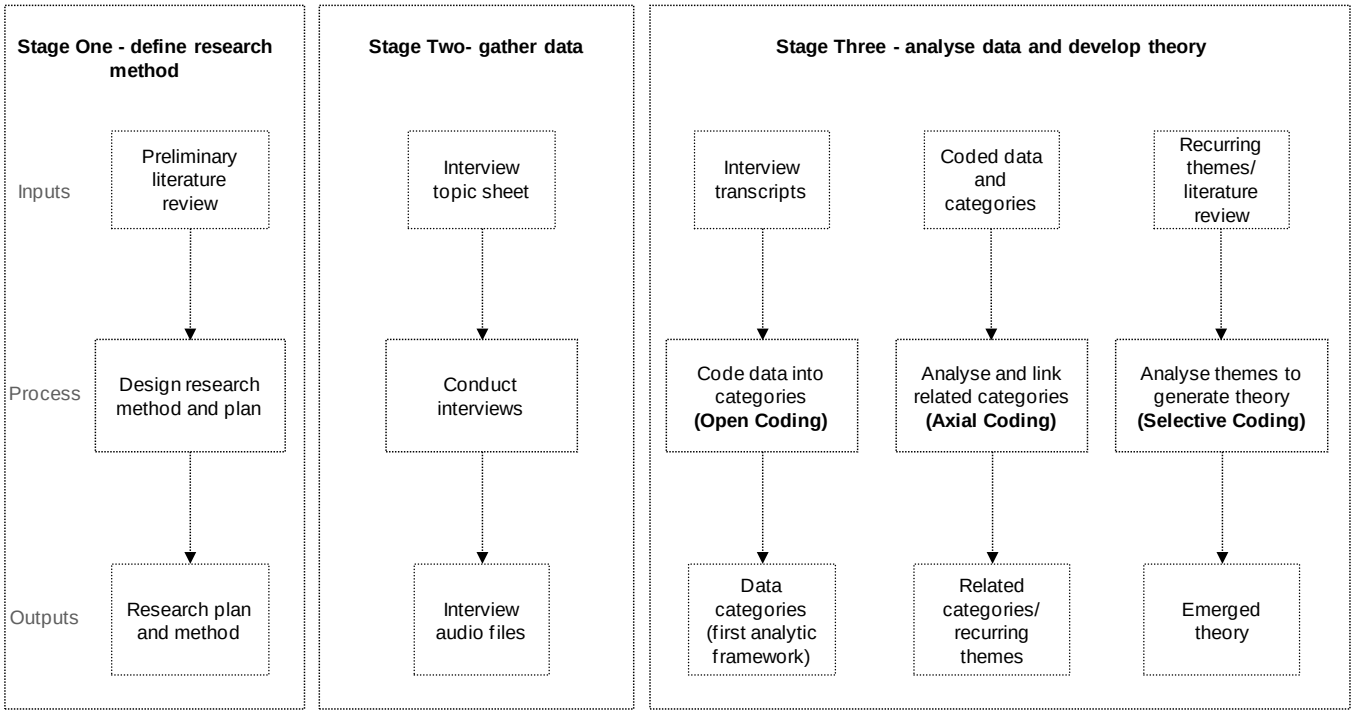

Figure 5.2 Research Plan

In stage one a preliminary literature review is used to provide initial thoughts for the design of the research plan. It also provides stimulus and ideas for the interview narrative, in line with the 'uses of literature' noted by Strauss and Corbin:

> "Before beginning a project, a researcher can turn to the literature to formulate questions that act as a stepping off point during initial observations and interviews." (Strauss and Corbin, 1998)

This stage of the activity is conducted by the researcher, and results in a defined research plan, and a topic sheet listing some of the potential areas for discussion, as well as specific questions relating to the projects.

Stage two comprises the field work. The data is gathered in a series of semi-structured interviews and supplemented by evidence from other sources, including e-mails and reports compiled at various stages of the projects. The main participants during this stage of the research are the researcher and the research interviewees.

During stage three, the researcher conducts coding and analysis using grounded theory techniques. The categories emerge from the data and are used identify recurring themes, which after further analysis yield the embryonic theories. A further literature review is conducted both to provide preliminary validation of themes and to guide analysis. In this way, the theory 'emerges' from the data, and is grounded in it, and at the same time is validated and informed by theoretical antecedents.

Developing the research plan caused the researcher to consider many of the practical aspects of the research, such as what activity was needed to produce particular outputs, and when. The plan provided a useful reference point at each stage of the process, and acted as an *aide memoire* as well as a blueprint. The effort spent in developing a thorough plan helped ensure a relatively straightforward approach to the research.

5.3 Data collection

The practical business of collecting field data is a demanding part of any research programme, and requires careful preparation and forethought. Key elements to be considered are the techniques to be used, the scope and nature of the questioning, and gaining access to secondary data sources. Practical considerations are important, such as travel to remote locations, and arranging interview schedules. Other considerations concern the use of voice recorders, or the particular approach to be taken with documenting interviews. Each element of data collection must be planned carefully to ensure that the best possible outcome is achieved: the quality of the data determines to a large extent the robustness of the conclusions. Both the sources of data and the process by which the data are gathered are of great importance, and these are described below.

Data Sources

While many sources of data are used in this research, the interview is the primary one:

> "…since it is through this method that the researcher can best access the interpretations that participants have regarding the actions and events which have or are taking place, and the views and aspirations of themselves and other participants." (Walsham, 1995 (ii))

The content and tone of the interviews revealed much that was invisible in the documentation, and led to important and interesting avenues of investigation. Myers (1997) defines primary data sources as data which are unpublished and which the researcher has gathered from the people or organisation directly. In this research, the people interviewed included business executives (those responsible for decisions relating to the operation of the business areas in which the projects were conducted); IT staff (those responsible for planning and operating the IT function in the organisations considered); onshore and offshore IT practitioners (Capgemini staff in Mumbai and Reading responsible for conducting the projects); and other project participants (those engaged at first hand in the development projects, particularly the project management team).

In addition, written data sources – project reports, memos, e-mails and letters - were collected. Data collection sought to obtain information on aspects of the projects under consideration, including the business environment – covering the nature of the organisation's business; the IS environment – covering the scale of the IT enterprise, the resource landscape, the operating model and the organisational structures and governance; the project itself – covering the scope and objectives, plans, organisation and governance, resources and risks; the development environment - covering development approach, methodology, and tools; project performance – covering perceptions on project success; project issues – covering difficulties and tensions, resolution approaches,

resourcing issues, supplier and sourcing issues and end-user interface issues; and the impact on organisation – covering the perceived acceptability of offshoring.

Data Gathering Process

The request for interview to respondents was accompanied by a topic sheet that set out the context, goal and nature of the interview. The topic sheet provided an unstructured *aide memoire* to both prompt the interviewer and to brief the interviewee (an example of a topic sheet is included at Appendix One). Some elements of the topic sheet were suggested by the preliminary literature review, but for the most part it concentrated on getting a coherent narrative of the project from the respondent.

In all, seventeen interviews were scheduled and conducted over a period of eight months (October 2006 to May 2007), in various locations in the UK, and by phone with respondents in India. These were supplemented by additional phone calls to validate points of fact. A list of the interviewees is included at Appendix Two.

All interviews were recorded and stored electronically as digital files in a 'wav' format using an Olympus WS-300M digital voice recorder. This approach proved successful and did not appear to inhibit any of the respondents unduly. The task of transcribing the digitally recorded voice files into text files proved straightforward, and this provided a set of Microsoft Word documents as the raw data for analysis. These were supplemented and validated by written notes taken during the course of the interviews.

Walsham (1995 (ii)) notes the importance of 'capturing' people's interpretations effectively in the course of a normal conversation. He also notes the importance of describing the process by which the results of the research are obtained:

> "The issue of how to report field work is important in all research, but it can be argued that it is particularly critical in interpretive case studies. Interpretive researchers are not saying to the reader that they are reporting facts; instead, they are reporting their interpretations of other people's interpretations. It is thus vital, in order to establish some credibility to the reader, that they describe in some detail how they have arrived at their 'results'." (Walsham, 1995 (ii))

In this research, the collection of the interview data proved relatively easy, and to a great extent enjoyable. Although the researcher was familiar with some elements of the offshore programmes being discussed, many of the perspectives and viewpoints that emerged in the conversations were new and surprising to the interviewer. This led to a greater degree of openness during the preliminary coding exercise.

Other less formal meetings provided anecdotal information – the 'soft' information that helps explain relationships and systematic data (Fitzgerald and Willcocks, 1993). These included several 'town hall' meetings with Capgemini's offshore IS practitioners during their assignments in the UK, meetings with non-IS client business executives, and many informal chats and discussions with senior managers in Capgemini's Indian operation.

5.4 Data analysis

Data analysis is described here in some detail both to highlight the consistency of the approach taken (the grounded theory approach) and to present the 'audit trail' of thinking from data to explanatory theory. This is consistent with Walsham's view (1995 (ii)): he notes that reporting should include how the field interviews were recorded, how they were analysed and how the iterative process between field data and theory took place and evolved over time. In this research, data analysis proved time consuming, and required painstaking care and effort.

Open Coding

The first part of the analysis - the process of open coding - involved the use of NVivo software (QSR NVivo Version 7.0.247.0 SP2) to analyse the text files. Strauss and Corbin describe this process as follows:

> "Broadly speaking, during open coding data are broken down into discrete parts, closely examined, and compared for similarities or differences." (Strauss and Corbin, 1998)

In this research, the transcribed data from the interviews and other selected documents and notes were input as text files to the NVivo software, and this provided the raw material for analysis. The data were analysed line by line and assigned to categories – and often to multiple categories, that best described that element of data. The unit of analysis was predominantly a sentence in the text, or a paragraph that summarised the interviewee's response to the researcher's question, and the principal key was by dimension of impact rather than by actor. In some instances, keywords or sentences were identified and coded as *in vivo* codes. Annotations to the data were common, and the analysis was supplemented by memos that were prompted by and referenced to particular themes or concepts in the data. The open coding process took place over an elapsed period of six months, between January and July 2007.

The primary output from open coding was a set of categories, with data grouped against these categories. Four main categories emerged as the primary dimensions of impact of offshoring as experienced in the projects under consideration. These were:

- cultural, covering aspects of offshoring that have primarily a cultural interpretation or significance;

- economic, addressing impacts of offshoring that affect the actors commercially and politically;
- organisational/skills, concerned with how offshoring is affecting the structure of IS organisations, and the skills of practitioners onshore and offshore;
- operational, concerned with factors that pertain to how offshoring impacts the processes, methodologies and tools of the actors considered.

The bulk of the data was classified into these four categories. A small number of additional minor categories were identified in open coding for points that covered specific random thoughts on offshoring expressed by the respondents. These included views on historical and future perspectives of IS offshoring, and risks and success factors of IS offshoring, but these data were subsumed into the major categories in later stages of open coding.

In parallel, six categories of stakeholder were identified as being impacted by the dimensions of offshoring. These were:

- the onshore IS firm, defined as onshore MNEs earlier in this thesis. The instance of the onshore IS firm in the data was Capgemini;
- onshore practitioners, defined as the IS specialists, engineers and consultants that work in onshore locations for the onshore IS firm;
- the offshore IS firm, defined as the 'pure play' offshore IS providers;
- offshore practitioners, defined as the IS specialists, engineers and consultants that work in offshore locations for the onshore or offshore IS firm;
- the end-user IS department, defined as the 'in-house' IT departments of commercial organisations in developed economies (onshore);

- end-user IS practitioners, defined as the IS specialists, engineers and consultants that work for the end-user IS department onshore.

At a purely quantitative level, most of the references at the end of open coding were assigned to the organisational/skills category (229 out of 693 references). This was followed closely by the economic category (205 out of 693 references). The lowest number of references was in the cultural category (113 out of 693 references). References to the literature provided an initial validation that the data was for the most part representative of wider study in the field, although the lesser importance of the cultural dimension appeared at odds with some of the literature.

Axial Coding

Strauss and Corbin define axial coding as:

> "The process of relating categories to their sub-categories, termed axial because coding occurs around the axis of a category, linking categories at the level of properties and dimensions." (Strauss and Corbin, 1998)

This is the process that followed in the second stage of data analysis over an elapsed period of 15 months between April 2007 and July 2008. The categories that emerged from open coding were analysed to determine relationships between dimensions of impact of offshoring and stakeholders affected by offshoring. These relationships were represented as a matrix, termed in this study the analytic framework. The framework is used as:

> "…an analytic device to stimulate thinking about relationships between data." (*ibid*)

The analytic framework that resulted from the axial coding process is illustrated in Table 5.4 a).

Axial coding allowed the researcher to relate the primary dimensions of impact to the various categories of stakeholder. This provided a view of those impacts of offshoring that were affecting specific stakeholders, and in what way. Again, from a purely quantitative perspective (which must be regarded as a very crude measure) the axial coding process confirmed that the stakeholders most impacted by offshoring were the onshore and offshore organisations, which accounted for almost two thirds of the references. This provided further pointers for analysis, and helped direct questioning in subsequent data collection and analysis.

	IS practitioners		**IS organisations**		**End-user IS practit-ioners**	**End-user IS org-anisations**	**Totals**
	Onshore	**Offshore**	**Onshore**	**Offshore**	**Onshore**	**Onshore**	
Cultural	10	39	21	13	4	26	**113**
Economic	14	25	47	40	10	69	**205**
Operational	1	7	56	47	1	34	**146**
Organisational/ skills	22	72	32	38	24	41	**229**
Totals	**47**	**143**	**156**	**138**	**39**	**170**	**693**

Table 5.4a) Initial analytic framework resulting from open coding

As the axial coding proceeded, further analysis of the data showed that the stakeholder categories could be condensed to two units of analysis – the firm (the macro-level of analysis) and the individual (the micro-level unit of analysis). In the case of the former, this resulted from a realisation that many of the references to offshore and onshore organisations were in fact overlapping – in effect the data was saying the same thing in both cases. This highlighted the first significant theme in the research – namely, that the impacts of offshoring on IS firms onshore and offshore are similar. This is not to say that

they appeared identical in the data – for example, there were significant differences in the stages of development of offshore methodologies between onshore and offshore firms – but convergence of strategy and practice of onshore and offshore IS firms emerged as a recurring theme. A further elaboration of the framework involved the elimination of the end-user IS department as a category, since most of the references of the end-user IS department were identical to those relating to the onshore IS organisation.

Similarly, the references to individuals onshore and offshore showed consistency. As for the end-user IS department category, it became clear that IS practitioners in end-user firms onshore faced the same issues as IS practitioners in onshore IS companies, and the category of end-user practitioner was eliminated. Second, it became clear that the primary dimensions of offshoring for onshore and offshore practitioners are the same, but for the most part in an inverted relationship. Thus, for example, the data showed that the economic impact of offshoring was significant for individuals (positive for the offshore IS practitioner and negative for the onshore practitioner).

Axial coding therefore resulted in categorisation of impacts on two units of analysis. A further refinement involved a switching of the dimensional and stakeholder categories in the framework. The initial choice at the outset of axial coding had placed the dimensions of impact as primary categories, but once the sub-categories had been condensed, it seemed more logical to swap the axes of the matrix. This had the effect of focussing the emerging concepts on the unit of analysis – a precedence of conceptualisation that was at first subtle, but ultimately quite important. What it meant was that the researcher's thinking became less fixed on the more abstract constructs of 'culture', 'economics', and so on, and crystallised more around the research question of understanding the impact of offshoring on IS practitioners and the organisations they work in. This in turn accentuated the primary themes that had previously emerged.

