

The Internationalisation of Firms in a Policy- Driven Industrial Cluster: The Case of Malaysia's Multimedia Super Corridor

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ABSTRACT

**THE UNIVERSITY OF MANCHESTER
CHRISTOPHER J.R. RICHARDSON
DOCTOR OF PHILOSOPHY**

The Internationalisation of Firms in a Policy-Driven Industrial Cluster: The Case of Malaysia's Multimedia Super Corridor

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This thesis investigates how operating in a policy-driven industrial cluster built from scratch by policymakers affects the internationalisation of firms. Following the success of well-known clusters like Silicon Valley, policymakers in many countries often seek to replicate these examples, anticipating the offset of various advantages as a result. One of the main perceived externalities associated with developing an industrial cluster is that it can potentially provide a foundation for enhancing firm internationalisation. However, extant literature has not adequately addressed whether and how a policy-driven industrial cluster affects the international growth of firms. In fact, research examining the impact on internationalisation of clusters as a whole, whether policy-driven or otherwise, is relatively scant, despite the importance of locational factors in International Business (IB) research, as stipulated by the eminent John Dunning, among others. The purpose of this research, therefore, is to generate fresh insights and understanding into how operating in a policy-driven industrial cluster impinges on firm internationalisation. The context of the study is the case of Malaysia's Multimedia Super Corridor (MSC). This case was selected for two key reasons. Firstly, it fits with the definition of a policy-driven industrial cluster, namely that its birth was the result of the direct actions of policymakers, and secondly, one of its primary objectives is to enhance firm internationalisation, which makes it a highly suitable case to examine.

The research adopts the interpretivist paradigm, with an embedded single-case study deemed the most appropriate methodology for responding to the research question. Multiple sources of evidence were employed, with the primary focus being on personal interviews with key managers in 10 firms, and representatives from the MSC cluster and a private organisation that works to support firms and entrepreneurs in the cluster. The findings suggest that the impacts of a policy-driven cluster on internationalisation are largely associated with marketing and financial support from policymakers, rather than deriving from the geographic co-location of actors, as suggested by much of the existing literature on 'organic' clusters.

The key contributions of the research are grounded in the fact that it focuses on internationalisation within a particular context (a policy-driven cluster) which, as noted, has been largely overlooked by IB scholars. In particular, fresh insight has been gained into some of the potential motivations behind firms joining such clusters, and the nature of their impact on internationalisation. The study also stresses various important implications that emerge for practitioners and policymakers. The thesis concludes by highlighting the limitations of the study and offers some suggestions for future related research.

Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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To my wife, Atiqah

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1 INTRODUCTION

1.1 Introduction

The aim of this chapter is to outline the key objectives and purpose of the thesis. It begins by outlining the main objectives of the study, in light of the specific research problem. This is followed by a discussion of the intended contributions of the study to the literature, and a summary of the thesis, including the main research question, and the methodological approach. The chapter ends with a description of the thesis' structure.

1.2 Objectives

This thesis seeks to contribute to the relatively scant interface between economic geography and international business by investigating how locating in an industrial cluster affects the internationalisation of firms. More specifically, it is concerned with a particular type of industrial cluster – a policy-driven industrial cluster. Policy-driven clusters are those where the ‘triggers of the birth of the cluster are direct actions of policy makers’ (Chiaroni and Chiesa 2006, p.1073). Governments often initiate regional cluster development in order to boost home-based competitive advantages and to support small firms seeking to enter international markets (Brown and McNaughton 2003; McDonald et al. 2007).

Extant literature has not sufficiently explored the possible impacts of operating within industrial clusters on firms' international expansion (Pla-Barber and Puig 2009; Prashantham 2008a). Considering the large number of ways in which cluster participation can potentially affect the internationalisation of firms (as will be discussed in greater depth in the Literature Review chapter of the thesis), the scarcity of studies at the interface of these two hugely important concepts is surprising, although there are some notable exceptions (e.g. Brown and Bell 2001; Fernhaber et al. 2008).

In particular, those few studies which *have* attempted to address cluster impacts on internationalisation have, for the most part, not focused specifically on the nature of the cluster's background and formation. In other words, they have neglected to consider different types of clusters, and generally adopt a broad 'cluster concept'. As a result, we do not really know whether and how the background of a cluster's formation has any varying effects on internationalisation. This thesis aims to address this gap by focusing on a certain type of industrial cluster, a 'policy-driven cluster', that is, one that has been developed by policymakers as a tool for both economic growth and for supporting firm internationalisation.

In this study, internationalisation is broadly defined as 'the process through which a firm moves from operating solely in its domestic marketplace to international markets' (Javalgi et al. 2003, p. 185). In other words, the focus here is on 'internationalisation' more generally, rather than on specific modes of internationalisation, such as exporting. Given our lack of understanding of the impact of policy-driven clusters on internationalisation, a more holistic conceptualisation of internationalisation such as this is arguably more favourable for an exploratory study such as this, as it will allow us to explore a greater range of potential processes involved, rather than being constricted to certain forms or stages in the internationalisation process.

Therefore, the main objective of this research is the following:

To investigate how operating in a policy-driven industrial cluster affects the internationalisation of firms

1.3 Intended contributions

This thesis attempts to generate important new insights into a phenomenon that has not yet attracted a great deal of attention from scholars. The study's contributions are particularly significant given this noticeable gap in the literature, as the following paragraphs demonstrate.

1) As has already been noted, extant literature on the impact of clusters on internationalisation remains scant. However, a few studies have been conducted and these provide some indications as to the possible impacts of cluster location on firm internationalisation. Although the small number of studies may not offer conclusive and generalisable confirmation of the cluster impact, there is some common ground in their findings (as will be discussed in the Literature Review chapter). This thesis attempts to make a novel contribution to the literature by focussing specifically on a policy-driven cluster. Previous studies on clusters and internationalisation have not, on the whole, distinguished between different types of clusters. Notwithstanding the important contributions these studies have made, it is crucial to distinguish between clusters which originate spontaneously and ‘organically’ through market forces, from those which are implemented ‘top-down’ by governments and policymakers with the intention of stimulating regional economic growth and to support firm internationalisation. Although there are a number of alternative ways of categorising clusters (see, for example, Markusen 1996), financial and time restraints meant that it was possible to focus on just one particular categorisation for this study.

It is important to distinguish policy-driven clusters from organic clusters for a number of reasons. First, scholars are divided over the desirability of purpose-built, designed clusters. Despite the wealth of available literature on clusters, we still do not know very much empirically about the effectiveness of activist policy interventions (Wallsten 2004), with some writers arguing that policy-driven clusters are too costly and have only limited chances of success (Castells and Hall 1994; Guinet 2003; Hospers and Beugelsdijk 2002; Nelson 1993), and others offering a more optimistic view (Kutchiki and Tsuji 2005; Lundequist and Power 2002). Thus, it is not entirely clear whether government efforts to build clusters from scratch are likely to succeed. This study adds to the debate and extends it further to incorporate the impact of these types of clusters on *internationalisation*, thus deepening our understanding of both the policy-driven cluster and of internationalisation.

Second, following the success of notable clusters such as Silicon Valley, developing industrial clusters has become a popular approach to economic development, not only because they are expected to support firm internationalisation, but also because they

are perceived to attract foreign direct investment and stimulate innovativeness, industrial competitiveness, R&D, and employment, particularly in developing nations (Brown and McNaughton 2003; Fromhold-Eisebith and Eisebith 2005; Jussawalla 2003). Given their growing popularity, it is vital that scholars attempt to extend our knowledge of these types of clusters, particularly as they necessitate heavy financial commitment by governments. The internationalisation literature can no longer continue to overlook their significance, and an in-depth study such as this is essential.

Third, it has been suggested that there is an East-West divide in terms of which type of cluster is favoured in particular regions, with organic spontaneous clusters more common in western countries, and policy-driven clusters more prevalent in Asia (Su and Hung 2009). This regional dichotomy should be taken into consideration as it may not be accurate to generalise the findings from an organic cluster in a Western country to a purpose-built cluster in Asia, or indeed vice-versa. Given the popularity of policy-driven clusters in Asia, it is preferable to investigate the issue from an Asian perspective. This point ties in with the study's second important contribution, as follows.

2) The present study is set in the context of a policy-driven cluster in a developing, non-western market. The literature on industrial clusters has focused largely on developed countries, with fewer studies being conducted on clusters in less developed countries (LDCs) (Rabellotti 1999; Sajarattanochoe and Poon 2009; Schmitz 1995; Wei et al. 2009), and this appears to be the case also for research on the cluster impacts on internationalisation. Although some studies have examined the impact of agglomeration in clusters and industrial districts on internationalisation, they have largely been confined to clusters in Western, developed countries, such as the US (Fernhaber et al. 2008), Denmark (Andersen 2002; Rasmussen and Servais 2002), Portugal (Sopas 2001), New Zealand (Brown and Bell 2001), Italy (Becchetti and Rossi 2000), and Spain (Belso-Martinez 2006). As noted above, the findings from such studies may not be readily applicable to other contexts, such as Asia, where clusters are often intentionally designed to achieve specific economic growth and firm internationalisation objectives, due to, for instance, the different levels and nature of government intervention.

In addition, however, LDC firms often face certain barriers to internationalisation which may not pose problems to firms from more developed countries, such as inferior home-country institutions (Cuervo-Cazurra 2008; Cuervo-Cazurra and Genc 2008), particularly for high-tech products (Ahmed and d'Astous 2008; Leonidou et al. 2007). On the other hand, however, firms outside the developed world may have different ownership advantages (Erramilli et al. 1997) and experience of coping with difficult conditions in their home markets (Cuervo-Cazurra and Genc 2008), which may give them an advantage over firms from more developed countries, particularly when entering other developing markets with similar conditions (Cuervo-Cazurra 2007; Cuervo-Cazurra et al. 2007). Thus, the internationalisation path of firms from developing, and newly-industrialised economies often differs from that of their developed-country counterparts (Bonaglia et al. 2007; Cuervo-Cazurra 2007; Lau 2008), and it is not clear whether operating in an industrial cluster has any significant implications for internationalising firms in developing countries.

Therefore, there are some distinctions between industrial clusters in Asia, which often rely on direct government intervention to either complement or even replace market mechanisms, and those in the West, which are usually more spontaneous in their origins. Moreover, the internationalisation course of firms in developed economies does not always reflect that of firms from outside the developed world. Given these differences, this study has the potential to offer fresh insights into the nature of the cluster impact on internationalisation, which will contribute to extending our understanding of how industrial clusters more generally, and policy-driven clusters in particular, can influence the internationalisation of firms.

1.4 Overview of thesis

This thesis constitutes an exploratory study which aims primarily to generate creative new insights pertaining to the impact on firm internationalisation of operating in industrial clusters. More precisely, it is concerned with the case of a policy-driven industrial cluster, because their significance to the internationalisation of firms remains largely unclear due to the limited number of studies which have investigated the issue, despite their prevalence in various economies around the world, particularly

in Asia. In order to achieve this aim, and in line with the aforementioned key objective of the thesis, the main research question to be addressed is:

How does operating in a policy-driven industrial cluster impact firm internationalisation?

In order to better comprehend the broader issues related to the research question, I conducted a thorough review of the industrial cluster and internationalisation literatures. The study follows Eisenhardt's (1989) suggestion of approaching exploratory research with no predetermined propositions, as these may bias and limit the findings. Nevertheless, it is acknowledged, even by Eisenhardt, that it is impossible to approach any research with no theory under consideration at all, and therefore, in line with Eisenhardt, the review of the extant related literature provided a useful theoretical framework in which to operate.

The study adopted a single-case study approach for two principle reasons. First, single case designs are suitable as an exploratory study that can lay the foundations for later, more comprehensive studies (Ghauri and Gronhaug 2005; Yin 2009). Second, there were crucial logistical reasons for focusing on a single cluster (Yin 2009). More specifically, the limited time and financial resources at the researcher's disposal meant that it was not possible to conduct extended fieldwork in multiple geographical locations in the relatively short period of time available for the study. The case in question is Malaysia's Multimedia Super Corridor (MSC) information and communications technologies industrial cluster. Within this cluster, 28 informants from 10 carefully selected firms and representatives from the government and a private organisation (Technopreneurs Association of Malaysia – TeAM) which works with companies in the MSC to develop 'technopreneurship' were interviewed at least once. Five of these firms were either conceived in the cluster or relocated there after some time, while the remaining five firms are based outside the cluster, in and around Greater Kuala Lumpur, and continue to refuse demands by government authorities to have some significant presence (at least 10 percent of the workforce) in the cluster. It is not uncommon for firms to apply for 'membership' of the MSC (in the form of MSC Malaysia Status – see section 3.11), and then to refrain from relocating at least some of its workforce to the cluster, which is part of the agreement

firms sign up to when joining the MSC. Thus, in order to more accurately grasp the setting of the MSC, it was imperative to include firms that have resisted governmental pressures to fully operate within the cluster. More importantly, however, accounting for these firms meant that the views of actors that have experienced the cluster 'from the outside' were taken into consideration, rather than limiting the study to just those firms that are permanently based inside the cluster setting. Thus, it was essential to investigate why they did not find the cluster location appealing and whether this decision has had any effect on their internationalisation.

As previously mentioned, the thesis is expected to contribute to both the internationalisation and cluster literatures by focusing on the influence on internationalisation of operating in a policy-driven cluster, and thus to develop a preliminary understanding of the issue. As a result, the findings offer fresh insights into how a cluster of this type may affect internationalisation. Most significantly perhaps, it is shown that this type of cluster may not necessarily or automatically have an overwhelmingly positive impact on firms' internationalisation, at least in the short run. A number of factors are responsible for this, and, of course, they may not apply to other policy-driven clusters, but they do at least highlight the difficulties and limitations of enhancing internationalisation by developing such clusters from scratch.

Arguably the main drawback of this type of cluster, based on the findings from the case used in this study, is that it may not be able to (instantaneously) generate intense social interaction as seen in some of the most successful clusters, such as Silicon Valley (Saxenian 1994). Informal interaction between members of a cluster is considered to be one of the most important features of cluster membership, because it is often the primary mechanism through which knowledge, including tacit knowledge that may enhance internationalisation, is shared amongst firms (Dahl and Pedersen 2004). Porter (1998a) has previously warned against the dangers of assuming that merely accumulating firms, suppliers, and institutions will generate 'social glue'. Face-to-face interaction and personal relationships are still required to guarantee the cluster's success. Whether social networks and informal relationships, leading to the sharing of tacit knowledge between cluster members that can support international growth, emerge over a longer period of time lies outside the scope of the thesis, but

this observation nevertheless underlines the embedded nature of social capital (i.e. the degree of trust in social relations (Hospers and Beugelsdijk 2002)), which is very difficult to instantly create (Hospers and Beugelsdijk 2002; Ionescu 2005).

Despite these limitations, the study suggests that a policy-driven cluster may enhance internationalisation through alternative means. Although these may not necessarily be *exclusive* to policy-driven clusters, they are arguably more prominent in such clusters than in organic clusters. For example, possibly owing to the lack of spontaneous informal interaction in the cluster, authorities in the case cluster have organised regular events, such as conferences and trade shows, to bring together firms in the cluster with foreign contacts. For a number of the firms, attending these events has proved beneficial to firms' international expansion. Other potential benefits to internationalising firms of locating in a policy-driven cluster which the study highlights include a higher chance of being discovered by foreign contacts, who regularly visit the cluster on the invitation of the government, and high quality infrastructure available inside the cluster.

However, it is argued that, in spite of these efforts by authorities, a policy-driven cluster is more likely to succeed in supporting internationalisation if it is able to generate regular, spontaneous, self-sustaining, informal interaction and communication between its members. This is arguably the key feature of most successful clusters such as Silicon Valley, and any attempts to replicate this success, need to be based on self-sustaining factors, most notably regular informal interaction. Unfortunately, it is not clear from this study whether policy-driven clusters can achieve this in the long run.

1.5 Structure of thesis

In order to arrive at the conclusions outlined above, the thesis adopted the following structure:

- Chapter 2 consists of the literature review. As the research is of a multi-disciplinary nature, an in-depth analysis of both the industrial clusters and

internationalisation literatures was conducted. Although the decision was made to avoid approaching data collection with predetermined propositions, as Eisenhardt (1989) recommends, a thorough appreciation of the relevant issues provided a useful guideline for suitable interview questions and data analysis.

- Chapter 3 presents the methodological approach adopted in the study. It begins with an overview of the epistemological qualitative-quantitative debate surrounding research methods, and proposes the use of qualitative methodology for this research. The chapter also focuses on case study methodology, argues for its suitability to responding to the study's main research question, and introduces the MSC cluster, the case used as the unit of analysis in this study, and the 10 MSC-member firms that were interviewed.
- Chapters 4 and 5 focus on the key findings of the data which were collected during three rounds of interviews (June, 2008, April-May, 2009, and November-December, 2009). The data are analysed and presented both within, and across, the firms, with representative quotations from the respondents presented in order to emphasise key observations.
- Chapter 6 offers an interpretive discussion of the findings, exploring the study's main contributions to the literature. The purpose here is to integrate the findings with the literature in order to see how they contradict or extend existing knowledge with regards to the impact of industrial clusters on internationalisation.
- Finally, Chapter 7 of the thesis constitutes the concluding chapter, with a discussion of the overall contributions and implications of the study for researchers, policymakers and practitioners. Moreover, the chapter presents the research's main limitations, and offers suggested guidance for future scholarly efforts.

Thus, the structure of this thesis aligns itself with other typical qualitative structures, as shown in Table 1.1:

Table 1.1: Structure and content of thesis

Note: Adapted from Easterby-Smith et al. (2008, p. 310)

Principle	Content in qualitative research	Chapter in thesis
<i>What is the research about?</i>	Abstract	Abstract, Introduction
<i>What is already known?</i>	Review of literature and relevant theories	Introduction, Literature Review
<i>What is new about this study?</i>	Identify the gap or research question(s)	Literature Review
<i>How was the research done?</i>	Research design and method	Methodological Approach
<i>What did it find out?</i>	Descriptions of data and interpretations	Findings
<i>What are the implications?</i>	How the data adds to existing theory	Discussion, Conclusion
<i>Next steps?</i>	Limitations and suggestions for future research	Conclusion
<i>Addenda</i>	References, appendices	References, Appendices

2 LITERATURE REVIEW

2.1 Introduction

A review of the existing, related literature serves a number of important functions. First, by identifying relevant concepts, it demonstrates that the author is familiar with the major issues in the area, thus increasing the reader's confidence in the researcher's ability (Neuman 2006). It also highlights the results of closely-related studies, thus offering the reader a benchmark for assessing the findings of the present study (Creswell 2009). Perhaps most importantly, the literature review allows the researcher to frame the problem under scrutiny and to position the study so that it becomes clear what the present study is adding (Ghauri and Gronhaug 2005). Accomplishing these objectives is arguably more important (and also more challenging) in the case of an interdisciplinary study such as this one, where a review of two major academic disciplines was required: 1) International Business (more specifically, *internationalisation*) and 2) Regional Studies/Economic Geography (more specifically, *industrial clusters*).

In order to outline the importance of the research problem under investigation, and to pinpoint the position of the study within the literature, this chapter begins with an overview of the concept of internationalisation, emphasising the importance of knowledge and organisational learning in the process. I use the concept of knowledge, and the potential ways in which firms can acquire knowledge that can support their international growth, as a 'bridge' to connect the internationalisation literature with that of industrial clusters, which constitutes the next section of the chapter. After introducing the concept of industrial clusters, I examine the various ways in which operating in clusters can potentially affect firm internationalisation, both positively and negatively. The final section discusses policy-driven clusters more specifically, discussing why they may be developed by regional authorities, and some possible ways in which they may impact the internationalisation process.

2.2 Internationalisation

Broadly speaking, internationalisation can be defined as ‘the process through which a firm moves from operating solely in its domestic marketplace to international markets’ (Javalgi et al. 2003, p. 185). As noted in the previous chapter, this study adopts this somewhat holistic definition, instead of focusing on specific forms of internationalisation, such as exports, because the objective here is to focus on the impact of policy-driven clusters on ‘internationalisation’ more broadly. Therefore, we want to know what difference operating in a policy-driven cluster can make to firm internationalisation, irrespective of the type or mode of internationalisation the firm may have undertaken, or at what ‘stage’ of internationalisation they may be. At present, it is not clear how operating in a policy-driven cluster affects firms’ international expansion, and thus a broader definition of internationalisation will allow us to explore a larger range of potential processes involved, which a more narrow concept may prevent. While this approach may place greater emphasis on breadth at the expense of depth (e.g. compared to a study that focuses only on, say, policy-driven cluster impacts on exports), it is felt that, given the dearth of existing research in this area, this broad approach is preferable¹.

It is argued that internationalisation is no longer an option for firms, but rather a necessary ingredient for success, and sometimes even survival, whereby entrepreneurs must decide not “whether or not” to internationalise, but rather “when” and “how” the process should be conducted (Brown and Bell 2001; Levesque and Shepherd 2004; Majocchi et al. 2005). Whereas, traditionally, firms were able to avoid the uncertainties and risks of competing in foreign markets, the liberalisation of trade, the globalisation of the business environment, the increased homogeneity of markets, and rapid developments in information and communications technologies have allowed international competitors to penetrate previously protected domestic markets (Aulakh et al. 2000; Etemad et al. 2001; Hedlund and Kverneland 1985; Karagozoglu and Lindell 1998). Consequently, internationalisation today has become less about simply entering foreign markets, and more about responding to

¹ Future studies may then, of course, be undertaken to test whether the theoretical insights emerging from this study are applicable to particular forms and stages of internationalisation.

international business influences, opportunities, and threats (Jones 2001), and the significance of these developments is particularly relevant for smaller firms as they often lack product diversity, economies of scale, and financial and human resources, compared to larger firms (Bell et al. 2004; Brown and Bell 2001; Fernhaber et al. 2008)².

The process of firm internationalisation has been closely studied by scholars for several decades now, with particular emphasis on why and how firms expand across national borders (Weisfelder 2001). As firms penetrate international markets in greater numbers and at greater speed than ever before (Axinn and Matthyssens 2002), the issue of internationalisation remains as much a priority for researchers today as in previous decades. This continued attention from scholars is, in part, down to the fact that, despite more firms competing in international markets than before, there remain obstacles that restrict the international growth of firms (Fillis 2002; Leonidou 2000; Shaw and Darroch 2004), of which one of the most important is a lack of knowledge of conducting business activities in foreign markets.

2.2.1 Internationalisation and knowledge

Knowledge, including technological knowledge, knowledge of foreign cultures, and knowledge of commercial laws in foreign markets, is an essential ingredient for successful international expansion (Barkema et al. 1996; Casillas et al. 2009; Eriksson et al. 1997; Hadley and Wilson 2003; Tuppara et al. 2008; Zahra and George 2002). However, it has long been observed that a lack of knowledge of conducting international business impedes the international expansion of firms (Carlson 1966; Johanson and Vahlne 1977; Johanson and Wiedersheim-Paul 1975). Notwithstanding rapid developments in information technology, and despite growing recognition that internationalisation is becoming more and more vital to firms, insufficient knowledge of how to do business in foreign markets continues to inhibit firms' international growth (Barkema and Drogendijk 2007; Contractor et al. 2003; Nadkarni and Perez 2007; Petersen et al. 2008). Petersen et al. (2003, p. 36) note that

² The issue of small and medium-sized firm internationalisation is discussed further in section 2.2.3.

‘despite suggestions that there are other determinants of firms’ internationalisation, knowledge remains the centrepiece in internationalisation theories’.

Particular emphasis is placed on the role of *experiential* knowledge over *objective* knowledge in the internationalisation process. Eriksson et al. (1997) identify three experiential knowledge constructs related to internationalisation: internationalisation knowledge, foreign business knowledge, and foreign institutional knowledge. Unlike objective knowledge, which can be easily codified, taught, and transmitted, experiential knowledge relates to more specific aspects of internationalisation, such as culture and customer characteristics, and can only be acquired gradually through repetitive action (i.e. through *experience*) (Hadley and Wilson 2003; Penrose 1995).

2.2.2 The Uppsala model of firm internationalisation

The importance of experiential knowledge to the internationalisation process is perhaps best illustrated by reference to the model of the internationalisation process made famous in the 1970s by scholars at Uppsala University in Sweden, and commonly referred to as the ‘Uppsala internationalisation model’ (Johanson and Vahlne 1977; Johanson and Wiedersheim-Paul 1975). The Uppsala model is arguably the most widely recognised and influential theory of internationalisation and continues to be most closely associated with the process of international expansion of the individual firm (Andersen 1993; Bjorkman and Forsgren 2000; Chetty and Campbell-Hunt 2003; Cheung and Leung 2007; Malhotra and Hinings 2010; McDonald et al. 2003a).

The central thesis of the Uppsala model is that firms can only expand their international business activities in incremental stages, beginning with activities which require only a low level of resource commitment, such as exporting via independent representatives. Over time, as the firm becomes more familiar with the conditions in the foreign market, additional resources are committed as the level of uncertainty gradually subsides, and eventually, the firm may potentially set up overseas production facilities. However, this market experience is assumed to be largely

country-specific and the experience gained in one place is not automatically replicable elsewhere (Johanson and Vahlne 2006; Johanson and Vahlne 1990).

Over the decades, the Uppsala model has been subjected to empirical testing, with much of this work (but not all) offering support to the central tenets of the model, namely that internationalisation takes place in incremental stages as the firm gradually acquires experiential knowledge of international business activities (e.g. Cavusgil 1984; Chang 1995; Chang and Rosenzweig 2001; Contractor et al. 2003; Erramilli 1991; Luo and Peng 1999; Terpstra and Yu 1988). Eriksson et al. (1997), for example, found that firms have to seek experiential knowledge on individual clients and markets, as well as local laws, governments and cultures. However, collecting this information is time-consuming and costly, requiring sustained presence in foreign markets, decoding the knowledge, and adapting the resource structure, processes and routines of the firm.

Thus, the dominant view in the internationalisation literature stipulates that firm internationalisation is a gradual process, owing to its reliance upon knowledge which can only be acquired through personal (and country-specific) experience in foreign markets. Understanding the dominant themes in the internationalisation literature is important in this study, as internationalisation is a central concept here. The key point of the Uppsala model, in relation to the present study, is that internationalisation, whilst increasingly vital for firm success, is far from being a smooth and quick process for firms.

2.2.3 The internationalisation of small- and medium-sized enterprises (SMEs)

The firms used in the present study are all classified as SMEs. One of the main reasons behind the exclusive selection of SMEs was their perceived representativeness of the wider population of firms in the Multimedia Super Corridor cluster, with around two thirds of firms in the cluster being SMEs (see section 3.11 for a more detailed discussion of the key issues surrounding firm selection). Given the focus on SMEs, it is important to discuss some of the key issues surrounding the internationalisation of these particular types of firms.

Traditionally, the study of firm internationalisation has tended to focus more on larger firms, with smaller firms receiving comparably less attention from scholars (George et al. 2005; Jansson and Sandberg 2008; O'Cass and Weerawardena 2009; Westhead et al. 2001; Williams 2003). Although precise definitions of firm size classifications tend to vary, there is now growing acceptance that smaller firms are becoming increasingly active on the international stage (Bell 1995; Fillis 2001; Jones et al. 2009; Nummela et al. 2006).

In many ways, though, the impediments to international growth discussed in the previous subsections often pose more of a problem for SMEs than for larger firms due to SMEs' relative lack of alternative resources (Acs et al. 1997; Christensen and Lindmark 1993; Fernhaber et al. 2008; Jones 1999; Reuber and Fischer 1997). It has been noted, for instance, that a lack of appropriate knowledge is a challenge common to both small and large firms (Arteaga-Ortiz and Fernandez-Ortiz 2010; Haahti et al. 2005; Liesch and Knight 1999; Nummela et al. 2006), but, given their lack of alternative resources (compared to larger firms), the acquisition of knowledge is arguably more important for SMEs than for their larger counterparts (Holmlund and Kock 1998; Meyer and Skak 2002), with Liesch and Knight (1999, p. 385) concluding that 'information and knowledge are perhaps the most critical [resources] to the expansion of SMEs into foreign markets'.

Although much has been written on small firms who are 'born global' (e.g. Knight and Cavusgil 2004; Shrader et al. 2000), the majority of SMEs still seem to follow a similar evolutionary path in their internationalisation as many larger firms, with new knowledge acquired only gradually as the firm incrementally expands its operations overseas, usually starting with export activities (Andersson 2004; Holmlund and Kock 1998; Holmlund et al. 2007; Jatusripitak 1986; Korhonen et al. 1996; Lu and Beamish 2006; Suarez-Ortega 2003). For instance, SMEs need time to understand new cultures, languages, distribution systems, and so on, meaning that certain routines and skills will need to be developed in order to overcome the liability of newness and smallness (Andersson et al. 2004). Lu and Beamish (2006) have labelled these firms "Late Globalizers" in order to distinguish them from "Born Globals".

Thus, despite some notable criticism of the Uppsala model of internationalisation (e.g. Andersen 1993), the model's assumption that limited experiential knowledge of internationalisation restricts international growth is pertinent in many ways not only to large firms, but also to smaller ones (Barkema et al. 1996; Berry and Brock 2004; Gankema et al. 2000; Jansson and Sandberg 2008; Saarenketo et al. 2008). The purpose of this present study is to shed some light on whether and how operating in a policy-driven industrial cluster can enhance the international growth of firms, with the potential acquisition of internationalisation knowledge a central theme throughout.

2.2.4 Alternative sources of internationalisation knowledge

In the contemporary business environment, where internationalisation is becoming increasingly imperative for firm success, this time-delayed model of internationalisation is somewhat undesirable for firms seeking to compete in foreign markets in order to survive (Etemad et al. 2001). Thus, it is increasingly important that firms acquire knowledge which is relevant to operating internationally through alternative means, rather than relying exclusively on the lengthy process of accumulating knowledge through personal experience in individual markets.

Organisational learning processes are at the core of internationalisation theories (Ruigrok and Wagner 2003), with the Uppsala Model focusing almost exclusively on experiential knowledge, for the most part neglecting other potential ways in which firms can obtain knowledge about internationalisation. However, several scholars have pointed out that, in addition to internally-derived personal experience, firms can acquire knowledge through various sources external to the firm, sometimes even unintentionally or unconsciously (Maskell and Malmberg 2007)³. For example, studies indicate that firms, and particularly SMEs, can acquire knowledge relevant to

³ The literature on 'born globals', for instance, supports the idea that firms can acquire knowledge that can significantly enhance internationalisation without having to actually go through the relatively time-consuming process stipulated in the Uppsala model Weerawardena, Jay, Gillian Sullivan Mort, Peter W. Liesch, and Gary Knight (2007), "Conceptualizing accelerated internationalization in the born global firm: A dynamic capabilities perspective," *Journal of World Business*, 42 (3), 294-306..

internationalisation through their business and/or social relationships, networks, and interactions (Bonaccorsi 1992; Ellis 2000; Ellis and Pecotich 2001; Eriksson et al. 1997; Freeman et al. 2010; Haahti et al. 2005; Hadley and Wilson 2003; Harris and Wheeler 2005; Wong and Ellis 2002), recruiting new workers with experiential knowledge of doing international business (Bell et al. 2003; Loane et al. 2007; Samiee and Walters 1999), imitating other firms' international growth (Bonaccorsi 1992; Cheng and Yu 2008; Forsgren and Hagstrom 2007; Guillen 2002), acquiring, or being acquired by, other firms (Bell 1995; Bell et al. 2004; Bell et al. 2003), and through alliances and collaborations with other organisations (Keeble et al. 1998; Lu and Beamish 2001; Makino and Delios 1996; Yenyurt et al. 2009). Taking this into consideration, a broader concept of organisational learning in the internationalisation process would be desirable (Forsgren 2002).

Crucially, though, these observations that experiential knowledge related to internationalisation can be acquired through several alternative means offer analytical support to the relevance of industrial clusters for internationalisation, as firms in clusters have been shown to acquire knowledge (including complex and uncodifiable knowledge that may help internationalisation) in various ways. In addition, the knowledge available to firms in clusters tends to be inaccessible to firms outside the cluster, thus underlining the apparent significance of cluster location for firms to acquire localised tacit knowledge (or 'localised learning' (Malmberg and Maskell 2006), to be more specific), as will be discussed in greater detail in the following sections. We now introduce the concept of industrial clusters, and examine how firms located in clusters often benefit from access to knowledge which can potentially enhance their international expansion.

2.3 Industrial clusters

Industrial clusters are common features in economies throughout the world (Porter 1998a), though they are not a new phenomenon, having been around for centuries (Steiner 1998; Swann and Prevezer 1998). Scholarly work on clusters also has a rich history, stretching back at least as far as Marshall (1920), and popularised in recent decades by Porter (1990; 2000a). However, in spite of this extensive body of

literature, categorically defining what a cluster actually is remains a surprisingly complicated procedure (Lundequist and Power 2002), as the following subsection demonstrates.

2.3.1 What is an industrial cluster?

The term *cluster* remains a somewhat ‘vague’, ‘ambiguous’, and ‘chaotic’ concept (Gordon and McCann 2000; Martin and Sunley 2003; Steiner 1998). Multiple definitions exist within the literature, and it appears that scholars are not yet in complete agreement about what actually constitutes an industrial cluster. Some definitions are quite broad. For example, Swann and Prevezer (1998, p. 1) describe clusters, quite simply, as ‘a large group of firms in related industries at a particular location’, while De Propis and Driffield (2006, p. 280) define clusters as ‘geographical agglomerations of small to medium-sized firms specialised in one or a few related sectors.’ Note the difficulty involved in, for example, determining when (a) a group of firms is ‘large’ enough to be classified as a cluster, or (b) a ‘few’ related sectors become too many for a location to justify its ‘cluster’ label.

Other definitions are more specific. For instance, Porter (1998b, p. 199) uses the term ‘cluster’ to refer to ‘a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities’, and Waits (2000, p. 37) denotes clusters as ‘geographical concentrations of competitive firms in related industries that do business with each other and that share needs for common talent, technology, and infrastructure.’ Again, there is some fuzziness surrounding, for example, the *degree* of ‘geographical proximity’ and ‘geographical concentration’. Moreover, although these authors and others suggest that cooperation between firms is an essential aspect of clusters, this is often regarded to be a matter for empirical research and is not always subsumed in the definition (Humphrey and Schmitz 1996).

The lack of clear geographical and industrial boundaries is the most problematic aspect of defining clusters (Martin and Sunley 2003). For example, Raines (2002, p. 1) argues that actors within clusters tend to be located in ‘*relatively* close

geographical proximity' (emphasis added). Determining what exactly constitutes geographical proximity and concentration is unclear. This is made even more confusing when one considers how terms such as 'distance' and 'proximity' might be perceived in different areas of the world. For example, what might be considered a 'short distance' in the United States (say, an hour's drive), might be regarded as a long journey in Singapore. As a result, clusters can range in size from those which cover just one area of a city to those straddling international borders (Malmberg and Maskell 2002; Padmore and Gibson 1998). Moreover, there is a danger that broadly defining clusters as being 'manufacturing', 'services', or 'high-tech' is too vague and may not fully capture the connections among included industries, which are important aspects of clusters. At the same time, though, restricting cluster classifications to just one particular industry devalues the role of interconnections with other industries and institutions, which are also vital features of clusters (Porter 2000a; Porter 1998b). Thus, how much an industry needs to be 'concentrated' before it can be considered a cluster, as well as the geographical space or range in which firms have to be situated, is rather opaque, and these boundaries are often a matter of degree, which makes choosing a unit of analysis for empirical research a more confusing task (Felzensztein and Gimmon 2008; Malmberg and Maskell 2002; Martin and Sunley 2003; Porter 1998b).

Notwithstanding the ambiguity surrounding geographical and industrial boundaries, coming to an agreement on how a cluster is best defined is made even more difficult by the existence and use of multiple terms, which are more or less used to describe the same thing. Marshall (1920, p. 267) referred to 'localised industries'. Other writers have used the term 'clusters' and 'regions' interchangeably (e.g. Baptista and Swann 1998; Enright 1996; Enright 2001), some use the term 'cluster' in a generic sense, encompassing related concepts such as 'geographical agglomerations' and 'industrial districts' (see, for example, Maskell and Lorenzen 2004, p. 1002), while other studies associate clusters with 'cities' (e.g. Martin and Sunley 2003; Swann 1998), and others treat 'clusters' and 'industrial districts' synonymously (e.g. Cook and Pandit 2005; Prashantham 2008a). Some writers (e.g. Simmie et al. 2002) alternate between 'clusters', 'cities' and 'regions' in a single study, while other labels include 'hot spots' (Pouder and St. John 1996), 'local industrial systems' (Saxenian 1994), 'industrial complexes' (Czamanski and Czamanski 1977), 'technopoles'

(Castells and Hall 1994), ‘business clusters’ (Rosenfeld 1997), ‘innovative clusters’ (Feldman et al. 2005), ‘regional clusters’ (Felzensztein and Gimmon 2008; 2009), ‘geographic clusters’ (Gilbert et al. 2008) and ‘city industries’ (Glaeser et al. 1992; Rauch 1993). However, the word “cluster” is usually adopted by scholars as a collective term to describe firm agglomeration more generally (Fioretti 2006), and since this study does not intend to focus on distinguishing between clusters and, say, industrial districts or science parks, the more inclusive concept of ‘clusters’ is used throughout.

Given this ambiguity, it is no surprise that Martin and Sunley (2003, p. 11) conclude that ‘The existence of clusters, appears then, in part at least, to be in the eye of the beholder – or should we say, creator’. However, despite the array of terms, and the lack of universally acceptable guidelines for definition, there is some common ground in how clusters are conceptualised. In particular, there appears to be a prevailing emphasis on (a) ‘relative’ geographical boundedness and (b) ‘relative’ industrial specialisation. In addition to these core features, some authors claim that clustered firms depend on common talent, technology, and infrastructure, while it is also argued that clusters are not the exclusive domain of firms, but are also usually populated by associated institutions (e.g. a university). In summary, then, a definition of a cluster should include at least two central qualities:

1. Geographical proximity between actors
2. Some degree of industrial specialisation

However, a more complete definition may include two additional characteristics:

3. Shared reliance on common talent, technology, and infrastructure
4. The presence of associated institutions alongside firms

Thus, in an attempt to incorporate these aspects into one definition, the present study defines an industrial cluster as ‘*a geographical concentration of firms and associated institutions in a similar or related industry, which are reliant upon common talent, technology, and infrastructure*’. However, it should be noted that the stricter one defines a cluster, the more difficult it is to identify real-world cases that conform to

the definition, such that we rarely find ‘true’ or ‘real’ clusters anywhere in the world (Waxell and Malmberg 2007), and thus our definition here does not specify the *degree* of geographical concentration and industry similarity.

2.3.2 Potential advantages of clusters for internationalisation

With this definition of clusters in mind, attention can now be turned to understanding how operating in a cluster can possibly affect firm internationalisation. Given that relatively little is known about the impact of clusters on internationalisation (Prashantham 2008a), it is difficult to make bold assumptions and generalisations, and therefore it is important to keep in mind that these are *potential* impacts which have not been clearly specified and have not yet, for the most part, received rigorous empirical testing from scholars. By and large, these potential impacts are derived from the literature on how clusters affect *firm performance* generally, although it is suggested here that there is potentially some impact on *internationalisation* more specifically as well.

2.3.2.1 Access to localised, tacit knowledge

One of the most important factors behind industrial clustering is access to spatially-confined knowledge spillovers which can be difficult to access from a distance (Acs et al. 2002; Krugman 1991; Malmberg et al. 1996; Sorenson 2003). The success of firms in clusters is often attributed to these knowledge spillovers, which are defined by Gilbert et al. (2008, p. 405) as ‘the direct or indirect transfer of knowledge from one party to another’. In today’s increasingly knowledge-based economy, where technologies and markets are constantly evolving and where the economic environment is becoming more and more unpredictable, knowledge is central to the success of both firms and regions (Amin and Wilkinson 1999; Boschma 2005; O’Hagan and Green 2002). Knowledge created within clusters and available to firms therein represents a quasi-public good (Engelstoft et al. 2006; Porter 1998b). The exchange of knowledge within clusters is critical to defining a cluster’s performance and success (Tallman et al. 2004).

It has been suggested that certain forms of knowledge are difficult to transfer to other parties through mere verbal or written communication, usually requiring frequent face-to-face communication to be exchanged. As a result, this type of knowledge tends to be locally or socially embedded (e.g. within a cluster), accessible primarily to those members of the ‘community’ who regularly meet with each other in person, and thus making it seem somewhat ‘sticky’ (Asheim and Isaksen 2003; Maskell and Malmberg 1999b; Tallman et al. 2004; Von Hippel 1994). This type of knowledge, which is usually ‘tacit’ in nature, is deeply rooted in an individual’s action and know-how gained through experience (Nonaka and Takeuchi 1995; Von Krogh et al. 2000). Forsgren (2002) has argued that market-specific knowledge is often perceived as being tacit in nature, making it difficult to transmit, although he stresses that the acquisition of this type of knowledge need not necessarily depend on firms’ personal experience in foreign markets⁴. This is particularly significant for cluster impacts on internationalisation, as market-specific (tacit) knowledge is potentially more accessible to firms operating in clusters, and therefore, their efforts to initiate or extend their international expansion may be aided by their membership of the cluster. Unlike ‘explicit’ forms of knowledge, which can be easily acquired through, e.g. exploring the Internet or swapping documents, the exchange of tacit forms of knowledge, such as market-specific knowledge, usually requires some form of shared experience and/or the build up of shared understanding and trust between each party – usually through regular, close interaction (Arikan 2009; Lam 2000; Nonaka 1994).

Therefore, whereas some types of knowledge are stored in documents or repositories, certain types of knowledge possessed by firms are far ‘deeper’, e.g. organisational routines and norms, and knowledge of foreign markets (Davenport and Prusak 2000; Forsgren 2002) and more geographically ‘sticky’, sometimes only really existing “in the air” of clusters (Marshall 1920). The following subsections explore the various mechanisms through which cluster firms can acquire additional knowledge, particularly this type of locally rooted knowledge, which can potentially help to support their international growth.

⁴ The following subsections go into more detail about how firms can acquire market-specific knowledge without having to undergo personal experience in these markets.

2.3.2.1.1 Regular face-to-face interaction between cluster members

In industrial clusters, it has been suggested that regular, face-to-face interaction between people and firms is one of the main mechanisms through which knowledge – including tacit, experiential knowledge – is diffused through the region (Breschi et al. 2007; Dahl and Pedersen 2004; Felzensztein and Gimmon 2009; Malmberg and Maskell 1997; Nadvi and Halder 2005; Oerlemans et al. 2001). Geographic proximity in clusters generates opportunities for personal meetings, which may be intentional or spontaneous (Bathelt et al. 2004), although Camagni (1991) has emphasised the importance of *informality* and *spontaneity* within clusters, arguing that these ‘cafeteria effects’ allow firms to benefit from a ‘collective learning process’, which is made up of personal face-to-face encounters and casual information flows. The value of social interaction within clusters is perhaps best exemplified by the case of Silicon Valley, arguably the most celebrated example of industrial clusters (Malmberg and Maskell 2002). Saxenian (1994; 1990) closely analysed various underlying factors behind Silicon Valley’s success story, and she concluded that the existence of rich social networks, involving regular face-to-face communication between co-workers, competitors, suppliers, customers, etc., has played a major role. She writes that:

‘Informal conversations were pervasive and served as an important source of up-to-date information about competitors, customers, markets, and technologies. Entrepreneurs came to see social relationships and even gossips as a crucial aspect of their business. In an industry characterised by rapid technological change and intense competition, such informal communication was often of more value than more conventional but less timely forums such as industry journals’ (Saxenian 1994, p. 33).

A crucial aspect of these social networks is that they are, for the most part, exclusive to firms in close proximity (i.e. within the cluster). Social networks do not occur at random, but rather are usually the result of frequent interaction between people with similar interests and affiliations and who live and/or work close to each other (Sorenson 2003). Foss (1996) suggested that certain capabilities, such as personal ties and networking, are geographically concentrated and immobile, and cannot simply be

purchased; at best, they can only be (slowly) *built*. People tend to have stronger ties to contacts who reside within the same geographic region (Stuart and Sorenson 2003). From this perspective, social networks constitute a durable competitive advantage to a region. In fact, some writers even claim that a cluster would not be sustainable without personal networks of individuals in different firms (Asheim and Coenen 2005).

The intense interaction and social bonds found in many clusters has also been shown to boost innovative performance, particularly in those industries where tacit knowledge plays an important role (Audretsch 1998; Baptista and Swann 1998; De Propis and Driffield 2006; Doring and Schnellenbach 2006; Enright 1998b; Oerlemans and Meeus 2005; Owen-Smith and Powell 2004). Studies have shown that innovation, broadly defined as ‘new and better ways of producing new and better products or services’ (Waxell and Malmberg 2007, p. 138), can be enhanced in various industries, including financial services (Pandit et al. 2001), broadcasting (Cook and Pandit 2005), telecommunications (Ibrahim et al. 2009), and ceramic tiles (Russo 1989), as a result of clustering. However, innovation, which is vital in determining the long-term prosperity of firms and regions, is arguably a greater priority in young, high-tech industries, and it is here that the importance of clustering is perhaps most profound, as firms’ networks and interactions, which are crucial in keeping up to date on the rapidly evolving technologies, are enhanced by clustering (Rosenfeld 1997; Waxell and Malmberg 2007).

It is not uncommon for technology spillovers to occur because technological knowledge and information tend to leak out from the firm due to their ethereal nature, but the beneficial effects of these spillovers do not extend very far in geographic terms (Fosfuri and Ronde 2004). Technology spillovers and the diffusion of innovation are highly social processes which involve interpersonal communication relationships, and are therefore more easily absorbed by firms located closer to the originator of knowledge (Baptista 1998; Cowan 2007; Rogers 2003). Information flows more easily when agents are located in close proximity to each other, and therefore innovation is potentially improved in clusters (Doring and Schnellenbach 2006). Innovations are more likely to result from interaction *between* organisations that agglomerate in certain places than *within* individual organisations (Breschi and

Malerba 2005; Feldman and Florida 1994; Powell 1990). It is important also to bear in mind that knowledge-sharing as a result of regular interaction is not exclusively a firm-to-firm phenomenon. For example, firms and universities/research institutes/public authorities can also benefit from physical proximity by engaging in collaborative research projects with one another, which requires sufficient geographical closeness to enable regular face-to-face interactions (Dicken and Malmberg 2001; Wallsten 2001) (see section 2.3.2.1.3).

Initially, only relatively low-value knowledge is likely to be shared in clusters as there is still some degree of uncertainty and lack of trust between the actors (Dahl and Pedersen 2004), but over time, firms often find mutual benefit in interaction, and as these relationships develop and become more dense, and firms begin to trust each other more, a local culture emerges in the region and firms in proximity may cooperate on various activities, undertake joint action, and become somewhat interdependent (Felzensztein and Gimmon 2008; 2009; Garnsey 1998; Isaksen 2009; Lund-Thomsen and Nadvi 2010). For example, in their sample of engineers in a cluster of wireless communication firms in Northern Denmark, Dahl and Pedersen (2004) demonstrate that even knowledge considered quite valuable is shared amongst informal contacts in clusters, while Felzensztein and Gimmon (2009) showed that repeated face-to-face interaction within clusters can lead to discussions of strategic topics among managers, interfirm cooperation, and collaborative marketing activities.

First-hand information about foreign market opportunities, exporting, international demand trends, and the major problems involved in internationalisation, is more easily available through connections within the cluster, and therefore the perception of internationalisation risk, particularly amongst smaller firms, is likely to be significantly reduced in clusters (Bonaccorsi 1992; Fernhaber et al. 2008; Rabellotti 1999). Moreover, entrepreneurs are often relatively open to sharing information about internationalisation, even with their local competitors, because of the expectation that this act will be reciprocated when needed in the future, particularly in clusters, where frequent, social interaction leads to personal relations between actors (Bonaccorsi 1992; Sopas 2001). Thus, the social values amongst cluster participants generates trust and encourages reciprocity (Dahl and Pedersen 2004; Ffowcs-Williams 1997), which may have positive implications for internationalising firms as the sharing of

(tacit) knowledge, e.g. market-specific knowledge, may be relatively widespread in clusters. In addition, foreign firms are often attracted to locate in industrial clusters due to the high level of localised demand and specialised suppliers (Birkinshaw and Hood 2000; Head and Ries 1996; Rugman and Verbeke 2003), and local cluster firms may gain from this constant exposure in the form of knowledge spillovers through observing and interacting with these international organisations (Aitken et al. 1997; Blostrom and Kokko 1998; McDonald et al. 2002; Sajarattanochoe and Poon 2009). Head et al. (1995) argue that, while technical information often flows between entrepreneurs, designers, and engineers in close proximity, the presence of *foreign* firms may help to enhance the international growth of local firms because a large part of the spillovers may include experience-based knowledge on how to operate in a particular market, including, for example, experiential knowledge of meeting local regulations, and more ‘mundane’ but practically useful advice on transportation options, foreign representatives, and so on.

Further, developments in information and communications technologies, which sometimes appear to minimise the need for personal meetings, seem to have had relatively insignificant effects on face-to-face contact. Some writers consider telecommunications improvements as complements to, rather than substitutes for, face-to-face interaction (Gaspar and Glaeser 1998). In spite of advances in ICT, it has been argued that geographical proximity remains very important in the efficient exchange of tacit knowledge for four reasons (Dicken and Malmberg 2001; Rallet and Torre 1998):

1. Tacit knowledge is often costly to codify, and therefore it is usually more efficient to rely on personal interaction for tacit knowledge exchanges.
2. Recent developments in science and technology constitute emergent knowledge, which cannot be instantly codified.
3. Tacit and codified knowledge are complementary and therefore, the transmission of tacit knowledge requires knowledge and use of codified knowledge, and vice-versa.

4. Using ICT tools requires the sharing of common codes and practices of communication, which themselves are tacit.

Thus, regular face-to-face interaction, which is enhanced by geographical proximity, is a significant mechanism for the transmission of tacit knowledge and innovation. With geographical concentration, firms and associated institutions are ideally placed to exchange ideas on internationalisation and to cooperate in industrial research and marketing activities. Moreover, as the information exchange is usually informal and dependent upon trust gained and sustained through social relations, the knowledge tends to be 'sticky' to the region and is somewhat geographically immobile (Asheim and Isaksen 2002; 2003; Baptista 1996; Moodysson and Jonsson 2007). Therefore, firms in clusters may be able to absorb the experiential knowledge of internationalisation of others through engaging in regular, informal, face-to-face interaction with other cluster actors.

2.3.2.1.2 Pool of skilled labour and regional interfirm labour mobility

Industrial clusters, by definition, comprise many firms in a certain industry, and as a result, they attract large numbers of workers who specialise in that particular industry (Krugman 1991; Lorenzen and Frederiksen 2008; Marshall 1920; Waters and Smith 2008). Moreover, as will be discussed later, universities are common features in many clusters (e.g. Stanford University in Silicon Valley), and very often, graduates from these universities seek employment within the cluster (Bramwell et al. 2008; Brown and Bell 2001). The source of the skilled labour within the cluster does not necessarily have to be local, as clusters often attract skilled workers from other countries (Bresnahan et al. 2001). Thus, operating in industrial clusters enhances the potential for firms to expand their knowledge base, including, possibly, acquiring experiential knowledge of internationalisation, by virtue of the potential for tapping into a pool of skilled workers in the region.

The presence of a skilled labour market is not necessarily a static feature of clusters, as it is common for these workers to move between different firms within the cluster. Clusters often stimulate high levels of worker mobility because job search costs are

lower for workers due to the presence of many related firms, while firms find it easier to hire workers with suitable skills because of the large presence of such labour (Patibandla and Petersen 2002). The inter-firm mobility of skilled labour is a well known feature of many successful clusters, such as Silicon Valley (Fallick et al. 2006; Morosini 2004). Angel (1989), for instance, found that 80 percent of semiconductor production engineers who left their jobs found employment within another firm in the region. The speed of rotation of upper-tier workers within the local job system is a consequence of the large local labour pool, where skills tend to be sector-specific, rather than firm-specific (Storper and Scott 1990). Clustering reduces the difficulties associated with the job search process, as well as the risks involved in industry-specific human capital investment, thus encouraging greater localised job hopping as both employees and employers seek better matches (Freedman 2008). Breschi and Lissoni (2009) even suggest that the reluctance of skilled workers to relocate in space is the fundamental reason why geography matters as their movement between organisations tends to be spatially bounded, which means that those firms located in close proximity are most likely to benefit from their knowledge.

Interfirm labour mobility is, along with the social relations between cluster members, largely responsible for the dissemination of knowledge within regional systems (Almeida and Kogut 1999; Breschi and Lissoni 2001; Cook and Pandit 2005; Dahl 2002; Pouder and St. John 1996; Saxenian 1994). Since knowledge is mainly carried by people, the movement of skilled workers between firms is one of the most efficient mechanisms for transferring knowledge that is personal, context-specific, difficult to codify, and tacit (Almeida and Kogut 1999; Boschma et al. 2009; Lundmark and Power 2008; Xu and McNaughton 2006). The intensity of labour mobility in many successful clusters allows firms to hire workers with industry-specific, and possibly international business experience and knowledge, thus also enabling firms to bypass lengthy searching and training processes to respond swiftly to changing labour demands (Angel 2000). Due to the presence of foreign firms in many clusters (Majocchi and Presutti 2009), the diffusion of international business knowledge may be increased through interfirm labour mobility of workers previously employed in foreign firms within the cluster (Sajarattanochoe and Poon 2009).

Some writers (e.g. Cumbers and MacKinnon 2004; Power and Lundmark 2004) argue that interfirm labour mobility is an even stronger force for knowledge dissemination through a region than the development of social relations between cluster actors. They argue that informal interaction and other aspects which reside ‘in the air’ of clusters are rather vague and are not as efficient in stimulating knowledge flows as labour mobility. Another view exists which acknowledges the importance of social networks for the diffusion of certain forms of knowledge in clusters, but stipulates that localised interfirm labour mobility is the main mechanism by which such networks emerge, as it generates a large network linking managers and firms (Casper 2007) – although Saxenian (1994) argues that it is quite the reverse, with interfirm labour mobility being the result of social networks within clusters.

Thus, the diffusion of knowledge and innovation through a cluster is dependent upon people, rather than firms, as innovation, which usually originates inside firms, becomes a collective process within the cluster, where ‘common knowledge...accumulates in *people* rather than *firms*’ (Rabellotti 1995, p. 35; emphasis added). In successful clusters such as Silicon Valley, where skilled workers are in large supply and move regularly between organisations, firms are often able to expand their tacit knowledge base, which may include knowledge pertinent to internationalisation. Executives with experience of international competitive arenas, or who have been trained by MNEs, are likely to understand international market dynamics, and thus, by hiring additional workers such as these, firms may have quick access to experiential knowledge of internationalisation (Bloodgood et al. 1996; Blostrom and Kokko 1998).

2.3.2.1.3 Universities

Thriving universities are a feature of many industrial clusters (Dahl and Pedersen 2004; Varga 2000), where they often conduct industry-specific research, provide specialised training, and contribute to regional economic growth and the production and distribution of new technological knowledge (Acosta et al. 2009; Antonelli and Quere 2002; Enright 1998b). Firms can potentially benefit from locating near universities, as university research regularly generates knowledge which may be

critical for the innovation process (Feldman and Florida 1994; Lofsten and Lindelof 2002; Ponds et al. 2010; Porter and Stern 2001; Wallsten 2001). Local universities can act as a magnet for attracting scientists, researchers, and firms to a region and there is evidence that knowledge tends to spill over from universities to nearby firms (Goncalves and Almeida 2009; Wallsten 2004). For example, Jaffe (1989) found that commercial spillovers from university research, based on corporate patent activity, is geographically mediated, while Styles and Genua (2008) highlight Genentech, Google, and ResMed as well-known examples of internationalising firms that began on university campuses.

Universities can act as institutions where engineers, scientists, and other researchers employed in different, sometimes competing enterprises often share ideas, offer one another advice, and engage in joint creativity and improvement of their innovations (Piore and Sabel 1984). Firms can also benefit from close proximity to universities by collaborating on research projects, which usually requires researchers to meet face-to-face on a regular basis (Wallsten 2001). Knowledge spillovers from firms or universities creating knowledge to a third party firm is critical to innovative activity, and these spillovers tend to be spatially bound, thus benefiting firms which are located geographically close to the source of knowledge creation (Audretsch 1998; Cowan 2007; Hospers and Beugelsdijk 2002).

In some cases, clusters emerge and develop around a university. As industrial economies become more knowledge-based, universities can be key to cluster formation and development (Wolfe 2005). The high-tech clusters in Boston (Route 128), California (Silicon Valley), Waterloo (Canada's Technology Triangle), and Uppsala (the Uppsala biotech cluster) for instance, grew out of the local university communities, as researchers at Harvard, MIT, Stanford, the University of Waterloo, and Uppsala University set up firms based on technological developments achieved in the university laboratories (Bramwell et al. 2008; Jaffe 1989; Piore and Sabel 1984; Waxell and Malmberg 2007).

Firms located near universities also have the advantage of access to skilled graduates. In their study of the Christchurch electronics cluster in New Zealand, Brown and Bell (2001) noted that a crucial external benefit of operating within the cluster was access

to engineering graduates from the University of Canterbury. Similarly, California's Hollywood and Silicon Valley clusters owe part of their success to the existence of local pools of specialised workers with related technological and associated skills which generate learning, entrepreneurship and innovation (Raco 1999). In some clusters, certain specialised degrees and training programmes are set up to complement the industrial focus of the cluster. For instance, Stanford University offers courses to match the needs of firms in Silicon Valley, while a number of colleges in the region developed technical training programmes and close ties to the industry, thus contributing to the development of a skilled labour force in accordance with the cluster's specific technical needs (Rosenfeld 1997; Yusuf 2008).

Imagawa (2005) recommends that governments which are keen to attract the IT industry to a particular region should ensure they have educational facilities, preferably universities or graduate schools with natural science, engineering, and medical departments. He also points out that various IT clusters in Asia, including the MSC, contain science and technology universities, such as the Multimedia University in the MSC, the Indian Institute of Science Bangalore, and the Qinghua University in Zhongguancun.

To sum up, universities often play an important role in clusters. First, firms in the cluster often benefit from access to skilled graduates. Sometimes, these universities even offer specialised courses consistent with the needs of the cluster, thus ensuring that the skills of these graduates are ideally suited to the cluster. Second, universities often attract skilled researchers, including scientists, engineers, etc. and the level of knowledge creation in the cluster is boosted as a result. Moreover, there often develops communities of researchers who not only create, but also share knowledge and advice with other organisations, including firms. Thus, firm innovativeness and competitiveness is likely to be enhanced by knowledge spillovers from specialised universities in clusters, which can potentially help to improve internationalisation. However, evidence suggests that these spillovers do not extend very far geographically, thus benefitting only those firms in close proximity.

2.3.2.1.4 Observation/imitation

Given that clustered firms are often well informed about one another, mimicry, which is another mechanism through which firms can acquire knowledge previously outside their boundary, is likely to take place (Giuliani 2006; Poudier and St. John 1996; Suire and Vicente 2009). Imitation occurs when firms discover and replicate other firms' organisational routines, strategies, technologies, product innovations, common practices, and/or procedures (Haunschild and Miner 1997; Osland and Yaprak 1995; Teece and Pisano 1994). Geographic proximity allows firms to directly observe their competitors, which may lead them to try to mimic others, thereby potentially enhancing innovation (Arikan 2009; Bell 2005; Kelley and Helper 1999; Waxell and Malmberg 2007; Zhang 2003). Moreover, co-location enhances the possibility for mimicry because firms share similar conditions, e.g. threats, costs of resources, and even labour (assuming interfirm labour mobility is a regular occurrence). In clusters, the high density of firms in a concentrated area means that there is greater visibility between one another, and thus, when one innovative firm (which may be a domestic firm or a multinational) decides to initiate internationalisation, other firms can observe this and are likely to follow this strategy very quickly (Aitken et al. 1997; Bonaccorsi 1992).

Although the act of imitation is not necessarily dependent upon any pre-existing social networks between cluster firms, it is still largely a cluster-specific phenomenon as non-cluster firms would be unlikely to have access to common knowledge within the cluster and would be unable to directly observe other firms for a prolonged period (Bell 2005). Moreover, cross-firm imitation is a complex operation involving tacit knowledge which is usually highly contextual, making it vulnerable to distance decay (Breschi et al. 2007; Gallaud and Torre 2004).

2.3.2.1.5 Detecting international demand trends

Co-locating, cooperating, and collaborating with other organisations can potentially provide firms with important information on international consumer demand (Felzensztein and Gimmon 2008; Porter 1998b). For example, Brown and Bell's (2001) study found that small firms located in a cluster were working with larger

firms located nearby, which helped them to identify international market trends and conditions. While this may occur through self-induced partnerships and collaborations, at other times, regional cluster authorities may step in to disseminate such information amongst cluster members (see section 2.4.2 of the present chapter).

In summary then, the preceding subsections have demonstrated that firms in clusters seem to benefit from access to knowledge. However, this knowledge is often geographically ‘sticky’, and is usually accessible only to those firms located in the cluster. Geographical proximity is a central element of certain knowledge-flow mechanisms, namely regular face-to-face interaction and the development of social ties, the interfirm mobility of skilled labour, the spillover of knowledge from universities, and interfirm imitation. Thus, firms which are located closer to these sources and flows of knowledge are more likely to acquire the knowledge.

One of the central features of industrial clusters is the flow of knowledge that occurs within its radius. These observations appear to provide a major link to the potential significance of operating within clusters to the internationalisation process. As has been shown earlier in the chapter, knowledge and organisational learning are not only critical features of industrial clusters, but they are also significant concepts in the literature on internationalisation.