Thus, the embryonic outcomes that emerged at the start of the axial coding process had firmed to the following outcomes by the end:

1. Offshoring is causing the strategy and practice of onshore and offshore IS organisations to converge, and a new type of global IS organisation is emerging.
2. The impact of offshoring on individual IS practitioners, both onshore and offshore, is primarily economic.
3. The skills mix onshore and offshore is changing, with an increasing level of high-grade skills being provided by offshore practitioners. This is a gradual process.
4. Cultural issues associated with offshoring are not prominent.
5. Organisations and practitioners perceive the operational impact of IS offshoring to be low, as new operational practices, tools and methods are being introduced with little difficulty.

These themes were then represented in the analytic framework, which was modified to the form illustrated in Table 5.4 b).

Unit of Analysis	**Dimension of Impact**			
	Cultural	**Economic**	**Organisational/ skills**	**Operational**
IS firms (onshore and offshore)	Cultural awareness increasing but no significant impact	Onshore and offshore firms converging. new global organisational forms emerging	Organisational changes involve rebalancing of onshore-offshore mix – but no significant downsizing	New tools and methods gradually being developed and adopted as standard
IS practitioners (onshore and offshore)	Limited cultural impact as ppractitioners adapt quickly to offshoring	Reducing economic outlook for onshore practitioners and growing opportunities for offshore specialists	Gradual changes in the skill mix between onshore and offshore	Practitioners adapt easily to the use of ad-hoc tools and methods

Table 5.4 b) Refined analytic framework after axial coding

5.5 From data to theory

Selective coding - the process of integrating and refining the theory (Strauss and Corbin, 1998) - largely consisted of extracting the main themes identified, elaborating them in description and in substance, and validating them against data. This cycle of conceptualisation, elaboration and validation, which took place over an elapsed period of seven months from May 2008 to November 2008, not only led to the development of the themes into theory, but also linked explicitly the data to theory. Thus, for example, the idea that emerged concerning a diminished cultural impact in offshoring was cross-referenced to respondent's statements in the interview transcripts. In this way, the link between data and theory was confirmed, as illustrated in Figure 5.5.

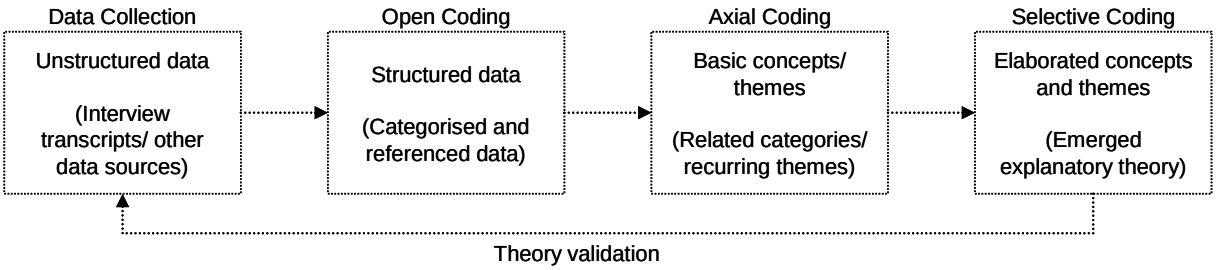

Figure 5.5 Progression from data to theory

This is the process described by Strauss and Corbin whereby an analyst reduces data:

> "…into concepts and sets of relational statements that can be used to explain in a general sense what is going on." (Strauss and Corbin, 1998)

A further validation was provided by repeated literature reviews. This again is in line with the use of literature suggested by Strauss and Corbin:

> "The technical literature can also be used to stimulate questions during the analysis process. For example, when there is a discrepancy between a researcher's data and the findings reported in the literature, the difference should stimulate the researcher to

> ask the following questions. What is going on? Am I overlooking something important? Are conditions different in this study? If so, how are they different and how does this affect what I am seeing?" (*ibid*)

Similarly,

> "When an investigator has finished his or her data collection and analysis and is in the writing stage, the literature can be used to confirm findings *and*, just the reverse, findings can be used to illustrate where the literature is incorrect, is overly simplistic or only partially explains phenomena." (*ibid*)

The process of selective coding is thus iterative and inductive. In this research, the input to the selective coding process included the analytic framework (a representation of the key themes that emerged from the data) and selected antecedents drawn form the literature. The framework was analysed cell by cell – thus, for example, the cultural impact of offshoring on the IS offshoring organisation was investigated and explored, with repeated reference to interview transcripts and literature. In this way, conclusions regarding this aspect of the phenomenon were elaborated and articulated.

The thought processes embodied in this method are presented in chapter six (focusing on the organisation) and chapter seven (focusing on the IS practitioner). The output of selective coding is a framework that presents a validated and conclusive statement on each of the aspects investigated. A sub-set of these statements identify perspectives of offshoring that are new, and it is these that are identified as the emergent theory and described in chapter eight.

After several months of selective coding activity, it became apparent that the analysis had reached saturation – that is, it became obvious that further correlation of categories and

data within the categories was not yielding any additional insight. At this stage the analysis ceased, and the focus of the research shifted to extending and refining arguments, and looking to substantiate these with reference to theoretical antecedents found in the literature. The results of this final analysis are described in chapter eight of this thesis, with the emphasis on substantiating the dominant themes that led to significant conclusions.

5.6 Commentary on methods, tools and techniques

Setting up a research project can be time-consuming, and demands much careful thought. Effort in the preliminary stages, when the research is planned, can be rewarded later on when the data is analysed: and in this instance the research plan proved invaluable. Overall, it would have been much more difficult to structure research inputs and outputs without it.

Notwithstanding the preparation during the early stages, and the satisfaction that was gained from the archaeological and detective effort expended at various stages on the literature review, this research came alive during the data gathering and analysis phases. This is perhaps a familiar sensation to any researcher who conducts field work. There is deep satisfaction to be derived from contact with practitioners dealing with real problems, and in determining how their personal circumstances can sometimes be explained by the experience of others. It validates the purpose of the research. It serves also to strengthen the value of the grounded theory approach. The philosophy that supports grounded theory and the techniques it encompasses seemed natural and fitting for this research, and proved fruitful in emerging the theory.

NVivo proved to be a useful tool for preliminary analysis. The functions for inputting data, assigning categories to data, and line-by-line analysis of text were straightforward

and resulted in a structured categorisation. It also provided a basic quantification of the categories – for example, it was possible to determine from NVivo the frequency of occurrence of a reference in a particular category. It was also easy to link references to memos, and to associate these with more than one reference.

However, it was of less use in subsequent stages of analysis. Grounded theory techniques involve a progression from categorisation to cross-referencing to conceptualisation of ideas and finally to generation of theory, and it proved less easy to manipulate data in NVivo once the initial data had been categorised. This may be more a result of the researcher's unfamiliarity with the software than a genuine limitation of the product. However, for this reason the data categorised in NVivo was exported to Microsoft Excel after open coding, and Excel was used from that point on to sort and analyse data further.

The use of the analytic framework as a device to stimulate thinking proved highly effective throughout the course of the research. As well as providing guidelines for subsequent stages of analysis, the framework helped identify prominent themes and relationships as they emerged. This then allowed the prioritisation and assessment of the relative importance of the results. The framework also served to provide a structure for the description and presentation of the outputs of the analysis and results.

At the same time, the analytic framework did not prove restraining in any respect, but was flexible as the research progressed. In this respect, Walsham's metaphor of scaffolding seems particularly appropriate (Walsham, 1995). The original framework that emerged from the open coding stage numbered 24 related categories – four categories of dimensions of impact cross referenced to six categories of stakeholder. Over the course of the analysis, the framework shrank to its eventual form of eight cells – two categories of stakeholder cross-referenced to four categories of impact – but remained essentially the

same (the variations concerned additional levels of detail rather than fundamentally different perspectives). This helped greatly in the presentation of an audit trail from data to theory.

Having described how the data analysis stage leads from data to theory, the focus of this thesis now turns to elaboration and presentation of theory, with the emphasis on substantiating the dominant themes. The following chapters present the selective coding phase of the analysis as it pertains to the IS offshore provider (chapter six) and the IS offshore practitioner (chapter seven).

6 The impact of offshoring on IS organisations

6.1 Introduction

Much of the literature concerning IS offshoring has a focus on the individual: the impact of the phenomenon on organisations is considered less often. The focus of research in the grey literature takes a contrary view, and looks at how organisations, both suppliers and consumers of offshore IS services, are adapting to change. Similarly, the literature in fields such as international business often focuses on macro-level analysis of organisations.

This section of the thesis takes the latter perspective also, and assesses the impact of the offshoring phenomenon on companies that provide IS services. The unit of analysis is the organisation or firm, and the scope covers both onshore and offshore IS providers, since the initial stages of analysis showed that the impact of offshoring appears to be similar for both. The various impacts are assessed according to the dimensions of impact that emerged from the data analysis with the emphasis on substantiating dominant themes rather than elaborating on every aspect of the data that emerged.

In summary, the main conclusion that affects the organisational stakeholder is that offshoring is causing IS organisations to evolve into a new type of global firm. Global IS organisations are changing fundamentally their business models: in effect they are adopting a hybrid approach to offshoring that involves the use of joint onshore/offshore teams. This is involving a gradual restructuring of the global IS workforce, and a redistribution of skills across onshore and offshore locations. Both onshore and offshore IS firms are adopting an increasingly apolitical stance– the desire not be seen as originating or operating in any one country, but being seen as truly global organisations.

Similarly, an increased mobility of staff and increasing standardisation of process are prominent in these new businesses.

Having seen from the data and the subsequent analysis that new forms of organisation are emerging, and having identified the essential aspects of these changes, it was logical to look for antecedents for similar global organisational models, and how they evolved. This led to a review of the literature associated with MNEs, and their evolution, and this led in turn to the discovery of a construct to describe the new form of MNE: the notion of the heterarchy – a term identified by Hedlund (1986).

A heterarchical firm shares aspects of the trans-national organisation defined by Bartlett and Ghoshal (1998), but is more complex and fluid, and extends beyond the more formal boundaries implied in Bartlett and Ghoshal's definition. Both onshore and offshore organisations are evolving into modern heterarchical firms, and therefore the overall impact of offshoring as a phenomenon applies equally to both types of IS organisation.

The rationale for adopting the construct of the heterarchy for modern IS offshore firms, and a more detailed description of the characteristics of the heterarchy, is given in chapter eight, where the general conclusions from this research are presented.

6.2 Cultural impact

Bearing in mind the narrow definition of culture used, the research sought to understand the cultural challenges facing IS organisations. It became apparent that most IS organisations have recognised the need to change to be successful in an industry where distributed IS development is now the norm; and that cultural adaptation is a significant dimension of this.

This is an aspect of globalisation - any company aspiring to have a global presence needs to be aware of different cultural perspectives where it operates. This is not a new challenge for international organisations – traders have had to contend with cultural diversity ever since they extended their activities beyond their home markets. Chanda (2007) describes trading in agriculture and obsidian in the Levant and Mediterranean in 7400 BCE, and how this led to trade routes and networks that expanded to India and China. The cultural challenges for present day traders - including those engaged in software development - would appear to be mild in comparison.

There were few observed or reported instances of cultural difference at an organisational level during the course of the research. This is not unusual, since it may not be obvious at the time that a particular interaction has cultural significance or undertones. Nonetheless, culture and cultural difference was a constant sub-text for respondents throughout the research. While some of the discussions in this research were framed to provide viewpoints regarding cultural interaction among players, others with no explicit cultural reference returned data that had cultural undertones. Moreover, it is impossible to be completely objective from a cultural perspective: data are inevitably coloured by the researcher's and the respondent's cultural positions.

Cultural differences did give rise to tension on occasion in both Mars and Europa, and demanded organisational response. However, the most significant aspect of the cultural dimension observed was seeing how little it mattered: on both projects other issues, such as late delivery and poor quality of software from local suppliers, were more serious.

At a strategic level, the research highlights the fact that both onshore and offshore organisations understand the importance of the cultural dimension of distributed development. Onshore IS organisations are adjusting to the fact that the dominant culture

in their organisations is as likely to be the offshore culture as any other, simply because offshore workers are likely to outnumber onshore workers soon, if they do not already. The offshore director for Capgemini in the UK had this to say:

> "It's going to become - maybe I'm going to point to something here - but it's the 'browning' of Capgemini that's going to happen. I suspect that the management recognises this. I went to the global kick off of Capgemini in January this year and there were more Indians there than any year previously and I think Capgemini has to accept that."

Getting onshore workers to understand and work with culturally diverse offshore colleagues was helped by the fact that English was the main language spoken on project Mars and project Europa. Similarly, co-location of project staff helped eliminate cultural misunderstanding. Both Mars and Europa projects differed greatly in their approach to integration and communication, and this had a significant bearing on outcome. On project Mars, nearly all of the offshore team came onshore to the client site at some stage of the development: on project Europa, few were present on site, and they were isolated. The Mars project manager onsite felt this was critical to success:

> "We had nearly all - not absolutely everyone - but nearly all of the offshore people were at some stage on site. And that really helped integrate the team. They all knew what it is we were building. They were all very comfortable with the culture, and they had what I call the vision, which is very important."

The project Europa director highlighted difficulties that were essentially cultural in nature ('fitting in') and that were caused by poor communication and integration:

> "I remember the first guys that we had…and I know they found it really difficult because I used to take them aside and talk to them about how they were fitting in, and they used to find it really

> difficult in terms of being accepted by the UK team. If you remember the project Europa testing team was very much a ring-fenced team that sat in the middle of the office on their own, all together."

A further conclusion contests the validity of the notion of cultural distance (Johanson and Vahlne, 1977), although this depends on whether the cultural distance between the UK and India is viewed as greater than that between the UK and European countries. It is possible to present alternative views: European countries share common history, cultural and commercial reference points, and heritage with the UK; India shares some of these aspects of culture with the UK as a result of its historic colonial relationship. However, if it is assumed that the cultural distance between the UK and India is greater than that between the UK and European countries, the expectation is that it would prove more difficult to transact business between organisations based in India and those based in the UK. The experience on project Mars showed that this was not the case: there was greater cultural tension between onshore (European) locations. For example, the cultural affinity between Capgemini UK and Capgemini India was far greater than it was between Capgemini UK and Capgemini Belgium. Similarly, there was greater cultural friction between Spanish and Polish organisations, as exemplified by this exchange with the Mars project manager:

> "If you wanted to ask about tension, we had some tension between the J2EE and the Profile team. I think it's cultural difference. In this case it was, not necessarily the Portuguese, but it's the Polish thing of being very, I guess, direct. And it also came with the fact that their English is also not, yeah… well, there are a number of, there are a couple of individuals whose English wasn't quite right. And because of that, when some guys go to other guys to talk about how to solve problems, it comes off wrong."

On project Europa, the tension between Capgemini Belgium and Capgemini India needed Capgemini UK to act as a broker, essentially between the two cultures, as described by Capgemini's UK delivery manager:

> "…a point that I certainly found the most frustrating of all and that was our inability in Capgemini to do business even with the Belgians … We couldn't even talk to the Belgians."