2.3.2.2 Other advantages of cluster location for internationalisation

Given the importance of knowledge to the internationalisation process, access to geographically-confined knowledge and information is arguably the most significant feature of clusters with regard to firms’ international expansion. However, there are a number of additional ways in which operating in a cluster can potentially enhance internationalisation.

2.3.2.2.1 Infrastructure

Infrastructure consists of physical structures, e.g. roads, pipelines, communications, etc., and intangible, social, institutional arrangements, e.g. business associations, research laboratories, quality of life (housing, crime, etc.), training systems, tax regimes, etc. (Larsson and Malmberg 1999; Padmore and Gibson 1998). Like a local quasi-public good, infrastructure is freely distributed amongst participants of the cluster (McCann and Shefer 2004). The infrastructure of clusters tends to be of relatively high quality, and specialised to suit the needs of the particular industry which dominates the region, and cluster firms often benefit from access to this specialised infrastructure (Brown and Bell 2001; Maskell and Malmberg 2007; Morosini 2004; Porter 2000a; 2000b; 1994).

Many clusters include various institutions – e.g. universities, think tanks, associations, and vocational training providers – which offer specialised training, education, information, research and technical support, and can stimulate local cooperation, competence building and innovative production methods (Asheim and Isaksen 2002; Chen and Choi 2004; Porter 1998a). Supporting institutions and specialised infrastructure are critical components of clusters (Austrian 2000). Porter (1998a), for instance, points out that the telemarketing cluster which developed in Omaha in the US state of Nebraska was largely a consequence of the telecommunications capability and infrastructure of the area. Access to shared specialised infrastructure, such as laboratories and associations, can help to reduce fixed costs for existing companies and initial investments for new firms, thus supporting the cluster's growth process (Chiaroni and Chiesa 2006).

In sum, the infrastructure in industrial clusters, comprising both physical and intangible structures, is often of high quality and tailored to the needs of the industry. Whereas high quality physical structures, such as communications and pipelines, clearly enable firms to operate more efficiently, additional support services and associations can help to enhance interfirm cooperation and provide assistance and advice to firms, thus contributing to information and knowledge flows in the region, and it is likely that these aspects of clusters can have some positive impact on firm internationalisation.

2.3.2.2.2 Specialised intermediate inputs

The emergence of specialised local suppliers of specific intermediate inputs and services is common in clusters, either because firms already in the cluster perceive profitable opportunities to switch from manufacturing to trade or services, or because suppliers from outside the cluster are attracted to the concentration of industry-specific firms and institutions (Krugman 1991; Marshall 1920; Maskell 2005; McCormick 1999; Tambunan 2005). For example, many specialised suppliers, such as silicon wafer producers and semiconductor equipment manufacturers, can be found in Silicon Valley, thus giving firms in the region some significant advantages over firms elsewhere (Krugman and Obstfeld 2009; Saxenian 1994; Stuart and Sorenson 2003). Access to these intermediate inputs is considerably enhanced by geographic proximity, as it enables a more efficient and shorter supply chain (Kolko 2002; McKendrick et al. 2000). Locating near a pool of specialised intermediate inputs can be beneficial for firms as they have easy access to a range of equipment which might be needed to enhance the competitiveness of their products for international markets.

2.3.2.2.3 Chance of discovery by international buyers and partners

Firms are sometimes attracted to a cluster because they are more likely to be 'discovered' by customers (Baptista and Swann 1998; Cook et al. 2001; McCormick 1999; Swann 1998), and potential foreign buyers or partners (Brown and Bell 2001; Ffowcs-Williams 1997; Tambunan 2005), as they are more likely to be selected if they are operating in recognised and established industrial clusters (Brown and Bell 2001). A cluster of similar firms is easily identifiable and can lead to more customers searching in the area (McNaughton and Brown 2006). In other words, firms are likely to be more 'visible' to potential foreign partners if they are associated with a cluster than if they are isolated. In the study by Brown and Bell (2001), one firm reported how it had been approached by an international contact who had witnessed its production quality while visiting another firm's factory in the cluster, for whom it sub-contracted, thus generating a trading relationship, while another firm revealed that it was introduced to an international contact while visiting a supplier in the cluster at the same time, eventually leading to a working relationship.

2.3.2.2.4 Association with cluster's 'brand name'

Where a cluster is well established with a strong international reputation, firms may take advantage by being associated with the popular cluster's 'brand', using it as a kind of marketing tool to 'stand out' more in the eyes of overseas customers. Firms that are members of such clusters are likely to be perceived as being more credible in the eyes of foreign consumers and are thus more likely to consider doing business with them (Brown and Bell 2001; McNaughton and Brown 2006). This is particularly pertinent for firms from developing countries, which often have to overcome negative country-of-origin perceptions among foreign consumers (Ahmed and d'Astous 2008; Bilkey and Nes 1982; Tesfom and Lutz 2006), especially for high-tech products (Ahmed et al. 2002; Leonidou et al. 2007). However, the cluster's positive reputation abroad can enhance the possibility of (a) unsolicited orders to the firms within the cluster from abroad, and (b) a positive outlook towards firms from the cluster that are proactively seeking business opportunities with potential foreign customers (Prashantham 2008b).

Thus, there are potential advantages to internationalising firms, in terms of their perception amongst both foreign customers and foreign business partners. Membership of a credible cluster may enhance the status of firms outside their own markets, assisting them in overcoming any unfavourable country-of-origin effects.

2.3.2.2.5 Competitive pressures to stand out

It has been argued that firm innovation can be enhanced by cluster membership as firms concentrated in one geographical area are often pressured to improve and distinguish themselves from proximate rivals with whom they are constantly compared owing to their similar circumstances in terms of labour and utility costs (Gilbert et al. 2008; Porter 1990; 2000a). Local pride and the aspiration to stand out in the local community means firms are continually striving to outdo one another. Permanent physical proximity forces firms to compete harder against each other than

if they were far apart (Cowan 2007). Moreover, if firms are surrounded by rivals who are successful in overseas markets or by foreign firms, they may feel some competitive pressure to introduce new technology and work harder in order to enhance their own international expansion so as to avoid appearing inferior in any way to potential customers (Blostrom and Kokko 1998).

2.3.2.2.6 Venture capitalists

Put simply, venture capitalists refer to ‘fund managers who invest into private companies...[usually in return for] a large (even the majority) equity position and...managerial control of the company’ (Chiesa and Chiaroni 2005, p. 177). They usually have strong experience in a particular industry, and use their extensive networks to help new entrepreneurs with recruiting staff, executives, customers, and other investors (Chiesa and Chiaroni 2005). In clusters, there is often a strong presence of venture capitalists, which can provide access to the capital needed to finance international growth (Fernhaber et al. 2008). Geographic proximity is an important issue for venture-capital firms as distance makes it difficult for them to obtain and evaluate referrals required to establish trust in an unknown venture, and also limits their ability to monitor and provide active input into the development of investments (Gompers and Lerner 2004; Zander 2004), and thus many are attracted to co-locate in clusters.

2.3.3 Limitations of clusters for internationalisation

Notwithstanding the potential for clusters to enhance firm internationalisation, it is important to note that sometimes they can have little significant impact (Malmberg et al. 2000), and may even hinder the process. It should be noted that many firms thrive outside of clusters (Maskell and Malmberg 1999b), and the following subsections offer some potential limitations of clusters for internationalising firms.

2.3.3.1 Face-to-face interaction in clusters and the diffusion of knowledge

Although much of the success of well-known clusters such as Silicon Valley is attributed to the flow of tacit knowledge that takes place primarily through regular interaction among entrepreneurs and other actors (Saxenian 1994), extensive social interaction and cooperation does not always develop in clusters (Maskell and Malmberg 1999a). Beugelsdijk and Cornet (2002, p. 169), for example, found that physical proximity does not necessarily promote industrial knowledge spillovers, suggesting to them that ‘a far friend may be worth more than a good neighbour’. A cosmopolitan street life or spontaneous, informal face-to-face interaction amongst friends may at best only stimulate the flow of relatively small ideas (Breschi and Lissoni 2001; Power and Lundmark 2004; Schrader 1991). Even intense, collaborative interaction with similar and related firms in a cluster does not always lead to the acquisition of important knowledge (Arikan 2009; Malmberg and Power 2005). Face-to-face interaction in clusters is not always guaranteed and can actually be very limited, despite physical proximity (Bathelt et al. 2004). Further, the pattern of knowledge diffusion is, at times, uneven and selective, circulating mainly within small, ‘epistemic communities’ or ‘communities of practice’, rather than flowing freely through the cluster (Gertler 2003; Giuliani 2007; Lissoni 2001), and therefore, knowledge that may be beneficial to internationalisation may not reach *all* firms in the cluster. Moreover, access to knowledge flows in clusters does not always lead to enhanced international growth, particularly if a firm is not capable of using external knowledge effectively, and firms may have to rely on alternative means of gaining suitable internationalisation knowledge (Arikan 2009; Liu et al. 2008).

Distance separating individuals does not necessarily constitute a barrier to knowledge flows (Gallie 2009). The ability of people to travel quickly (and at relatively low cost) to meet one another has meant that permanent co-location and geographical proximity is no longer necessary or sufficient for collaborations – either between firms, or between firms and other organisations such as universities – and the exchange of tacit knowledge (Boschma 2005; McKelvey et al. 2003), with Ponds et al. (2010, p. 249) concluding that researchers have ‘over-estimate[d] the importance of geography for academic knowledge spillovers’. In fact, face-to-face communication may be less effective than electronic communication in acquiring knowledge (Ganesan et al.

2005). In his survey of technical managers in the steel mill industry, which is not geographically clustered, Schrader (1991) found that 83 percent of his sample had shared technical information with someone in another firm at least once during the previous year (Dahl and Pedersen 2004).

Therefore, clusters are not always necessary for knowledge exchange through face-to-face interaction, and as a result, their impact on internationalisation may be somewhat limited. Furthermore, as has been shown, even where social networks do develop within clusters, they may be exclusive to only a few firms, meaning that any flow of knowledge that may be useful to internationalisation may not reach all firms in the cluster.

2.3.3.2 The loss of technological advantage through intra-cluster imitation and labour ‘poaching’

As mentioned earlier, proximity in clusters often leads to firms observing, and sometimes even imitating, other organisations. However, this may be a rather simplified way of looking at things. For instance, as Teece and Pisano (1994) have suggested, few organisational routines are ‘stand-alone’, meaning that imitating one set of routines, such as production, necessitates changes in other parts, such as R&D. In other words, imitating other firms, regardless of geographical distance, can be somewhat ineffective and, besides, is far from being a straightforward procedure and co-locating with others may not necessarily lead to frequent and widespread cross-firm imitation. Moreover, while firms in clusters may acquire useful knowledge by observing and imitating others nearby, their own routines and strategies may be replicated. Thus, cluster firms may be dissuaded from generating new innovations, marketing strategies, and so on, in fear of absorbing the costs associated with experimenting with new techniques, while others sit back, monitor the situation and eventually ‘free ride’ off the new innovation (Morosini 2004).

Similarly, although there are potentially a number of benefits to interfirm labour mobility, several scholars have questioned its pervasiveness as a feature of all clusters. Almeida and Kogut (1999), for instance, found that skilled workers’

mobility was highly localised only in Silicon Valley, and not elsewhere (Breschi et al. 2007). Moreover, it has been shown that agglomeration sometimes enhances the mobility of blue-collar workers, but decreases it for white-collar workers (De Blasio and Di Addario 2005). Further, even where interfirm labour mobility amongst skilled workers is prevalent, this does not necessarily ensure that the knowledge base of firms will expand. For example, in many cases, skills are too firm-specific to be useful to others, even within an industrial cluster (Yamawaki 2002). Sometimes, what is important is the *kind* of knowledge that flows with the movement of labour, and not necessarily the movement of labour in and of itself. In order to enhance a firm's knowledge base, it is important that the newly-acquired worker possesses related, but not similar, knowledge that is already present within the firm. If he/she possesses the same skills and knowledge as the absorbing firm, the firm may not gain any additional knowledge (Boschma et al. 2009). Thus, the flow of any internationalisation knowledge through localised labour mobility may not automatically occur in clusters.

Moreover, where interfirm labour mobility *is* a feature of a cluster, it is not necessarily an advantage to firms. In the same way that imitation in clusters may deter firms from developing new techniques, the movement of skilled workers between firms can lead to wage inflation generated by intense competition for labour, costly investments in training and education for new employees, the loss of technological advantage as firms 'poach' each others' staff, and the convergence around particular technologies and strategies as firms recruit talent from the same managerial and technical pools, leading to a reduction in strategic diversity amongst firms in the cluster (Power and Lundmark 2004; Stuart and Sorenson 2003) (see section 2.3.3.4).

2.3.3.3 Congestion and intense competition

As more firms and other actors are attracted to the cluster, the costs of congestion and competition may have negative effects on firm internationalisation. Clusters may become congested, and demand for land and certain skills may outweigh the supply, therefore pushing the cost of rent and labour upwards (Brown and McNaughton 2002;

Fujita and Thisse 1996). Similarly, as the cluster's population grows, increased localised competition may reduce the profit margins of firms, leaving them with fewer resources to commit to international expansion.

2.3.3.4 Conformity and over-dependence on cluster resources

Operating in clusters can, in some situations, restrict potential innovation amongst firms (Boschma 2005). For a start, cluster membership may be detrimental to international growth by causing firms to be over-dependent on cluster-specific resources and having things done by other firms in the region (Enright 1998b). For instance, where cluster firms recruit workers from the local area (e.g. from nearby competitors or local universities) and interact regularly with fellow cluster members, information spillovers gradually become somewhat homogenised due to their obsolete knowledge bases, thus potentially suppressing innovation and leading to difficulties in making sense of new and alien market information spillovers (Arikan 2009; Pouder and St. John 1996; Visser 1999). Moreover, clusters may develop routines and a uniform approach to competing, which can create an attitude favouring 'traditional' behaviours over new ideas, thus inhibiting 'deviant' behaviour, such as the adoption of enhanced techniques from outside the cluster (Porter 2000a; Pouder and St. John 1996; Rugman and Verbeke 2003). According to Pouder and St. John (1996), clusters can become vulnerable to 'coercive isomorphism' (Di Miaggio and Powell 1983), whereby firms are pressured to conform to particular procedures, controls, and structures within the organisation field. Clustered firms may become more concerned with cluster-specific approaches, thus overlooking or neglecting trends and developments taking place beyond the cluster's borders, including, of course, internationally (Brown and McNaughton 2002; Porter 1998b; Saxenian 1994). Thus, cluster membership may create conformity, deterring creativity or innovation, leading firms to avoid change at the expense of sound business practice (Brown and McNaughton 2002).

2.3.4 Summary

Knowledge is clearly a central feature in the literatures of both internationalisation and industrial clusters. To sum it up crudely, firms need experiential knowledge in order to internationalise. Although the Uppsala Model puts emphasis on personally-acquired experiential knowledge, there are strong indications in the literature that firms are able to obtain the experiential knowledge of internationalisation of others through such means as networking, hiring workers, imitation, and collaboration. At the same time, industrial clusters may provide a suitable setting for firms to acquire this kind of tacit knowledge by, for example, stimulating social interaction and the development of informal networks, generating regional interfirm labour mobility, and enhancing opportunities for imitation and collaboration. On the other hand, clusters may only have a minimal impact on internationalisation, and can potentially even hold back the process by, for example, generating congestion, intense competition, and pressures to conform to ‘cluster norms’. Table 2.1 offers a summary of the potential cluster impacts on internationalisation.

Table 2.1 Potential impacts of cluster location on firm internationalisation

Advantages	Limitations/disadvantages
Access to ‘sticky’ knowledge that can potentially enhance internationalisation	Limited flow of knowledge that can potentially enhance internationalisation
High-quality, specialised infrastructure	Loss of technological advantage
Access to specialised intermediate inputs	Congestion in cluster
Chance of discovery by potential foreign buyers/partners	Localised competition in cluster
Association with cluster’s international reputation	Pressures to conform
Competitive pressures to stand out	Over-dependence on cluster resources
Access to venture capitalists	

It is worth repeating that, due to the lack of empirical investigation, a clear theory does not, as yet, exist on how clusters affect internationalisation, and hence there is no real consensus on what the impact is. The purpose of this study is not, therefore, to test whether, and to what extent, these factors affect internationalisation, but rather, in an interpretive fashion, to uncover further insights into the impact of clusters (in this case, a policy-driven cluster) on internationalisation, by illuminating and understanding phenomena in context-specific settings.

2.4 Policy-driven industrial clusters

Now that a potential link between clusters and internationalisation has been established, we can turn to the case of policy-driven clusters, sometimes termed ‘intentional clusters’ (Yeung et al. 2006) or ‘technology parks’ (Castells and Hall 1994). As highlighted in the Introduction chapter of the thesis, relatively little research has been undertaken to explore the possible impacts on firm internationalisation of operating in clusters generally (Pla-Barber and Puig 2009; Sopas 2001), and policy-driven clusters in particular.

2.4.1 What is a policy-driven cluster?

Policy-driven clusters are clusters that owe their origin to the direct action and strong commitment of governmental actors who set the conditions for the cluster’s creation, either in response to an industrial crisis, or to promote regional growth (Chiesa and Chiaroni 2005; Su and Hung 2009). Following the success of well-known industrial clusters such as Silicon Valley, policymakers in many countries have attempted to replicate these achievements by designing and creating clusters, particularly high-tech clusters, sometimes from scratch (Breschi and Malerba 2001; Chen and Choi 2004; Enright 1998a; Feldman et al. 2005; Fromhold-Eisebith and Eisebith 2005; Martin et al. 2002; Tan 2006; Wallsten 2004; Wever and Stam 1999).

It is often held that clusters constitute a successful economic strategy as they lead to regional innovation and industrial competitiveness due to the social capital generated

by geographic proximity and sectoral specialisation, as well as increasing exports and attracting foreign investment (Ab. Aziz and Norhashim 2008; Forslid and Midelfart 2005; Fromhold-Eisebith and Eisebith 2005; Karlsson 2008; Karlsson et al. 2005; Lai and Shyu 2005; McDonald et al. 2003b; Meyer 2004; Moral 2009; Perez-Aleman 2005; Yang et al. 2009). In particular, policymakers in many developing countries view clusters as a vital source of FDI, technology spillovers, R&D, and employment, capable of producing economies of scale and scope, as well as generating local economic development.

More importantly, at least from the perspective of the present study, policy-driven clusters are also perceived as providing a foundation for helping firms, particularly small- and medium-sized enterprises (SMEs) to compete in global markets (Brown and McNaughton 2003; Jussawalla 2003; McCormick 1999; Rabellotti 1999; Raines 2002; Schmitz and Nadvi 1999). This is precisely the situation with the case under examination in this study, the MSC cluster, which considers the international competitiveness of local firms to be central to their overall objectives (MDC 2008). Cluster-oriented policies are also particularly popular because it is easier for governments to provide technical and management support, training, and general infrastructure and facilities to a group of firms in one location than to individual firms in multiple, dispersed locations (Tambunan 2005).

However, whether public agency is the most effective technique for conceiving and supporting clusters is an issue that has largely been overlooked by scholars, who are also uncertain as to how to adequately assess the outcomes of intentional cluster support (Cinti 2008; Fromhold-Eisebith and Eisebith 2005; Wallsten 2004). In fact, as Wallsten (2004, p. 229) has observed, despite abundant literature on industrial clusters, 'we know little empirically about the effectiveness of activist policy interventions.' The present study attempts to shed some light on this issue by assessing some of the ways in which a policy-driven cluster can affect internationalisation. The following subsections offer some insight into how these types of clusters may potentially enhance internationalisation, and some of the main difficulties facing regional authorities in this regard. Again, though, it should be noted that these are still highly ambiguous due to the lack of studies undertaken in this field and they are discussed here primarily to highlight that policy-driven clusters may

affect internationalisation in different ways, and do not act, as in positivist research, as variables to be tested.

2.4.2 Potential advantages to internationalising firms of operating in policy-driven clusters

Whereas in developed Western countries, clusters have, for the most part, emerged as a result of spontaneous, largely unplanned forces, some scholars argue that government support in cluster creation and growth may be preferable in the developing world (Choi 2005; Indergaard 2003; Kuchiki and Tsuji 2005; Morris and Barnes 2007). It is interesting to note that while most 'organic' clusters exist in the West, policy-driven clusters appear to be prevalent in Asian countries (Su and Hung 2009). Governments must play a central role in order for clusters in developing countries to succeed because the market mechanism for conceiving clusters may be hampered by regulation, bureaucracy, and existing legal frameworks, and the absence of institutional and human resource capacity (Huff 2002; Kuchiki and Tsuji 2005; Morris and Barnes 2007; Peng 2007). Without government support, industrial clusters are unlikely to emerge in less industrialised regions (Castells and Hall 1994).

As has already been discussed in some depth, operating in industrial clusters (broadly speaking) may have some advantages for internationalising firms. However, membership of a policy-driven cluster, more specifically, may provide firms with some additional, exclusive benefits that can further enhance their international expansion. As policy-driven clusters are pre-planned, authorities may put in place pre-emptive measures to cope with the common weaknesses of clusters. In other words, they may take direct action to limit the drawbacks of cluster membership for internationalising firms (either before they occur or as a remedy to overcome them), and put greater emphasis on ensuring the various potential advantages discussed previously bear fruit.

For instance, Humphrey and Schmitz (1996) show how policymakers in the Centro Informazione Tessile Emilia Romagna (CITER) textile cluster in Modena Italy, which was created using public funds, assists firms by providing such services as

half-yearly periodic reports on international market trends and on activities of local and international competitors, keeping members informed on technological developments by preparing technical notes and collecting relevant literature, and informing members of international fashion trends. Essentially, therefore, CITER collects, analyses, and distributes information relevant to the local business community (Humphrey and Schmitz 1996).

Moreover, as shown earlier, social networking and the cross-fertilisation of ideas and knowledge may be absent in some 'organic' clusters. In policy-driven clusters, these and possibly other potential shortcomings may be amended by the direct actions of policymakers. Government policy is often important in encouraging the formation of networks of collaborating firms (Dodgson et al. 2008). For example, in their study of firms in an electronics cluster in Christchurch, New Zealand, Brown and McNaughton (2003) found that entrepreneurs recognised and valued the efforts of the New Zealand Trade Development Board's (TradeNZ) Strategic Development Unit in initiating informal cluster events, such as business sector breakfasts aimed at enhancing informal networking and information exchange between firms in the cluster. That these informal breakfast events were later discontinued has been a source of frustration for local entrepreneurs, who claim that they provided one of the few opportunities for firms in the same industrial sector to meet and discuss issues that concern all of them. One advantage of these informal events being set up by a 'third party' (i.e. the policymakers) is that it is likely to include many, or even all, the cluster firms. As knowledge occasionally flows within enclosed networks of firms in clusters (see section 2.3.3.1), these types of events may help to ensure that all firms are engaged in the creation and sharing of knowledge, thus potentially enhancing internationalisation.

Policymakers may also provide human and financial support to boost the cluster's performance. This kind of support has been the main driving force for the growth of the policy-driven Shanghai Zhangjiang Hi-Tech Park in China, for example (Su and Hung 2009). If the cluster is lacking skilled workers, regional authorities may offer substantial financial packages to attract talent from home and abroad. In addition, financial support from the government, in the form of grants, tax breaks, and so on, may enhance the international growth of cluster firms (Su and Hung 2009). Similarly,

the Taiwanese authorities have ensured that firms in the Hsinchu Science Park (HSP), a fully government-oriented cluster, can easily receive academic support from various institutions, such as a number of universities in the area, as well as national laboratories, and educational institutes and training centres in the region (Chen and Choi 2004; Koh et al. 2005; Lai and Shyu 2005; Lee and Yang 2000). Regional authorities may invest in improving telecommunications, transportation, training institutions, enhancing the cluster's international reputation, and the creation of educational and training institutions in order to attract local and foreign firms to the region and to try to ensure the cluster's success (Castells and Hall 1994; Tambunan 2005).

The promise of a 'vision' may also entice leading firms to the cluster, thus subsequently enhancing the cluster's reputation and brand name. In Sweden, for example, local authorities 'transformed' the city of Karlskrona, which for decades had seen its population falling and unemployment rising, as the economy shifted away from traditional heavy industries, into a leading 'infocom' development environment focused on telecommunication, named 'Telecom City' (Hallencrutz and Lundquist 2003; Lundquist and Power 2002). The vision of policymakers was to create a centre for the telecommunications industry, and this vision lured a number of high-profile, leading firms to the region, who also did not hesitate in acknowledging the city's vision as a major factor in their decision to locate in Telecom City (Lundquist and Power 2002). Further, regional authorities were willing to provide attractive land in the area to make relocation even more appealing (Hallencrutz and Lundquist 2003).

The importance of a 'vision' for the cluster is particularly pertinent in the case of developing countries, where cluster success is often dependent upon attracting foreign investment (Koh et al. 2005). In Taiwan, the vision was for the HSP to imitate the success of Silicon Valley, and efforts to create comparative advantage where none had existed led policymakers to encourage foreign firms and talented Taiwanese immigrants trained in the US to develop their technology in the Hsinchu region (Chen and Choi 2004; Koh et al. 2005; Saxenian 2004; Saxenian and Hsu 2001). The community of US-educated Taiwanese engineers and specialists has brought capital, skill, and know-how to the cluster and even led to collaborations between specialist

producers in the HSP and Silicon Valley, where many of the returning Taiwanese workers had gained experience (Saxenian and Hsu 2001). These efforts emphasised the Taiwanese government's vision for the HSP, and as a result, many firms that started out in the cluster as small and medium sized have gone on to become large, successful multinationals in their own right (Koh et al. 2005).

2.4.3 Potential limitations of policy-driven clusters for enhancing internationalisation

Despite the potential benefits of these types of clusters, which have just been highlighted above, some writers are critical of clusters built from scratch by policymakers (e.g. Feser 2005; Porter 2000a; Schmitz and Nadvi 1999; Vonortas 2002). While some clusters have been successfully developed from scratch, these are in the minority as the costs involved are very high, and most of these schemes are likely to fail or go unreported (Howells 2005; Jacobs and De Man 1996; Manning 2008; Tambunan 2005).

For a start, there may be difficulties in implementing any single 'ideal' type of industrial cluster (De Ferranti et al. 2003; Gordon and McCann 2005). It is still not known under what conditions a location can develop into a cluster (Manning 2008). Regional structures and regional cultures are unique, making it difficult to learn from regional cluster policies initiated elsewhere (Breschi and Malerba 2001; Dohse 2007; Hospers and Beugelsdijk 2002; McDonald et al. 2007). Policymakers are often warned against attempting to 'clone' the success of Silicon Valley and other successful cluster policy programmes from abroad, particularly in industries that have structurally much smaller growth potential (Bresnahan et al. 2001; Feldman and Braunerhjelm 2006; Fosfuri and Ronde 2004).

Arguably one of the most significant difficulties policymakers may face in developing clusters from scratch is creating a dense social network community, through which tacit knowledge, which can potentially help internationalisation, can flow between firms. As discussed earlier in the chapter (see section 2.3.2.1.1), one of the keys to the success of well-known clusters lies in the diffusion of tacit knowledge

within the region through regular, informal interaction amongst the community's actors (Dahl and Pedersen 2004; Saxenian 1994). However, social and business networks and relationships are often embedded and usually take time to develop, requiring trust and repeated interaction (Anderson et al. 1994; Dahl and Pedersen 2004; Johanson and Mattson 1991; Tsang 1998). It has been argued that community, culture, and social capital, which refers to the degree of trust in social relations, are intimately linked, and can be built through networks and civic engagement, but can be difficult to create instantaneously (Cinti 2008; Hospers and Beugelsdijk 2002; Ionescu 2005; OECD 2005). Xu and McNaughton (2006) have highlighted the importance of a long history of social connections in the spread of tacit knowledge through clusters. Policymakers may, therefore, struggle to generate knowledge-sharing amongst cluster members, in the short run at least. While authorities may succeed in attracting entrepreneurs and other key actors to the cluster, co-location does not necessarily guarantee that tacit knowledge will circulate within the community. For example, Su and Hung (2009) have noted that tight networking among biotech companies in the ZKHT Park in China does not exist. Although government initiatives have brought high-quality human and financial capital to the region, government policies have been unable to create intense networking among all the different actors in the cluster. At the same time, this type of assistance from government may lead firms in the cluster to become over-reliant on government support, thus potentially limiting their ability to initiate and enhance their own international growth (Tambunan 2005).

In the hope of creating a vibrant cluster, policymakers may bring together a number of important 'ingredients' in order to meet certain 'cluster recipe' conditions, although this does not necessarily ensure success. The Irish government's efforts to generate an innovative cluster (the Digital Hub cluster) have included the provision of industry-specific institutions, government support programmes, a pool of talented labour, a local venture capital industry, and high-quality infrastructure. Despite this, though, the cluster has yet to fully flourish for three main reasons (Bayliss 2007). First, the link between research/education and industry was not properly established, given (a) their different objectives, and (b) the difficulties associated with creating a thriving academic institution in a short period of time. Second, the project seemed more focused on developing property rather than talent. Third, authorities were

unlucky because the ‘dotcom bubble’ burst in 2000, thus affecting the project’s momentum. The experience of the Irish policymakers demonstrates that significant investment and even the provision of favourable cluster conditions is not necessarily a secure formula for creating a successful cluster in which innovative firms thrive and internationalisation is subsequently enhanced.

Given the role of universities in the formation and success of some well-known clusters, it is easy to see why policymakers, such as those in Ireland, would be keen to develop a high-quality university in a cluster. However, the role of universities in cluster formation remains uncertain and there are leading universities in Brazil, Japan, Korea, and the US and Europe that have not generated significant spillovers or contributed to a host of start-ups (Yusuf 2008). In many cases, particularly in developing countries, cooperative links between universities and firms are relatively thin (Goncalves and Almeida 2009), and thus, in clusters such as the MSC, the development of specialised, high-quality universities from scratch may not necessarily lead to firms acquiring internationalisation knowledge.

It is also debatable whether a cluster that is conceived and supported by policymakers can successfully support firm competitiveness and internationalisation. In their study, for instance, Brown and McNaughton (2003) showed that entrepreneurs were doubtful about the potential of government efforts to support firm internationalisation because the authorities did not appear to fully understand the exact nature both of the electronics sector and of clusters, arguing, for instance, that political actors concern themselves more with short-term thinking than with long-term planning.

Authorities may also struggle to generate an internationally established ‘brand’ for the cluster, particularly in the short run. The competitiveness of a cluster is often dependent on its brand, which in turn serves three main functions (Lundequist and Power 2002). First, a successful brand can attract investment, venture capital, skilled workers, and new entrants to the cluster. Second, it can help unite actors, acting as an entity that creates a common sense of identity and purpose. Third, as noted earlier in the chapter, the cluster’s brand can be used by firms as a marketing tool, both at home and abroad. However, the cluster may require time to establish its credibility, particularly abroad, and thus firms may not be able to free ride off the cluster’s brand

in international markets in the short run. Moreover, given the general preference among consumers for high-tech products from developed countries (Ahmed et al. 2002; Leonidou et al. 2007), the problem of quickly establishing a global brand is more acute for policy-driven clusters in developing and newly-industrialised countries, such as the MSC.

Finally, although venture capital is vital to cluster development, particularly for internationalising technology-intensive firms (Fernhaber et al. 2008; Saxenian 1990; Yusuf 2008), venture capital activity in a new cluster is likely to be limited, as venture capitalists wait for the cluster to show signs of succeeding as an innovative region (Feldman et al. 2005) – although, as has already been mentioned, policymakers may compensate for this and provide financial support themselves.

2.4.4 Summary

The success of well-known clusters such as Silicon Valley, as well as the popular perception of clusters as being a recipe for enhancing internationalisation, attracting foreign investment, and boosting employment and regional development, has led policymakers in many countries to attempt to replicate thriving clusters, sometimes from scratch. In addition to the potential impacts of clusters generally on internationalisation, this chapter has demonstrated that policy-driven clusters may affect internationalisation in different ways. While there are certain ways in which operating in policy-driven clusters may potentially improve internationalisation, it is important to note that they may also be either largely insignificant, or potentially even detrimental, to the process. Table 2.2 offers a summary, derived from related literature, of some of the potential ways in which operating in a policy-driven cluster may affect the internationalisation of firms.

Table 2.2: Potential impacts of operating in policy-driven clusters on firm internationalisation

Advantages	Limitations/disadvantages
<p>‘Normal’ cluster externalities (see Table 2.1)</p> <p>Prior planning by authorities</p> <p>Distribution of relevant information by policymakers</p> <p>Organised networking events by policymakers to stimulate knowledge-sharing</p> <p>Promotion of a ‘vision’ to attract leading firms</p> <p>Provision of human and financial support from policymakers</p>	<p>‘Normal’ cluster externalities (see Table 2.1)</p> <p>High chance of cluster failure</p> <p>Lack of social interaction, knowledge-sharing in cluster</p> <p>Lack of knowledge spillovers from universities</p> <p>Lack of understanding of cluster nature and industry needs amongst policymakers</p> <p>Difficult to establish international cluster ‘brand’ (particularly for high-tech clusters in developing countries)</p> <p>Difficult to attract venture capitalists to cluster that is not yet established.</p>

Once again, it should be noted that very little research has been conducted on the impact of clusters, and particularly policy-driven clusters, on internationalisation. Therefore, the possible effects are still rather ambiguous due to the lack of any clearly specified theory. In particular, the factors discussed above related to potential policy-driven cluster impacts on internationalisation mainly refer to their impacts on firm and cluster performance generally and not *internationalisation* more specifically. Thus, their potential impacts on internationalisation are somewhat speculative in nature, but nevertheless merit some discussion in order to highlight the fact that policy-driven clusters are inherently different in nature to organic clusters. Therefore, to repeat, our purpose here is, in an interpretivist manner, to generate new insights and understanding into a largely unexplored phenomenon in a context-specific setting, rather than to test any relations between variables.

2.5 Conclusion

The overall objective of this chapter has been to review the literature in order to gain a deeper understanding of clusters more generally, and policy-driven clusters more specifically, and how they may affect internationalisation. As the literature demonstrates, operating in industrial clusters, whether they are conceived by policy or market forces, may be advantageous, obstructive, or in some ways even largely insignificant, to the internationalisation process. However, given that relatively little research has been carried out to assess the impact of clusters, particularly policy-driven clusters, on firm internationalisation, further research is needed to fully understand the issue. Although this analysis of the literature provides some important insight into the present study's context, it does not, of course, represent the final picture as additional factors and points of interest may emerge from the case study data to provide an adequate response to the research question set out earlier.

3 METHODOLOGICAL APPROACH

3.1 Introduction to chapter

This chapter is devoted to explaining the methodological choices of the study. It begins with an overview of the qualitative-quantitative, and positivist-interpretivist dilemmas facing researchers, and argues for the use of an interpretivist approach for this particular study. It then goes into more detail on the particular qualitative methodology employed in the investigation, namely the single-case study (using semi-structured interviews as the main method for data collection), introducing both the case study and the 10 firms used as informants in the research at the same time. Next, the process of data analysis is explained, before finally discussing how the study handled the issue of reliability and validity.

3.2 The qualitative-quantitative predicament

One of the major themes of any discussion on research methods is that of the dichotomy between the qualitative and quantitative approaches (Hakim 2000). In the early stages of any research study in the social sciences, a decision needs to be made as to whether the qualitative or quantitative method is more suitable to answering the research question(s) set. Traditionally, there has been a tendency in the research community in favour of quantitative methods due to their popular image as the more ‘scientific’ and structured approach, based on ‘hard’ numbers, (Ghauri and Gronhaug 2005; Hakim 2000), though there is growing appreciation of the richness of data that can be acquired through qualitative methods (Flick 2009). Although there still exists some animosity between adherers of each research approach (Hakim 2000; Neuman 2006), some authors have called for greater recognition of the cohesion, rather than conflict, of the two methods (Creswell 2009; Newman and Benz 1998).

While not seeking to add to the ill feeling between the two approaches, it is important to bear in mind that, despite sharing basic scientific principles, qualitative and quantitative methods are distinct from each other in a number of important ways. A key difference between qualitative and quantitative research is the different epistemologically grounded beliefs which manifest themselves in the distinct but contrasting concerns of the two approaches (Bryman 2008; Bryman and Bell 2007). Whereas quantitative researchers are more preoccupied with issues such as measurement, causality, generalisability, and replication, qualitative researchers focus more on depth, seeing through the eyes of the people being studied, emphasising on context and process, flexible and limited structure, and concepts and theory grounded in data (Bryman 2008; Patton 2002; Sinkovics et al. 2008). In essence, then, ‘qualitative observation’ concerns itself with identifying the presence or absence of something, whereas ‘quantitative observation’ involves measuring the degree to which a particular feature is present (Kirk and Miller 1986). Moreover, the quantitative researcher’s relationship to the subject under study tends to be more distant than that of the qualitative researcher, and therefore he/she (the quantitative researcher) acts as more of an ‘outsider’ than an ‘insider’ in relation to the subject (Bryman 2005). Maxwell (2005) adds that a fundamental difference between quantitative and qualitative approaches is that whereas quantitative researchers seek to determine the extent to which a variance in x causes a variance in y , qualitative researchers focus on *how* (i.e. through what *process*) x causes y .

Crucially, quantitative research usually seeks to confirm (or reject) theories and concepts in the literature, whereas qualitative research more commonly rejects the idea of approaching an investigation with predetermined theory, as this can restrict the research subjects’ views about what is going on. Qualitative research stresses the importance of viewing events from the perspective of the research subjects, and understanding what *they* themselves think (Bouma and Atkinson 1995).

3.3 Epistemological foundations

The distinction between the qualitative and quantitative approaches is part of the wider and long-running philosophical debate about the nature of knowledge in the

social sciences. Most social research is based on two epistemological approaches: *positivism* and *interpretivism*. A third approach, *critical social science*, is less common, and therefore the focus here is on the first two approaches (Neuman 2006). It is important to outline the ontological, epistemological and methodological positions of a research project, as this justifies methodology choice and the research methods on which subsequent analysis and data interpretation are based (Zalan and Lewis 2004).

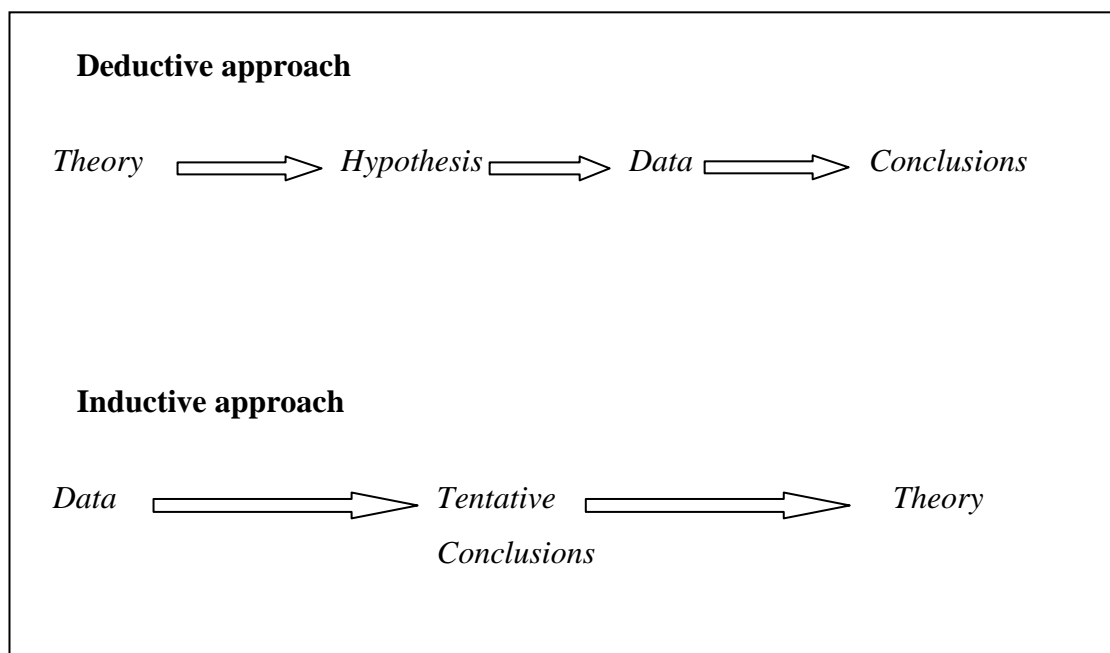
Social science research, including management and organisational research, has traditionally been dominated by *positivism* (Buckley and Chapman 1996; Lee 1991; Neuman 2006; Zalan and Lewis 2004). Positivism emphasises on knowledge based on experience and rejects any demarcation between the sciences of nature and those of society (Hindess 1977). As a result, it insists on applying the same methods used in the natural sciences to the social sciences, and any differences between the two sciences is blamed on the underdevelopment and youth of the social sciences (Neuman 2006). Positivism is also committed to value neutrality, measurement, and quantification of observable events (Seale 1999). In their efforts to generate ‘objective’ research, positivist researchers in the social sciences favour precise quantitative data using experiments, surveys, and statistics (Bryman 2008; Neuman 2006).

Contrary to positivism, the interpretivist approach views the natural sciences as being distinct from the study of society, and considers the application of scientific models to the study of the social world to be undesirable (Bryman 2008). Rather, interpretivist social science is very much context-specific and is more concerned with rigorously observing people in natural settings in order to better comprehend how the social world is created and maintained (Neuman 2006). Unlike natural objects, people formulate and attribute personal significance to their world and behave in accordance with these values, such that the same physical artefact, institution, or human action can have different meanings for different people (Lee 1991). As a result, the researcher is required to *interpret* these meanings in great depth and, preferably, on a subjective level. Accordingly, interpretivist social researchers prefer to use qualitative methods, including participant observation and field research, often spending

considerable time in direct personal contact with the research subjects (Mason 2002; Neuman 2006).

These differences between the positivist and interpretivist positions have led researchers to adopt different means of building and testing theory: the *deductive* and *inductive* approaches. Deductive researchers begin with existing theory and what is known about a particular phenomenon and, from this, develop a hypothesis (or hypotheses) which is then empirically tested in order to confirm (or reject) its validity. Where necessary, theory is then revised on the basis of the findings (Bryman 2008). Inductive researchers, on the other hand, begin with specific data in order to develop theoretical concepts and propositions (Schut 2006). This approach is primarily exploratory in its nature (David and Sutton 2004). Figure 3.1 illustrates these different approaches to research:

Figure 3.1: Deductive and inductive approaches to social science research



Deductive reasoning is typically associated with quantitative research, while the inductive approach is more often the domain of qualitative research (David and Sutton 2004; Hesse-Biber and Leavy 2011). International Business (IB) researchers appear to favour the deductive approach based on quantitative methods (Jack and Westwood 2006; Mendenhall et al. 1993; Werner 2002; Yang et al. 2006). In fact, between 1991 and 2001, only 10 percent of publications in top-ranking IB journals

adopted qualitative research strategies (Andersen and Skaates 2004). Although qualitative research is still very much the exception rather than the norm in IB research, scholars are beginning to appreciate its value and the number of studies adopting qualitative methods is slowly growing (Marschan-Piekkari and Welch 2004; Nummela and Welch 2006). For example, Yeung (1995) has highlighted the flexibility and richness of qualitative research in IB, arguing that it is best suited to capturing the changing context of research and concern with firms operating in multiple geographical locations.

3.4 The epistemological position of this study

While it is important that researchers appreciate the merits (and limitations) of *both* quantitative and qualitative methods, they must nevertheless make a decision as to which to employ in their study. This decision should be determined by the nature of the research problem or research question, and not by personal preference (Ghauri and Gronhaug 2005). Given the absence of any established theory within the literature on the impact of policy-driven clusters on firm internationalisation, an interpretivist, more inductive, qualitative research strategy, in which the goal is ‘to understand the action in a substantive area from the point of view of the actors involved’ (Glaser 1998, p. 115), was deemed the most suitable methodological and epistemological approach to answering the research question set earlier. The lack of any theory or empirical findings made generating hypotheses, on which a possible survey questionnaire could be set, unfeasible. The potency of qualitative research in developing fresh insight and understanding has seen it become increasingly popular amongst researchers in the social sciences (Miles and Huberman 1994), including IB (Wright 2004), and this approach was deemed more appropriate to investigating the problem at hand.

At this stage, the research problem is not well understood, and this study is primarily concerned not with providing definitive answers, but rather with generating fresh, new insights that future research, perhaps using quantitative methods, can test and expand. Therefore, the study is more concerned with generating new insights from the data, prioritising participant perspectives, and offering greater depth through

focusing on fewer subjects and specific situations – attributes commonly associated with qualitative methods (Hakim 2000; Maxwell 2005; Patton 2002; Silverman 2006) – than with theory-testing, eliminating subjective viewpoints, and ensuring greater breadth through involving many research subjects – typical traits of the quantitative approach (David and Sutton 2004; Neuman 2006). It is, of course, possible to employ both quantitative and qualitative methods in a single study (Creswell 2009), but this would have required additional time and resources that were not possible in this project.

Nevertheless, an exploratory, qualitative strategy appears the most suitable methodological approach to deal with the research question outlined in Chapter 1. At this stage, the literature does not provide clear-cut variables for us to measure and compare, and thus one of the goals of this research is to generate fresh insights into the nature of the impact of policy-driven clusters on internationalisation through an analysis and integration of in-depth views of multiple respondents in a single case study. In exploratory research, the aim is not to provide conclusive answers to a particular phenomenon, but rather to allow the researcher to make preliminary investigations into a largely unknown area of research, usually relying on more flexible, inductive approaches to research in order to generate new, speculative insights and ideas into phenomena (Durrheim 2008; Stebbins 2001). Qualitative research is often considered to be superior to quantitative research in terms of generating new ideas (Ghauri and Gronhaug 2005; Miles and Huberman 1994; Wright 2004; Zalan and Lewis 2004). The depth that qualitative research offers, owing to, for example, its focus on only a few research subjects, situational particularity, flexibility, and vigorous interviews (Hakim 2000; Neuman 2006), allows the researcher to gain a thorough understanding of any interrelationships that may exist between various factors.

Further, given the absence of an existing theoretical framework, it is important for exploratory studies such as this to provide ‘thick description’ with regards to the problem area. The insights developed from these pioneering studies may then be broadened, possibly along quantitative lines, but it is useful for early empirical contributions to have thoroughly analysed aspects of the phenomenon. One of the advantages of qualitative research, which utilises only a small number of research

subjects, is that it allows the researcher to study the phenomenon in greater depth, and thus is better positioned to provide ‘thick description’ (Ghauri and Gronhaug 2005). Although qualitative research is often criticised for employing such few participants, which critics claim restricts its generalisability, this very feature is, paradoxically, also championed as its greatest strength, because individuals are interviewed in such detail that results are taken to be true, complete, and valid (Hakim 2000). For example, qualitative research strategies enable researchers to examine the “why” and the “how” surrounding particular, complex issues, which may be more appropriately asked (and answered) through semi-structured and unstructured interviews (Hakim 2000; Hesse-Biber and Leavy 2011; Wright 2004).

3.5 The role of existing literature in qualitative research

At this stage, it is important to acknowledge the role that existing literature plays in qualitative research, particularly in this study. The literatures of both ‘industrial clusters’ and ‘internationalisation’ (as two separate concepts) are well established and provided invaluable conceptual pillars for the present study. Further, although few in number, existing studies examining the impact of industrial clusters on firm internationalisation proved very useful when formulating interview questions, and also when attempting to position the study within the literature.

It is almost impossible to begin any research study without considering any theory whatsoever (Eisenhardt 1989), since research in the social sciences, including IB, is by no means a recent trend. This does not mean that everything has already been researched, of course, but researchers should be aware that ‘almost everything you want to research will probably connect with an existing, neighbouring field’ (Flick 2009, p.48). In fact, pure induction without prior theory may even be detrimental to the study as it deprives the research of vital existing theory (Perry 2001). This is precisely the situation with this study, as the literature on ‘industrial clusters’ and ‘internationalisation’ is voluminous and formed the conceptual framework on which the research project was based. Moreover, they provided insight into common factors underlying the two concepts – for example, the centrality of ‘knowledge’ and ‘organisational learning’ in both the cluster and internationalisation literatures. In

addition, existing literature on a more closely related subject, namely ‘the impact of clusters on internationalisation’, although not quite as established, provided some useful insight into how to marry the two concepts (‘internationalisation’ and ‘industrial clusters’) in a single study.

A thorough understanding of associated theory was also important in positioning the study within the literature and in the context of related studies within the discipline (Marshall and Rossman 2006; Silverman 2006). Moreover, approaching the study with knowledge of the related literature served four functions (Marshall and Rossman 2006):

1. First of all, it made possible the underlying assumption behind the research question that a correlation between ‘policy-driven clusters’ and ‘internationalisation’ was at least logical and conceivable.
2. Second, it showed that the researcher was aware of, and appreciated, related studies associated with the topic. As already noted, finding a research topic with no closely-connected literature in the social sciences is practically impossible, and thus, it is imperative that any researcher demonstrates that he/she has conducted a thorough analysis of supporting, related literature.
3. Third, understanding the literature enables the researcher to identify those gaps which need addressing.
4. Fourth, the research questions can be refined and redefined during the literature review process. Admittedly, this was the case in this particular study where the initial research questions put forward in the research proposal, prior to its commencement, were modified on more than one occasion – a process which, I believe, ultimately strengthened the thesis’s contributions.

Thus, rather than beginning immediately with data collection without consulting existing literature, as is the case in ‘Grounded Theory’ methodology (Glaser and Strauss 1967), this study began by reviewing the literature, locating where the study fits in relation to available theory, identifying gaps which need addressing, and only

then proceeding to data collection. Following data collection and analysis, further review of the literature took place so that the thesis's contributions could be more clearly determined. Therefore, existing theory in the literature played a hugely significant role throughout the entire process of the study.

3.6 Case study methodology

Now that the epistemological paradigm of the research has been established, the specific research methodology needs to be addressed. As indicated previously, this study aims to explore and investigate a phenomenon to which scholarly attention has not really been devoted, and does not strive to confirm or reject hypotheses emerging from the literature (precisely because the literature is so thin). According to a number of scholars, exploring a relatively unknown subject is best done using the case study strategy (Eisenhardt 1989; Eisenhardt and Graebner 2007; Gerring 2007; Ghauri 2004; Ghauri and Firth 2009; Walton 1992; Yin 2009), which is one of the reasons it is popular in thesis and dissertation research in business studies, including IB (Ghauri 2004; Ghauri and Firth 2009), and also amongst researchers investigating industrial clusters (Karlsson 2008).

The case study is concerned with understanding the case (or cases) in depth, and in its complex natural setting, partly in order to generate insight into a larger category of cases (i.e. the population) (Gerring 2007; Punch 2005; Stake 1995). The literature also advocates using case studies when: (1) 'how', 'why', or exploratory-type 'what' questions are asked, (2) the researcher has no control over the behaviour of research subjects, and (3) when the research is focused on contemporary events (Ghauri and Gronhaug 2005; Perry 2001; Yin 2009). Since there is no universally-agreed upper and lower limit to the number of cases included in a study (Ghauri 2004), some studies limit the number of cases to just one, while others investigate multiple cases. Although multiple-cases are often preferred due to the popular perception that generalisations can be more easily drawn from numerous cases than just one case (Eisenhardt and Graebner 2007; Graebner and Eisenhardt 2004; Yin 2009), single-case studies also have their advantages, such as when it is an extreme or distinctive

case, or when the case is uniquely suited to challenging or extending theory (Ghauri and Gronhaug 2005),

Although case study methodology is often criticised on the grounds that it limits generalisation, Walton (1992, p.122) argues that, by showing how particular social forces influence results in specific settings, case studies can ‘provide at least one anchor that steadies the ship of generalisation until more anchors can be fixed for eventual boarding’. Generally speaking, case research is also typically used when, as in the case of the present study, addressing “how” or “why” research questions, as opposed to, for instance, “how often” or “how many” (Eisenhardt and Graebner 2007).

In summary, the choice of research strategy for the present study was determined by the following factors: (a) the nature of the research question; (b) the degree of control the researcher had over behavioural events; (c) the contemporariness of the study; and (d) the resources available for research. Consequently, case study methodology was considered the most suitable approach for this study, particularly as there is very limited direct theoretical grounding for the research topic.

3.7 The decision for a single-case design over a multiple-case design

One of the first dilemmas facing case researchers is to decide how many cases should be included in the study. Given that there is no universally-accepted upper or lower limit to the number of cases to be included in a study (Ghauri and Firth 2009), the researcher should determine whether their research problem is more suited to a single-case strategy or a multi-case one. Multiple-cases are useful in providing different perspectives, and comparing between cases, and the findings here are usually considered to be more generalisable (Creswell 2007; Ghauri 2004; Yin 2009). Single cases, on the other hand, are particularly suitable in three situations⁵ (Ghauri 2004; Ghauri and Gronhaug 2005; Patton 2002):

⁵ It should be noted that, although not immediately relevant to the present study, single-case studies can also be used to test well-formulated theories (Yin 2009).

1. when a certain case is particularly unusual, or
2. when it meets all the conditions to confirm, challenge, or extend theory, or
3. when the study is exploratory in nature and aims to lay the foundations for later, more comprehensive studies

This study opted for a single-case design for two principle reasons. First, as noted above, single-case designs are appropriate for exploratory studies that seek to lay the foundations for future, more broad studies (Ghauri and Gronhaug 2005; Yin 2009). Second, given the limited time and financial resources available for conducting the study, extended fieldwork in multiple geographical locations was not possible. A single-case study is ideal for the small-scale researcher as it allows him/her to conduct an in-depth investigation on just one example (Blaxter et al. 2006). What may appear to be a single-case study, though, may in fact consist of ‘many potential observations, at different levels of analysis, that are relevant to the theory being evaluated’ (King et al. 1994, p. 208). In this study, although only one particular cluster is adopted as the case study, interviews with respondents from multiple firms, as well as non-firm informants, provided the majority of data for the study. This type of single-case study is known as an embedded case study, and is explained in more detail below. The case in question is Malaysia’s Multimedia Super Corridor (MSC) information and communications technologies industrial cluster, and the justification for selecting this particular case is offered in section 3.9.

3.8 Embedded versus holistic single-case studies

It is important to distinguish between a holistic single case study and an embedded single case study. The former may examine, for instance, the global nature of an organisation, whereas in the latter, even though a case study might focus on a single organisation (in this case, the MSC cluster), data collection and analysis, as well as the presentation of findings, occurs at multiple levels, including at the level of the individual and/or strategic subunits (Gray 2004; Mills et al. 2010; Saunders et al. 2009). For instance, in an embedded organisational case study, the main unit may be the company as a whole, with the individual departments or even individuals

representing the smaller units (Scholz and Tietje 2002). Thus, the subunits can become part of some larger, main unit of analysis – in other words, a single-case study may involve multiple units of analysis, which can be selected through sampling, while still treating the organisation at large as a single case study (Blaikie 2010; Yin 2009). A holistic design can be adopted when no logical subunits can be identified, but can create problems for the researcher as there is the risk of avoiding examining any specific phenomenon in operational detail (Yin 2009). This study follows a more embedded single-case study approach, with the MSC cluster constituting the single case study (or the main unit of analysis), but with individual MSC firms representing the ‘informants’ (the subunits) within the case.

3.9 The MSC industrial cluster as an appropriate case study

As discussed earlier, qualitative research is geared towards in-depth understanding, usually through utilising only small samples (Hesse-Biber and Leavy 2011). Selecting case samples from within a population is a central aspect of case study research, as analysis from a small number of cases is expected to provide some insight into the wider population (Eisenhardt 1989; Gerring 2007). The literature offers several useful criteria to guide researchers in their case selection. Case selection should involve more than just identifying accessible and convenient research subjects.

Purposive or *theoretical* sampling, rather than *random* sampling, should ideally be undertaken in order to ensure that the selected cases can be used to investigate the research problem. Purposive and theoretical sampling are often used synonymously, with the only difference being when the ‘purpose’ behind ‘purposive’ sampling is not theoretically delineated (Silverman 2006). In theoretical sampling, the case study should be chosen on the basis of its relevance to the research question and theoretical framework (Mason 2002), and is important when conducting research on new or unexplored areas, (Charmaz 2003; Eisenhardt and Graebner 2007; Strauss and Corbin 1998). Random sampling, on the other hand, is usually associated with quantitative methods and is useful when the goals of the research are to produce generalisations about a population (Auerbach and Silverstein 2003). It is therefore important that the

selected case (or cases) coincides with the study's theoretical background and research question (Ghauri 2004; Ghauri and Gronhaug 2005).

The MSC cluster was deemed an appropriate case study for the research and was selected for investigation due to two principle reasons:

1. First, having been conceived, developed, and to this day regulated by the Malaysian government, it matches the definition of a 'policy-driven cluster' set out in the previous chapter, namely on in which the 'triggers of the birth of the cluster are direct actions of policy makers' (Chiaroni and Chiesa 2006, p.1073).
2. Second, one of the key aims of the MSC policymakers is to support the international growth of local firms (Lepawsky 2009; MDC 2008), which means that it is appropriate to examine its effectiveness for internationalisation.

A third, more practical reason is related to the fact that members of the researcher's family reside in Kuala Lumpur, a 45-minute or so drive from the MSC, which made it easier and less costly to make repeated, lengthy visits to the research setting to gather data.

3.10 The Multimedia Super Corridor cluster

The MSC encompasses a 750-sq-km-wide by 50-km long 'corridor' stretching roughly from the Kuala Lumpur City Centre/Petronas Twin Towers in the north to the Kuala Lumpur International Airport in the south, anchored by the purpose-built cities of Putrajaya, the new administrative capital of Malaysia, and Cyberjaya, the core of the MSC (Bunnell 2002; Corey 2000) (see Appendix I). The MSC is a multi-billion dollar project conceived by the Malaysian government under former Prime Minister

Tun⁶ Dr. Mahathir Mohamad in 1996 to develop a high-technology cluster, a key driver in the push for ‘Vision 2020’, which aims to transform Malaysia into a ‘knowledge economy’, and to achieve ‘developed nation status for Malaysia by the year 2020 (Huff 2002; Jarman and Chopra 2008; Lepawsky 2009). Both the MSC and MSC firms are regulated by the Malaysian government in terms of legislation and policies, domestic and international promotion, and the provision of an environment suitable for companies to harness the full potential of ICT (Lepawsky 2009; MDC 2008).

The MSC, which has been described as ‘Malaysia’s answer to Silicon Valley’⁷ (Ernst 2004, p. 144), was considered a suitable context for the study not only because it is a policy-driven cluster built from scratch, but also because clusters and agglomeration are particularly important for knowledge-intensive and high-technology industries such as ICT (Imagawa 2005; Storper 1997; Swann and Prevezer 1998; Xu and McNaughton 2006), where specialist labour and knowledge spillovers based on interactions – both of which tend to be somewhat geographically immobile – play an important role⁸ (Cooke 2001; Dohse 2007; Garnsey 1998). Moreover, the ability to engage in international activities has become increasingly important for the survival and growth of firms in high-tech sectors, due to industry globalisation, high upfront R&D costs and the focus on narrow niches scattered thinly from one country to another (Blomqvist et al. 2008; Gabrielsson and Gabrielsson 2004; Keeble et al. 1998).

The MSC was the first major investment by the Malaysian government in the IT and multimedia sector, and included significant outlays of up to US\$2bn on installing fibre-optic networks to ensure top-of-the-range physical and information infrastructure, with the ultimate aim being to replicate the successful Silicon Valley model in the United States (Jussawalla 2003; Okamoto 2005). Further, recognising

⁶ ‘Tun’ refers to a prestigious Malaysian title awarded to someone who has highly contributed to the nation

⁷ In fact, its planners took direct inspiration from Silicon Valley (Lepawsky 2009).

⁸ Section 2.3.2.1 in the Literature Review chapter discusses the embedded nature of certain forms of knowledge in more detail

the enormous gap between Malaysia and technologically more advanced nations, the MSC was set up to attract not only Malaysian IT and IT-related companies, but also significant overseas high-tech companies by offering numerous incentives such as financial incentives (e.g. exempt from some taxes for 10 years), exemption from local ownership requirements, unrestricted employment of local and foreign knowledge workers, and the provision of aforementioned high-quality infrastructure (Corey 2000; Felker and Sundaram 2007; Taylor 2003). To receive these benefits, firms need to be awarded ‘MSC Malaysia Status’ by the Malaysian government, which in turn requires them to (re)locate at least 10 percent of their workforce in the MSC cluster, to be a primary provider of IT and multimedia services and products, pledge that at least 15 percent of their workforce will be ‘knowledge workers’ (i.e. engineers and other ‘white collar’ workers), and, in the case of foreign firms, to be engaged in technology transfer (Corey 2000; Okamoto 2005; Taylor 2003).

The number of firms in the cluster continues to grow (see Figure 3.2), and as of 2008, there were more than 2,100 local and multinational ICT firms with MSC Malaysia Status involved in various ICT sectors⁹, including Shared Services & Outsourcing (SSO), Application Software (AS), Creative Multimedia Companies (CMC), Mobility, Embedded Software & Hardware (MeSH), Internet-Based Business (IBB), and Institutions of Higher Learning (IHLs) & Incubators (MDC 2008) (see Figure 3.3). Around 19 percent (approximately 79,000 jobs) of the total ICT workforce in Malaysia is employed in firms with MSC Malaysia Status, with the MSC’s contribution to the country’s economy, based on revenue to Gross Domestic Output, at around 2.6 percent (MDC 2008). Export sales continue to grow and in 2008, export sales contributed to 33 percent of total MSC revenue of RM 17.06 billion (around RM 5.57 billion) (MDC 2008). In terms of the countries of preference for establishing market presence, the most popular amongst MSC Status firms are China, Indonesia, Singapore and the United States (MDC 2008).

⁹ It is important to note, though, that a significant proportion of these firms are not actually physically located in the MSC cluster, despite the legal requirement of these firms to do so (Lepawsky 2009), which of course raises the question of how efficiently the government actually is in regulating the MSC. This issue is discussed further in the remaining chapters of the thesis.