However, this negative experience overstates the case, and did not hinder greatly the ability of the English and the Belgians to transact successful business on project Europa. The primary conclusion regarding the role that culture plays in effective offshoring of IS work is that it is of marginal importance.

There remain some fundamental cultural challenges for IS organisations. For example, the board of Capgemini comprises mostly French and Swiss nationals, and the head of the Indian operation remains outside the inner circle. In response to a direct question about whether the person responsible for India sits on Capgemini's main board, the UK offshore director gave a somewhat defensive reply:

> "Not yet, but the person who is our sponsor on the board is Nicholas Defourq (*a French national*), who is the CFO, so again it's a very, very powerful person that represents Capgemini India's Rightshoring place on the board."

In summary, the fact that the cultural aspect of globalisation is not new and is relatively well understood shapes to a large part the view of cultural impact that emerged: that while there are some cultural differences that give rise to tension, these are minor compared to other challenges facing IS organisations.

6.3 Economic impact

In this research, the respondents highlighted how their employers' business models were changing, and this in turn demonstrated that the economic impact of offshoring on these companies is profound. The key ways in which this change is manifested relates to the fact that the IS organisations onshore and offshore look to exploit competitive advantage from any part of their organisation, and not just from the 'home' market. They have lots of centres – the project structures and locations for both project Europa and project Mars provides clear evidence of this – and there is less of a sense of differentiation on hierarchical boundaries than on cost and skill. Increasingly, on Mars and Europa, managers from any location were invited to contribute to practical and strategic discussions regarding the projects, and differentiation diminished. Most of all, a generally collaborative approach was prevalent – and in fact Capgemini has coined a phrase – the Collaborative Business Experience – to embody this approach.

Two further economic aspects of this evolution are noteworthy, and hinge on the fact that offshoring in this new business model is a less definitive term. First, there is a rebalancing of the development contact, with each part of the enterprise (onshore, nearshore and offshore) sharing risk and reward. Typically the risk and reward has been assumed disproportionately by either the onshore or offshore division. Second, and related to the first, is the fact that offshore IS organisations have recognised the need to have a wider global presence to be able to provide services to global customers using an optimised set of resources. Capgemini expressed this desire clearly, and a reading of the grey literature highlights the fact that other offshore companies are expanding presence in a similar way. This leads inevitably to consolidation among the IS offshore providers.

Allocation of risk and reward between onshore and offshore departments

The first of these implications (concerning the rebalancing of the development contract) was illustrated in a discussion with project Europa's delivery director. This concerned the extent of the risk assumed by the offshore division of Capgemini on the project. The traditional model is for Capgemini to use its Indian offshore business as a cost centre. In other words, it is a pool from which Capgemini in other parts of the world draws resources for projects. This is essentially the same 'body-shopping' business model as that used by early offshore customers (Soota, 1994), but with a more sophisticated, risk-bearing onshore front end. While this arrangement may be preferred for contractual or commercial reasons, there is an implication in this business model that offshore locations are less sophisticated, and somehow less capable than the onshore component.

On the Europa project, the delivery director proposed a different business model that involved sharing the risk – one that was readily accepted by the offshore organisation:

> "Yes, India is still run as a cost centre, so the UK or France or the front office country takes all the risk. ..We were trying to resolve this for smaller projects, to transfer risks, and at the time it seemed to me that this was a new way of working but one that they (*the Indian colleagues*) were absolutely up for. It was an explicit conversation: "Look, guys, we're not going to take the risk on this because this is a fixed price deal - you guys will have to bear it. Are you happy and comfortable with that?" And their view was, well great, finally somebody's taking some notice of us who are actually doing things we want to do."

This reflects a profound change in the way that offshore phenomenon is impacting IS organisations: it represents a significant maturing of the offshore components and recognition on the part of the onshore part of the organisation that it can no longer dictate the terms of IS engagements with their offshore colleagues. In simple terms, it allows the

offshore part of the organisation to act as a profit centre, with all of the power (and risk) that involves. Most of all, it acknowledges that the traditional 'brokerage' business models of the western IS providers are changing to a more equitable global distributed development business model. This is further evidence of the emergence of a new type of enterprise, and a move towards a more strategic deployment of offshoring analogous to that illustrated in Carmel and Agarwal's stage model of offshoring (Carmel and Agarwal, 2002).

However, there is evidence that this new form of balanced organisation is at an early stage of development. On project Europa, for example, there was no such balancing of risk, and this is perhaps more typical of the bulk of Capgemini's offshoring contracts. In response, the offshore part of Capgemini is going directly to market – in other words, there is competition between the onshore and offshore elements of the business. The Capgemini account manager for Atlas describes this succinctly:

> Respondent: "Yes, the costs are going up…and we're now under quite a lot of pressure (*in the UK*) in terms of the mark-up we've got to put on them (*Indian colleagues*) … which of course....it doesn't help when you're struggling to be price competitive onshore.
>
> Researcher: "*So effectively the offshore organisation is putting the onshore organisation out of business because it's more cost-effective?"*
>
> Respondent: 'Yes - it is'."

Pure play (offshore) organisations do not face this conflict: they simply want to ship work offshore. Onshore IS organisations have staff in developed economies that are threatened by their offshore colleagues, and therefore have less motivation to move work offshore. The Capgemini project manager for Europa in Belgium, for instance, had great antipathy

to offshoring, and did everything she could to ensure that jobs stayed in Belgium, to the point of striking a commercial deal that was disadvantageous to Capgemini. This caused tension not only with her Indian colleagues, but also with her UK colleagues who were trying to respond to the client's demands for a much more aggressive approach to offshoring. This is described by Capgemini's UK delivery manager:

> "Actually this brings me to....or reminds of a point that I certainly found the most frustrating of all and that was our inability in Capgemini to do business even with the Belgians - much less with the Indians - and the absolute fracturing of even the most tenuous relationships that we had simply because we couldn't strike the right commercial deal. "

This scenario is a consequence of the old business model, where onshore and offshore organisations are treated almost as independent companies. In the emerging heterarchical enterprise it seems likely that more refined business models will be used that allocate risk and reward to the most appropriate location, just as it allocates other economic factors like labour and capital.

Consolidation in the IS offshore industry

The second economic implication emerging from the research concerns consolidation in the offshore IS industry. Much of the trade literature highlights the fact that consolidation in the offshore market is inevitable. A comment by a Forrester analyst is typical:

> "Market consolidation intensifies with HP's acquisition of EDS. Most suppliers are seeking consolidation opportunities aimed at increasing functional or geographic breadth, as opposed to significantly increased scale. Tier two players unable to achieve significant organic growth will face increasing pressure to pursue combinations in an increasingly polarized market for offshore services." (Martorelli, 2008)

The shareholder disagreement at Atos Origin's annual general meeting in 2008 was in part spurred by a belief that Atos is too small to compete as a global IS provider (The Economist, 2008, ii). A further example is the sale by T-systems, a German systems integrator, of its offshore development centres to Cognizant, an Indian pure play offshore services provider, which is a direct acknowledgement of the fact that it is hard for some IS providers to scale their offshore operations (Moore, 2008). Such debates concern the nature of the business model to be adopted by these organisations in response to the phenomenon of offshoring.

Again, this is consistent with the emergence of a new business model for offshore IS organisations. For example, Wipro is pursuing a steady, small scale acquisition programme – its so-called 'string of pearls' strategy - which involves buying small specialist IS organisations in European countries that have deep customer relationships, and using these to deliver a blended lower-cost service using resources locally and in India:

> "The pending Saraware acquisition, the sixth by Wipro in six months, is in line with its stated "string of pearls" strategy to buy up a number of small companies, giving it access to new markets or specific domain expertise." (Ribeiro, 2006)

This is the concept Capgemini refers to as 'Rightshoring'. It appears that IS providers will look to become increasingly distributed in nature by acquiring onshore IT resources, a point highlighted by Capgemini's UK delivery director:

> "…everyone will move to at least some degree of Rightshoring and it just depends on how aggressively they chose to model that. Even the most conservative insurance organisations are doing that."

In summary, the IS offshoring business model is changing, becoming more distributed and more collaborative (for example, distributing function to where it can most effectively be performed, and resource to where it can most effectively be used). This change in the form of offshore MNEs is profound because it is changing the manner in which offshored development is conducted. This means that a new construct is needed to describe the emerging offshore organisation, and this is identified and described in chapter eight.

6.4 Organisational/skills impact

In assessing how offshoring impacts the way IS organisations are structured, and the skills they now need, the research indicates that IS companies will rebalance staffing between onshore and offshore locations. This is resulting in a slow down of recruitment in onshore organisations and an increase in the pace of ongoing redundancy, as described by Capgemini's account director for Atlas:

> "We know - and we're already doing it – we are going to have to significantly remodel our business... even the architects we're having to make redundant at the moment. …there'll still be project management, programme managers, analysts.....but the UK business is shrinking from a technology perspective."

On project Mars and project Europa, Capgemini chose to retain account management skills and specialist technical skills onshore. This was to allow them to build and maintain deep customer relationships – in effect, to allow them to speak the language of their customers. The delivery director on project Mars described these skills as:

> "…the bits which … require customer intimacy and intimacy with the business users. Those are the bits that, you know, people are almost presuming that they cannot be moved offshore."

On project Europa, the account manager identified the elements of her proposal that were most successful:

> "We provided them with a solution that gave them the ability to talk about those additional bits of functionality to a set of people who understood their business pain."

Her delivery director agreed, and noted that there are some technology skills that will also be needed onshore:

> "I think there'll always be early adopter technologies where people who are familiar with them will be of value locally. I think it's likely that strategic consultancy, IT strategic consultancy skills…project management skills and business analysis type skills..."

Despite anecdotal evidence gathered from respondents, there appears to be little change in the numbers of staff remaining onshore. For example, the size of the technology organisation onshore at Capgemini is not greatly reduced, nor is there wholesale layoff of onshore staff: although decreasing as a percentage of overall headcount, staff numbers in Capgemini's subsidiaries in the UK, USA and Nordic countries have remained broadly stable over the past four years, while those in the Benelux, Germany and France have actually increased (Capgemini Consolidated Financial Statement, 2007).

This is evidence that supports the emergence of a distributed and collaborative business model. It recognises that low-cost offshore development on its own does not necessarily meet client demands; nor does aggressive labour arbitrage on its own represent a wise competitive stance. This research shows that IS offshore companies are adopting a hybrid development approach, and this is a key characteristic of the emerging business model. On project Mars, for example, the delivery director describes how the bank

stipulated that offshore resources be brought onshore to the bank's premises for the duration of the project:

> "They felt that it wasn't an option to do any of it offshore. It would have been a preference for Capgemini to do components offshore, but they weren't prepared to consider that because they felt that the timescales were too quick… and the risks involved in doing that would be too great. And they felt they didn't have the maturity as an organisation to do that. So they were absolutely clear they didn't want anything built offshore."

6.5 Operational impact

The research highlights the IS organisation's recognition of the need to overhaul radically the existing base of tools and techniques, and to develop what has been described as a global development model:

> "A global delivery model is the optimum combination of processes, end-to-end methodologies and quality procedures, with high-quality skills and resources available internally or externally in requisite quantities on a global basis." (Iyengar *et al*, 2006)

Thus, Capgemini had invested in building a distributed toolset and methodology to account for the fact that the operational impact of offshoring affects all aspects of the development life cycle, and the associated support processes such as resourcing. This was described by the Mars project manager:

> "…it (the Capgemini methodology) is called RUP Distributed Delivery Framework. …it's a Capgemini view of how to run distributed delivery projects. It involves templates … starting with the project management and going right through the different areas. So from Inception through Elaboration, through Construction, what would a typical project manager need to adopt? What does he need to guard against? It's almost like a 'lessons learned' document

> which you then use to bring an element of commonality across (*projects*). So it's not as if I do a project by accident and get it right. It's ensuring that that message is consistent across everyone who is running a distributed delivery project…"

Much of this framework on the Mars and Europa projects involved a common sense set of guidelines, and comprised - more or less - business as usual for the developers. The programme reporting for project Mars, for example, was straightforward, as described by one of the developers:

> "Periodically, usually every end of the week, or on Monday, we used to have the team leaders meet with the management there... We used to … check on progress, status, check on how the team's doing and the major issue was how (*to*) manage the interactions between the modules of your team."

On project Mars and project Europa, it was the recruitment and resourcing process that was novel, and under greatest stress, as described by the Europa delivery director:

> "…it was difficult because it was a new process. So it was difficult identifying the right skills and getting the handshake between the UK and Mumbai working effectively. … so we had somebody managing this, more or less full time, for about two weeks, two or three weeks, setting up the process, setting up the documentation around it, so there was clarity around who'd been interviewed…"

For both projects, this led to delays in the start date, something that was complicated by the fact that the public processes to facilitate offshoring were not optimised, and required significant client as well as multi-shore organisation involvement. The Mars project delivery director described how the Home Office was not geared up to accommodate large scale offshoring in the UK:

> "'Yeah, there were (difficulties bringing developers to the UK from India) and we had to write letters to the Home Office explaining what the contract was. We had to give them copies of the contract.

> … Initially, we got the visas for too short a period, and so we had to have people who went offshore. We sent them back to Mumbai, so that they could get visa extensions. So that was quite complicated and costly and disruptive."

Notwithstanding such early setbacks, the evidence from the data suggests that IS offshore organisations are developing new operational tools and processes to support the new business model. Capgemini's emerging offshore organisation is equally at home in any country, and increasingly presents the same face, uses the same tools and approaches and is consistent from place to place and from client to client. On project Mars and project Europa, Capgemini was seen to be investing in a set of offshore IS development tools and capabilities that are consistent from country to country.

6.6 Conclusion

The various impacts of offshoring identified in the research can be viewed as a maturity process for IS organisations. Although starting from different bases, both onshore and offshore IS organisations are evolving towards the same corporate model. This model is an extension of the 'trans-national' enterprise in Bartlett and Ghoshal's typology (which in turn exhibits elements of Perlmutter's 'geo-centric' organisation (Perlmutter, 1969), and Porter's 'global' organisation (Porter, 1986)). It shares the defining characteristics of the trans-national enterprise, but has unique features of its own. In effect, these companies are models of a new form of global organisation or MNE.

This conclusion is examined further in chapter eight of this thesis, and the new organisational form is elaborated using the construct of the heterarchy identified by Hedlund (1986). This construct also provides insight also on the impact of offshoring on the individual IS practitioner, and it is this impact of offshoring that is addressed in the next chapter.

7 The impact of offshoring on IS practitioners

7.1 Introduction

The construct of the organisation is necessarily impersonal, and allows for some generalisation. In chapter six, this facilitated a conclusion that posits the emergence of a new form of MNE – the modern heterarchical firm (after Hedlund, 1986). This chapter of the thesis describes the conclusions of the research relating to the impact of the offshoring phenomenon on IS practitioners onshore and offshore: the unit of analysis is the individual. The impacts are classified under the categories that emerged from the data and the perspectives and themes that resulted from the data analysis are validated and strengthened by use of antecedent thinking in the literature.

In summary, what emerged from the data and subsequent analysis is that for IS practitioners the primary impact of offshoring is economic. IS specialists in offshore locations are increasingly well rewarded, and experiencing consequent improvements in their standard of living. For IS practitioners onshore, while there has been little evidence of wholesale loss of jobs or significant reduction in remuneration, there is a small increase in the pace in what is termed 'downsizing' (the reduction of staff numbers) in the onshore divisions of IS services organisations.