Figure 3.2: Number of firms with MSC Malaysia Status 1997-2008

Source: Adapted from Multimedia Super Corridor Impact Survey, 2008, p.6)

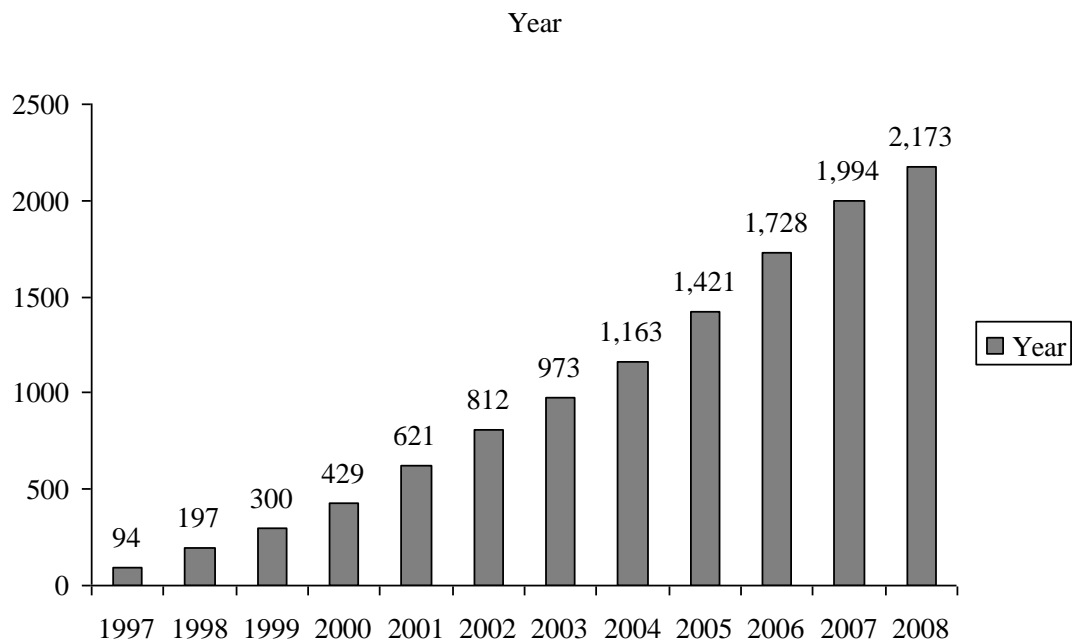
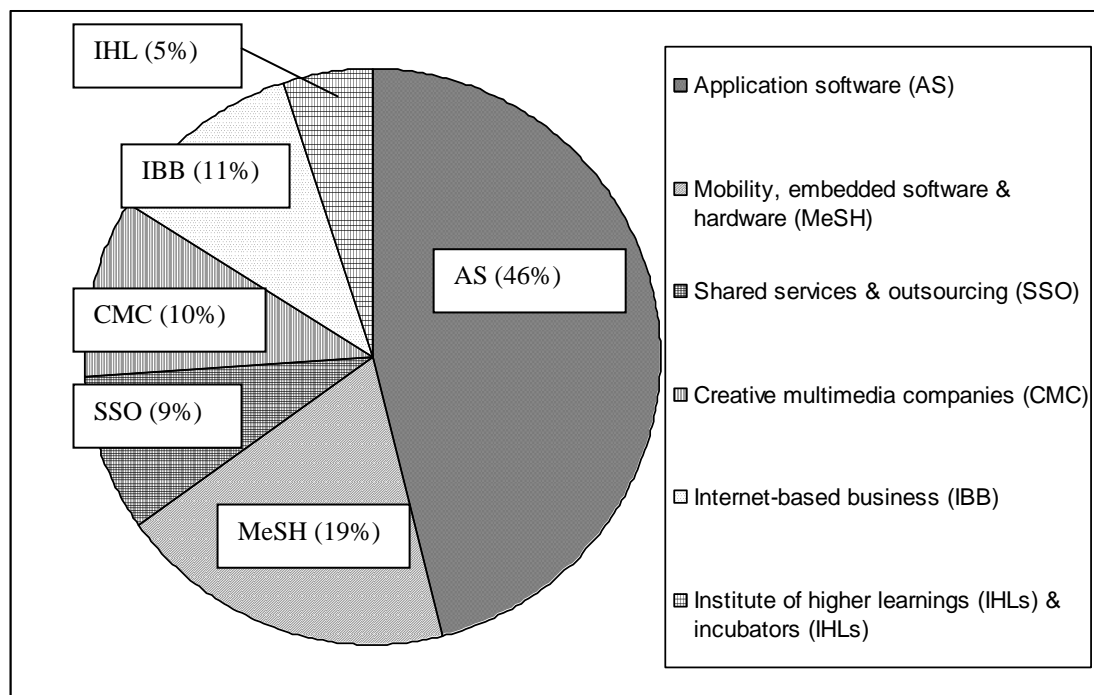


Figure 3.3: Sectoral breakdown of MSC Status firms

Source: Based on data from Multimedia Super Corridor Impact Survey, 2008)



The MSC is a particularly interesting case to examine because it is a very bold attempt by the government to develop a digital district in a second-tier newly industrialising country (NIC). Although the Malaysian government has been relatively successful in supporting the growth of basic industry, it is unclear whether the same strategy can work for developing advanced technology (Indergaard 2003). Unlike many clusters in industrialised nations in North America and Europe, the MSC was conceived by the Malaysian government as a key component in the nation's economic development, with the Multimedia Development Corporation (MDeC), a quasi-state institution set up to promote the MSC locally and globally, as well as supporting companies with MSC Status, and attracting investors to the cluster from around the world (Corey 2000; Indergaard 2003; Lepawsky 2009; Taylor 2003). Although transnational corporations are important actors within the MSC, the terms of their involvement are largely set by the state, with state entities being the main entrepreneurial actors (Indergaard 2003).

At the core of the MSC lies the industrial park city of Cyberjaya, a 7,100-acre, pre-planned, high-tech urban space developed to serve as 'a major cluster of software, information, and new media producers' (Scott 2004, p. 480). It was intended to serve as the major residential community in the MSC, providing housing to 15,000 knowledge workers (Bunnell 2002; Corey 2000; Indergaard 2003), although, as the 'Findings' chapters of this thesis show, this aim does not yet appear to have been fully accomplished. The 'intelligent city' was officially opened by former Prime Minister Dr. Mahathir¹⁰ in July 1999, who noted that "*By locating in Cyberjaya, MSC-Status Companies can also reap the power of association. The presence of Multimedia University, Tenaga University, and Universiti Putra Malaysia will seek to emulate the Stanford-inspired setting of Silicon Valley and create a networked, creative, and productive society in Cyberjaya*" (cited in Corey 2000, p. 15). The Multimedia University, a private university owned by Telekom Malaysia, was opened in 1998 and is made up of four faculties: creative multimedia, engineering, management, and information technology. A major factor behind its establishment was to alleviate the shortage of skilled workers in the area (Taylor 2003). In addition,

¹⁰ Malay names do not carry family names, and thus the first name is used. The first and/or middle names belong to the individual, with the last name being that of his/her father.

the government has established ‘incubators’ within Cyberjaya to house and support ICT developers and technopreneurs (Huff 2002).

3.11 The sample

Within the MSC, I selected several firms (10 were used in the final write up of the thesis) in order to extract data relevant to the research question set out earlier. The sample was selected from the online company directory of the MSC: <http://www.msomalaysia.my/topic/Company+Directory>. This directory lists all firms which have been awarded the ‘MSC Malaysia Status’. As mentioned earlier, firms (both foreign and local) are awarded MSC Malaysia Status on the condition that they are engaged in developing or using multimedia technologies to produce or enhance their products or services, and for process development. In return, these firms enjoy a series of incentives and benefits, such as exclusion from paying income tax for up to ten years, no restriction on the employment of local and foreign knowledge workers, and no Internet censorship. One of the criteria for receiving MSC Malaysia Status is that the firm is required to have at least ten percent of their workforce permanently located in one of the MSC’s ‘cyber centres’ or ‘cyber cities’, although, as noted earlier, many firms have not lived up to this agreement and either rent a small office facility within the MSC, which is used purely for correspondence and to satisfy the MSC requirements, or resist moving altogether – although they still retain MSC Status.

The reluctance of many firms to relocate to the purpose-built city of Cyberjaya, while still maintaining their MSC Status, was a phenomenon that I considered to be interesting and relevant for my study. Since many of the key benefits of cluster membership to internationalisation concern *physical co-location* (e.g. frequent face-to-face interaction, higher chance of being discovered by potential foreign buyers and partners, access to high-quality infrastructure, and so on), it was interesting to understand how firms were able to enjoy any of these ‘perks’ if they were physically based mainly outside the cluster. Moreover, this form of ‘token’ membership of the cluster was not a rare exception (Huff 2002) – it became clear to me as my research progressed, both through observations and through discussions with the respondents,

that many firms had been awarded MSC Status yet remained outside the MSC, thus making it imperative upon me to include these firms in the study, so as to present a more accurate picture of what actually happens in the cluster. Therefore, five of the firms in this study had their headquarters in an area outside the MSC, in and around Kuala Lumpur, and the other five were located in the MSC's core city of Cyberjaya. The city of Cyberjaya is especially interesting and relevant to this study because it constitutes arguably the most ambitious part of the MSC project, having been built up from palm oil estates into a large urban centre which is intended to become a regional ICT hub.

In total, more than 2,000 firms had been awarded MSC Status at the time the research was conducted, although this number also includes foreign firms which have been awarded the Status. The information that was available on the directory surmounted to only a basic description of each firm, such as company website, contact details, sector, year of MSC Malaysia Status approval, etc. Thus, it was not possible to discern from the directory whether the firm was appropriate for the study. Consequently, firms were contacted initially by email, before a telephone call was made to those that showed interest in participating, in order to offer them a more detailed description of the study and to ensure that they met the necessary conditions for participation.

Suitable informants (firms) within the case study (the MSC) were selected if they were in harmony with the theoretical framework of the study, and were somewhat representative of the wider population of MSC firms. In terms of the firms' harmony with the theoretical framework, the first criterion was that they had already been awarded MSC Malaysia Status for at least 12 months¹¹ before the first round of interviews and were thus members of the cluster. Secondly, given that the research was concerned with the impact of a policy-driven cluster on internationalisation, only those firms which considered international growth to be central to their strategy and

¹¹ Firms who had held MSC Status for less than one year prior to the interview were excluded as it was felt they may not have sufficient experience and knowledge of the MSC, and thus may not be ideally positioned to provide in-depth accounts of the MSC's impact on their internationalisation.

had already initiated international expansion, or at least had strong desires to do so, were included.

In terms of maximising their representativeness to the wider population, firms needed to satisfy three requirements. First, they had to be Malaysian-owned, which is reflective of around 73 percent of MSC firms (Lepawsky 2009). Second, they needed to be small- and medium-sized enterprises, or SMEs (defined in Malaysia as firms that employ up to 150 full-time workers (Shah Alam and Ahsan 2007)), not only because decision-makers could be accessed more easily (Chetty 1996; Ghauri and Firth 2009), or because, as mentioned previously, internationalisation is often particularly challenging for SMEs compared to larger firms (Fernhaber et al. 2008), but also because the majority of MSC firms (around two thirds) are SMEs (Lepawsky 2009). Third, the selected firms needed to be somewhat representative of the sectoral composition of MSC firms (see Figure 3.3). Given that firms involved in the application software sector make up almost half of MSC firms, I focused on selecting firms from this sector. The online MSC directory enables users to focus their search to particular sectors, which made this task easier. Of the final 10 firms used in the thesis, seven were from this sector, two from the mobility, embedded software & hardware (MeSH) sector, and one from the creative multimedia company (CMC) sector.

It should be noted, though, that all firms are unique in their own way, and that their representativeness is always somewhat limited. Although the firms' representativeness of the wider population of MSC firms was central in their selection, gaining access to organisations to conduct interviews is an inherently problematic procedure, and thus accessibility was also an important factor in the selection of firms. The respondents within each firm, meanwhile, were required to have been with the firm for at least 12 months prior to being interviewed and were closely involved in either the research and production side of the firm's activities, and/or the decision-making process, particularly internationalisation decisions.

Initially, 11 firms expressed their interest to be included in the study, although one of them was excluded because it fell outside the criteria outlined above (it was not an SME). Thus, during the first round of interviews in June, 2008, at least one

respondent from 10 firms was interviewed in person. Each respondent was informed by telephone beforehand that additional interviews would be required, including interviews with other suitable respondents from the firm, as the research progressed. Although all the respondents provided verbal reassurances to this at the time, I was later denied further access to four of the firms for various reasons, including lack of available time for respondents, unwillingness to participate further in the study, and resignation of the respondent (and therefore also the loss of the key contact within that firm). I was determined to compensate for these unfortunate withdrawals and, prior to my next round of interviews in April-May, 2009, I contacted several more firms to participate in the research. An additional nine firms expressed their interest, although two of these did not fit with the aforementioned criteria (neither had attempted to internationalise, nor had any future intentions to do so). Thus, another seven firms in total were interviewed during the second round of face-to-face interviews. Unfortunately, during the third and final round of interviews in November and December, 2009, three of the 'new' firms denied me additional interviews, despite offering verbal assurances beforehand that, if required, they would participate in later stages of data collection. Thus, these three firms, along with the four that effectively withdrew from the study earlier, were ultimately excluded from the final thesis because I lacked in-depth insights for them, leaving me with a total of 10 firms. Although it was frustrating to have to exclude seven firms from the final thesis, the data that were obtained from them were nevertheless useful reference points in the overall analysis.

Given the exploratory nature of the study, conducting a large-scale survey of firms within the MSC cluster would not have been desirable, and thus interviews with a smaller number of informants provided richer, more in-depth data. However, judging whether the number of firms in the study was sufficient was difficult, as too few would have made generalising across the population unfeasible (Eisenhardt 1989; Hedges 1985), while at the same time, including more than, say, 15 firms can make the study 'unwieldy' (Miles and Huberman 1994). Glaeser and Strauss (1967) argue that the upper limit is determined when the researcher reaches theoretical saturation, that is, when additional information is not able to add anything to theory. However, the more data sources in a study, the more likely they are to be representative of the population at large, and the easier it is to identify patterns common to the wider unit

of analysis, in this case the MSC cluster (Eisenhardt 1991; Gerring 2007). Based on these rough guidelines, the number of firms included in the study was limited to 10. Table 3.1 provides an overview of the 10 firms selected from within the MSC cluster case study. A more detailed description of each firm is offered in the first of the Findings chapters (Chapter 4).

Table 3.1: MSC firms used in study

Firm	HQ Location	Year est.	Year of MSC-Status	Size (no. of FTE)	International scope ¹²	International intensity ¹³
1. Firm A	Cyberjaya	2002	2002	30	0	0
2. Firm B	Cyberjaya	1996	2000	45	3	10
3. Firm C	Cyberjaya	1994	1997	102	11	46
4. Firm D	Cyberjaya	2000	2000	13	10	60
5. Firm E	Cyberjaya	2001	2002	12	10	40
6. Firm F	MINES Resort City	2000	2004	60	5	10
7. Firm G	Petaling Jaya	2003	2004	30	3	10
8. Firm H	Gombak	1999	2001	12	3	20
9. Firm I	Kuala Lumpur	2006	2007	20	3	95
10. Firm J	Kuala Lumpur	2003	2007	30	1	1

¹² Number of countries from which firm generates revenue

¹³ Percentage of sales derived from international markets (Fernhaber et al. 2008)

3.12 Interviews in qualitative research

Within the realm of qualitative research, the interview is probably the most commonly employed method (Bryman and Bell 2007; Silverman 2010). An interview study can be defined quite simply as one ‘where the data and findings are based on direct researcher-to-respondent conversations (in person or by phone)’ (Daniels and Cannice 2004, p.185). Interviews are particularly popular in case study research due to their capacity to directly focus on the case study topic and ability to generate insight into perceived causal inferences (Yin 2009), and can be used as the only approach in a study (Robson 2002). The goal of qualitative research interviewing is ultimately to ‘understand the world from the subjects’ point of view, to unfold the meaning of their experiences, [and] to uncover their lived world prior to scientific explanations’ (Kvale and Brinkmann 2009, p.1).

As with all research methods, the qualitative interview method has a number of shortcomings, such as the high costs involved, its time-consuming nature, possible researcher bias in the framing of questions, and the difficulty of ascertaining whether the respondent genuinely means what they are saying (Kumar 2005; McNeill 1985). However, there are also numerous advantages of employing qualitative interviews when conducting research. For example, they offer the researcher access to individuals’ attitudes and values, which can be difficult to achieve through alternative means (Byrne 2004). Further, interviews are very flexible, allowing the researcher to repeat and explain any misunderstood questions (Bailey 1994). Interviews are also well-suited to helping the researcher to discover new relationships and situations, which can lead to the development of new theory (Daniels and Cannice 2004). Thus, despite the high costs and time involved in conducting interviews, they are well-suited to ensuring that the views and opinions of the respondents are taken into account, and can also provide in-depth information which is valuable in the process of developing fresh insight into a particular phenomenon.

The merits of using interviews in qualitative research have also been acknowledged by scholars in IB, who recognise their ability to explore, in depth, IB processes and

mechanisms (Daniels and Cannice 2004; Yeung 1995). Further, interviews are a vital tool used by scholars researching industrial clusters, as they allow the investigator to learn the specifics about how the cluster functions, including the interaction between firms, institutions, and other supporting infrastructure that constitute the cluster (Austrian 2000). As a result, the interview was deemed to be the most appropriate technique for the present study.

In essence, interviews can be classified as being either *structured*, *semi-structured*, or *unstructured* (Ghauri and Gronhaug 2005). In structured interviews, each respondent is asked a predetermined set of questions in the same order and wording as other respondents (Kumar 2005). Structured interviews permit the researcher to compare his/her interviews more easily, and, because the data are collected in a more uniform pattern, also enhances generalisability (Hesse-Biber and Leavy 2011). As a rule, structured interviews are normally the subject of quantitative analysis (Saunders et al. 2009). Both semi-structured and unstructured interviews, on the other hand, generally ally themselves with qualitative methods (Gray 2004; Saunders et al. 2009). In semi-structured interviews, as in structured interviews, the interviewer prepares his/her questions, or themes to be covered, in advance, but they should be open enough to allow the interviewer to carefully probe unpredicted issues raised by the respondent. In this sense, the researcher requires a great deal of improvisational skills (Wengraf 2001). Finally, unstructured interviews are characterised by the absence of any pre-planned questions, with interviewers free to formulate their questions and raise issues spontaneously during the interview, much like in a standard conversation between two people (Bailey 2007; Gillham 2005; Kumar 2005).

These differences do not necessarily entail that a researcher must select only one in his/her study, and it is often desirable to integrate two or more of the interviewing styles (Merriam 2009; Saunders et al. 2009). Nevertheless, each style has its own unique strength. For example, structured interviews are usually employed in positivist research, while interpretivist researchers tend to prefer unstructured and semi-structured interviews (Collis and Hussey 2003), given that structured interviews are more appropriately analysed using quantitative techniques (Saunders et al. 2009). Further, unstructured and semi-structured interviews are usually considered to be the most suitable when the research is geared towards discovery and developing new

insights (Ghauri and Gronhaug 2005; Saunders et al. 2009). While I welcomed new insights from the interviewees, I also had some pre-formulated 'themes' that had emerged from my literature review that I wanted to cover during the interviews, thus ensuring some consistency (Myers 2009). Consequently, the present study favours the use of semi-structured interviews, as opposed to structured and unstructured interviews.

Semi-structured interviews help to ensure a consistent method of interviewing each case or respondent, while at the same time allowing for flexibility to explore any special issues that applied to that particular case or respondent (Merrilees and Tiessen 1999). Therefore, in order to establish some consistency in the interviews, I prepared an interview guide before commencing with my data collection. Unlike in structured interviews, an interview guide in unstructured and semi-structured interviews is less specific and usually consists of a list of issues or themes that need to be addressed (Bryman and Bell 2007). The list of themes was shown to the respondents before each interview, in part because they requested this information, but also because this strategy strengthens a study's dependability and reliability (Bryman and Bell 2007).

Each interview followed the same basic structure. Following some 'non-controversial questions' intended to establish some rapport between the respondent and myself (see 'Validity and reliability', section 3.17), I began by asking rather broad questions, such as for the respondents' general thoughts on the research problem under scrutiny. Inviting the interviewee to 'tell the story of their experiences' of the research topic does not require significant thought on the part of the interviewee and puts them more at ease, making the interview seem like less of an interrogation (Perry 2001). Once this was completed, more specific questions were put forward, based mainly on the main themes that had emerged from the literature, and also on any novel insights that the respondent had introduced during the initial 'stage' of the interview (see Appendix II for check list of questions). It is important to note that the list of questions served mainly as a guide to the topics that needed to be covered in each interview, and they usually varied in wording from respondent to respondent, and were not necessarily asked in the order shown in Appendix II. Nevertheless, the broad format was as follows: the interviews began as somewhat guided 'conversations' (Burgess 2005; Rubin and Rubin 1995), with respondents given the opportunity to

freely express their opinions about the research subject, before more specific, predetermined questions were introduced.

While it was important to give respondents the opportunity to talk openly on the issue, the semi-structured interview approach ensured some degree of pattern within the data, providing a reliable framework for analysing and comparing between respondents (Perry 2001). As Peterson (2004, p.34) concludes, the semi-structured interview ‘allows the researchers to ask each interviewee essentially the same set of questions, but also allows the interviewee to share insights on topics or issues that would never come up using only surveys’. Therefore, although the interviews started with interviewees being given more or less free reign to discuss any topic they felt was pertinent to the study, ‘probe questions’ about the key research issues were prepared in case these were not raised during the first, unstructured part of the interview (Perry 2001).

Respondents were informed prior to each interview that interviews would be conducted in English. This did not pose a problem as all respondents spoke fluent English, and had all received their tertiary education in the English language – either at local institutions or, in most cases, in English-speaking countries such as the UK, the US and Australia. Moreover, according to one of the respondents, the ‘business language’ in Malaysia, even amongst Malaysians themselves, is usually English, not Malay.

The majority of the interviews (23 out of 37) were conducted in person. Interviews conducted in person (as opposed to those done by telephone) are uniquely positioned to allow the researcher to record nonverbal forms of communication, such as facial expressions and gestures, thus enriching the qualitative dimension of the data (Jupp 2006). Moreover, respondents are likely to spend more time answering questions in a personal interview than they would, for example, if they were handed a self-administered questionnaire, thus potentially allowing the researcher to extract more data (Bernard 2000). During the first two rounds of interviews (in June, 2008 and April-May, 2009), I visited Malaysia for four weeks and five weeks respectively, having pre-arranged most interviews before travelling. Although some of the respondents subsequently needed to change the time and location of their interviews,

I was fortunate that all the pre-arranged interviews were eventually conducted (only one respondent decided to make a significant change to the interview, asking for a telephone interview instead of a personal interview due to his lack of available time). Moreover, in several cases, following an interview, I was introduced in person by the respondent to additional informants within the firm, who agreed to be interviewed either on the same day, or at a later date and time during my visit.

Given financial and time constraints, I could not visit Malaysia in person for the third round of interviews in November-December, 2009, and thus I conducted an additional 13 interviews by telephone. Although there are some limitations to doing interviews by telephone, such as missing out on non-verbal forms of communication (Gillham 2005), telephone interviews do have a number of advantages. For example, they are cheaper and easier to conduct than personal interviews, and there is less risk that the researcher's characteristics (e.g. age, class, ethnicity, etc.) may influence the responses (Bryman and Bell 2007).

One respondent informed me that he did not have time to have a lengthy conversation over the telephone, and thus insisted that I email him all the questions. His initial replies were relatively brief and did not provide sufficient information, and so I emailed him once more politely requesting more detailed information, to which he eventually replied. Although I would have preferred to interview the respondent by telephone (having already interviewed him once in person in April 2009), email interviews can sometimes be advantageous because both the interviewer and the respondent have time to reflect and consider the questions and responses (Jankowicz 2005; Morgan and Symon 2004).

3.13 Additional sources of data

These interviews were supported by my own observations of the cluster, and by public documents provided by both the MSC (e.g. the MSC Impact Survey) and the firm respondents (e.g. company brochures). None of the respondents were willing to provide any internal information, such as company reports and performance indicators, arguing that it was company policy not to disclose this type of

information. Nevertheless, having visited Cyberjaya on many occasions for the interviews (sometimes spending a whole day in the city), I was able to observe the general atmosphere and to understand more about what the respondents were telling me. For instance, many of the interviewees were critical of the lack of social amenities in the area, such as coffee bars, that prevented them from interacting socially with others in the community and exchanging valuable knowledge that could potentially help one another's international growth (see 'Findings' chapters). During my visits to Cyberjaya, I was able to directly observe this. In fact, finding a place in which to pass time between interviews was something of a repetitive problem for me because of the lack of cafes and the like. Some of the respondents also complained about the high cost of commuting to and from Cyberjaya each day, something which I also experienced myself. Thus, personally visiting the location many times during the research study helped me to gain a deeper, more personal, insight into the nature of the MSC cluster, and to conduct valuable first-hand observations.

3.14 Respondents

A number of writers stress that researchers should not worry about the quantity of their responses, as this is partly determined by the time available for collection, transcription, and analysis (Patton 2002; Strauss and Corbin 1998; Travers 2001). In other words, it is difficult to pinpoint beforehand the 'best' number of cases and interviews for any particular study. Rather, this is best determined by the information gathered during the collection of the data – i.e. once theoretical saturation has been reached. As a general rule, however, the number of interviews required in a reasonably-sized qualitative research project (including a PhD study), in order to provide a credible picture, is somewhere between 30 and 50 (Carson et al. 2001; Perry 2001; 1998), and studies with 60 or more respondents remain the exception rather than the rule in qualitative research (Ruyter and Scholl 1998).

A number of steps were taken in order to minimise informant biases (Graebner and Eisenhardt 2004), including promising respondents confidentiality, specifically requesting interviews with appropriate managers who were closely involved in the firm's major decisions, particularly those related to internationalisation, and in most

cases, interviewing more than one individual from each firm, each of which is likely to have different perspectives on the research topic. However, although researchers are advised to interview, for example, three respondents at different hierarchical positions within 10 firms, this may be difficult in smaller firms, and thus, in order to compensate for this, interviews with respondents in the 'context' of the cases, such as government advisers and industry associations, can be conducted (Carson et al. 2001; Perry 2001).

In this study, two of the smaller firms, Firm E and Firm D, were not able to grant me additional interviews with other respondents within their organisation. However, given the firms' small sizes, both respondents assured me that they were closely involved in the bulk of the major decisions and activities, including those related to international expansion, and therefore they were knowledgeable of most areas of the firm. In fact, as noted earlier, during my correspondence with each firm, I politely requested that each interviewee was involved in these types of decision-making processes, particularly internationalisation, and this condition was accepted by the firms. Nevertheless, I felt it was necessary to conduct two additional interviews: one with a senior representative of an industry association which works closely with MSC Status firms, and one with a government official from the MSC. Triangulation, which refers to the process of collecting data through different methods, including observations and interviewing different managers in a firm, and at multiple times, enhances confidence in the accuracy of findings, reduces the possibility of misinterpretation, allows the research to check and validate data received from various sources, and enhances understanding and explanation (Ghauri and Firth 2009; Jick 1979; Perry 2001). After 37 interviews, no additional data were being unearthed and this was the stage at which theoretical saturation was judged to have been achieved and it was felt that no additional information was needed.

Interviews lasted between 30 and 80 minutes and were all tape-recorded, which meant that I was more attentive to what was being discussed, rather than having to write down large volumes of notes during the interview, thus taking the risk of missing something that the respondent said which may have been important. As already mentioned, face-to-face interviews took place during two stages: June, 2008, and April-May, 2009. One round of telephone interviews was also conducted in

November-December, 2009. The respondents within the firms were all in senior managerial positions and had been with the firm for at least one year – in many cases since day one. The respondents comprised:

Table 3.2: The respondents

Firm	Respondents
1. Firm A	1. Director* 2. Chief Technology Officer 3. Manager of Operations
2. Firm B	1. Chief Executive Officer 2. Chairman 3. General Manager 4. Chief Operating Officer 5. Business Development Executive
3. Firm C	1. Chief Operating Officer* 2. Vice President for Commercial Operations/Head of Sales & Marketing
4. Firm D	1. International Sales and Marketing Manager*
5. Firm E	1. Vice President/CFO*
6. Firm F	1. Chief Executive Officer 2. Vice President* 3. Business Development Manager 4. Vice President for Medical Sciences
7. Firm G	1. Chief Executive Officer* 2. Business Development Manager
8. Firm H	1. Managing Director* 2. Finance Manager 3. Business Development Manager
9. Firm I	1. CEO/Owner* 2. Project Executive
10. Firm J	1. Chief Operating Officer* 2. Senior Manager 3. Business Development Executive

* Respondent interviewed twice

The number of interviews conducted during the study was as follows:

Table 3.3: Summary of responses

	Personal Interviews	Telephone Interviews	Email interviews	Total Responses
Firm A	2	2		4
Firm B	5			5
Firm C	2	1		3
Firm D	1	1		2
Firm E	1	1		2
Firm F	3	2		5
Firm G	2	1		3
Firm H	1	3		4
Firm I	2		1	3
Firm J	2	2		4
TeAM ¹⁴	1			1
MSC	1			1
Total	23	13	1	37

3.15 Access to organisations

Early in the data collection phase of the research, I encountered a problem with which many qualitative researchers are familiar: difficulty in gaining access to organisations (Bryman 1988; Easterby-Smith et al. 2008). Researchers need to rely upon ‘some

¹⁴ Technopreneurs Association of Malaysia (TeAM) is a private organisation consisting of numerous ‘technopreneurs’, which works closely with companies in the MSC to further the interests of ‘technopreneurship’ in Malaysia.

combination of strategic planning, hard work, and dumb luck' (Van Maanen and Kolb 1985, p. 11) in order to gain access to most organisational settings. Although the problem of access is pertinent to quantitative research as well, it can be even more difficult when employing qualitative research strategies, such as personal interviews, due to the greater time required and the need to develop a relationship with each respondent (Macdonald and Hellgren 2004). My lack of any suitable contacts in the field emphasised this difficulty, as I had to establish access, and later credibility, rapport, and trust, out of the blue and with people I did not know – sometimes called 'cold calling' (Easterby-Smith et al. 2008). Anticipating these types of limitations, I started contacting firms quite early in the research process (around March, 2008). A number of the respondents that were interviewed in June, 2008 made clear to me that they were only available for interviews in May and June of that year, hence my decision to conduct the first round of interviews at that time.

In order to boost my chances of gaining access to suitable respondents, I needed to address three key reasons why organisations often do not grant access to researchers (Saunders et al. 2009):

1. Perceptions about the researcher's credibility and doubts about his/her competence.
2. Concerns about confidentiality of the information required.
3. Lack of perceived value for the organisation and/or individual.