From a cultural, skills and operational perspective, the impact of offshoring appears to be slight. The cultural horizons of both onshore and offshore practitioners are being broadened by contact with diverse nationalities, and by opportunities to travel abroad for extended periods. There is evidence from the research of cultural friction, but on the whole the cultural impact of offshoring on IS workers amounts to minor instances of mis-communication at early stages of interaction that are quickly overcome.

Operationally, the processes of software development have changed for the onshore worker, with greater emphasis on communication throughout the lifecycle and increased use of distributed methodologies. New tools are being used, but these tend to be lightweight and informal. In terms of skills, capabilities onshore and offshore are also changing, but this appears to be a gradual process, and there is no wholesale transfer of skill from one location to another.

7.2 Cultural impact

The definition of culture used in this research is narrow, and at an organisational level the construct can be regarded as somewhat abstract (the frequently-cited concept of corporate culture notwithstanding). At the individual level, which is the unit of analysis of this section of the thesis, culture is very real, and not at all abstract. In the course of the research, it became apparent that most of the respondents were acutely aware of cultural similarities and differences, and that these provided an ever-present, if often unspoken, backdrop to the day-to-day activities of the project teams. It was also apparent that while such differences might cause tension or generate problems, this was for the most part infrequent and the impact minor. Moreover, the impact diminished rapidly as the various actors became accustomed to each other, and to new ways of working. In other words, cultural difference did not appear to be a significant issue at the individual level.

Surprisingly, the cultural impact of offshoring on 'onshore' practitioners proved much greater than that on offshore practitioners coming to work in onshore locations: one might expect the cultural impact to be greater for the individual who travels rather than the individual who stays at home. However, on both projects, onshore practitioners found it harder to deal with cultural differences when exposed to colleagues from offshore locations.

Much of this stemmed from onshore views about the lack of competence of offshore colleagues. While the research data suggests that the offshore resources are highly competent and can do the things onshore workers can do, it also highlighted suspicion of offshore competence from onshore workers. This may be a cultural difference, or may relate to economic factors, such as implicit threat of job loss or role change (even though often it is routine or dull stuff that is being offshored). There are nonetheless strong cultural overtones: for example in the Mars project manager's response to a question about the onshore practitioner perspective of offshore colleagues:

> "'I think … initially, there were a lot of concerns around which way the project was going … because there were, at that time in the UK, there were a number of failed distributed delivery projects. And you know…there was, I don't want to use the words 'bad stigma' but there was just a little bit of taste in a number of people's mouths, you know, 'Maybe this isn't going to go so well for us.' And it took a lot of time to take that out, especially the UK guys who'd been with the UK firm for a long time. I've got guys who have been in the firm for 15 or 16 years, and when it's entrenched in their beliefs, they don't quite see it in any other way. But we managed to do well."

And again, in response to a question about relationships between onshore and offshore colleagues, the Capgemini account manager for Atlas commented:

> "...it's not going to work properly and these Indian guys don't really know how to deliver software...."

This onshore view of capability of offshore resources is a recurrent theme throughout: as is the difference of opinion about capability of offshore resources from onshore and offshore practitioners. Cohen and El-Sawad find the same bias:

> "This was likewise apparent in respondents' discussions of competence. Although Indian representatives were generally far better educated than their UK counterparts, there was a feeling in much of the UK data that the Indians were 'really nice' and 'so willing', but lacking in competence." (Cohen and El-Sawad, 2007)

Indian interviewees working on the Mars and Europa projects point out that offshore workers are capable of a lot more, while their UK colleagues maintain that they are capable only of very specific tasks. This is part of the 'accepted wisdom' or folklore of offshoring ('send discrete blocks of work offshore and be very precise with instructions, and it'll work"), as described in this exchange with the Europa programme manager:

> "So what we found, and this is perhaps something of a cliché but true for that, they were very good if they were given a very clear scope in terms of reference but given a blank sheet of paper they really struggled to create a framework for which to take forward. There was one specific exception, and it was interesting to note he actually spent a long time living and working in the UK, well actually in Ireland but in Europe, and so had developed a much more consultancy perspective."

Again, Cohen and El-Sawad concur:

> "Importantly, with regard to this issue of competence, the majority of Indian respondents did not accept the charge that they were in any way less able than their British colleagues. On the contrary, they discussed at some length the ways in which their own performance often far exceeded that of their UK counterparts…" (Cohen and El-Sawad, 2007)

This is essentially no different to the point of view expressed by the 'ethnocentric' executive cited by Perlmutter:

> "Let us manufacture the simple products overseas. Those foreign nationals are not yet ready or reliable. We should manufacture the

> complex products in our country and keep the secrets among our trusted home-country nationals." (Perlmutter, 1969)

One can attempt to explain the onshore view as a response to a direct threat to onshore practitioners from offshore colleagues. This could provide a conscious or sub-conscious basis for disparaging their capability. The fact that this viewpoint is not supported by any evidence suggests that it is an emotional or subjective response. Further, this attitude is not shared by IS practitioners working in end-user organisations, who feel less threatened by offshore capabilities.

The offshore practitioners' views of the cultural divide were much less charged than those of their onshore colleagues. Almost all of the interviewees noted the challenges associated with the different cultural viewpoints of onshore and offshore workers. One of the junior Indian developers on project Mars makes a telling remark, with unconscious humour:

> "Generally …we could never understand English humour at first. You know, definitely we could get along and speak one to one because, you know, people do speak English there (*in the UK*). But humour, it's quite different or something. We weren't able to grasp every time what was said in the meeting or something. But slowly, as you stay along and, you know, interact with people… I think the key to understanding is if you interact with different people and other stuff you can slowly get to understand like what they're actually meaning or something."

Again, it may be that the offshore practitioner is less sensitive to cultural issues because there is no implied threat.

What is interesting is that on both project Mars and project Europa, co-location of onshore and offshore workers at the clients' offices caused the cultural issues to diminish

over a period of months as people became familiar with cultural subtleties and learned to adapt. As cultural issues diminished, so too did concerns about competence. The Mars project manager describes this maturing process:

> "…for instance, I've got a team lead called Bala, who's a Mumbai team lead who's here (in the UK). A fantastic guy, but he will never, I guess, he'll never question one of the things that a UK team lead will say, for instance. It's just out of respect. And you sometimes do need to tease that out. So if I see him flinching in a meeting, I say, 'Do you have something to say?' And, yeah, it's just picking that out. And now they've worked on the project for a while, it's less of an issue."

Regarding the experiences of the Indian offshore practitioners who worked in the UK, there is perhaps an obvious point that emerges from the data: the cultural impact on offshore workers is the same as that for anyone who travels abroad and experiences a different culture and environment. The offshore worker experiences new ideas and concepts; and on return these enrich not only the individual but also the wider workforce. This works both ways: for example, the Europa project resource manager in Mumbai commented on how it was comparatively difficult now to get returned Indian staff to work extended hours:

> "I think one view I would say like the people from other regions – globally - are coming together, they're coming next to each other, so people are now adapting the right methodology - the right living style from each other. I view that (*Indian*) people are getting more exposure to work with the behaviour and way that Western people work and so they definitely feel that there should be some balance between personal and professional life."

This resonates with D'Mello's (2005) views on issues of identity and related tensions, and highlights wider social issues that result from globalisation. A related viewpoint

shows how the ‘can-do’ attitude of the Australian project manager onshore was significant for the junior offshore developer:

> “So (*the project manager*) asked me, ‘Would you have some time for writing a use case or helping write the use case?’ So I remember thinking if I was back in Mumbai I would never have got the chance to, you know, try to help a person writing a use case or designing a table like an Oracle designer.”

There are other views. Ramesh (2004), cited by Cohen and El-Sawad, takes a neo-colonialist perspective on offshore workers in India:

> “Somewhat paradoxically, given their elite status in India and greater cultural capital in relation to their UK counterparts, Ramesh (2004) describes the workers in India’s new economy as ‘cyber coolies’: ‘insecure’ and ‘vulnerable’ casualties of the new economic order. He argues that the precariousness of the new economy is related most fundamentally to the increasing instability of workers’ sense of who they are: ‘Agents, especially those who work on voice processes, are forced to live as Indian by day and westerner after sundown’. Thus the workers in Ramesh’s analysis appear to lead a double life – an ‘authentic’, Indian, daytime life, and a pretend, western, night-time one.” (Cohen and El-Sawad, 2007)

McMillan (2006) presents a post-colonial perspective, again concerning Indian offshore workers, and describes Indian call centre workers as ‘the global proletariat’:

> “The call centres then stand as strong symbols of a neo-colonialist environment, where labourers need to enter into the cultural contexts of their employers and clientele based in the UK, Germany or the Netherlands, as the case may be, and using their knowledge of the range of customer services available to the client, converse fluently, stripping away as much as possible, indicators of their local, Indian contexts.” (McMillan, 2006)

McMillan notes, however, that some of these workers appeared to regard this aspect of globalisation as fun.

7.3 Economic impact

The economic impact on the onshore IS practitioner

Chanda, in commenting on the effects of globalisation, describes the suicide of Lee Kyung-hae, a Korean farmer, at a World Trade Organisation's conference in Cancun in 2003 (Chanda, 2007). This was an act of protest at 'globalisation', and more specifically at the impoverishing effects of removing tariffs from agricultural produce on farmers in South Korea. Chanda quotes the Thai Buddhist critic Sulak Sivaraksa, and notes that for some:

> "Globalisation has wrought every imaginable ill: increased poverty and inequality, the ruthless exploitation of natural resources, the spread of crime and disease, global terrorism, and ecological catastrophe." (Chanda, 2007)

While the reactions of the respondents in this research did not reach the same levels of desperation, there was nonetheless a distinct tone of anti-globalisation in the comments of the onshore IT practitioners interviewed. Whether real or imagined, the responses highlight a perceived impact of offshoring that is profound, and for the most part negative. Onshore practitioners see offshoring as an inevitable phenomenon that in the long term will cause them to lose their jobs. In the medium term, they are being forced to re-skill and reposition their careers, with the attendant negative economic impact that entails. More importantly, they are being forced to change traditional ways of working to new – and for them more risky – ways of working. The UK-based Europa project manager articulated this concern:

> "…we had some of the guys from Paris coming in and saying 'Rightshore (*offshoring*) is the right thing to do', and 'We're planning to do all of our delivery work out of Mumbai', and so on. And we got a lot of guys seriously worried about job prospects."

The data from the Mars and Europa projects indicate that the offshoring process is inevitable. However, it is difficult to predict whether this presages a wholesale move of onshore IT jobs offshore: for now, it is still a matter of a small scale transfer of low-level programming skills.

The literature is divided on this point. John McCarthy, an industry analyst with Forrester, made a contentious and frequently cited prediction in 2002 of a sizeable shift of IT jobs offshore (McCarthy, 2002). He maintained this stance in 2004, noting that predicted near term increases were due to a variety of factors, such as greater use of offshoring by conservative companies and increased capability of pure play operators.

> "Forrester has increased its estimate of how many US services jobs will go offshore in the near term. Long term, we believe that our previous projection of 3.3 million by 2015 is still accurate." (McCarthy, 2004)

However, Farrell *et al* (2005) believe that just a small fraction of the jobs that could go offshore actually will – possibly just one percent of the total number of service jobs in developed countries by 2008 – and that this will happen gradually:

> "Offshoring will probably continue to create a relatively small global labor market—one that threatens no sudden discontinuities in overall levels of employment and wages in developed countries." (Farrell *et al*, 2005)

Regulatory barriers will explain in part why this number is so low, but Farrell's research indicates that company-specific considerations (such as management attitudes,

organisational structure, and scale) will be more powerful deterrents. They also suggest that while wages will certainly rise in offshore locations, it is unlikely that they will match current wage levels for similar occupations in developed economies. Transaction costs will remain a factor – Farrell *et al* believe that many companies lack sufficient scale to justify the costs of offshoring (*ibid*).

Other factors matter also: for example, it is difficult to assess how a prolonged economic downturn in developed economies might impact the propensity for firms to offshore work. Since many companies cite cost pressures as the main incentive to move work offshore, (Farrell *et al*, 2005; Dibbern *et al*, 2004), it may be that an economic recession will increase the amount of work placed offshore. However, a counter argument can be made that suggests offshoring will decrease, since IS budgets on the whole will decrease, and onshore labour costs fall significantly. The Europa project manager describes his view:

> "At the moment we're in a buoyant market, and anyone working in the IT industry can just see that we've had two good years. Not just Capgemini: the market has had two good years. What will happen when the belts get tightened again at the end of the economic cycle remains to be seen but one would have expected that it will be a greater challenge to demonstrate cost efficiencies in the UK for industrial type stuff. I would be surprised if many organisations in the UK still seek to retain local capability for rapidness of response, appreciation of business needs, flexibility and ease of communication. But whether that will be provided from a consultancy perspective is a different matter."

Court *et al* (2007) study the impact of the 'baby boomer' generation – those born between the end of the Second World War and the late 1950s - estimating that more than 40 percent of this generation in the US, amounting to 29 million people, will be working at age 65. They note that:

> "Companies will want such workers. Building on occupational forecasts from the US Bureau of Labor Statistics, we project that from 2005 to 2015 US companies will need to fill 34 million net jobs as the economy grows and workers retire, leave their jobs to enter new occupations, or depart the labor force for other reasons, such as poor health. Twelve million of these jobs will involve highly skilled professional and management roles, and more than 10 million will involve service roles. Boomers will be desirable candidates for many of them. This generation not only is the best-educated, most highly skilled aging workforce in US history but also accounts for a disproportionate share of US 'knowledge workers' - 51 percent of all managers and 45 percent of all professional people, such as doctors and lawyers - while representing just 41 percent of the workforce." (Court *et al*, 2007)

If this estimation is correct, it would suggest that there will be an increased demand for knowledge workers in the coming years. Panko, in his study of IT employment trends in the USA since 2001, agrees:

> "Job prospects in the U.S. and most other countries are good for the short term, and the U.S. Bureau of Labor Statistics employment projections for 2006–2016 indicate that job prospects in the U.S. will continue to be good for most IT jobs. However, offshoring is a persistent concern for students in Western Europe and the United States. The data on offshoring are of poor quality, but several studies indicate that IT job losses from offshoring are small and may be counterbalanced by gains in IT inshoring jobs." (Panko, 2008)

This analysis highlights the difficulty that exists in assessing the impact of offshoring on jobs in developed economies. In a study on labour market trends in the UK published by the Office of National Statistics, Heckley (2005) notes that:

> "There are currently no data series on how many firms are offshoring sections of their business or how many are selling

> offshoring services to foreign firms. Neither are there any data on the effect of offshoring on the labour market, showing how many jobs are lost due to firms moving sections abroad or even how many are created due to offshoring. It is also very hard at the moment to know exactly what workers who lost their jobs due to offshoring are now doing and whether there is a problem for these workers, and whether offshoring is a regional phenomenon or not. The primary reason for this is that the concept of an 'exported job' is difficult to define in a dynamic economy where change occurs simultaneously on a number of dimensions. In part this is because firms die, merge and grow, constantly changing the make up of industries. In part it is due to firms changing their nature and activity base as the dimensions of competition evolve." (Heckley, 2005)

Despite there being no direct source of labour market data on offshoring, Heckley concludes that:

> "Employment growth in the occupations considered susceptible to offshoring has been very strong. The redundancy levels for these occupations, although high relative to the whole economy, have been falling in the last four years. The overall reemployment rate for these occupations has also shown an increase, showing the cost of moving low-skilled jobs abroad is either falling or positive job creation is highly prevalent in these IT-enabled occupations. There doesn't seem to be an obvious regional effect in terms of regional employment changes. The patterns observed in the labour market not only reflect what economic theory would suggest of a high-tech, fast-paced industry, where job turnover and creation rates are expected to be high, but also the macroeconomic observations. The overall picture for the UK is very healthy with the UK being a net exporter of intermediate services and also possessing a very buoyant labour market in this sector." (*ibid*)

On balance, from both the empirical data emerging from the research and the wider literature, it can be concluded that the economic impact of offshoring on the onshore

workforce is low, and is of a much lower order when compared with the discontinuity faced by the workers observed by Zuboff (1988): they were experiencing the deployment of a fundamentally new technology that had profound side-effects on account of its informating capability. The deployment of offshoring as a mainstream IS sourcing option changes process, and has the effect of re-distributing labour patterns and rewards. However, its wider social impact appears limited for now, notwithstanding the severity of the global economic downturn in early 2009.