First, I provided each respondent with an Internet link to my research student profile at my university. I hoped that by inviting them to view my profile and photograph that they would develop some reassurance of my credibility. At the same time, all the firms I contacted received an electronic copy of one letter from the postgraduate research office at my university (see Appendix IV), confirming my status and position as a doctoral student at Manchester Business School. Those respondents who later agreed to personal interviews were each given an original hard copy of this document. Second, I had to assure the respondents that there was no risk involved, in terms of confidentiality, of participating in the research (Taylor and Bogdan 1998). In

order to convince each respondent that I posed no ‘threat’, all contacted firms were promised anonymity, both during the initial contact by email/telephone, and once again in person before and after the interviews were conducted. This pledge was backed up by a scanned letter from my supervisor (see Appendix IV), in which it was made clear once more that the details of participants would not be passed on to other parties. Third, the letter from my supervisor also made it clear that, in his considered opinion, the study had the potential to generate important insights that could be beneficial to participating firms. A hard copy of this letter was also passed to those respondents who agreed to participate in the study.

In addition to this, I maintained contact with the respondents after my initial interviews, informing them of the progress of my research (e.g. conference presentations, papers submitted to journals). Maintaining some degree of rapport and trust with the organisation, in particular the key contact, made arranging additional interviews with the respondent a smoother process, and also made it less inappropriate for me to ask them if they could introduce additional suitable contacts within the firm. Although gaining initial access to each organisation was strenuous, interviewing additional respondents in the firms was slightly easier because of my relationship with the key respondent (Ghauri and Firth 2009), a senior manager within the firm (except, of course, in those firms that withdrew from the study for various reasons – see section 3.11).

3.16 The process of data analysis

Although collecting and analysing qualitative data is a very time-consuming and labour-intensive operation, the most serious difficulty facing qualitative researchers, particularly those using the case study method, is the ambiguity surrounding data analysis due to a lack of universally-accepted, well-formulated methods (Ghauri and Firth 2009; Maclaran and Catterall 2002; Miles 1983; Tesch 1990). Nevertheless, given the volume and complexity of information collected by the qualitative researcher, it is imperative to provide an explanation of the specific analytical and management procedures undertaken to condense it all so as to produce a more ‘digestible’ account of the situation.

3.16.1 The overlap between data collection and analysis

It is important to stress that in qualitative research, particularly when using the case study method, it is highly recommendable to overlap between data collection and analysis, that is, to begin analysing the data as they are collected, rather than waiting until data collection is finalised (Barbour 2008; Eisenhardt 1989; Ghauri and Firth 2009; Miles 1983; Taylor and Bogdan 1998). This provides the researcher not only with a head start in analysis, but also, more importantly, the freedom to amend and modify the remainder of the data collection process, including improving data collection techniques (Eisenhardt 1989; Ghauri and Firth 2009; Hartley 2004). As was described earlier, the present study's data collection phase was divided into three stages. During the intermediate periods between the different stages, the data were analysed, which brought to my attention any limitations of the previous rounds of data collection, allowing me to address these limitations at the subsequent stages.

Therefore, much like the data collection undergone during this study, the process of data analysis was continuous, spanning the post-collection phases between June 2008 and March 2010. It should also be noted that, although in the end, the findings of only 10 of the firms are included in the final thesis, I analysed the data from all the firms. As explained earlier, some firms needed to be excluded from the final analysis because I was denied additional interviews which were deemed essential. Nevertheless, the data that were gathered from the discounted firms were still analysed using the same techniques described below, not only because I had not foreseen the problem of follow-up interviews being denied, but also because, for the most part, many of these respondents' views and opinions conformed to those of the other respondents, thus strengthening the findings and conclusions of the study.

3.16.2 Transcribing interviews

The first step of data analysis involved the transcription of each interview, which was usually done immediately following the interview in order to minimise any risk of

misplacing the tape recorder. While the transcribing of interviews is a particularly laborious task, it should not be taken lightly as it forms a substantial part not only of the overall method of interviewing, but also of the analytical process in particular (Denscombe 1998; King and Horrocks 2010; Maxwell 2005). Moreover, although rarely stipulated, interview transcripts should be close to verbatim accounts of interviews in order to ensure rigour in qualitative research (Poland 1995). Thus, notes were taken during the interview and transcription process, in order to account for any hesitations or delays, etc. (e.g. “office telephone rings”, “respondent scratches head in thought”, and so on).

The value of transcribing interviews in great detail is that it allowed me to significantly familiarise myself with the data, providing an initial, albeit unstructured, analysis of the data. Familiarising oneself with the data is critical as it enables the researcher to present findings which are representative of what was said in the interviews (Jankowicz 2005). In fact, initial ideas on how the interviews should be interpreted emerged during the transcription process. Whereas the interviews lasted between 30 and 80 minutes, the transcription process would take around eight or nine hours per interview. Each question and topic was meticulously ‘transformed’ from an oral account of the situation into one that is more manageable and, ultimately, easier to analyse.

3.16.3 Data reduction

Following the transcription of interviews, data reduction was undertaken. This process, which involves transforming the data ‘from unmanageable details to manageable summaries’ (Babbie 2009, p. 467), was important given the large volume of textual data obtained from all the interviews (766 pages in total). According to Miles and Huberman (1994), the researcher’s decisions on which data chunks to code or discard, which evolving stories to tell, and so on, are central to the analytic process. In fact, data reduction ‘is a form of analysis that sharpens, sorts, focuses, discards, and organizes data in such a way that “final” conclusions can be drawn and verified’ (Miles and Huberman 1994, p. 11).

As with other steps in qualitative data analysis, the criteria for data reduction are not clear (Richards 2009). Initial choices about what needed emphasising, minimising, and eliminating were largely guided by the predetermined research question and review of related literature, with themes and relationships emerging from the interviews added to the mix (Hair et al. 2007). Rather than being a one-off event, the process of selecting relevant parts of the interviews is a cyclical one. As the researcher's understanding and familiarity with the data grows, following detailed transcription and repeated data reduction, it becomes easier to decide which parts to emphasise, and which to eliminate (Richards 2009, p. 60). By organising and reducing the data to more manageable levels, based on relevant parts of the interviews, meaningful passages were more easily evident, thus enhancing further analysis.

3.16.4 Coding data using computer-assisted qualitative data analysis software (CAQDAS)

Next, I acquainted myself with the qualitative data analysis software, Nvivo. While there are a range of CAQDAS packages available, my decision to accustom myself with Nvivo was based purely on practical considerations: this particular package is the most widely used within the CIBER department at MBS, and thus any assistance I needed with the software could be more easily sought.

After gaining an understanding of the Nvivo software, I copied the interview transcripts from their Microsoft Word files into Nvivo. From here, I went through each individual interview, searching for themes within the text, creating a list of "codes" that are used to label or tag passages (words, phrases, sentences, whole paragraphs) which can then be used to help generate fresh insights into a particular phenomenon. Coding is a process during which the researcher seeks to capture, in one word (or two at most), some essential meaning that a section of text suggests to him/her (Faherty 2010). Coding the data allows the researcher 'to simplify and focus on meaningful characteristics of the data' (Hair et al. 2007, p. 292), and to force some order and categorisation onto a narrative text that initially appears unordered and

uncategorised, by sorting the data and distinguishing them according to various concepts and themes (Faherty 2010; Ghauri 2004; Miles and Huberman 1994).

The overall objective of coding one's data in qualitative research is to identify explicit pieces of narrative that one believes contains meaning or interest for the general research problem at hand (Boeije 2010; Faherty 2010). Having a set of codes helps facilitate the analytical procedure as it further breaks down the raw data into a more organised, manageable, and understandable structure, thus enabling the researcher to quickly locate, extract, group together, and compare all the data relating to a particular research question or theme (Ghauri and Firth 2009; Maxwell 2005; Miles and Huberman 1994; Taylor and Bogdan 1998).

The issue of creating themes or codes is not always straightforward and is an inherently subjective process with no universally-accepted 'correct' set of guidelines (Bryman and Bell 2007; Faherty 2010). However, it is suggested that researchers have a check list of codes, gained from one's research questions, literature review, conceptual framework, and/or hypotheses, prior to collecting data, which can then be complemented with further themes and sub-themes (or codes and sub-codes) that surface from the data (Carson et al. 2001; Ghauri and Firth 2009; Miles and Huberman 1994; Seale and Kelly 1998). Existing literature on the impact of clusters on internationalisation, although relatively sparse, provided a useful provisional start list of codes, which were then supplemented by a number of additional codes that emerged from the interviews. Working with a set of pre-determined categories or codes also means there is less of a reliability threat, as the researcher does not need to invent them him/herself, and can work within an analytical framework to give the research findings an appropriate structure (Jankowicz 2005).

Therefore, the list of codes used in this research was largely determined by the literature review (e.g., 'Interaction' for social interaction, 'Discovery' for chance of discovery by foreign contacts, and so on) (see Appendix III). The names of the codes were determined by myself, rather than from the language used by the interviewees, not only as this tended to be quite varied, but also because it allowed for easier comparisons with literature terminology (Lindsay 2004). Although researchers often use abbreviations to label their codes, I did not consider this essential and felt more

comfortable working with more descriptive labels. Given the semi-structured approach to interviewing, the data were often collected in themed areas. In keeping with the study's inductive approach, however, further codes were added from the data as the research progressed (e.g. 'MSC events' for events organised by MSC authorities that help firm internationalisation in some way). In addition to keeping to Miles and Huberman's (1994) suggestion, this strategy is also consistent with Glaser (1978), who argues that codes or categories are either derived from the literature (he terms these 'sociological constructs'), or emerge during interviews with respondents ('in vivo codes') (Fielding and Lee 1998).

Using Nvivo proved to be a useful aid for storing, managing, categorising, and coding the narrative data, particularly given the large volume of text resulting from the transcribing process. Prior to computers being available in such large numbers, the process of coding, which is very laborious and time-consuming (Fielding and Lee 1998), was performed manually, using photocopies, cut-out texts passages, and the like (Bryman and Bell 2007). CAQDAS packages enable the researcher to organise the data more efficiently, and to access, retrieve, and view the data more quickly (Fielding and Lee 1998; Silverman 2010). For instance, using Nvivo enabled me to further categorise the codes into a more meaningful conceptual structure, or, to use Nvivo terminology, categorising 'free nodes' into 'tree nodes'. For example, free nodes such as 'Social amenities' and 'Lack population' could be entered (or subcategorised) into the tree node 'Interaction' to organise the data even more by breaking them down even further and also to establish a general conceptual framework in which to work. This is consistent with Miles and Huberman (1994) who distinguish between 'first-level coding', which they argue is the first step in the coding process where the researcher summarises segments of data, and 'pattern coding', where he/she groups those summaries into a smaller number of sets or themes. This process helped me to look at the data in a different way, within a conceptual framework. At the same time though, I still had instant access to all the free nodes I had created in case I became confused with the list of tree nodes and needed some clarification.

Nevertheless, there are still a number of limitations of being over-reliant upon such software. For instance, they can distance the researcher from their data (Denzin and

Lincoln 2003). It is also possible that using computer analysis may lead the researcher down an overly quantitative path, focusing on counting the frequency of categories, while overlooking or undervaluing the importance of understanding the *qualitative* aspect of ideas, experiences, and phenomena (Easterby-Smith et al. 2008). Moreover, they regularly impose a rational, hierarchical, linear or quasi-linear, and sequential framework on the data, giving the impression that they contain meaningful patterns, when actually, these are formulated by the software (Denzin and Lincoln 2003). As a result, even in high-ranking and “qualitative-friendly” journals, such as the *Academy of Management Journal*, few papers adopt such techniques (Gephart 2004), while studies in commercial market research still appear to be sceptical of their use, with only 9 percent using CAQDAS (Rettie et al. 2008).

Clearly then, not all scholars have been convinced about the suitability and strength of CAQDAS (Atherton and Elsmore 2007). In fact, the very term “computer-assisted qualitative data *analysis* software” is rather misleading, as using CAQDAS does not eliminate the need for thoughtful and intelligent analysis, while sometimes it can actually impede the process (Dolan and Ayland 2001). Rather than being an *analytical* tool, CAQDAS tends to be used primarily as an assistant for data administration and data management (Dolan and Ayland 2001; Fielding and Lee 1998; Maclaran and Catterall 2002). This view rather echoes my own experience of using Nvivo. I found the software very helpful in terms of managing the data, and for developing and managing my codes. Moreover, its user-friendly applications rendered the task of analysing within individual firms and across the firms (see section 3.16.6) more straightforward than probably would have been the case had I performed these tasks manually (for example, the layout of Nvivo is such that one can focus on ‘sources’ (or individual firms) or ‘nodes’ (or codes/themes), with the advantage of being able to quickly alternate between the two). However, as its functions were largely limited to assisting with data organisation, I did not rely solely on Nvivo for the analysis, as will be discussed below.

On the whole, therefore, while I recognise and appreciate the strengths of Nvivo and other CAQDAS for their ability to assist with data management, it was necessary for me to immerse myself within the data and to use my own interpretive and analytical skills. Thus, although I did not totally forsake the employment of CAQDAS in the

study, I did limit its use to storing, organising, and developing themes and categories (i.e. coding) from the data.

An important point about coding needs to be made here. Although coding the data allowed me to focus on more important aspects of the data more efficiently, qualitative researchers often give the impression that coding *is* qualitative data analysis (Maxwell 2005). Instead, it is important to remember that coding is part of analysis, albeit an important part, as the researcher still needs to interpret his/her findings (Bryman and Bell 2007). In this study, the amount of data was fairly manageable, and the emphasis on coding was diminished somewhat by the fact that only one researcher was involved in data analysis and data collection. Furthermore, as noted earlier, the semi-structured nature of the interviews meant that the data could more easily be sorted into themes. Moreover, there are several problems associated with coding, such as the potential of losing context of what is said, and the dangers of over fragmentising the data such that one loses the narrative flow of what the respondent is saying (Bryman and Bell 2007). Therefore, as with most researchers (who usually do not describe this part of their analysis), I relied on additional types of analyses, particularly re-reading and continuously thinking about the interview transcripts and observation notes that I made during my visits to the MSC cluster and Greater Kuala Lumpur, in order to help answer my research question and to address validity threats (Creswell 2009; Maxwell 2005; Taylor and Bogdan 1998). Also, I constructed tables based on the coded data so that they could be viewed more easily. This is a particularly qualitative strategy which summarises the data into a more manageable format (Birkinshaw 2004; Graebner and Eisenhardt 2004; Jankowicz 2005).

3.16.5 Memoing

According to Glaser (1978, pp. 83-84, as cited in Miles and Huberman, 1994, p. 72), a memo refers to ‘the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding...it can be a sentence, a paragraph or a few pages...It exhausts the analyst’s momentary ideation based on data with perhaps a little conceptual elaboration.’ In this study, memos were sometimes used to help link

pieces of data and to record certain ideas related to the analysis. However, due to the fact that the coding and writing up of the data was performed sequentially and possibly also because the data were collected and coded by just one researcher, the need for memoing was diminished because the researcher had a reasonable understanding of the full range of data collected.

3.16.6 Analysing within- and across-firms

The primary source of data used in the study was the semi-structured interviews. Following a thorough analysis of the data gathered from each of the 10 firms, I proceeded to compare the data between and across the firms. The steps outlined earlier in the chapter (transcription, data reduction, coding, etc.) were thus conducted on a firm-by-firm basis prior to comparing between the firms. Essentially, therefore, the analysis was based on the approach usually adopted in multiple-case studies: within-case analysis followed by cross-case analysis, with within-case analysis typically preceding cross-case analysis since the former provides the data for the latter (Perry 2001).

Eisenhardt (1989) has stressed the importance of conducting within-case analysis in case study research, particularly given the large volume of data which characterises this research strategy. As with most analytical procedures in qualitative research, a standard format for analysing within cases does not exist, but in this study, I followed Eisenhardt in developing a detailed case study write-up for each firm, while simultaneously coding the data in Nvivo. The main purpose of within-case analysis is ‘to become intimately familiar with each case as a stand-alone entity’ (Eisenhardt 1989, p. 540), thus subsequently accelerating comparisons across cases, and I believe that, after spending considerable time analysing each firm, this objective was achieved.

After analysing each firm individually, I proceeded to compare between the firms. In single-case, embedded research, it is important to use multiple data sources in order to enhance generalisability across the population and to avoid jumping to conclusions based on more limited data (Yin 2009). While it is necessary to characterise and

explain the unique aspects of each firm, it is also important to highlight the characteristics that are common to several firms (Ghauri and Firth 2009). Using the themes (codes) developed from the within-firm analysis (which, as explained earlier, were themselves derived from both the literature review and subsequent data collection/analysis), I once again drew upon Eisenhardt (1989) in looking for similarities and differences between the firms, including looking for differences between seemingly similar firms, and also for similarities between seemingly different firms. I then developed a number of tables in Microsoft Word, each based on a particular theme, and inserted a summary of the respondents' comments. This brought together the relevant information in one 'place', allowing me to view the content more easily. The creation of lengthy tables of text imposes some degree of order on the data (Birkinshaw 2004), and it is a particularly qualitative strategy, which summarises the data into a more manageable format, helping the researcher to compare between different informants (Birkinshaw 2004; Graebner and Eisenhardt 2004; Jankowicz 2005). The main purpose of comparing between different firms in the study was to enable me 'to go beyond initial impressions, especially through the use of structured and diverse lenses on the data' (Eisenhardt 1989, p. 541). Although analysing within firms was a vital part of the analytical process, the cross-firm analysis allowed me to emphasise why differences may have occurred, with the use of quotations from the interviews again being particularly helpful in justifying conclusions about differences or similarities between firms (Carson et al. 2001).

A useful approach to perceiving patterns when analysing and comparing between data sources is for the researcher to continuously ask certain questions of the data as he/she is collecting and analysing them (Eisenhardt 1989; Jankowicz 2005). Thus, as I was doing my fieldwork, and during the analysis stages, I would ask myself:

What am I learning?

How do the data that I collected today from this firm compare with the other data that I have already gathered from other firms?

- Are there any emerging trends?
- How frequent are certain issues and responses raised in comparison to others?
- What picture seems to be emerging?

What concepts and issues from existing literature seem relevant to the data that I have collected?

- How did I personally feel about the conversations at the time of the interviews?
- How can I confirm any initial impressions I had?

These questions acted as a rough guide and helped me to remain focused and not get ‘lost’ in all the data. Each time I felt overwhelmed by the large amounts of data, I would return to these questions and record my answers in order to try and make sense of everything.

In line with cross-case analysis in multiple-case studies (Eisenhardt 1989), the 10 firms in this study were examined across various dimensions. The most significant dimension, in relation to the present study, is that of geographic location. Five of the firms had their headquarters based in the MSC cluster, with the other five located outside the cluster.

1. Cluster firms (Firm A, Firm B, Firm C, Firm D, Firm E)
2. Non-cluster firms (Firm F, Firm G, Firm H, Firm I, Firm J)

This offered a vital opportunity to analyse the effects of the cluster on internationalisation, by comparing between cluster- and non-cluster locations. Additional dimensions included the nature of the firms’ activities, their size, their degree of internationalisation, and the time elapsed since being awarded MSC Status.

In terms of ‘activity’, three dimensions were developed, based on information derived from the MSC’s directory, from where the firms were selected:

1. Application software (Firm A, Firm B, Firm H, Firm J, Firm G, Firm I, Firm F)
2. Mobility, Embedded Software & Hardware (MeSH) (Firm D, Firm E)
3. Creative Multimedia (Firm C)

Two dimensions were developed for ‘size’, based on the number of full-time employees:

1. 0-20 (Firm D, Firm E, Firm H, Firm I)
2. >20 (Firm A, Firm B, Firm C, Firm F, Firm G, Firm J)

Two dimensions were developed for ‘degree of internationalisation’. In this case, the dimension was based on international intensity (i.e. percentage of sales derived from international markets), rather than international scope (number of countries from which firm generates revenue) because (a) it was felt that this was a more significant factor, and (b) there was some degree of positive correlation between scope and intensity anyway, with firms with greater intensity usually having greater scope as well.

1. International intensity 0-20 (Firm A, Firm B, Firm F, Firm G, Firm H, Firm J)
2. International intensity >20 (Firm C, Firm D, Firm E, Firm I)

Finally, two dimensions were developed for ‘time elapsed since being awarded MSC Status’

1. Five or more years (Firm A, Firm B, Firm C, Firm D, Firm E, Firm H)
2. Less than five years (Firm F, Firm G, Firm I, Firm J)

Developing categories or dimensions is a good way of counteracting various weaknesses of qualitative data analysis, such as leaping to conclusions based on limited data, or being overly influenced by elite respondents (Eisenhardt 1989). This

tactic involves ‘look[ing] for within-group similarities coupled with intergroup differences’ (Eisenhardt 1989, p. 540).

3.16.7 Presenting the analysis

In interpretivist research, unlike in positivist research, there is no universally accepted model for communicating one’s research (Bourgeois and Eisenhardt 1988). Given the nature of the collected data, the results of interpretivist research are usually presented in descriptive, narrative form rather than as a scientific report, with thick description allowing the researcher to communicate a holistic picture of the experiences of the small number of people they study (Creswell 2009; Rubin and Babbie 2010). Nevertheless, far from being a mere formality, the presentation of qualitative data in writing is central to the analytic process, as it ‘makes us think about data in new and different ways...[and] forces us to think about the meanings and understandings, voices, and experiences present in the data’ (Coffey and Atkinson 1996, p. 109).

One habitual dilemma of presenting qualitative data is finding a balance between qualitative data in the form of quotations, and discussing the theoretical implications (Easterby-Smith et al. 2008). Golden-Biddle and Locke (2007) suggest distinguishing between ‘showing’ data, and ‘telling’ the reader the theoretical significance of those data (i.e. telling the reader what the data means) (Easterby-Smith et al. 2008). Ultimately, the objective of the qualitative researcher is to convey ‘not the stream of recorded conversations and actions, nor the carefully produced analytic tables, but rather the significance of these details...for broader phenomena, processes, and theories’ (Golden-Biddle and Locke 2007, p. 13). One common strategy is to interweave between showing the data, usually illustrating it with a quote, and explaining the significance for theory (i.e. show, then tell) (Easterby-Smith et al. 2008). Thus, qualitative researchers often rely on their ability to interpret the data, ‘showing’ some of their data, usually in the form of quotations (because it would not be feasible to show all the data), and then ‘telling’ others what this means, and its theoretical significance. This interlacing underlines the close connection between empirical evidence and emergent theory (Eisenhardt and Graebner 2007). In this study, the Findings chapters (Chapters 4 and 5) are the ones that are devoted

primarily to ‘showing’ the data, with the aid of select quotations, with a brief explanation (i.e. ‘telling’) of its theoretical significance, while the Discussion chapter (Chapter 6) offers a more detailed discussion of the theoretical significance of the findings (i.e. this is where the reader is ‘told’ in more detail of the theoretical significance of the findings).

In an effort to address the research question set out earlier, the codes that were developed during the within-firm analysis stage of the research were divided into two main categories for each firm: ‘*positive impacts of MSC on internationalisation*’ and ‘*limitations of MSC for internationalisation*’, with a third, ‘*reasons for joining the MSC*’, also deemed pertinent to the research question. The use of such broad themes was considered to be more effective in presenting the within-firm findings in a concise way in order to respond to the research question. Since the within-firm analysis preceded and provided the data for the cross-firm analysis (Perry 2001), the cross-firm findings are presented using the same three broad themes, with a table used to display the key factors within each theme.

3.16.7.1 The use of quotations

Qualitative researchers most commonly present the findings of interview inquiries using selected quotes from respondents (Kvale and Brinkmann 2009). The use of quotations in presenting qualitative data is helpful for demonstrating that the researcher’s findings are grounded in his/her data, and ‘for capturing the nuances and subtleties of a situation’ (Macdonald and Hellgren 2004, p. 272). However, it is important also to avoid overusing quotations, so that the reader can judge the findings more easily (Welch and Welch 2004), particularly in a study such as this which draws on material from 10 firms. Quotations should be contextual, while simultaneously ensuring that respondents are not recognised, and thus, the researcher should implement a project-wide system of anonymity (Kvale and Brinkmann 2009; Richards 2009; Woods 2006). In this study, I have used a number of quotations which, although pertinent to a particular theme, would risk identifying a respondent or firm. Where a quotation potentially jeopardises anonymity, I have clearly replaced key words with a brief clarification, e.g. using [brackets].

As noted earlier, I interviewed multiple respondents in most of the firms presented here. In such cases, it is possible to paraphrase a series of quotes in a report, to avoid repetition (e.g. “several respondents noted that...”), although it can also be prudent to chose a smaller number of quotes (or even just one) among many that illustrates a theme most clearly (Rubin and Rubin 1995). Choosing particular quotations from numerous quotations was based on some useful guidelines from Rubin and Rubin (1995) and Kvale and Brinkmann (2009). First, a convincing quotation should be direct, thus minimising the reader’s need to infer. It is for the researcher to interpret what viewpoint a quote illuminates, proves, or disproves. Second, it is advisable to present quotations from respondents who are in position to know the answer. Third, where arguing that a point of view is commonly held, presenting several quotes from various respondents is a useful way of supporting the argument. Fourth, quotes should be limited to a maximum of half a page in order to minimise complexity and to avoid the risk of the reader losing interest. Finally, pauses and common verbal expressions (e.g. ‘umm’, ‘err’, etc.) that were deemed unimportant were excluded to facilitate comprehension.

The difficulty of modifying or altering quotes is another issue with which to contend. Presenting precise verbatim quotes is not always necessary or desirable, and is more common amongst researchers engaged in conversation analysis (Kvale 2007). In this study, I followed the common practice of editing quotations by omitting repetition and off-the-topic comments, while ensuring that the meaning is preserved, that the words that are quotes were actually said, and that the alterations were clearly marked (Rubin and Rubin 1995). Following these steps is important to avoid lengthy and hard-to-follow quotes (Rubin and Rubin 1995).

3.17 Validity and reliability

Broadly speaking, validity refers to the degree to which a study’s findings are true (i.e. the extent to which findings accurately represent the phenomenon under investigation) while reliability means that, other things being equal, the results of a study are repeatable, with respondents providing consistent answers (Bryman and

Bell 2007; Chambliss and Schutt 2006; Hair et al. 2007; Seale and Filmer 1998). With respect to validity, authors most commonly distinguish between internal and external validity. Internal validity is concerned with the extent to which we can infer causal propositions between certain variables in a study of a particular setting, while external validity refers to the extent to which certain causal propositions are likely to hold true in alternative settings – i.e. the generalisability of the findings (Cook and Campbell 2004; Seale 1999). Reliability is typically concerned with the accuracy, replicability, and standardisation of research methods and techniques. Being a favourite criterion of science, a reliable study should yield approximately the same results if another researcher were to investigate the same phenomenon using the same procedures (Dey 1993; Gummesson 2000).

In many ways, some of the central features of reliability and validity, such as the standardised research instruments, lend themselves more to quantitative research (Bryman and Bell 2007; Mason 2002), and some writers are critical of applying these ideas to qualitative inquiry because they are often unsuitable or irrelevant (Kirk and Miller 1986; Leininger 1994; Lincoln and Guba 1985; Wolcott 1994). Reliability is based on the assumption that methods of data collection can be considered as tools that can be standardised, neutral and non-biased, which is not always possible with qualitative research (Mason 2002). Taylor and Bogdan (1998, p. 9) write that ‘it is not possible to achieve perfect reliability if we are to produce meaningful studies of the real world’. It has been argued that qualitative research is a form of art, and its validity and reliability depend not on replicable outcomes, but on ‘the employment of a data ‘reduction’ process that leads to a result that others can accept as representing the data’ (Tesch 1990, p. 304). Tesch (1990) argues that reducing qualitative data allows the researcher to present an image of a phenomenon’s ‘essence’, rather than overloading the reader with detail and leaving him/her with a minimal perception of the phenomenon.

Given differences in philosophical stances and individual styles, there is more than one way of interpreting events, because qualitative researchers will perceive, interpret, and present each phenomenon or event in a unique way, and thus no two scholars produce the same results in qualitative research, even when undertaking the same task (Janesick 2000; Tesch 1990). Whereas in quantitative research, one can

often insert numbers into formulas and calculate the outcome to assess validity (Hair et al. 2007), qualitative research revolves around the description of people, places, and events, and therefore, validity in qualitative research is concerned with description and explanation and whether or not the explanation fits the description (i.e. whether the explanation is credible) (Janesick 2000). Qualitative studies, particularly case studies based on semi-structured or unstructured interviews, cannot be used to make statistical generalisations about the entire population, as they are based on a small, and sometimes unrepresentative, number of cases (Saunders et al. 2009).

Criticisms such as these have become more common within the qualitative research community, with some writers rejecting any need to defend qualitative research, or to offer any detailed explication of its methods (e.g. Wolcott 2001). Therefore, there remains no set standards available in the literature for assessing the reliability and validity of qualitative research, and the role of reliability and validity in qualitative inquiry remains somewhat blurred (Andersen and Skaates 2004; Chambliss and Schutt 2006; Sinkovics et al. 2008).

This does not mean, of course, that qualitative researchers undervalue the importance of validity and reliability. In fact, some argue that qualitative research may be more valid and reliable than quantitative research. For example, in some ways, the very fluidity and flexibility of methods such as semi-structured interviews may be perceived as enhancing validity, compared to the rigid and standardised nature of structured questionnaires which place far greater emphasis on reliability, often at the expense of validity (Mason 2002). Where the circumstances to be explored are both complex and dynamic, qualitative interviews are most suitable to exploring this complexity (Saunders et al. 2009). Additional methods for assessing validity and reliability in qualitative research, and which were employed in this study, include:

- i) the extent of the rapport between the researcher and the respondent(s),
- ii) the amount of fieldwork undertaken to collect the data,
- iii) the time and procedures involved in the analysis process,
- iv) the extent of participant feedback, and

- v) the proportion of the data associated with the dominant pattern compared to those themes that receive fewer mentions (Daymon and Holloway 2002; Dreher 1994; Gray et al. 2007).

3.17.1 Rapport between researcher and respondents

It is important for the researcher to establish trust and rapport with the respondent(s) being interviewed, while at the same time remaining neutral to what is said (Patton 2002). Developing the trust of the interviewee enhances the reliability and validity of the data (Saunders et al. 2009). One way in which I sought to gain the respondents' trust was to provide each of them with two letters. The first was from my supervisor (see Appendix IV), which promised anonymity, and the second was from the Postgraduate Research Office of my university department (see Appendix IV), which confirmed my position as a doctoral student at the institution. The intention behind this was to enhance my credibility in the eyes of the respondents, and to make them more relaxed, in the hope that this would elicit more honest and detailed information. Moreover, I did not name or pass on any information about the respondents and organisations that were participating in my study to the other participating firms, thus demonstrating my commitment to confidentiality (Saunders et al. 2009).