The economic impact on the offshore IS practitioner

IS offshoring presents the offshore practitioner with the opportunity to travel more and to earn more money. Travel abroad brings new experiences to these individuals, and on their return they bring new perspectives, new ways of doing things, and increased social and personal demands. This is resulting in significant economic outcomes, as noted by Capgemini's offshore director in the UK:

> "Again, some statistics: the average age of a first time house owner, ten years ago, was 42 - today it is 32. So by the time the guy is 42, he is going to possibly be buying his second home. And it is impacting property prices in places like Mumbai. In two years, property prices have gone up 50%."

At an infrastructural level, offshore locations benefit from investment, and this is improving individual living standards. In addition to direct economic growth experienced in areas where IS offshoring centres are located, there are indirect benefits. NASSCOM identified some of these in a recent report:

> "The growth of the IT/ITES sector and its resultant contribution to the economic growth and development has also resulted in certain wider impacts, which in many cases have had a rub-off effect and set benchmarks for other sectors of the economy while boosting the image of India in the global market." (NASSCOM, 2008)

The report describes how offshoring is leading, for example, to increasing diversity in the workplace:

> "The growing trend in the number of women employed in this sector indicates that not only does the industry offer equal opportunity to women but also has in place proactive and sensitive mechanisms which counter the common causes that discourage women from pursuing employment in the corporate sector. Women employment in the industry is set to rise to 45% by 2010 from the current 30%." (*ibid*)

Capgemini's offshore director in the UK echoes this theme:

> "But, yes, it's the young people; it's changing the world in India. The exposure that they get and the, you know, what they're bringing back to India. *'So offshoring is having an impact on cultural and social life in India as well?* 'Especially in the cities: if you go to Bangalore, there are communities which celebrate Thanksgiving - with turkey - which was unheard of. Ask their parents, you know, or ask people who lived in the same area 10 years before. They'd say, 'So what's Thanksgiving?'"

Thanksgiving turkey in Bangalore notwithstanding, the Capgemini's UK offshore director notes that these changes appear to be broadly welcomed by offshore practitioners:

> "And that is changing demographics, that is changing spending ability; it is changing the ability of people to aspire for better lives."

7.4 Organisational/skills impact

As for the cultural dimension, the organisational/skills impact of offshoring on the IS practitioner is visible, but not extensive: process, organisational and methodological change is gradual and accommodated by adaptation of the existing environment. For

offshore workers it can mean physical dislocation for extended periods. The skills and attitudes of IS practitioners, particularly those from offshore locations who spend time abroad, are changing in response to their experiences. For example, a senior manager working for Capgemini on project Europa in India had this to say about a difference she noted in Indian practitioners returned from a period of working in London:

> "I wouldn't say there would be difference in attitude but definitely they become more mature after working on site and interacting more with clients. In terms of expectation, in terms of handling the problem, in terms of putting themselves in clients' shoes, understanding the problems - I think they become more mature around this aspect."

For the onshore worker, for example, it can mean adoption of new and unfamiliar development methodologies, or new ways of organising project work. Similarly, onshore IS practitioners need to re-skill towards higher value technology skills, or become industry specialists. To remain at the commodity end of the market – such as having basic programming skills – is to price oneself out of the market. This theme is articulated by Capgemini's UK offshore director:

> "…people have to re-profile themselves. A programmer cannot afford to remain a programmer. He has to think about whether he can become a designer. A designer has to think about himself as a solution architect. A solution architect has to start thinking about himself as somebody who adds value from a business standpoint, rather than from a technology standpoint alone. So there's a fair amount of re-profiling that is taking place."

And again:

> "There are two things that are happening. The first thing of course is unfortunate, which means that when it comes to people with, say Java, Dot Net skills, development skills, they are slowly finding that their jobs are going away to India so they have the challenge to

> up-skill: they have to move away from being just coders to being designers; move away from being designers to architects; move away from being architects to business analysts; move from being business analysts to project and programme managers. That is the challenge that is being placed on the individual who is a good Java coder in the UK."

Panko identifies the issue for students of IS:

> "At the same time, offshoring and productivity gains appear to be making low-level jobs such as programming and user support less attractive. This means that IS and computer science programs will have to focus on producing higher-level job skills among graduates. In addition, students may have to stop considering the undergraduate degree to be a terminal degree in IS and computer science." (Panko, 2008)

The view from Atlas's chief information officer was stark. She described the skills to be offshored as 'commodity' skills:

> "I don't mean commodity disrespectfully, I don't just mean the cost issue, I mean where resource is plentifully available, probably higher skilled than the resources we had, so for programming and analysis, at testing, operational activities and a lot of those things that other people could do better and in most cases cheaper than we could and have access to far higher skills than we ever could have; plentiful supply and rapidly available."

7.5 Operational impact

Even though IS offshoring represents a new way of working for software developers, with novelty arising from physical and temporal dislocation of the practitioners, the impact of offshoring on the processes, methodologies and toolsets they use appears to be slight. New tools are certainly emerging, for example to allow pseudo-instant communication between developers. However, these tools are basic for the most part, and

often include software downloaded from the Internet, as described by a developer on the Mars project:

> "(We used) just anything actually. Yahoo! - just anything that was available. So Yahoo! or MSN…"

New processes - for example to conduct code reviews with developers - and new methodologies - for example to incorporate remote prototyping - are similarly being deployed. However, on project Mars and project Europa, these changes were basic, and were supported by web-based tools like Instant Messenger. The project manager describes the process of code review:

> "The only way we all kept in contact was Yahoo! And it's the only way to just maintain contact and you know, sometimes you'd just be cutting and pasting components of code and saying, 'How do you think this looks like?' or 'What do you think?' and it's great."

Similarly, few formal standards were in place, and those that existed were not strictly adhered to. Developers chose their own approach, with little apparent sensitivity around security, as described by a developer on the Mars project:

> "…we now have a standard toolset that we're supposed to use. All our J2EE components used Star Team (for change control) … and the guys in Mumbai just VPN'd in and used it … effectively, we got exemptions to do it our own way, which was maintain it on the client's site and we would VPN in and do it."

This evidence differs from that in the trade press. A view presented by Forrester, an industry analyst, foresees a greater demand for adaption and change, particularly when offshoring uses more Agile processes for software development:

> "IT organisations must optimize their processes to better support the business, reduce costs, improve quality, and improve time-to-market. Many have turned to offshore outsourcing or Agile application development processes to help address these challenges

> - but not both. Indeed, given Agile methodologies' intense developer/customer interaction and light documentation requirements, the two approaches seem diametrically opposed. However, companies that master the complexity of merging the two types of approaches can further reduce costs and also improve their ability to communicate with remote development resources, a challenge for all companies doing offshore outsourcing." (Moore and Barnett, 2004)

The delivery director on project Europa made the same point about custom software development offshore:

> "The industrial configuration of some of the big packages likes SAP financials, HR, the Oracle suite in that space which obviously now includes things like PeopleSoft - I think it's much clearer to see how they can be done offshore and to be honest what I see is a much better success rate in package based implementations offshore than I do in custom software development because the fact is we were pretty crap at doing custom software development when we were all sitting in the same room so doing it with a 7,000 mile distance between you makes it just that bit harder, whereas it's relatively easier to appropriate and articulate configuration /customisation of a package."

However, for the most part, the evidence from this research indicates that the operational impact of offshoring on the IT practitioner is negligible: most of the practitioners on both projects worked efficiently, and without any sense of perturbation caused by the fact that the projects were offshored. This can be viewed as further evidence of the adaptability of individuals faced with change: practitioners onshore and offshore easily met the challenges presented by change and found ways and tools to adapt to it.

7.6 Conclusion

Because the interaction between the researcher and the practitioner is more tangible than that between the researcher and the organisation, there is an expectation that the impact of the offshoring phenomenon on the practitioner will be correspondingly more tangible than the impact on the organisation. The evidence from this research shows the opposite: the impact on practitioners, both onshore and offshore is relatively minor, and the economic dimension dominates in both instances.

The research indicates a robust accommodation of change at the individual level, and an ability to adapt quickly to new circumstances. One of the junior developers arriving in the UK for the first time replied to a question about the town of Reading, where he was to be based, with more bewilderment than concern:

> "I was wondering how a place can be called Reading, or something. I was wondering. And if you do a Google search on Reading, it gives a lot of many vague options - not as a place. If you put 'Reading UK', then it gave me Reading Borough Council and where I would be living so that was quite helpful. So none of us knew what Reading is …"

Within a month he had settled in and was enjoying his experience:

> "I remember I … took a week off and went to Italy, Venice, and Pisa and all this stuff. That had been a very remarkable journey or something. And I personally prefer Scotland. If I get a job in Scotland I would definitely go there and settle down. I just liked Scotland. Not the weather but the Highlands, you know."

In most respects, his experience and behaviour is the same as that of other well-educated, ambitious and mobile professionals around the world. IS offshoring provides opportunities for offshore practitioners, but it is not a unique characteristic of offshoring

to do this. The Capgemini offshore director in the UK emphasises the fact that employees in India look for the same thing that employees elsewhere do, namely interesting, varied assignments in interesting places:

> "…and possibly one more, because Indians tend to be more the ones who have wanderlust. They do also look for an opportunity to travel the world, to see places, to work out of some of those places. I don't know whether you have been to Switzerland of late, but if you go to Jungfrau on any average day there will be around 200 people from India who will be around. Maybe 85% of these are software engineers on holiday from their jobs in Europe."

For onshore IS practitioners, the research suggests that the impact of offshoring on onshore IS practitioners is also primarily economic. Many are concerned about job loss and role change. However, with the exception of the Atlas practitioners in Belgium, few of the respondents saw an immediate personal threat to job security.

Finally, the research highlights a shift in the balance of power between onshore and offshore. As both project Mars and project Europa progressed, there was an increasing acceptance by both onshore and offshore participants of mutual skills and capabilities, and a growing democratic tendency in decision making. This is a definite heterarchical trend that augers well for IS practitioners everywhere because it acknowledges that a multiplicity of skills and resources is needed to implement global solutions for global customers.

In the next chapter, the conclusions from this phase of analysis are correlated to 'emerge' a theory about the impact of IS offshoring. In essence, the conclusions are synthesised to develop explanatory theory.

8 Conclusions from the research

8.1 Introduction

In the previous chapters of this thesis, the context of the research was described and used to inform the data analysis. The chapters setting out the research activity and the primary conclusions from that research lead directly to the outcome: namely the theory that emerges from the empirical data.

Two main conclusions emerge from this research. The first relates to the primary impact of offshoring on IS organisations and the theory can be articulated as follows:

> "IS offshoring is a major stimulus in causing a new form of IS MNE to evolve - the modern heterarchy."

IS offshoring is a factor of globalisation, and subject to globalising effects (Beverelli, 2007). However, the nature and definition of offshoring is changing, becoming more fluid and multi-directional (that is, not just from rich countries to less developed countries). In response, IS offshore providers are also becoming less hierarchical, and are distributing function to where it can most effectively be performed, and resource to where it can most effectively be used. This change in the form of offshore MNEs can best be described by an updated version of the construct of the heterarchy (Hedlund, 1986). This construct has been alluded to in previous chapters: in this section of the thesis the construct and its updated version – the modern heterarchy - is elaborated.

The second conclusion relates to the primary impact of offshoring on the IS practitioner and the theory can be articulated as follows:

> "The impact of IS offshoring on IS practitioners is primarily economic, and the cultural, organisational and operational impacts are relatively low."

While it is unclear whether offshoring presents an economic threat to onshore practitioners, it is certainly providing economic benefits to offshore practitioners. This is to a certain extent a predictable conclusion, and it is perhaps more interesting to consider the relatively diminished impact associated with other factors. In particular, culture as a factor in offshoring appears to be of lesser importance: practitioners are adapting quickly to accommodate and minimise negative impacts associated with cultural difference. This accommodation of behaviour to diminish the impact of cultural difference is aided by other powerful globalising forces, like global satellite television and the Internet, and by increased mobility of practitioners.

8.2 Summary of impact of offshoring

Four dimensions of impact of offshoring emerged from the data, comprising cultural, economic, organisational/skills and operational impacts. Table 8.2 – the final representation of the analytic framework that emerged after the open coding stage of data analysis - summarises the primary outcomes of the research by outlining the various dimensions of impact at the firm and individual level. Table 8.2 a) highlights the impact at the firm level, and Table 8.2 b) highlights the impact at the practitioner level.

Because the categories in the analytic framework remained largely consistent throughout the analysis, it is useful to present the conclusions from the research in this form, since it highlights further the progression from data to theory.

Stakeholder	Dimension of Impact			
	Cultural	**Economic**	**Organisational/ Skills**	**Operational**
IMPACT	**LOW**	**SIGNIFICANT**	**LOW**	**LOW**
IS firms (onshore and offshore)	IS organisations onshore and offshore are aware of cultural diversity and are adapting to the globalised world slowly and for the most part successfully.	Offshoring is causing IS firms to adopt a new form: the modern heterarchy. The attributes include: limited association with a 'home' market; delivering services to clients from any location; and optimising access to labour and capital.	Numbers of IS practitioners onshore and offshore are changing, but this is a gradual process. There is little evidence of wholesale transfer of headcount from one location to another.	New tools, operational processes and methodologies are being developed to allow close networking and consistent and efficient delivery – these support the new organisational form emerging.

Table 8.2 a) Summary of impact of offshoring at the firm level

Stake-holder	Dimension of Impact			
	Cultural	**Economic**	**Organisational/ Skills**	**Operational**
IMPACT	**LOW**	**MEDIUM**	**LOW**	**LOW**
IS practitioners (onshore and offshore)	Practitioners adapt quickly to accommodate and minimise negative impacts associated with cultural difference.	The economic impact of offshoring on onshore practitioners is unclear; but offshore IS specialists are experiencing a positive and noticeable economic uplift.	Skills profiles of IS practitioners onshore and offshore are changing, but this appears to be a gradual process.	There is greater emphasis on communication at all levels throughout the lifecycle; and increased use of distributed methodologies and tools.