In order to establish rapport and trust with the respondents, I began each interview by describing the nature of the research, obtaining the interviewee's permission to record the interview, starting the interview by asking 'non-controversial questions' – usually by asking the respondent to tell about him/herself, thus demonstrating my interest in the interviewee personally (Ghauri and Gronhaug 2005). Following these steps was important to develop a rapport between myself and the respondents, creating a relaxed interview environment, easing the participant into the interview situation, and paving the way for more informed research (Klenke 2008). In order to acquire deep knowledge of the social world through interviews, there must be a level of rapport and trust between the interviewer and the respondent (Miller and Glassner 2004). According to Glesne and Peshkin (1992, p. 79), 'rapport is tantamount to trust, and trust is the foundation for acquiring the fullest, most accurate disclosure a respondent is able to make'. Validity and reliability in interpretivist research is achieved, in large

part, through an extended, trusting, and confidential relationship between the researcher and the participants (Dreher 1994).

Furthermore, prior to each interview, a short description of the project was sent to the interviewees to acquaint them with the main objectives of the research. The key 'themes' that were to be discussed during the interview were included in the initial description, although no direct questions were specified. I followed this procedure for two reasons. First, after the first few respondents requested to know what kind of information I would be asking for, I decided to approach the remaining participants in the same way, both because it seemed to be customary to do so, and in order to ensure some degree of consistency in the preparation of each interview. Second, providing respondents with this type of information beforehand can enhance the researcher's credibility in the eyes of the respondents, and, more importantly, promote validity and reliability by allowing the respondent to consider the information being requested and to process some thoughts about the research topic (Bryman and Bell 2007; Saunders et al. 2009). Moreover, I made clear to each participant that the interview could take place at a location of their choice, so that they would not feel uncomfortable (King and Horrocks 2010; Saunders et al. 2009). While most respondents asked me to conduct the interview in their office, some felt more comfortable in other locations, such as hotel lobbies, air-conditioned cafes, and coffee bars. Crucially, none of the interviews took place in a noisy environment, and thus the recordings were not affected.

When conducting interviews in qualitative research, it is also important for the researcher to carefully consider the questions he/she asks, and the way he/she asks them, so as to increase the reliability of the derived information. I always tried to use a neutral tone of voice and to phrase my questions clearly, so that the respondent could understand what was said (Saunders et al. 2009), and, where it appeared that he/she did not fully understand the question, I repeated the question, explaining more clearly what I meant. Moreover, where suitable, 'open questions' (i.e. those usually starting with 'what', 'how', or 'why') were used, which allowed the respondents to describe a particular situation or phenomenon as they wished, and to express their own opinions and experiences (Rubin and Rubin 1995; Saunders et al. 2009). For instance, one of the first, and most important, questions that were put to the

respondents went along these lines: "...how has joining the MSC affected your company's international expansion?" Open questions such as these are important as they do not suggest possible 'answers' to respondents, although it does not necessarily guarantee that the researcher interprets them accurately (Foddy 1993; Perry 2001).

Further, wherever possible, I tried to get respondents to go into detail about a real-life experience that is relevant to the research topic, rather than relying solely on abstract concepts. This 'critical incident technique' is useful because the respondents offer their personal experiences, rather than just their own opinions (Saunders et al. 2009). For example, a number of respondents mentioned certain events organised by the MSC authorities that were helpful to their international expansion (see chapters 4 and 5 on 'Findings'). Each time, I asked them to describe the events, asking how they were useful, what actually happens in these events, what type of knowledge they acquired, and so on.

3.17.2 Amount of fieldwork

Extended fieldwork involves collecting data over an extended period of time. The underlying assumption behind this is that extended periods of observation and data collection gives the researcher confidence that the patterns of relationships he/she is reporting are stable and allows him/her to understand why these relationships occur (Johnson and Christensen 2004). Due to a number of reasons, primarily financial restrictions, it was not possible for me to stay in Malaysia for an extended period of time. Therefore, I collected data during three different periods, each separated by at least six months. During the first two stages of data collection (June, 2008 and April/May, 2009), I personally visited Malaysia for a combined total of nine weeks (due to financial limits, the third stage of data collection was conducted by telephone-based interviews). Spending a large amount of time integrated into the research setting and the social field not only enhanced my familiarity with the study's participants, it also allowed me sufficient opportunity for observation, discovery and interpretation, and to understand the MSC cluster, and the reasoning behind the participants' responses more closely (Dreher 1994; Hair et al. 2007; Johnson 1997).

As noted earlier, triangulation, which refers to the process of using several sources of information, allows the researcher to validate data received from various sources. Thus, in order to improve the study's validity, I conducted interviews with different managers in the majority of the firms, as well as with key individuals in trade associations and the government. Interviewing more than one respondent per firm is an important procedure in triangulation (Patton 2002; Perry 2001). Moreover, as has just been pointed out, repeated visits to the MSC cluster and many of the firms' offices allowed me to directly observe the context of my study, and to make notes on the cluster's setting and environment. Also, all the firms provided me with public information in the form of company brochures and packages which offered basic information and a useful introduction to each firm. Getting data from several types of sources, such as interviews, observations and brochures constitutes a form of triangulation, which enhances the study's validity (Perry 2001).

3.17.3 Time and procedures involved in analysis process

As section 3.16 demonstrated, the process of analysis included time-consuming procedures such as transcribing and reducing interviews, coding, constructing lengthy tables, and interpreting. In order to avoid repetition, it will suffice to say at this juncture that each stage in the analytical process required me to dig through the data, reduce them, categorise (i.e. code) them, and so on, thus enhancing my familiarity with them. Moreover, as data collection and data analysis usually overlap with one another (see section 3.16.1), the analytical process was stretched out over a long period of time, and I was able to modify and improve on future data collection procedures after each analytical stage.

3.17.4 Participant feedback

It is important to consider the views of respondents because they possess the experience and knowledge that the researcher is seeking to extract and present in his/her study. In order to minimise the danger of misinterpreting the meaning of what

participants had said during the interviews, I requested that the key respondent from each firm provide some feedback about the data I had gathered, and the conclusions I had drawn from them (Maxwell 2005; Travers 2001). This process of ‘respondent validation’ (Bryman 2005) was helpful because it allowed me to be confident in my interpretations of the interviews, and, where relevant, gave me the opportunity to amend any misinterpretations I had made (although none were significant). Since the qualitative researcher purports to describe the beliefs and behaviours of various social actors, it is useful for the participants to recognise the validity of these accounts (Hammersley and Atkinson 1983).

While some scholars (e.g. Buchanan et al. 1988) have been known to send their respondents transcripts of the interviews (minus the repetitions, coughs, etc.), I did not consider this to be helpful for two main reasons. First, each transcript was a lengthy document, even after it had been reduced, and thus it was unlikely that respondents would examine it closely. Second, I was more concerned about the validity of my analysis, and the strength of my interpretive skills, than with my transcription abilities. Although there are some limitations to respondent validation (see, for example, Hammersley and Atkinson 1983), it is popular amongst qualitative researchers as it ensures that there is a good correspondence between the findings and the actual views and experiences of the research participants (Bryman and Bell 2007), and has been described by Lincoln and Guba (1985, p. 314) as ‘the most crucial technique for establishing credibility.’

3.17.5 Consideration of less dominant data

As noted earlier, with respect to case studies, the literature does not provide a single, coherent set of validity and reliability tests to determine the quality of the data obtained (Riege 2003). Nevertheless, increasing trustworthiness, validity and reliability can be achieved by embracing deviant or negative cases (in this case, the individual firms), and incorporating them into the interpretation of data (Mills et al. 2010). That is, it is important to understand why a certain relationship did not hold for a particular ‘negative’ case (firm) (Hesse-Biber and Leavy 2011). In this study, variations between firms are taken into account in the cross-firm analysis (Chapter 5),

with possible explanations offered for why they do not seem to ‘fit’ with the rest of the sample.

Qualitative research is sometimes accused of accommodating research bias, such that researchers find what they want to find, dispose of that which does not fit with their bias, and write up the results (Johnson 1997). It is important then that the researcher defends him/herself against claims based only on data confirming initial, predetermined impressions. One way to do this is to clearly identify variations in the data that may not fit in with any pre-conceived ideas, and to show how their findings are based on detailed analysis of all the available data, rather than data that support any research bias, thus demonstrating that all the data have been taken into consideration (Mills et al. 2010; Silverman 2010). As is shown in the Cross-Firm Findings chapter of the thesis (Chapter 5), I have highlighted variations within the data and offered possible explanations for these variations.

3.18 Conclusion

This chapter presented the key epistemological and methodological choices facing researchers in the social sciences, and argued for the suitability of an interpretivist, inductive, qualitative approach based on a single, embedded case study and semi-structured interviews for achieving the thesis’ research objective. Furthermore, the chapter examined issues such as sample selection and size, validity and reliability, and the process of data analysis, which leads to the next two chapters, which are devoted to the key findings of the present study.

4 WITHIN-FIRM FINDINGS

4.1 Introduction to chapter

The previous chapter explained the methodological issues considered in the research, provided details of the specific case context as well as the firms and informants, and described the method used to collect and analyse the data. This chapter is the first of two which presents the main findings of the study. As noted in the previous chapter, the aim here is not to provide the reader with lengthy analytic tables and recorded conversations, but rather to convey the theoretical and practical significance of these details (Golden-Biddle and Locke 2007). The broad structure of this chapter is in keeping with the popular approach amongst qualitative researchers of ‘showing’ the data, usually in the form of quotations, followed by a relatively brief explanation of the theoretical significance (Easterby-Smith et al. 2008; Eisenhardt and Graebner 2007).

The chapter consists of the within-firm findings. A brief overview of each firm is given, followed by a description of the main ways in which membership of the MSC has affected their international growth, and finally a brief conclusion. The aim of conducting a thorough analysis of each firm is ‘to emerge with a well-grounded sense of local reality’ (Miles and Huberman 1994, p. 172) of each organisation. Representative quotations from the respondents, in bold italics, are provided throughout, in order to demonstrate that the findings are grounded in the data.

4.2 Firm A

4.2.1 Introduction

Firm A, which is based in Cyberjaya and was established in 2002, consists of 25 full-time workers and is engaged in software development, with an emphasis on educational software for large government universities. It is unique in this study as it is the only participating firm which has not yet initiated any international activities. However, internationalisation remains a priority for the firm, and it continues to make efforts in order to achieve this objective, as the following subsections will demonstrate.

In total, four interviews were conducted with the firm – two in person with the firm’s Director (one in June, 2008, one in April, 2009), and two by telephone with the Chief Technology Officer, and the Manager of Operations (both in December, 2009). The key respondent (that is, the one with whom I initiated contact and with whom I established rapport) was the Director, who helped introduce me to the two other respondents.

4.2.2 Decision to apply for MSC Malaysia Status

Firm A applied for MSC Status primarily to enjoy the financial benefits that come with the award, particularly exclusion from paying tax for several years, and the possibility of applying for various grants.

Why did you want MSC Status?
Tax-free status and grants (Director, June 2008)

We just want the benefits which the MSC Status companies receive in Malaysia, because we are not taxed, our profits are not taxed. So we benefit from that (Chief Technology Officer, December 2009)

None of the respondents claimed that the firm joined the MSC and chose to locate in Cyberjaya in the hope of improving their chances of initiating international growth in any way. Instead, the main motivation behind their membership was entirely financial, particularly tax breaks. Moreover, their decision to locate in Cyberjaya was purely to satisfy the requirements set out by the government (which stipulates that all MSC firms (re)locate to an MSC area, or at least have 10 percent of their workforce operating there), rather than seeking to take advantage of any cluster externalities

discussed in Chapter 2, particularly learning through networking and interacting, which some scholars have suggested is the most important reason that firms cluster (Breschi and Malerba 2005; Sorenson 2005).

What drew you to Cyberjaya? Why did you choose to locate here initially?
It's a requirement of the MSC
And if it was not a requirement...would you still choose to locate here?
No, we'd probably be in Kelana Jaya¹⁵ (Director, June 2008)

4.2.3 Positive impacts of MSC membership on internationalisation

Although Firm A has yet to initiate its internationalisation, the respondents did not hesitate to point out the support and assistance they have received from MSC authorities. For example, they highlighted an international exhibition where they were invited (and offered some grants) to participate by the MSC.

In Lisbon, we followed an MDEC/MATRADE¹⁶ exhibition, and then, as a result of that tour, we realised we're still not in a position to crack an overseas market (Director, April 2009)

...MDEC organised an event, a marketing event, in Portugal, and we were involved in that exhibition, and we tried to market our product (Chief Technology Officer, December 2009)

The Chief Technology Officer added that the exhibition was helpful as the firm was able to acquire knowledge about international demand trends. The Managing Director added that the MSC provides useful information about international technology trends by offering regular talks and other programmes, similar to the assistance offered by policymakers in the CITER textile cluster in Italy (see section 2.4.2). Finally, the Chief Technology Officer revealed that the firm was more 'visible' to foreign contacts as they were included on the MSC's contact directory, and Firm A had already received a number of inquiries from Australia.

¹⁵ A suburb in Greater Kuala Lumpur

¹⁶ MATRADE (Malaysia External Trade Development Corporation) is Malaysia's national export promotion agency, responsible for assisting Malaysian companies succeed in the international market (<http://www.matrade.gov.my/cms/index.jsp>)

...normally, foreign companies check with MDEC's list of companies that are registered with the MSC. So, at least at that level, we are visible overseas (Chief Technology Officer, December 2009)

Although some studies have discussed how operating in clusters can make firms more likely to be discovered by potential foreign buyers and partners who visit the area (Brown and Bell 2001), the type of 'visibility' here is *virtual* visibility (i.e. they are visible through an Internet directory), and therefore does not necessarily require cluster *location* (but does require cluster *membership*).

4.2.4 Limitations of MSC membership for internationalisation

Though MSC membership has provided the firm with some opportunities to initiate their international expansion, some limitations remain. For example, when asked why, despite the support provided by the MSC, the firm had yet to initiate international expansion, the Director argued that the main problem was the firm's small size and lack of resources, and that he believed that most of the financial assistance available to MSC firms is for product development, rather than international market expansion. Moreover, the firm's experience of foreign customers and potential partners, including during the exhibition in Lisbon, highlighted a lack of awareness within the international community of the MSC 'brand':

People don't know about MSC Status overseas. They hardly even know where Malaysia is sometimes! (Director, April 2009)

This indicates that the MSC has yet to establish a well-known reputation overseas that firms can take advantage of when seeking to internationalise. Implicit in the above quotation is the suggestion that Malaysia is not perceived to be a frontrunner in educational software, at least in the eyes of foreign consumers, and the MSC has not yet succeeded in helping firms overcome this perception. Thus, although it has been argued that cluster membership can enhance the international growth of firms through association with the cluster's international 'brand' (Brown and Bell 2001; McNaughton and Brown 2006), this does not appear to be true in all cases, as Firm A have found to their cost in the MSC cluster.

Moreover, Firm A has not been able to access any localised knowledge flows as a result of their MSC membership. For a start, there is limited social interaction in the area, which, according to the Director, is due primarily to a relatively low population. He argued that the office complex in which the firm is located is largely empty. My own observations (I visited the office twice for interviews) confirmed this statement. Although MSC Status stipulates that firms have to have at least 10 percent of the workforce in the MSC, many firms have been reluctant to fulfil this requirement (Huff 2002). Instead, many firms have a ‘token’ presence in the cluster, using the ‘Cyberjaya address’ to boost their profile, without actually relocating any of their operations to the area. In Firm A’s office building, many of the offices were empty, despite having company names on the doors, underlining the difficulty facing policymakers in attracting firms to the purpose-built cluster. Thus, opportunities for interacting and possibly acquiring knowledge about international operations are limited for the firm. Further, important knowledge does not readily circulate within the cluster due to the competitive, rather than cooperative, nature of MSC firms, as the following remark indicates.

I don’t think it [important knowledge and information] tends to circulate, because most people will try to keep the intellectual property to themselves, rather than sharing [it] with others. Most people in the cyber cities, like Cyberjaya for example, they are more like competitors, rather than working together (Managing Director, December 2009)

It is possible that, because interaction appears to be limited in Cyberjaya, people have yet to develop a significant level of trust between one another, which may discourage firms from sharing valuable knowledge that may help to improve performance, including international performance. Social interaction and relationships usually stimulate trust and reciprocity between people (Jones 2007; Storper and Venables 2004; Sturgeon 2003), which often leads to the exchange of important knowledge (Dahl and Pedersen 2004). Thus, without regular, social interaction, it is difficult for Firm A and others in the MSC to establish trust between one another, and to exchange valuable information which can potentially enhance their internationalisation prospects.

4.2.5 Conclusion

Given that the firm has yet to establish itself overseas, Firm A offered a unique perspective on the MSC's impact on internationalisation. Interestingly, the decision to join the MSC and move to Cyberjaya was not inspired by the possibility of directly enhancing their international growth through access to any cluster externalities, despite suggestions in the literature that this is a major reason for firm clustering. Instead, it was the financial incentives, particularly tax breaks, which are provided to MSC-Status firms that sparked their desire.

Nevertheless, the respondents pointed out that there had been some benefits, in terms of their efforts to internationalise, of operating in the MSC, including being invited (and partly subsidised) by the MSC to present their products at international exhibitions, receiving useful information on international technology trends during regular MSC-organised programmes, and improving their 'visibility' amongst international contacts through their inclusion on the MSC list of directories. However, it should be noted that none of these factors necessarily requires geographical co-location in a cluster. In other words, these benefits do not derive from *physical proximity* to other actors (although it may help), but rather from their *MSC Status*.

Furthermore, it was argued that most of the financial assistance available to MSC firms is mainly for product development, rather than international expansion. Moreover, the lack of awareness within the international community about the MSC, and the value of MSC Status, was highlighted by the CEO. Finally, the respondents revealed that they had not been able to access any knowledge flows within the region, which could potentially help to improve their international growth, due to the competitive nature of firms in the MSC, and their location within a sparsely-populated office complex.

Thus, Firm A is unique amongst the firms in the sense that they have not successfully penetrated any foreign markets, despite their desire and efforts to do so. Although MSC membership has provided the firm with some opportunities to establish themselves overseas, this has not yet been enough to help the firm overcome the obstacles it faces – according to the CEO, the main obstacle is its lack of resources.

Interestingly, with the exception of improving the firm's visibility ('chance of discovery') abroad, the respondents did not consider the cluster externalities identified in Table 2.1, such as access to localised knowledge flows and association with the cluster's 'brand', as being significant enough within the MSC to boost their international growth. In fact, it was argued that knowledge flows within the cluster are actually restricted, while the MSC 'brand' is not well established abroad to be used as a marketing tool.

4.3 Firm B

4.3.1 Introduction

Firm B was established in 1996 and is involved in developing application software for the education and creative multimedia sectors. The firm, which has a total of 40 employees, was awarded MSC Malaysia Status in 2000, and relocated all its operations and staff to Cyberjaya a year later. Although Firm B has not yet established itself overseas as much as it would like, it has been relatively successful in neighbouring ASEAN markets, having done work in Myanmar, Laos, Cambodia, Vietnam, and Indonesia.

Firm B granted me interviews with five senior managers: The Chief Executive Officer (June, 2008), the Chairman (June, 2008), the Chief Operating Officer (June, 2008), the General Manager (May, 2009), and the Business Development Executive (May, 2009). All interviews were conducted in person. My initial contact was with the CEO, and after interviewing her, I was introduced to the remaining respondents.

4.3.2 Decision to apply for MSC Malaysia Status

Firm B applied for MSC Status in order to enjoy tax breaks and to receive support (marketing, financial, R&D support) from the government. The firm was not motivated to join the MSC by the chance of enjoying various cluster externalities, such as accessing localised knowledge flows, which is often considered the main force behind firm clustering (Breschi and Malerba 2005; Sorenson 2005). Instead, the main intention behind the decision was to take advantage of the financial incentives and government support on offer.

<p><i>Why did your company want MSC Malaysia Status? For the benefits...[such as] tax free status, and also the support from the government through MDEC...in terms of marketing our product, in terms of</i></p>

grants, in terms of research (General Manager, May 2009)

Although the firm acknowledged the support offered to MSC firms by the authorities, the cluster externalities outlined in Table 2.1 do not appear to be what attracted Firm B to join the MSC. Moreover, Firm B's decision to relocate to Cyberjaya was due to MSC requirements.

What made you relocate to Cyberjaya?

We had to, because that was the condition of being an MSC-Status company (CEO, June 2008)

4.3.3 Positive impacts of MSC membership on internationalisation

Unlike several others in the study, the respondents from Firm B were relatively complementary in their perception of the MSC's impact on internationalisation. For a start, it was argued that the MSC is committed to supporting the internationalisation of firms.

Because it [the MSC] is a blue-print and it is design-made, one aspect of its design is that the government has actually put in agencies that allow us to make that international link. The main agency is the MDEC...[one of whose] roles is to make that international link, by bringing multinational companies here, as well as by taking companies who have MSC-Status, overseas, in delegations (CEO, June 2008).

MDEC organises business-matching, they organise events, networking events, for us to meet local as well as international companies based in Cyberjaya. So, you know, we have a lot of opportunities to network, to display our products, to talk about our products and services (General Manager, May 2009).

Clearly, the MSC authorities have contributed to supporting Firm B's internationalisation. Foreign firms are attracted to locate subsidiaries in the MSC by a number of incentives, including exemption from local ownership requirements and the provision of high-quality infrastructure (Taylor 2003), thus enhancing the cluster's profile and paving the way for local firms such as Firm B to learn from foreign counterparts in the area (Sajarattanochote and Poon 2009). Similarly, the MSC helps local firms like Firm B by inviting, and sometimes even subsidising, them on events overseas, allowing them to showcase their products to an international

audience. Firm B's CEO describes the MSC's role as being that of a 'link', suggesting that it acts as a bridge connecting local firms to foreign markets.

Further, although the respondents revealed that they mainly acquired knowledge of domestic (rather than international) business activities through informal interaction in Cyberjaya, they have been able to develop a relationship with an Indonesian firm located next door, with whom they are now working on a project for the Indonesian market. As was discussed in some detail in Chapter 2 of the thesis, operating in clusters generates opportunities for regular interaction with proximate firms, which can lead to collaborations (Felzensztein and Gimmon 2009). Where these collaborations are with foreign firms in the cluster, this can directly enhance international growth (Felzensztein and Gimmon 2008), as the experience of Firm B demonstrates.

Firm B also appears to benefit from being associated with the MSC. The General Manager claimed that people overseas are impressed by their MSC Status, making it easier for them to do work abroad.

Having that seal [MSC Status logo] on our letter-heads, and our documents, really means something to the world at large, because it says that we are a company recognised by the government...because not every company is awarded the MSC Status. So...that actually gives us a seal of approval, and people...are more confident dealing with companies with the MSC stamp (General Manager, May 2009).

This is consistent with some work on clusters (Brown and Bell 2001; McNaughton and Brown 2006) that suggest that foreign consumers are more likely to consider doing business with firms that are associated with well-known clusters. According to Firm B's respondents, the MSC is perceived positively in Southeast Asia (where Firm B is engaged in the bulk of its international activities), and this can help MSC firms keen on penetrating markets in the region.

4.3.4 Limitations of MSC membership for internationalisation

As was mentioned in the previous subsection (4.3.3), important knowledge that can help internationalisation is not readily shared within the Cyberjaya community, according to the CEO of Firm B. Instead, the knowledge that is exchanged tends to be more relevant for domestic business. Moreover, technological knowledge and innovation, which could be used to improve firms' competitiveness, does not seem to spill over to other organisations in the MSC. According to the CEO, MSC firms do not trust each other enough to share this type of knowledge.

There's too much competition and IP [intellectual property] problems related to technology and knowledge spillovers. I don't think we have resolved that protection area. I think there's still a strong mistrust about how much will remain your property once it's shared (CEO, June 2008).

These comments underline the importance of trust in knowledge-sharing. Firms in the MSC cluster appear to lack trust in one another. One possible reason for this is the short time some of the firms have spent in the area. As was shown in Figure 3.2, the number of MSC Status firms grows yearly, with some of these firms being set up in (or relocating to) Cyberjaya. It may take time before these new MSC firms trust, and are trusted by, the more established¹⁷ firms, and for valuable knowledge to be exchanged.

4.3.5 Conclusion

In comparison to several other firms in the study, Firm B's respondents were relatively complementary of the MSC, and its impact on internationalisation. Although the decision to join the MSC was influenced by the financial incentives on offer, rather than any cluster externalities, the firm is more than satisfied with its Cyberjaya location and has no wish to leave the cluster.

The respondents recognised the objectives of the MSC authorities in trying to help local firms become international, highlighting the role of the MDEC in bringing firms on overseas delegations, attracting foreign firms to locate in the cluster, and

¹⁷ 'established' in terms of MSC membership

organising networking events to allow firms to showcase their products to potential international customers and partners. Furthermore, Firm B has established a relationship with an Indonesian firm in the area, thanks to their geographical proximity, which has given them the opportunity to work together on a project for the Indonesian market. Moreover, it was argued that being associated with the MSC (in terms of having the logo on their company documents) has helped their international expansion as it enhances their image. Therefore, some of the positive cluster externalities highlighted in Table 2.1 apply to some extent to Firm B's experience in the MSC, and their internationalisation has been enhanced somewhat as a result.

At the same time, however, it was argued that important knowledge does not seem to disseminate between MSC firms due to the competitive (rather than cooperative) nature of firms, and the lack of trust between one another. Further, where knowledge is exchanged in the cluster, it tends to be more relevant for domestic, and not international, business.

Overall therefore, Firm B's experience of operating in the MSC, in terms of their internationalisation, has been somewhat positive. Although the firm has not been able to access any significant flows of knowledge within the region that can help their international expansion, this is compensated, at least to some extent, by the contributions of policymakers in supporting local firms' internationalisation, the specialised infrastructure in Cyberjaya, and the MSC's reputation abroad, which the firm is able to use as a marketing tool to enhance its own image overseas.

4.4 Firm C

4.4.1 Introduction

Established in 1994, Firm C is involved in creative multimedia and the provision of satellite solutions to customers throughout the Asia-Pacific region. In 1997, the firm was awarded MSC Malaysia Status. With 102 full-time employees, it is the largest firm to participate in the study. Moreover, it has the largest international scope amongst the firms, with activities in 11 different countries outside Malaysia constituting almost half (46 percent) of its total sales. Initially based in a relatively remote part of the country, it shifted all its operations to Cyberjaya in 2004.

I conducted three interviews with the firm. The first two, in June 2008 and April 2009 were face-to-face interviews with the firm's COO in his office in Cyberjaya. The third interview was conducted by telephone in November 2009 with the Head of Sales and Marketing.

4.4.2 Decision to apply for MSC Malaysia Status

According to the respondents, the main reason that Firm C applied for MSC Status was not to enjoy any of the cluster externalities listed in Table 2.1, which some scholars suggest is the main reason firms join clusters (Breschi and Malerba 2005; Sorenson 2005), but rather to benefit from the tax benefits that come with it. In addition, one of their leading shareholders has close links with the government, and the firm was also keen to show its support for various government initiatives, including the MSC – although this was not the main reason for their application.

Why did you want MSC Status?

Mainly because of tax benefits that it provides.

Is that the only reason?

That's the key reason. I think also...because we were supporting the government. I

mean...our key shareholder had a strong relationship with the previous Prime Minister, Mahathir. So we are... very supportive of a lot of government initiatives. In terms of the specific business itself, it was because of tax benefits (COO, June 2008)

When asked why the firm decided to relocate to Cyberjaya, the same reasons were given. In 2004, the company was unsure whether to move from their previous location to Kuala Lumpur or Cyberjaya. In the end, Cyberjaya was preferred due to the tax breaks that were offered to firms in the area and their support for the government's initiative.

*What were the main reasons for relocating in Cyberjaya?
We decided to relocate back down to KL in 2004, to improve operations...At that time, we looked at various locations around KL. We chose Cyberjaya for two reasons. One is political, to support the government's initiative. The second is it gave us certain tax breaks – probably the other way around, probably in reverse order. It gave us certain tax breaks...As a result, we do not pay tax on our investments, for example our new satellite, for 10 or 12 years, which has a significant value to the organisation (COO, June 2008)*

Thus, gaining MSC Status and relocating to Cyberjaya was attractive to Firm C insofar as it offered tax breaks and the opportunity to demonstrate its support for the government. Any potential for enhancing their competitiveness, including internationally, through the cluster externalities discussed in the Literature Review chapter, did not appear to be relevant here.

4.4.3 Positive impacts of MSC membership on internationalisation

Although the respondents pointed out some limitations of MSC participation in terms of its impact on internationalisation, they highlighted some interesting advantages as well. In particular, it was revealed that the MSC often invites potential foreign investors and trade partners to Cyberjaya, showcasing local firms, and thereby providing opportunities for the firms to potentially develop vital links to international markets. In Firm C's case, the respondents highlighted several MSC-sponsored visits from various foreign politicians and companies.

MDEC often showcase[s] companies here, and so there is more likelihood that we are going to...be part of a tour. For example, the Minister of Telecommunications of [country x¹⁸] came through, like, 6 months ago, and we had a delegation. If we were based in another part of KL, that would not have happened (COO, June 2008)

...we get politicians from Africa, we get companies from Saudi, which are all related to us. So, we get a whole lot of people coming through this facility...through MDEC. So that has created some opportunities [for us to internationalise] (Head of Sales and Marketing, November 2009)

This observation is particularly significant in the context of this study as it is more likely to be a feature of a *policy-driven* cluster, where policymakers may make considerable efforts to assist firms and to promote the cluster, than an *organic* cluster, which may lack such government support. Whereas in organic clusters, firms have been shown to spontaneously meet with foreign visitors to the cluster, which can lead to the building of relationships and, ultimately, potential trade partnerships (Brown and Bell 2001), in a policy-driven cluster, the ‘meetings’ may be more planned, although the outcome may be similar.

Furthermore, they felt that the infrastructure in Cyberjaya was more specialised and superior to other parts of the country, which had some positive internationalisation effects.

The key thing here is obviously the infrastructure is quite good. Because it [Cyberjaya] is designed as a high-tech city, so they have these facilities. I mean we have quite good power supply, we have chilled water¹⁹ on tap, we have a reasonable amount of space, we have good communications to KL, good communications to the airport...it's got better power here than in other parts of KL. We have power from two separate grids (COO, April 2009)

Being located in Cyberjaya has given us space to put our teleports. The infrastructure has improved, and we can get Internet backbone connectivity which is almost competitive on an international scale (Head of Sales and Marketing, November 2009)

Finally, the decision by the government to locate Cyberjaya and the new international airport close to each other has helped Firm C's international activities in a small way,

¹⁸ Country not specified in order to protect Firm C's anonymity.

¹⁹ Due to Malaysia's tropical climate, tap water is not very cold. Firm C requires chilled water to run some of their equipment.

as it allows their international clients, customers, etc. to visit their facility more easily, sometimes just for one day, and also makes international travel easier for themselves.