Table 8.2 b) Summary of impact of offshoring at the practitioner level

8.3 A new construct for IS offshoring organisations

Limitations of organisational constructs for MNEs

Theoretical antecedents for the organisational aspects of MNEs – comprising constructs such as multi-domestic, trans-national, global and so on - are useful in describing IS offshoring MNEs at earlier stages of maturity. For example, offshore IS organisations ('pure plays') mostly originated as tightly controlled and disciplined operations designed to maximise efficiency and repeatability into the process of software development. Local relationships with overseas clients were less important – the offshore proposition was predicated on the use of a largely anonymous, remote workforce. Customer intimacy was in fact discouraged by both supplier and consumer: the work was packaged in a manner to allow for a clean interface between designer and developer (Soota, 1994). This model of organisation - essentially based on scale and cost-efficiency – matches the 'global' MNE of Bartlett and Ghoshal (1998), and the 'ethno-centric' MNE of Perlmutter (1969).

Similarly, onshore IS firms such as Capgemini started predominantly as national organisations, building strong relationships with their clients in home markets before extending reach into neighbouring countries, and gradually into overseas markets (the multi-domestic model described by Porter (1986)). Most operated a federal model, emphasising cooperation rather than centralisation, with limited or no drive for central efficiency. Before the phenomenon of offshoring became pervasive, the onshore IS companies were what Bartlett and Ghoshal describe as 'multi-national' or 'international' (Bartlett and Ghoshal, 1998). This strategy helped these companies to build strong local relationships, essential for developing customised solutions.

However, the offshore model is now quite different. Offshore IS firms follow a strategy of building solid customer relationships in local markets, while retaining the efficiencies

and disciplines that come from centralised control. Onshore IS firms are responding by building or acquiring development 'factories' in offshore and onshore locations that are modelled on the offshore organisations' 'global' strategy. An example of this is Capgemini's acquisition of Kanbay in 2006 (Moore *et al*, 2006).

In effect, onshore and offshore IS companies are now indistinguishable in strategic intent, and each has co-opted elements of the other's strategy. A maturity model perspective highlights a similar convergence: pure-play organisations are evolving towards what has been defined as the 'multi-shore' IS organisation:

> "…both categories of organisation (onshore and offshore) are developing multi-shore propositions to address reducing margins in commodity software development and to protect existing onshore client revenues." (Gannon and Wilson, 2006)

The construct of the heterarchy

Thus, the traditional constructs do not fully describe the modern IS offshore MNE, with one exception. This is the notion of Hedlund's heterarchy (Hedlund, 1986) which describes their essential qualities: the aspiration to be perceived and to operate as stateless, with limited or no association with a 'home' market; to appear ubiquitous, and capable of delivering services to any place from any place; to appear neutral - to be seen as commercial rather than political entities; to optimise access to resources (labour and capital); and to maximise access to customers that are also heterarchical. Such firms represent an evolution beyond existing descriptive frameworks and embody Murthy's definition of globalisation:

> "Sourcing capital from where it is cheapest, sourcing talent from where it is best available, producing where it is most cost effective and selling where the markets are without being constrained by national boundaries." (Chanda, 2007)

A key strategic difference with traditional organisational paradigms is that the heterarchical company seeks to exploit competitive advantage from any part of the global organisation, and not just from the 'home' market. The structural differences are more complex: the heterarchical company has many centres; subsidiaries and their managers are equally capable of contributing strategic thinking and value; organisation is collaborative in nature rather than coercive; and generally each part of the organisation is a reflection of the whole. This latter point implies that every member of a heterarchical organisation is aware of all aspects of the firm's operation (Hedlund, 1986).

Hedlund presented his model as 'radical' and saw it more as a 'loosely-defined' or theoretical construct than an actual manifestation of closely-defined reality. He predicted that such organisations might emerge in the future, possibly in newly developing countries. Writing in 1986, Hedlund used words like 'novelty' and stated that his goal was to generate debate. He coined the term 'hypermodern MNC' to suggest that existing 'modern' theories and notions used in international business thinking were inadequate, and used 'heterarchy' as an antithesis to hierarchy. (He elaborates on the etymology of the word, and notes that it is the concept of reality being organised differently – non-hierarchically - that he wishes to convey).

At the time Hedlund was writing, the term heterarchy was not used much in studies of the MNE. In fact, it appears that hierarchy was viewed as the only – or at the very least, the most stable – form of organisation for a system. Hedlund cites Koestler:

> "All complex structures and processes of a relatively stable character display hierarchic organisation, and this applies regardless whether we are considering inanimate systems, living organisms, social organisations, or patterns of behaviour." (Koestler, 1978)

Predicting where heterarchical companies will emerge, he identifies industries characterised by:

> "…the use of many different technologies, high but not maximum global homogeneity of demand, fast rate of technical and market change, non-trivial scale economies (but not necessarily in manufacturing), and absence of strong local barriers to entry". (Hedlund, 1986)

and notes that IT and biotechnology are obvious (if boring!) candidates. More importantly, he suggests that:

> "In terms of geographical and corporate origins, heterarchical MNCs are more likely to evolve from less than gigantic firms, and from contexts with a history of rather autonomous and entrepreneurial subsidiaries. This may give European firms an advantage over US ones. In a larger picture, MNCs from newly modernising nations may stand an even better chance." (*ibid*)

Heterarchical companies are not exclusively product suppliers, nor are they industry-specific. For example, the telephone services company Vodafone and the steel company ArcelorMittal both exhibit heterarchical aspects. Large IS service providers, onshore and offshore, have these characteristics and can be described as heterarchical.

Hedlund recognised the limitations of earlier constructs like geo-centricism (Perlmutter, 1969):

> "However, there are a number of difficulties facing the MNC, which wants to behave as if the world was one big market and competitive arena, to be adapted in a scaled-up version of ordinary 'national' strategy.
>
> In spite of increased homogenisation of demand (Vernon, 1979) there are still strong differences between nations and regions.

> Protectionism is furthermore on the increase rather than the other way around. The loyalty of many employees is still primarily with their home country (See Doz, 1979, and Doz and Prahalad, 1980).
>
> Cultural differences in management style makes one at least question the viability of uniformity, worldwide control systems and other management practices." (Hedlund, 1986)

His construct of heterarchy does not eliminate these circumstances, but takes account of them and turns them to advantage.

Limitations of the heterarchy for offshore MNEs

Hedlund's construct, while powerful in explaining the modern IS offshore firm, needs updating also: the term 'modern' is therefore used as a qualifier because Hedlund's construct does not describe the IS offshoring MNE perfectly. He was writing in 1986 and even in the space of 22 years, much has changed. The pace of globalisation has accelerated, and its nature and profile greatly debated. IS offshoring in 1986 was at an early stage of development, and bears little resemblance to the nature of the phenomenon today. Although instinctively grasping the statelessness of the heterarchical MNE, Hedlund nonetheless defines the strategy of the firm in terms of 'home' markets, an irrelevant concept for the modern heterarchy:

> "The heterarchical MNC differs from the standard geocentric one both in terms of strategy and in terms of structure. Strategically, the main dividing line is between exploiting competitive advantages derived from a home country base on the one hand, and actively seeking advantages originating in the global spread of the firm on the other." (Hedlund, 1986)

Similarly, his notion of heterarchy implies differentiation – somewhat similar to the 'differentiated network' which is:

> "…organized in different ways in the various regions of the world and in its various businesses, as a function of requisite complexity (Nohria and Ghoshal, 1997). Multidirectional knowledge flows are observed, accompanied by complex resource combinations to create competitive advantage." (Rugman and Verbeke, 2003)

The modern heterarchical firm is undifferentiated, deploying its resources in a manner dictated not exclusively by location (for example, from a 'centre of excellence') but by a mix of factors including cost, availability, location, proximity to the client and strategic intent (for example, by the desire to expand a presence in a particular country). It is closer to the analogy of the hologram that Hedlund presents in defining the term 'heterarchy', where:

> "…entire systems are represented and, 'as it were', 'known' at each component of the system." (Hedlund, 1986)

Hedlund defines this as a 'critical characteristic' of the heterarchical MNE, but qualifies this by describing as a 'theoretical ideal' the circumstance where:

> "Every member of the company will in the extreme case be aware of all aspects of the firm's operations." (*ibid*)

The modern heterarchy is a practical manifestation of this theoretical ideal: a good example was provided by the use of Capgemini's Accelerated Development Centres on project Europa, where resources from France, Holland, India and the UK were deployed to optimise cost and expertise. In essence, the qualifier 'modern' is needed because Hedlund's construct has moved from the realm of the theoretical into practice.

Implications of the modern heterarchy

If one accepts that offshoring is leading to the formation of modern heterarchies, one is led to an interesting and, in the context of this research, a fundamental and profound conclusion. Since heterarchical firms are not location-specific, the distinction between

onshore and offshore becomes irrelevant, and the terms meaningless. The commonly accepted definition of the words, which relate primarily to the physical location of the IS resources, becomes redundant. This applies generally to the traditional taxonomy in the literature: words like 'subsidiary', 'host country', 'home country', 'headquarters', are less relevant in the heterarchical construct, which is peer-to-peer, collaborative and mobile. Even the term "shore" is an analogistic construct that originated in an island nation that once had an empire: for example, the 49th parallel is not a "shore".

Hedlund saw this as a radical outcome:

> "A radical view concerning geocentrism and globality is that we are witnessing the disappearance of the international dimension of business. For commercial and practical purposes, the nations do not exist and the relevant arena becomes something like a big unified 'home market'. Business action as well as concepts to describe firms and the situation they face will be similar to the case of a company working in one national market." (Hedlund, 1986)

Doh expresses this viewpoint as follows:

> "Moreover, as Levy (2005) notes, the development of communications technologies and the requisite mobility of labour have allowed for an accelerated internationalization of production that accords neither with the product life-cycle nor the sequential internationalization perspective. Indeed, some have argued that many firms are now 'born global' (Knight and Cavusgil, 2004) and that the notion of sequential internationalization – whether on a country, industry, or firm scale – is outmoded and anachronistic." (Doh, 2005)

Buckley concurs:

> "One issue is whether the firm should be divided into domestic and international divisions (in the era of globalisation now a rather redundant debate…)" (Buckley, 2002)

Interestingly, recent research on the SaaS business model suggests a similar blurring of the notions of offshoring:

> "In this business model, the USA is as much offshore to Europe as is India – and the economics of the automated SaaS production model is determined by factors other than relative professional white-collar labour economics – such as energy and environmental costs and the quality of broadband access. In short, these trends envisage a future in which (loosely coupled) processes and systems are easier to configure, reconfigure and source, including around new geographic locations and offshore providers." (Morrison, 2006)

The author later notes that:

> "Eventually the word 'offshoring' itself will become superseded by 'global sourcing', which more fully captures the complexities of the emerging patterns of the industry." (*ibid*)

which is a firm endorsement of the construct of a modern heterarchy presented in the research.

Evolutionary trajectory of the modern heterarchy – a new maturity model

The research indicates that IS organisations will not necessarily find the evolution to a modern heterarchy easy, particularly those organisations that are at an early stage of development and only now coming to understand the implications of a truly global market for IS service provision. This is a difficult transition for most onshore organisations, and there is little information available to guide them:

> "The newly integrating nature of this global labor market has strategic and tactical implications for companies and countries alike. Information and insight about it are sparse, however, and executives and policy makers have little of either for making the decisions they face." (Farrell *et al*, 2005)

One way of viewing this evolution is through the lens of a maturity model. Gibson and Nolan (1974) see maturity as a series of S-curves, where the transitions from stage to stage correspond to the main events in the life of the IT organisation. Nolan (1979) concurred that the progression through stages in their models was caused by reactions to conditions set during the previous rapid growth periods as well as the external environment.

Taking this view, one could posit a new maturity model for offshore organisations that is complementary to that described by Carmel and Agarwal (2002) for offshore users. Gannon and Wilson (2006) describe a four stage maturity model for offshore IS service providers comprising domestic suppliers (small systems integrators or consulting firms with no offshore capability); tactical offshore suppliers (systems integrators or consulting firms that have ad-hoc experience with offshore development, and small or internally-focused offshore capability); niche offshore supplier (larger systems integrators and consultants that have a well-defined geographic or industry specialisation, and established onshore and offshore capabilities); and multi-shore suppliers (organisations that provide large-scale application development and management, business process outsourcing (BPO), high-end business process and strategy consulting, supported by a mature distributed development business model).

This latter stage of evolution could be seen to correspond with the modern heterarchy. However, it may be possible to represent this more simply using an S-curve in the manner

of Gibson and Nolan (1979) and using some of the constructs that are familiar in the discipline of International Business, such as those developed by Porter (1986) and Bartlett and Ghoshal (1998). Figure 8.3 is an example of how such a model would look in a simple form. Developing a more complex maturity curve would inevitably need to take account of how the various taxonomies overlap and diverge.

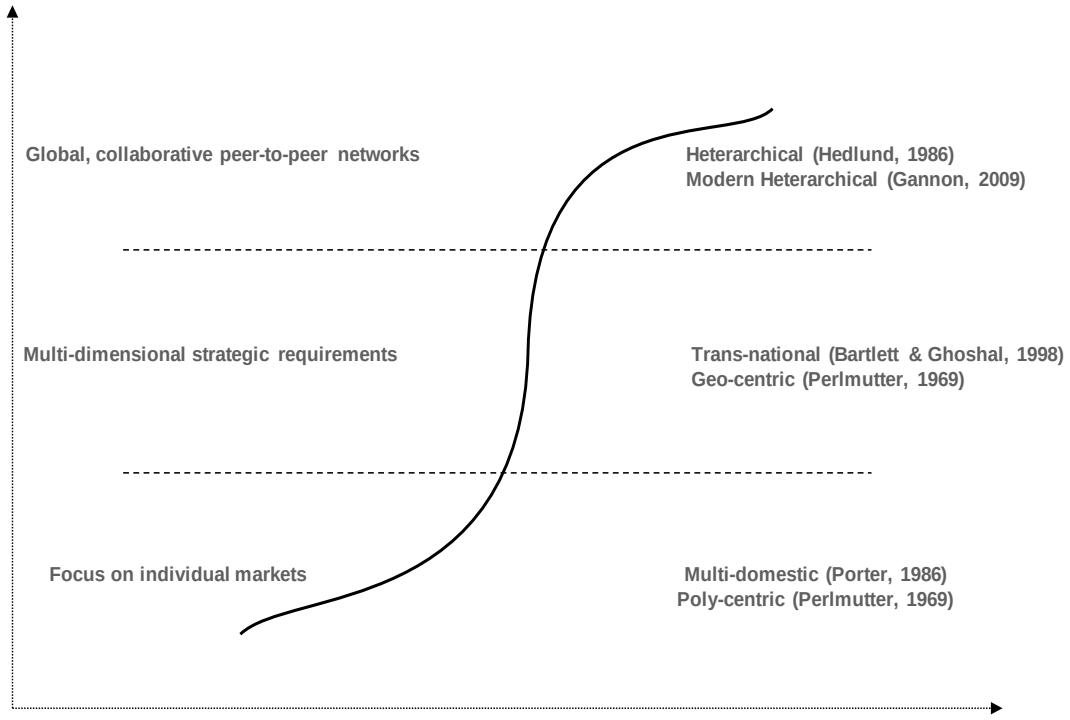

Figure 8.3 Example of a simple maturity S-curve for offshore IS organisations

8.4 Impacts of offshoring on the IS practitioner

The conclusion relating to the economic impact of offshoring on the IS practitioner is predictable: IS practitioners will be affected economically by a phenomenon that is primarily driven by cost differentials between countries. The corollary – that the cultural, organisational and operational impacts are relatively muted – is more interesting and novel. Accordingly, this section of the thesis focuses on these dimensions of impact, and highlights them – and in particular the cultural dimension – as the more relevant conclusions from the research as far as the IS practitioner is concerned.

The limited cultural impact of offshoring on the IS practitioner

The theory that culture as a factor in IS offshoring appears to be of marginal importance is at odds with a considerable body of research. For example, the work of the so-called Uppsala school (Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1974; Hofstede, 1980) emphasises the construct of cultural distance as a measure of the similarity or difference of dissimilar cultures. This originated from observations of internationalisation in firms, particularly with regard to where and when foreign investment occurred. The primary assumption is that the greater the cultural distance between participants, the less effective will be the outcome of any initiative between them.

Cultural distance was certainly observed in the course of the research, as noted in chapters six and seven and some of the 'traditional' cultural differences identified in the literature were noted (Winkler *et al*, 2006; Tsotra and Fitzgerald, 2007; Rottman and Lacity, 2004). However, these differences did not appear to be significant in either project Mars or Europa. It is not clear why this is the case, but it is possible to propose contributory causes. The first is that rapid globalisation is diminishing cultural differences among peoples. Powerful globalising influences such as television, inexpensive travel and the Internet have served to reduce the psychic distance (Johanson and Vahlne, 1977) between peoples and cultures. This is particularly true for the professional classes, which includes those likely to be engaged on a major IT development project. Cultural reference points for both onshore and offshore practitioners are likely to include Dilbert cartoons and Beatles pop songs; commercial reference points will include iPods and Coca-Cola. The Capgemini UK offshore manager noted this when he spoke of the emerging middle class in India:

> "In the last 15 years, depending on again who you talk to, anything of the order of 75 – 100 million people have entered the middle

> class (*in India*) and they are coming in with demands for Nike shoes. They are coming in with demand for Mac burgers - albeit they might be chicken tikka burgers in India - but you know they are making Western companies prosperous as well. (*For example*,) Nokia has a huge market in India."

This does not imply that there is no cultural difference at all: the world is not flat, as Friedman (2005) has described it: it is bumpy and uneven, containing all sorts of inequalities, inconsistencies and irregularities, and one size does not fit all. It is however more connected, and this connectivity is reducing the impact of the cultural barriers.

The second possible cause is that people are very adaptable to change. The research indicated that cultural difference, where it existed, tended to diminish quickly. This appears to be as much a pragmatic conclusion as anything else: there is a job to be done, and a deadline, and this necessitates action: considerations that impede this are put to one side, and IS professionals onshore and offshore get on with the work. Cultural considerations or other intangible sensitivities are relegated to a lower priority in the drive to succeed. Lewin and Peeters (2006) imply that this degree of cultural comfort is more pronounced for IT offshoring than for other process offshoring:

> "Coping with cultural differences seems to be less of an issue for IT, finance or accounting implementations than for functions that require soft people skills or more intensive interactions with US employees or customers, such as call centres and technical support activities." (Lewin and Peeters, 2006)

A final possible cause is related to this: there is great commonality and affinity between onshore and offshore IT practitioners as a class of professionals, and this professional affinity tends to be stronger than cultural difference (Cougar, 1988). It is also heightened by solidarity among IT professionals in the face of adverse criticism or excessive demand

from their business colleagues: in the battle lines drawn between 'us' and 'them', cultural difference is insignificant in comparison to functional or professional alignment. 'Us' is emphatically the IT team, and it is indifferent to culture or to the fact that some of the team may belong to an outsourcing organisation: it is enough that they are IT professionals. The Mars programme manager spoke with pride of one of the Indian team members who had distinguished himself in the wider organisation:

> "We had a table tennis table installed whilst the project was going on. I told the guys that they were more than welcome to use it. They started using it in the evenings and then … when we had a table tennis competition here, Prashanta came second in the whole company. And what was nice for me was, not only did he come second, but it was the <u>whole</u> company. The savings call centre knew who Prashanta was! … and they knew he was a Mars team member, worked on project Mars. None of them knew he was Capgemini, and none of them probably knew that he has been away from home for eighteen months."

Notwithstanding the conclusions above, it is important to stress that this research does not presage the end of cultural difference; merely that its impact as observed on the Mars and Europa projects appeared to be diminished as a factor in IS offshoring. Some challenges remain significant, and there are some areas where the research highlighted the divergence of views between onshore and offshore practitioners. One such example concerns the beliefs of offshore managers that they are capable of developing direct relationships with onshore clients without the need for onshore colleagues to act as cultural interpreters, as described by one of Capgemini's Indian project managers:

> "Yes, they (*UK colleagues*) have to be onsite but I don't see any reason why an Indian person can't go on site and do that too. We can definitely find some delivery managers from India going abroad and working with clients, but then the only challenge is that

> typically it is very senior people who would be doing delivery management role and they are not very keen (to travel)."

This conclusion does not suggest that cultural factors are unimportant. On the contrary, culture does matter a great deal. It is doubtful, for example, that India or Ireland would have become such prominent offshoring destinations for American corporations if their culture – and particularly their language – differed significantly from the host country. This point is well made by Metters and Verma:

> "Finally, cultural issues and the colonial past of the West has played an important role. Unlike manufacturing, service knowledge work is greatly aided by physically speaking the same language." (Metters and Verma, 2008)

The limited organisational/skills impact of offshoring on the IS practitioner

The second theory from this research also identifies that the impact of offshoring on organisation appears to be low. This does not suggest that there is not re-organisation of resources to align with – for example - a particular industry sector, technology capability, or client; such re-organisation is a facet of day-to-day business for most IS service providers and is often considerable. Rather, it addresses the macro-economic aspect of the organisation and suggests that there is no wholesale movement of staff from onshore locations offshore, or from offshore to onshore. This mirrors the focus of much of the research on this aspect of offshoring, which is concerned with the relative scale and pace of downsizing (McCarthy *et al* 2004; Beverelli, 2007). It is important to question why the impact of offshoring on organisation is low, and three possible causes are described.

The first relates to the fact that the main IS offshore providers are evolving into modern heterarchies. These organisations have reached a (heterarchical) conclusion that skills are needed in lots of locations, including onshore locations. Thus, onshore organisations are

not downsizing as quickly as might be expected, and offshore companies are acquiring onshore firms to build local presence and capability.

Second, there is a residual mistrust of offshoring in end-user IT departments, and they tend to use at least some onshore resources, sometimes termed the retained function, to oversee or mitigate risk. On project Europa, for example, the delivery manager outlined his view on the need for continued onshore presence:

> "My concerns at the time were because of the highly individualistic nature of the solution achieving knowledge transfer and doing it all offshore was going to be impossible and we spent....well, we had a number of meetings and presentations where I put that point of view and the client's chief technology officer made an equally articulate and robust counter-proposition predicated on what we'd promised them about our ability to offshore this. The eventual solution that we constructed probably was a compromise between the two and it would have been a largely offshored Indian team doing what might be considered commoditised migration work but much of the intellectual rigour and analysis was going to be done onshore with Indian people coming over but being led by the legacy Europa capable people in Belgium because they were the only people who would have the ability to do that."

Third, there is a continued need for local business knowledge – again best illustrated by the Capgemini project manager on Europa, outlining his view of how offshoring projects work best:

> "I think it (*offshoring*) is complemented by having some degree of in-house - within the country of operation - personnel that are involved in (*the offshoring project*). …those individuals would have a firm understanding of the business challenges that are facing us here in the UK, and ultimately speaking, let's not forget this is all underpinning and underwriting a business that is functioning here. And what is important from my point of view, is

> that the party that is engaged in doing it (*offshoring*) has a fundamental understanding of what is going on at the front end. And whilst it's possible behind the scenes on an operational level to carry out the integration and cooperation and so on, I think that there's some degree of skill that is useful to have actually here (*onshore*)."

It should be noted that in recent years (from 2004 to 2008), business has been good for the large IS suppliers. There has been relatively little serious pressure on costs, and demand for IT skills has been high. Behaviour may change in a less favourable economic climate, and continued pressure on costs might cause a more pronounced shift of work offshore. This is not predictable: severe recession may prompt protectionist measures in developed economies:

> "Protectionist pressures around the world are on the rise. G20 leaders have made a strong commitment to maintaining an open global economy and to resisting the temptation to resort to protection in these difficult times. Yet one participant at the G20 Summit argued for an extensive increase in the common external tariffs of the regional trade arrangement it is a party to." (Soesastro, 2008)

The limited operational impact of offshoring on the IS practitioner

The rather informal use of methodology and tools on both project Mars and project Europa hides the fact that all of the organisations involved in the development – users, onshore, nearshore and offshore – were closely networked and operated with a good deal of consistency and efficiency. The use of tools like Instant Messenger emphasises the immediacy of the interaction, and the adaption of existing methodologies to cope with the new (distributed) environment illustrates a resourcefulness and agility within acknowledged formal frameworks.

This flexible approach typifies modern development techniques. It is moreover entirely consistent with the heterarchical construct to the extent that the development infrastructure (telecommunications, tools, methodologies) can be defined as heterarchical. The Internet is stateless, networked, immediate, and the collaborative toolsets that comprise Web 2.0 technologies are collaborative, peer-to-peer and immediate.

One aspect of the operational dimension relates to risk, and the data suggests that the risks posed by offshoring as a factor in IS development projects are not significant compared to other typical risks faced by IS development projects. This conclusion challenges some of the perceptions of earlier research: Rajkumar and Dawley (1997), Ravichandran and Ahmed (1993), Ramarapu *et al* (1997) and Dubé and Paré (2001) all identify risk associated with offshoring. They imply that offshoring as a factor in software development presents a significant risk over and above the traditional risks in software development projects, and this is a view held by many practitioners also. For example, project Europa's delivery manager viewed offshoring as a major risk for the Atlas organisation:

> "My concerns at the time were because of the highly individualistic nature of the solution achieving knowledge transfer and doing it all offshore was going to be impossible and we spent....well we had a number of meetings and presentations where I put that point of view …"

It is difficult to make a definitive statement about the relative risk of offshoring, since to do so would require the execution of development projects identical in all respects except for the fact that one uses offshore resources and the other does not. However, it is possible to compare onshore and offshore risk qualitatively by identifying the overall risk profile of a software development project and assessing the relative risk introduced by offshoring. This analysis is presented generically in Table 8.5. The main risk categories

used in both comparisons are those identified by McFarlan (1981) and include project size, project structure, experience with the technology, and user factors.

Risk Factor	Generic Onshore	Generic Offshore
Size and Complexity	Size of the project carries equal risk, whether onshore or offshore	Size of the project carries equal risk, whether onshore or offshore
Project Structure	Allows for face to face interaction with project actors	Face to face interaction more difficult –increased demand for communications
Technology used	Usually managed by deploying specialist skills	Usually managed by deploying specialist skills – may even be more readily available offshore
User Factors	Allows for frequent user interaction	User interaction more difficult – increased demand for communications

Table 8.5 Comparing risk categories for generic onshore and offshore projects

At a high level this comparison suggests that the factors of size and complexity and technology used are more or less similar onshore and offshore; and that the key difference between the risks associated with project structure and user factors onshore and offshore is a need for more frequent and open communications.

If one accepts that the cultural and operational impact of offshoring is minimal, then many of the frequently-cited risks associated with offshoring - for example, the difficulties associated with knowledge transfer between practitioners from different cultures - are correspondingly diminished. The evidence from this research suggests that while the risks associated with offshoring do not disappear, other factors such as the need for increased multi-lateral communications at every level are more significant.

Although this analysis is at a structural level, and lacks an empirical unpinning, it is sufficient to emphasise the fact that offshore development projects are prone to the same

risks, processes and limitations that all software development is. In many respects, the risks associated with the fact that the team conducting the development is offshore is of marginal importance compared with the more traditional risks associated with software development. Following an extensive study in the US conducted by the Offshoring Research Network, the authors came to a somewhat similar conclusion (amongst others):

> "Overall there are no major differences in the risks perceived by companies that are not yet offshoring compared with those that have experience with offshoring." (Lewin and Peeters, 2006)

They noted two exceptions to this: first, risk of higher staff turnover in offshore locations; and second, risk of losing control. The Mars project manager put this more succinctly:

> "The biggest risk on a Rightshore (*i.e. offshore)* project is … your normal risks on a project, but it's just amplified."

In other words, one can get away with things on traditional (onshore) projects that one cannot get away with if the project is offshore:

> "No, it's not very different. We just need to be a little bit more careful about the detail. So some of the things that you'd forget on [traditional] development projects, if you forget in (*off*)shore, you'll fail. For example … if the communication isn't that good on a normal project, you might be able to get away with it. You can't get away with it on (*off*)shore. If… say your Use Cases aren't signed off on a normal project - you might be able to get away with it. You can't do that on (*off*)shore."

8.5 Conclusion

This chapter summarises the theory that emerges from the empirical data, and presents the main conclusions from the research. However, while these conclusions are considered robust, it is acknowledged that this research is relatively brief, and focused on particular aspects of a very wide phenomenon. There are many other parameters and

variables that affect companies and individuals, both onshore and offshore: and these parameters can have a significant bearing on how offshoring is viewed and implemented. There are many interesting avenues of exploration in this field.

Similarly, the conclusions reached in this research raise further questions, and these too are worthy of further investigation. The next and final chapter of this thesis sets out some of the potential areas for further research, and indicates how this builds upon the conclusions presented here.

9 Contributions

9.1 Introduction

This chapter of the thesis considers the theoretical, methodological and practical contributions of the study. It describes the limitations and the adequacy of the theoretical framework and discusses the validity and robustness of the conclusions. The chapter concludes with a commentary on options for further research in this area.

9.2 Theoretical Contributions

Although IS offshoring is still a relatively new phenomenon (King and Torkzadeh, 2008), this does not necessarily mean that there are multiple new perspectives and theories to be developed about it: the field of IS outsourcing, for example, is particularly well-researched and has a significant overlap with the nature and study of IS offshoring. Although this makes it difficult to identify completely new theory, it is not impossible; and this research makes a contribution to IS studies in three ways.

Reuse of a powerful explanatory construct from a neighbouring field of study

First, it takes a series of constructs from a related but substantially different discipline and successfully applies them in the field of IS. This has the effect not only of validating the imported constructs and theories, but also of illuminating the topic being researched. In this instance, the contribution validates various constructs in international business, and by applying them to offshore MNEs, shows their continued ability to explain complex aspects of offshoring. Examples include the constructs of knowledge transfer and cultural difference, both of which are particularly pertinent to IS offshoring. Such cross-disciplinary borrowing is endorsed by one of the leading researchers in this area:

> "In its successful era, international business researchers not only imported concepts and paradigms, they also exported them to neighbouring areas. This does not seem to be occurring at the moment." (Buckley, 2002)

It also results in the re-use of a powerful construct – that of the heterarchy (Hedlund, 1986). This is not an isolated view of organisational constructs: related organisational taxonomies from Perlmutter, Porter and Bartlett and Ghoshal are similarly used to provide insight on offshoring.

While the explanatory power of the heterarchy is significant, it does not completely describe the new offshore IS organisations. This research accordingly extends the construct to take account of the elements of offshore MNEs that are new and different to previously researched MNEs. The extended construct – the modern heterarchy - offers a richer view of these new IS organisations, and therefore provides a significant contribution to the wider field of IS studies.

It is potentially of interest also in the field of international business studies where the constructs originated, and it is intended that aspects of this research will be submitted for publication in the prominent journals in this discipline.

A contrary view of the effect of cultural difference

Views on culture and on geographical cultural difference are sometimes contentious, and they have certainly formed a sizeable part of study on offshoring. Many of these studies take as a starting point the assumption that cultural difference is a significant parameter, and that it implies increased risk and difficulty in conducting IS development (for example, Winkler *et al*, 2006). These studies often take for granted earlier conclusions regarding cultural differences, for example those described by Johanson and Vahlne (1977).

While this research adopts a similar starting point insofar as it uses the same sources for reference, it comes to a different conclusion. This conclusion – that cultural difference is not a significant factor in conducting offshore IS development – is grounded in the empirical data, and is at odds with much of the extant research. This in itself is of value, and represents a further contribution to the field of IS studies, even if it is contentious. It has significance beyond the field of IS studies: the conclusion represents an important comment on the scale and pace of globalisation. While it is phrased less dramatically, it provides a tangible validation of Lévi-Strauss's prediction regarding the homogenisation of human culture (Lévi-Strauss, 1992).

A different perspective on offshore project risk

There are many perspectives on the risks associated with IT projects, and a growing body of literature on the risks associated with offshore projects as a subset of this; this has been elaborated in a previous section of this thesis. Much of this research assumes implicitly - or asserts from anecdotal evidence often with transparent vested biases - that offshore projects are more risky than traditional co-located projects. A challenge to this view has significant consequences. First, it would demand an innovative approach to validating these assertions. Because it is a controversy emerging from the interpretative inducted evidence, it is a strong candidate for a wide-ranging deductive study from suitable hypotheses. Second, if it were to be validated – the popular assumptions being found wanting - it would have particular practical importance, and a direct benefit to practitioners. Thus, while the conclusion from this research regarding risk remain untested, it sets the scene for further discourse and debate on the subject, and paves the way for important future research.

9.3 Methodological contributions

A validation of the grounded theory method

The interest of the research was to develop a substantive theory where this is defined as:

> "…designed to account for a particular phenomenon where that particularity is defined in terms of time and space." (Dey, 2002)

In this respect the research has been successful: the conclusions and emerged theory fit Dey's description, and have relevance to the phenomenon of offshoring. More than that has been the value of the techniques of grounded theory, and particularly the dependence on robust field data, thoroughly analysed. A large share of the resources for this research focused on the gathering of data and its subsequent analysis. The methods used made it straightforward to link the conclusions directly to the empirical data. This had the added benefit of validating the conclusions, and maintaining the external validity of the emerged theory.

9.4 Practical contributions

It is not always straightforward to highlight the practical implications of IS research. This study, however, has direct relevance to both onshore and offshore practitioners, categorised in the areas identified as dimensions of impact (cultural, economic, organisational/skills and operational). Various guidelines can be deduced from the conclusions drawn from the research, depending on the perspective of the individual. For example, it is clear that there is value for onshore practitioners to learn new skills and to become less dependent almost solely on programming expertise. Similarly, offshore practitioners may benefit from the conclusions regarding the need for enhanced communication with remote colleagues.

Several practical implications for IS organisations emerge from the research. One of the more obvious conclusions concerns the nature of the modern heterarchy. If it is accepted that this is the form of organisation to which IS MNEs will evolve, then there is much in this and in antecedent research that can help inform this evolutionary continuum. For 'end user' organisations, there is enough detail regarding the phenomenon to provide guidance in the deployment of offshoring with both offshore and onshore systems integrators. Such guidance is similar to that provided by industry analysts, for example in the recent report on offshore futures, which proposes guidelines about the emergence of an organisational model analogous to the modern heterarchy:

> "The original idea of offshoring has been dominated by the concept of a simple A-to-B, transactional transfer of work. Nearly 90% of our respondents indicated that this idea will become increasingly displaced by the new mindset and terminology of the 'global delivery model' - a multi-faceted, multi-location issue involving onshore, nearshore and farshore components. Eventually the word 'offshoring' itself will become superseded by 'global sourcing', which more fully captures the complexities of the emerging patterns of the industry." (Morrison, 2008)

In summary, the practical implications depend to a great degree on the perspective of the potential user, and there are many different avenues of potential benefit to be investigated. This further work is beyond the scope of this research.

9.5 Adequacy and limitations of the research framework

Limited number of offshore projects considered

Given the wide variety of circumstances in which IS offshoring is used, it is difficult to generalise with certainty conclusions that emerge from just two projects. However, in this research, the focus of attention was less on the projects and more on the organisation (Capgemini) and the individuals (onshore and offshore) working on them. The findings

in each instance differed in some areas, but were broadly similar overall. Moreover, the research was extended over time, and the studies involved deep involvement in Capgemini throughout.

Limited input from offshore participants

Twelve of the seventeen participants formally interviewed as part of the research were predominantly 'onshore' practitioners. This has the potential to suggest an 'onshore' bias to the conclusions. However, this bias is corrected to a large extent by the fact that the formal interviews did not represent the full extent of the data collected.

During the course of the research, many views and perspectives were solicited from participants. This included informal feedback from offshore staff conducted in 'town-hall' meetings, where project and staff issues relating to the offshore team were raised. Similarly, much of the written data (reports, emails and other documents) are written from the offshore perspective. The broader views of Capgemini's offshore organisation – not related specifically to project Europa and project Mars - were presented in other management forums over the course of the research. Finally, presentations of research conclusions at various forums including the doctoral consortia during the European Conference on Information Systems and the UK Academy for Information Systems resulted in feedback and commentary that was subsequently applied in the research.

A more obvious negation of this potential limitation comes from the conclusions, which do not display an onshore bias. Had this been different – for example, indicating a widespread dissatisfaction with the quality of the work of offshore participants – then the criticism of limited offshore input might be more substantial.

Generic limits of interpretive research

As identified in chapter three of this thesis, interpretive research generally has been criticised for lacking validity (Silverman, 1998; Fay, 1987). This thesis does not address these criticisms, since they apply to interpretive research at its most fundamental level and are in effect ontological questions. The conclusions from this research highlight specific aspects of the offshoring phenomenon (cultural, economic, organisational/skills, operational) that are mostly self-standing and are supported to varying degrees by theoretical antecedents. Thus, their validity is bounded by the extent to which the antecedents, and the elaboration of these, are accepted. The impact of the general limitations of interpretive research is less important in such cases.

9.6 Areas of further research

Further empirical study of offshore IS MNEs to validate theory

This research concludes that a new form of offshore IS organisation is emerging. This conclusion emerges from a detailed analysis in which one offshore organisation was dominant. While the conclusion was validated by much reference to the literature – and in particular to the grey literature – it is nonetheless constrained by this narrow circumstance. There is therefore much scope for further validation of this theory by conducting empirical research on other offshore IS organisations.

Future general research on offshore and onshore MNEs

The offshore IS industry is relatively new, and the MNEs that dominate it still at an early stage of maturity. There is consequently scope to extend research in this area by assessing the relevance of other constructs familiar to researchers of international business. For example, it would be of interest to adopt the economic perspective taken by some researchers (Hymer, 1960; Vernon, 1966; Caves, 1971; Buckley and Casson,

1976; Ronstadt, 1977) in analysing economic and competitive IS offshoring MNEs. Applying well-known constructs such as transaction cost theory (Williamson, 1979), to offshoring might yield some further insights. This is essentially what some recent researchers are doing (Beverelli, 2007; Grossman and Rossi-Hansberg, 2008) although their research is focused on offshoring generally and not on IS offshoring as a specific instance of the phenomenon. Such research would demand an in-depth understanding of economics and international business. A particularly relevant programme of research would be to validate the large disparity between production and transaction costs.

Similarly, there is an opportunity to examine offshoring in India in the context of Porter's concept of economic clusters (Porter, 1998), where the current concentration of primary and secondary suppliers to the offshore IT industry conform to his definitions. Further, it is likely that IS offshoring suppliers will become established in less familiar offshore countries such as Vietnam and Russia, and this will in turn bring new challenges and demands that are worthy of research.

Second, a recurring theme in this research has been the distinctive nature of IS offshoring MNEs compared to the more traditional forms identified in earlier research. Boddewyn (1996), for example, has highlighted the historic emphasis on product MNEs in the literature. Modern research, such as that conducted by Knight and Cavusgil (2004) still retain this focus. Similarly, many offshore IS MNEs have originated in newly industrialising countries, again a distinctive feature compared to traditional MNEs.

There is therefore an opportunity to study how these essential differences affect behaviour or performance of offshore firms, or to identify how these differences could provide more general insight in the wider discipline of globalisation. For example, it

would be instructive to expand on Hymer's (1960) theme of the impact on world development of the MNE with reference to the IS offshore industry, for example in India.

Future research on global sourcing

What emerges from many of the conversations about offshoring (both with the Ariel and Atlas organisations and elsewhere in literature and practice) is that the phenomenon is essentially nothing new. Rather, it represents a further step in the maturity of IS procurement practices. This views offshoring at its most essential as a sourcing decision, and takes the economics of labour arbitrage as by far the dominant factor in adoption of the practice. There is nothing new about sourcing resources from lower cost locations – but what is new is that the sheer cost advantage has given visibility of IT resourcing costs to those in the business departments (outside of IT) who fund it.

In other words, the economics of IS offshoring has forced IT departments to cede IS resourcing decisions to the business. Many CEOs now know that the cost of IT development in India is a fraction of the cost onshore – so the question is asked in the boardroom – "what work does our company offshore?" This furthers the business perception that offshoring is the way to go – the implication being that IT is a commodity that can be done cheaply elsewhere. In effect, a key (unintended) impact of offshoring is to increase the distance between the onshore IT department and the business users. This rationale suggests that an important issue to emerge from this study of offshoring is that the phenomenon potentially represents a further step in the disenfranchisement of the corporate IT worker, and the increasing maturity of business users as consumers (and buyers) of IS services. This is a topic for further research.

Future research on validating assessment of risks of offshoring

One of the conclusions emerging from this research regarding the risks of offshore projects remains untested, and there is therefore scope for future research to determine

empirically whether risks on offshore projects are significant in comparison to other risks faced by software development projects.

9.7 Conclusions

The research carried out during the course of this study has confirmed the importance of IS offshoring in the practice of software development. It has highlighted some of the impacts of offshoring, and shown how and to what extent these impacts are significant. Earlier theoretical constructs have been used to help identify potential directions of development, for corporations and practitioners alike.

The research concludes that offshoring will persist as a prevalent phenomenon in the computer services industry, and that it is now a mainstream sourcing option for non-IT firms that develop and maintain software to perform business functions. IS offshoring is in fact a mature and growing industry in its own right, and is developing characteristics of its own. Perhaps the most salient aspect of this maturity is that 'offshoring' is no longer a useful or relevant term to use to describe how global IS resourcing is addressed.

The research does not answer all of the questions that can be asked, and it raises more. Several areas for future research have been identified, yet these represent a very narrow view on an increasingly broad topic: according to Beverelli (2007), the study of offshoring is the study of how globalisation affects individuals. Since the pace of globalisation is quickening, it is to be expected that the pace of offshoring will also increase. As offshoring changes – whether in response to technical, economic or other stimuli – the opportunity for wide-ranging research will grow, and new insights will benefit those who have an interest in it.

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11 Appendices

11.1 Appendix One – Sample topic sheet for shaping unstructured interviews

Rationale for choosing Ariel

I have made an implicit assumption that the most effective way of determining the impact of offshoring on its stakeholders is to observe the phenomenon in a real life context. The Mars programme in Ariel offers a perfect example of a recent sizeable offshore IS project.

The reasons for this are as follows. First, Mars is a systems development project with appropriate scale – over 10,000 days of development effort – and uses modern development methodologies (IBM's Rational Unified Process (RUP) and Capgemini's Deliver) in a Java environment. The project can be described as offshore, with developers from Capgemini's Indian operation located on-site at Ariel's offices in Reading as well as in Mumbai. This adds an interesting dimension, as does the fact that Ariel has an in-house IT department that had not used offshore outsourcing before.

Moreover, Ariel is a dynamic and growing business in a thriving sector. The bank manages risk carefully and has a 'can-do' attitude to business, reflecting its origin as a successful, marketing-driven start-up. Finally, the transition from customisation of the Canadian system to implementation of the OMIGA product provides an interesting perspective.

What I would like to discuss

My primary technique for collecting empirical data will be semi-structured interviews. Written data sources – project reports, memos, e-mails and letters and so on - will be

analysed as appropriate. Data collection will focus on context, technology, key players, and change process, and will include information on the following:

- the business environment, covering the nature of the organisations' business, the macro-economic context in which they operate, the prevailing business strategies, the business operating models and the organisational structures and governance. Also, the organisational context, including the scale of the IT enterprise, the extant or prevailing IS strategy, the resource landscape, the operating model and the organisational structures and governance in the IT departments;
- project detail, covering the scope and objectives, business drivers and imperatives, project plans and timescales, organisation and governance, resourcing plans and the risks and constraints. Also, the rationale for an offshore approach, covering the resource considerations, financial considerations, risk profiles, and options considered; and the project development environment, covering the development approach and methodology, development toolsets, change control, infrastructure and interfaces with the other parties;
- issues directly associated with offshoring, including cultural and other difficulties and tensions arising, resourcing issues, supplier and sourcing issues and end-user interface issues, and the impact on organisation, covering the perceived acceptability of the offshoring approach in terms of quality, cost and cultural alignment.

Potential questions and topics

Overall narrative of the programme? Business objectives?

IT organisation at the time programme started at Ariel? Now? Vendor selection process?

Methodology and approach to development?

Technology environment? Specific technology issues?

Tools and techniques for remote working?

How did distributed development - work in practice?

Types of issues faced by managers? By developers?

Primary drivers for programme? For the offshore approach?

Perception of offshore practitioners by onshore staff?

Perceptions of changes in organisation and approach as a result of offshoring?

Specific skills issues associated with the programme? Onshore? Offshore?

Project planning and associated reporting for distributed projects?

Perceived risks? Actual risks?

Perception of level of success of offshoring? Onshore practitioner views? Offshore practitioner views? Business views?

Useful documents if available

Initial project proposal and plan; recommendations or reports during transition from custom to package approach; costing/project budgets/timelines/gannt charts; organisational charts; technical architecture and design documentation.

11.2 **Appendix Two -** List of Interviewees

Ariel – Mars programme

Tjeerd Witchers, Mars programme director

Nick Grierson, Mars project manager

Susanna Chan, Mars project business analyst

Matt Lyons, Ariel procurement manager

Pawan Satav, Mars developer

Angelo Mariampillai, Mars programme manager (Capgemini UK)

Paul Coad, Ariel account manager (Capgemini UK)

Sunil Munsif, UK offshore director (Capgemini UK and India)

Dhananjay Acharya, Mars project manager (Capgemini India)

Nishit Kamdar, Mars project developer (Capgemini India)

Darshana Pai, Mars project manager (Capgemini India)

Atlas – Europa programme

Christine Brown, Atlas CIO

Sylvan Francis, Atlas procurement manager

Paul Bowen, Europa delivery director

Pam Maynard, Atlas Account manager (Capgemini UK)

Paul Coad, Atlas delivery director (Capgemini UK)

Sunil Munsif, UK offshore director (Capgemini UK and India)