The other advantage is that we're close to the airport. That's an advantage – people flying into Malaysia for a day-trip, it's easier for them to come and see us, than going into downtown KL – less travel time. So that's an advantage, maybe a small advantage, but it's an advantage. And we do a lot of international travelling as well, and being close to the airport is also a small advantage in that sense too (COO, June 2008)

[Our previous location] just wasn't practical. At least here [Cyberjaya], we have good connectivity...we can get to KL quite easily; we're close to the airport. So, it's helped [our international business activities] in that sense (COO, April 2009)

4.4.4 Limitations of MSC membership for internationalisation

Notwithstanding these advantages, the respondents also noted how the MSC has, in other ways, had minimal, and sometimes even negative, impacts on internationalisation. For a start, the firm considers itself to be quite unique among MSC firms, which means that any benefits and support coming from the MSC are not always closely relevant to them.

I think that, given that we're such a specialised organisation... I don't think we see a lot of value beyond the general level of support that they [the MSC] provide us (COO, June 2008)

Moreover, the respondents revealed that knowledge that may be useful to internationalisation does not flow through the cluster. Although studies have repeatedly demonstrated that the success of many clusters is largely down to the diffusion of tacit knowledge, particularly through social interaction (Dahl and Pedersen 2004; Saxenian 1994) and interfirm labour mobility (Morosini 2004), it was argued that this does not occur in the MSC. According to the respondents, social interaction is severely restricted in the cluster due to various factors, including a lack of a 'city feel', limited social amenities, and the fact that most people do not live in Cyberjaya.

It lacks a core heart; it lacks a sense of being a city. To me, it's [just] a collection of offices at the moment...There's very few opportunities to network socially here. You go to the pub here, and it's empty...We have our own canteen here [in the office building] because there are very few good places outside. In the evening it becomes very quiet very quickly (COO, June 2008)

It's really an isolated area, Cyberjaya. Not a lot of people live here, apart from students at the University...In Silicon Valley you find more people live close [to the cluster]. This place is actually 35 kilometres from my home, and I would say for most people, it's 15-20 kilometres. So, for socialisation, you want to socialise close to your home, right? So, I would say that geographic isolation makes it difficult for socialising...And...there's no Starbucks or Coffee Bean coffee houses in Cyberjaya. So, it's lacking, I think, quality areas, where those sorts of people [entrepreneurs] would share information (Head of Sales and Marketing, November 2009)

During my visits to Cyberjaya to conduct interviews for this study, I often spent full days in the city, and was able to observe these issues. In fact, finding a place to prepare between interviews was often difficult due to the lack of coffee bars, shopping centres, or other facilities where people in Malaysia often gather to pass time away from the outdoor heat. More importantly, though, these seemingly minor inconveniences appear to be limiting the dissemination of vital knowledge through the cluster that could potentially help local firms such as Firm C become more successful international players.

Furthermore, Firm C pointed out that, not only have they not gained valuable internationalisation knowledge owing to regional interfirm labour mobility, but they have actually lost skilled workers to foreign MNEs based in the cluster.

I have lost some very good executives to companies in Cyberjaya, like HP. So I've lost people. I haven't seen many people come the other way. I think HP pays very well – it's an international brand (COO, June 2008)

Thus, rather than enhancing the firm's internationalisation in some way, the mobility of skilled labour within the cluster appears to be detrimental to Firm C. This is not necessarily a result of the cluster's policy-driven background, but could be linked to the fact that local workers are eager to add working experience in a big-name MNE to their resumes, using local firms such as Firm C as a stepping stone. The geographic proximity between Firm C and big MNEs such as HP, therefore, appears to be a hindrance, rather than an aid, to the former's internationalisation efforts.

Finally, the respondents argued that having the MSC Status has not boosted the firm's profile in overseas markets in any way because the MSC is not well known abroad. This contradicts the findings of some studies (e.g. Brown and Bell 2001), which suggest that cluster membership can enhance internationalisation through association with the cluster's 'brand'.

To me, it [MSC Status] is not that relevant. To the people we speak to, what's more relevant is the quality of the services you provide them. That, to me, is what is relevant (COO, April 2009)

I don't think many people outside Malaysia understand the MSC Status. It's more of an internal thing...if I went to BBC or Disney or National Geographic and said "we're an MSC company", I don't think they'd know what I was talking about (Head of Sales and Marketing, November 2009)

When asked how else the firm was able to promote itself abroad, the respondents revealed that they used various internationally-recognised awards that the company has won to impress people.

...in our industry, there are companies which, every year, are named as, like, best operator, or fastest growing company; we publicise that. We've actually won some of those in the past twelve months, and we actually publicise those in our marketing material (COO, April 2009)

Therefore, the respondents believe that foreign customers are more impressed by the quality of services provided, and by international awards that the firm has won, than their association with the MSC cluster.

4.4.5 Conclusion

Firm C has had some mixed experiences with the MSC, in terms of its impact on the firm's internationalisation. For a start, it was never the intention of the firm's decision makers to relocate to the cluster in order to boost their international expansion. Nevertheless, there have been some benefits to Firm C's international growth of operating within the cluster. Firstly, the cluster location provides them with occasional opportunities to showcase their products to potential foreign investors and

partners visiting the area on the invitation of MSC authorities. Secondly, given the nature of the firm's industry, specialised, high-quality infrastructure is required to compete successfully in international markets. Cyberjaya provides a suitable location due to its focus on high-tech, specialised infrastructure, unlike other areas in the country.

On the other hand, however, the firm has not been able to significantly expand its knowledge of international activities, as the flow of this type of knowledge is restricted in the MSC due to limited social interaction, which in turn, is largely the result of the cluster's 'artificial' environment and lack of social amenities. Moreover, the loss of skilled workers to big-name MNEs based nearby has had some negative impact on the firm's international growth. Finally, being associated with the MSC through their MSC Status has had no positive effect on their internationalisation, contrary to what has been observed in other empirical settings (Brown and Bell 2001; Brown and McNaughton 2003).

In sum, then, the experience of Firm C in the MSC, with regards to the latter's impact on the former's internationalisation, has been mixed. MSC location has enhanced the firm's chances of being 'discovered' by potential foreign investors and partners, and provided them with specialised, high-quality infrastructure and facilities that would not be available elsewhere in the country. Nevertheless, some common cluster externalities that can enhance internationalisation, such as knowledge flows within the region and association with the cluster's 'brand name', are, in some cases, not prevalent, while in other cases, namely the 'poaching' of workers by high-profile MNEs, has even been harmful to the process.

4.5 Firm D

4.5.1 Introduction

Upon its inception in 2000, Firm D immediately applied for, and was granted, MSC Status. The company has been located in Cyberjaya since day one, and is involved in designing hardware for the mobile industry, particularly integrated circuits. Competing internationally is central to the firm's overall strategy, and around 60 percent of total sales are derived from a total of 10 markets outside Malaysia.

Two interviews were conducted with the company's International Sales and Marketing Manager. The first interview, in April 2009, was a face-to-face interview that took place in the respondent's office, while the second interview was undertaken in November 2009 by telephone. Given the small size of the firm, it was difficult to obtain the permission of other senior executives to participate in the study. Nevertheless, due to the firm's size, the respondent was closely involved in most of the firm's major decisions, particularly those related to international expansion.

Firm D was not involved during the first round of interviews in June 2008. However, following the withdrawal of some firms, additional companies were contacted, one of which was Firm D.

4.5.2 Decision to apply for MSC Malaysia Status

Although it has been suggested that firms usually join clusters to enjoy various cluster externalities, particularly in terms of expanding their knowledge base (Breschi and Malerba 2005; Sorenson 2005), Firm D's motives for joining the MSC cluster were finance-based; more specifically, the grants and tax relief offered to MSC firms.

...there are two factors why we wanted to be in the MSC region. One was there was a pool of grants...money that is given out to companies who can develop

products...And also, we had a tax relief. So that's helped us a lot (International Sales and Marketing Manager, April 2009)

Although the firm has considered relocating to Kuala Lumpur in the past in order to reduce the commuting time for workers, the high costs of operating from the capital has put this idea to rest, and the firm is somewhat satisfied with their Cyberjaya location.

4.5.3 Positive impacts of MSC membership on internationalisation

Overall, the respondent was critical of the MSC, in terms of its effect on the firm's international growth. In fact, he noted just one, relatively minor, positive impact, namely that the firm has been able to obtain a small amount of useful knowledge related to international business activities through social interaction in the cluster. Apart from this, however, the respondent expressed his dissatisfaction with the MSC, arguing that it has not provided his firm with any significant additional support.

4.5.4 Limitations of MSC membership for internationalisation

One of the main criticisms levelled at the MSC by the respondent, with regards to its impact on Firm D's international growth, is its lack of efforts to promote MSC firms, and the significance of the MSC Status, overseas.

Well, the agenda is simple. We want to get ourselves promoted. That's why we want them [the MSC] to help promote companies in the MSC. So, let's say, for example, you go for trade shows in the Middle East...They [the MSC] should be there, promoting companies like us, saying [to potential foreign customers] "here, this is what this company can do for you". [But] the exposure is minimal. Our exposure to the world via channels like the MSC, or the MDEC, is minimal...There's a specific group of people in the MDEC organisation who are supposed to help promote us ...They have people who come in and want to see what MSC firms can do for them. They should be able to promote the companies within the [MSC] group. They should say "we have companies who can help you do this"...We're losing that edge; you understand what I'm saying? They [the MSC] are supposed to go out there and promote MSC companies overseas (International Sales and Marketing Manager, April 2009)

Clearly, the firm perceives the role of the MSC not as a means of enjoying cluster externalities that often come with geographical proximity and co-location, as shown in Table 2.1, but rather as a sort of marketing ‘agent’. The respondent added that the MSC Status has no effect on internationalisation, with the firm using its International Standard Organisation (ISO) certificate as a marketing tool instead.

Moreover, the respondent was highly critical of the decision of the MSC to add several new ‘MSC zones’, instead of focusing solely on developing Cyberjaya.

...The MSC has no identity at all...now that the MSC has spread out beyond Cyberjaya, any other company in [the] Klang Valley can have MSC Status, because they have made many MSC zones. So, in the near future, they [the authorities] will say “oh, don’t worry, you can place your company anywhere in Peninsula Malaysia – even East Malaysia [on the island of Borneo], and you’ll be called an MSC company”. So it’s become so generalised already. The main reason that people were told to move to Cyberjaya was because they wanted a cluster of companies here. But now they make it so easy that the whole country is an MSC zone! There’s no identity anymore, you know? (International Sales and Marketing Manager, April 2009)

This criticism was echoed by a respondent from one of the firms which was later excluded from the final study (due to a lack of further participation by additional respondents). During my visits to Malaysia, I visited two of these ‘new’ MSC areas and interviewed several entrepreneurs there in order to get a clearer picture of what was happening²⁰. In many cases, firms were refusing to relocate all the way to Cyberjaya, and thus the authorities had made some concessions and allowed firms to relocate to these alternative areas, which are much closer to Kuala Lumpur, instead. This raises the question of how effectively the government is in regulating and enforcing this particular aspect (i.e. the location of MSC Status firms within the MSC cluster). In fact, it has been observed for quite some time now that many firms with MSC Status have bypassed this law with minimal, if any, repercussions from the government as a result (Huff 2002; Lepawsky 2009).

²⁰ These interviews were also excluded from the final thesis because of a lack of further participation by the respondents in the study.

It is arguable that this has had some negative impact on Cyberjaya, with many firms preferring alternative MSC zones, and even non-MSC zones, thus restricting the growth of the cluster's core (Huff 2002). Moreover, it indicates some limitations in the planning of the cluster. Instead of introducing new 'MSC zones', it might have been useful to focus on developing the cluster's core city, Cyberjaya, which has yet to fully establish itself as a strong cluster. It also highlights some key differences between organic clusters and clusters built from scratch by policymakers. Whereas organic clusters develop more 'naturally', policy-driven clusters built from scratch may suffer from poor planning on the part of policymakers, which can limit its positive impact on firm internationalisation. In the case of the MSC, the respondent from Firm D feels that the cluster lacks any identity or focus, as more and more MSC zones are added to the picture. This means that fewer firms are co-located in one specific geographic area where they can potentially share valuable knowledge on international activities.

4.5.5 Conclusion

Despite acquiring a small amount of knowledge through social interaction within the cluster, the experience of Firm D in the MSC, in terms of its impact on internationalisation, has been a largely negative one. Although the firm did not join the MSC in the hope of enhancing their own international growth, they do have high expectations of the cluster – expectations which they feel are not being met. However, these expectations may be slightly misplaced, as the firm seems to expect the cluster authorities' main role to be that of international promoters for MSC firms. While it is not contested that this is an important role that cluster policymakers can play, it detracts from arguably the main asset of clusters vis-à-vis internationalisation, namely externalities associated with geographic co-location.

Nevertheless, another of the respondent's arguments, i.e. that the cluster lacks a core identity as authorities add more and more MSC zones without fully establishing Cyberjaya itself, can be considered a valid one. In order for the cluster to be able to fully support the internationalisation of local firms, it is important to have at least one established, successful 'zone', rather than attempting to 'spread' the cluster over

larger areas. The success of most clusters lies in the very fact that they are limited in geographic space. Although the policymakers' intentions may be noble as they seek to spread cluster externalities more widely, the effect can be somewhat detrimental to the cluster's overall success, including its ability to enhance firm internationalisation.

4.6 Firm E

4.6.1 Introduction

Established in 2001, Firm E is involved in the design, development, and marketing of hardware, specifically integrated circuits. With 12 employees, it is the joint-smallest firm to participate in this research. Despite its small size, however, it has been relatively successful in international markets, and has recently set up a subsidiary in Silicon Valley. It has been based in Cyberjaya from its inception, with its application for MSC Malaysia Status granted in 2002.

Two interviews were conducted with the firm, both with the Vice President, who is also the firm's Chief Finance Officer (CFO). The first interview took place in person in April 2009, with the second interview conducted by telephone in November 2009. Further access to additional respondents was not given as potential informants did not wish to participate in the study. Nevertheless, due to the small size of the firm, the key respondent was closely involved in all the firm's major decisions and was thus deemed sufficient to represent the views and experiences of the firm.

Firm E did not take part in the first round of interviews in June 2008. Their participation was not requested until several firms had to be excluded from the study due to their unwillingness to provide further interview access.

4.6.2 Decision to apply for MSC Malaysia Status

Firm E applied for MSC Status for various reasons. Firstly, it gave the firm greater flexibility in terms of funding, with no capital control or the need to gain the approval of the National Bank of Malaysia (Bank Negara Malaysia) to transact with overseas companies. Secondly, MSC Status gives firms the ability to employ unlimited foreign knowledge workers. Thirdly, the firm was attracted by the possibility of applying for

grants that are exclusive to MSC firms. Finally, in recognition of efforts by the Malaysian government to promote the cluster, the firm felt that they would gain greater recognition, both locally and globally, by having the Status, and by physically locating in Cyberjaya, which, the respondent claims, often plays host to businesspeople visiting from various countries. Thus, the firm was interested in MSC Status and Cyberjaya location for a combination of financial and market-driven reasons (Brown and Bell 2001). From the perspective of the present study, the firm's expectation that cluster participation would help their international growth is particularly relevant.

4.6.3 Positive impacts of MSC membership on internationalisation

According to the respondent, MSC membership has had a number of positive impacts on the firm's internationalisation. It should be noted that these positive impacts stem predominantly from their MSC *Status*, in terms of support from the MSC authorities, rather than their MSC *location*. For a start, it was argued that the MSC is responsive to helping firms with ambitions to enhance internationalisation. For example, the authorities regularly promote MSC companies, particularly those based in Cyberjaya, in international seminars.

I think they [the MSC] have extended a lot of support in terms of bringing up the name of the company. In fact, they had this world seminar last year... So, during that seminar, we were, basically, chosen as one of the MSC companies to be promoted by [the] MSC, and...because there were a lot of overseas participants, you know, they tried to match us with those – some of the customers and suppliers from overseas (Vice President/CFO, April 2009)

Moreover, the grants that attracted the firm to apply for MSC Status in the first place have been used to develop a new radio frequency integrated circuit, which has raised the company's profile to a par with other companies worldwide.

...because from that grant, we developed one of those radio frequency IC products, you know, which is quite a difficult product to develop...So, I think that by having that kind of product, it raises the profile of the company to be at par with other companies around the world, because we managed to develop that kind of product, which has never been developed by any other Malaysian company (Vice President/CFO, April 2009)

Finally, MSC authorities often organise events aimed at assisting local firms to compete more successfully internationally. The respondent pointed out that the MSC usually tries to ‘match-make’ local firms with foreign investors, who are frequently invited to attend these events.

...sometimes, the MSC has these programmes, where they bring in prospective investors, or whatever, from overseas. Then they will try to match-make, you know, to bring all the companies to our place. Like, a few years back, we had investors from Scandinavia. So, this semi-conductor company knew us through the MSC (Vice President/CFO, November 2009)

In addition to the positive impacts on internationalisation of MSC Status, the respondent also acknowledged that their physical location in the MSC cluster has been helpful to their international business activities. In particular, the cluster’s pre-planned proximity to the airport, which allows foreign clients to conduct short transit-visits to the site, and the presence of big-name MNEs, which adds some prestige to their Cyberjaya address, were cited.

...we have some, like, overseas suppliers or customers. You know, sometimes they just transit in Malaysia; they’re not going to spend that much time...from the airport, it takes 30 to 40 minutes [to get to Cyberjaya]. So, there were cases where they just landed in KLIA, then come here for the meeting, then just go to the airport, and just go off.

...the presence of other companies, like HSBC, DHL, you know, BMW...in terms of profile, there is, to me, there is some [international] prestige there. You know, like, you are basically in the same cluster as all those companies (Vice President/CFO, April 2009)

4.6.4 Limitations of MSC membership for internationalisation

In spite of these positive impacts of MSC membership and location on the firm’s internationalisation, the respondent acknowledged that there were also some limitations. For example, it was suggested that MSC support is largely geared toward IT companies, rather than semi-conductor companies such as Firm E. As a result, the respondent insisted that the firm’s international success was mainly down to their

own efforts, rather than any assistance from the MSC. More crucially, though, the respondent made a very interesting observation. When asked about the nature of the firm's social interaction within the cluster, he claimed that he and his co-workers only regularly interact with fellow domestic SMEs, and that they met less with people working in foreign companies based in the cluster. This was because of the way in which parts of Cyberjaya have been designed and laid out, with many small, local firms, including Firm E, based in the SME Technopreneur Centre, and larger, foreign firms located elsewhere. Thus, although the presence of many MNEs in the cluster enhances the prestige of having a 'Cyberjaya address', it has not meant that small local firms such as Firm E frequently interact with them and acquire vital knowledge that could improve their international competitiveness.

*Why do you not interact socially with foreign companies in Cyberjaya?
Why not with foreign companies? Mainly because of the locality. I mean...we are an SME company, so the place where we go for lunch and so on, normally we just meet the same kind of people...It's just that our company is located in the SME building [the SME Technopreneur Centre], and most of the companies in this building are smaller companies...You know, we meet up once in a while [with people in foreign companies in the cluster], but not that frequently (Vice President/CFO, November 2009)*

4.6.5 Conclusion

There have been some benefits to Firm E, in terms of their internationalisation, of physically locating in Cyberjaya, such as proximity to the airport and having an increasingly internationally-valued address. However, the main advantages from MSC membership seem to be related to non-geographically-related externalities of MSC *Status*, specifically marketing and financial support from authorities. Thus, the positive impact on Firm E's internationalisation of geographic co-location and proximity in the cluster appears to be less significant than the impact associated with MSC membership, which does not necessarily stem from geographic clustering.

In terms of the limitations of MSC membership, perhaps the most important point here relates to the actual layout and design of the cluster. To some degree, small, domestic firms such as Firm E are isolated from foreign firms, thus minimising opportunities for the former to interact and potentially acquire knowledge of

international activities from the latter. Thus, certain aspects of the cluster's design do not appear to enhance firm internationalisation. Clearly, this point is likely to be of less relevance to organic clusters, which are by their very nature less pre-planned in their origin and development, and more pertinent to policy-driven clusters built from scratch.

4.7 Firm F

4.7.1 Introduction

Established in 2000, Firm F is involved in the development of software for data integration in bioinformatics and biotechnology solutions. The firm, which has 60 full time employees, was awarded MSC Malaysia Status in 2004. Given the small size of Malaysia's market, expanding their business activities to foreign markets is central to the firm's strategy, and five percent of their total sales come from ten countries outside Malaysia. Firm F has an office in Bangalore and is engaged in a joint venture in Thailand.

Despite receiving MSC Status, the firm has resisted pressure from the government to relocate to the MSC cluster, arguing that this would be detrimental to their success, both locally and even internationally, due to the advantages of their present locations, as well as the high rental costs and distance of Kuala Lumpur from Cyberjaya. Instead, the firm has two main offices outside the MSC, the first one (i.e. the headquarters) just outside the city of Kuala Lumpur, and the second in a suburb of the capital that is best known for its lively atmosphere, including numerous bars, smart coffee shops, and 'upmarket' restaurants²¹.

I conducted a total of five interviews with four key respondents from the firm. In June 2008, I interviewed both the CEO and the Vice President in person. In April 2009, I interviewed the Vice President, again in person. In November 2009, telephone interviews were conducted with both the Business Development Manager and the Vice President for Medical Sciences.

²¹ In order to protect anonymity, the specific details of the company's location are not revealed in this thesis.

4.7.2 Decision to apply for MSC Malaysia Status

Given the firm's resistance to relocating to the MSC cluster, it is not surprising that their motivations for applying for MSC Status were largely related to financial gains associated with MSC *membership*, as opposed to those connected with *geographical co-location*, as suggested by Breschi and Malerba (2005) and Sorenson (2005). Thus, their decision to apply for MSC Status was triggered by the following factors (in order of importance):

1. The opportunity to be exempt from tax for up to ten years.
2. The ability to employ foreign workers more easily.
3. The option of importing foreign machinery without paying tax.

4.7.3 Positive impacts of MSC membership on internationalisation

The respondents argued that MSC membership has provided very few benefits to the firm, in terms of internationalisation. However, one positive factor that was noted was related to Cyberjaya's infrastructure, which is surprising, given the firm's reluctance to relocate to the cluster. According to the respondents, their MSC Status allows them to utilise the facilities available throughout the MSC, even though they are not actually located there.

One of the infrastructures that they have, the virtual reality centre...we do find that it has been a bit useful for us...especially if we have to show or demonstrate our applications to an international audience...I think the Virtual Reality Centre they have is pretty good (Business Development Manager, November 2009)

Although they are not located in Cyberjaya, the firm's headquarter office is only around thirty minutes' drive from the city, and thus this does not necessarily prevent them from accessing some of the facilities available in the MSC cluster.

4.7.4 Limitations of MSC membership for internationalisation

At the same time, however, the respondents revealed various limitations of MSC location, in terms of its impact on internationalisation. What is particularly interesting here is that they often commended their non-MSC locations in the process. It was argued that the firm's two offices are in more strategic locations than would be the case if they relocated to the cluster. The headquarter office is just outside Kuala Lumpur and is surrounded by lush forests and a picturesque lake, which often impresses visiting international clients. The other office, meanwhile, is right in the middle of a Kuala Lumpur suburb known locally as a networking hub, and this location has enabled the firm to discuss international business activities with other actors on a relatively informal basis.

[The] business community tends to converge in this place [the firm's second office]. So you get the opportunity to meet them and talk to them often, with regards to international business development (CEO, June 2008)

When my international clients come here [to the company's office headquarters], they are very impressed by the location, you know. I don't think many of the companies in the MSC have a view like this...So, whenever they come here, they always feel that this is very much a high-end office place...Even if you go to the MSC, you cannot have a lake-view. So when I have international clients, and when I bring my clients to this location, they're always impressed (Vice President, April 2009)

[The CEO] is always very fussy about choosing the location of our office. [The location of the firm's second office] is very good, you know, because it's the place where everyone goes...for networking. [The CEO] and I are there at least three times a week, you know (Vice President, April 2009)

[The location of the firm's second office] is surrounded by pubs and nightlife...it's just like Silicon Valley, where a lot of people [tend to] sit in a place and congregate, and talk about things. Those kinds of environments thrive in [this location]. You would probably have seen that when you went there²²; everybody's just having a cup of tea and there are a lot of discussions [going] on. That appears to be lacking in the MSC (Business Development Manager, November 2009)

In addition to these criticisms of the geographical location of the MSC, the respondents also pointed out their dissatisfaction with the lack of positive impact on their internationalisation of MSC membership. More specifically, it was argued that (a) obtaining the grants on offer to MSC firms was difficult; (b) MSC Status is not

²² Respondent is referring to my visit to the office in June 2008, when I conducted the first two interviews with the firm.

widely known abroad and therefore cannot be used as a marketing tool; and (c) networking events organised by MSC authorities are not very useful as the focus tends to be on encouraging the development of social networks, rather than actually teaching firms how to improve their international competitiveness.

They [the MSC] have a lot of grants which are available [to MSC firms], but [Firm F] are yet to obtain any of the grants for the very simple reason that, as is typical of the MSC, you don't get anything...the implementation is horrible (Vice President, April 2009)

MSC Status does not add value. ISO [the firm's International Standard Organisation certificate] adds value; CMMI [the firm's Capability Maturity Model Integration award] adds value...accreditations which are recognised globally. MSC is [more of] a Malaysian initiative (Vice President, April 2009)

...when we win [these] awards, international people look at us. They are looking at the coverage...and they say..."these are the kind[s] of companies which can compete in technology and can do well in international business. And that makes more difference than being physically located in the MSC corridor and having MSC Status (Vice President for Medical Sciences, November 2009)

...networking sessions that are organised by MDEC focus on non-technical issues...it's more of a social interaction session, rather than one that is concerned with international technology development, product development, solutions...So, some kinds of discussions are not encouraged at all [in these MSC-organised networking events] (Vice President for Medical Sciences, November 2009)

4.7.5 Conclusion

The respondents from this firm were, on the whole, critical of what they perceived to be the MSC's limited impact on their internationalisation. The potential benefits associated with MSC *membership* have not sufficiently materialised and have been offset by the difficulties the firm has experienced in obtaining financial support from the authorities and the MSC's limited international reputation. With regards to *geographic location* and any potential benefits of MSC (re)location, the respondents did not seem convinced that moving to the cluster would enhance their international expansion, for two main reasons. First, they are still able to enjoy access to some of the high-quality facilities available to MSC firms in Cyberjaya that enable them to showcase their products to international audiences more easily. Second, all five respondents were adamant that the firm's two offices were in highly strategic

locations in terms of internationalisation, particularly when compared to MSC location.

4.8 Firm G

4.8.1 Introduction

Firm G develops application software for mobile phone technology, providing these solutions to financial institutions, interactive media, and corporate businesses. It was established in 2003 and a year later was awarded MSC Malaysia Status. With a total of 30 full-time employees, the firm generates revenue from three different markets outside Malaysia (all in Southeast Asia), which constitute 10 percent of its total sales. In Vietnam, the firm has set up a joint venture.

Upon receiving MSC Status, the firm set up a small office in Cyberjaya to satisfy MSC requirements, although its headquarters remain in Petaling Jaya. Firm G has been reluctant to relocate fully to the MSC cluster due to high rental costs and distance from residential areas in Greater Kuala Lumpur. Instead, the Cyberjaya office is used primarily for R&D, with the company's programmers using the office most frequently.

Firm G granted me three interviews in total. The first interview with the firm was in person with the CEO in Kuala Lumpur in June 2008. The second interview was carried out in May 2009, and was again conducted in person with the same respondent. The third and final interview took place in November 2009, and was conducted by telephone with the Business Development Manager, whom I had met informally during my previous visit to the company's headquarters six months earlier.

4.8.2 Decision to apply for MSC Malaysia Status

The main incentive for Firm G when applying for MSC Status was to enjoy tax relief for several years. In addition, however, the firm was attracted by certain services provided by the MSC to MSC firms, particularly subsidised training for staff.

Moreover, the decision to set up an office in Cyberjaya, the heart of the MSC, was 'purely to satisfy [the] MSC' (CEO, June 2008).

Crucially, however, it was not the potential to enjoy any of the various cluster externalities listed in Table 2.1 that triggered Firm G's interest in MSC Status and MSC location, as suggested by certain authors (Breschi and Malerba 2005; Sorenson 2005). Rather, the firm was lured by various financial gains and services on offer to firms with the Status. Physically (re)locating its headquarters to the MSC cluster does not appear to be significant in any way for Firm G to enjoy these benefits, as they can still avoid paying taxes and receive subsidised training for workers while operating in Petaling Jaya.

4.8.3 Positive impacts of MSC membership on internationalisation

Despite being physically present in the MSC (at least to a small degree), the main advantages to Firm G's international expansion of MSC participation are not related to geographic co-location in the cluster. Instead, the benefits of being part of the MSC are largely independent of geography and more concerned with marketing and financial support from policymakers. For instance, the CEO acknowledged the grants that are available exclusively for MSC firms to apply. He revealed that his firm was in the midst of applying for one of these grants, which he perceives will enhance Firm G's international growth indirectly by allowing greater investment in R&D and product improvement. The most important advantage, however, based on the interviews with the respondents, was attendance and participation in various events organised by the MSC aimed at supporting the internationalisation of MSC firms. Many of these events are aimed primarily at promoting local MSC companies and encouraging the development of contacts and relationships between local firms and foreign firms, customers, investors, and so on.

[MSC membership] improves the business, because sometimes they [the MSC]...organise international business trade networking [events], you know, they will organise one-to-one business-matching...So, we find that they have a good, consolidated effort in promoting Malaysian companies in the eyes of overseas customers...The latest one [event] was the WCIT, the World Congress IT last year...they arranged one-to-one business meetings for us...So, we met up with

customers from [the] Middle East, and other countries (CEO, May 2009)

...every week, there's a [MSC-organised] workshop around...They also invite foreign guest speakers from other countries. On and off, they [the foreign guest speakers] drop by here and give speeches...and most of them have experience of how to deal with the people, and the government sector[s] overseas. So, we get some ideas of how we are going to continue the business [internationally], and so on...They [the MSC] organise talks, and they provide us with information on international market needs. And then, if we are interested, we can engage with them, with other parties, to enter overseas markets...In fact, they [the MSC] had a talk about three weeks ago, regarding entering the China market (Business Development Manager, November 2009)

4.8.4 Limitations of MSC membership for internationalisation

As has been noted, the key benefits of MSC membership for Firm G are related to financial and marketing support offered by policymakers, rather than any externalities associated with geographical proximity in the cluster, despite having a small office in Cyberjaya. Moreover, the firm is reluctant to relocate fully to the MSC, partly because of the distance and high cost of the cluster, but also in part because they appear to be able to enjoy several 'cluster' externalities discussed in the Literature Review section of the thesis in their present headquarter location, Petaling Jaya. Petaling Jaya is rapidly growing, such that it was recently declared a 'city', and is attracting more and more successful companies, including international companies, to the area, thus providing increasingly valuable opportunities to develop local networks and information exchange.

...well, I find PJ [Petaling Jaya] to be a very strategic location...There's always a lot of exhibitions going on here and there, which makes it a good place for building contact with international companies (CEO, June 2008)

...we believe that there is a lot of other development coming up in PJ, and PJ is slowly growing to be one of the capitals, one of the most important town-centres, in the country. So, we...are following the growth of the city as well. [And] with that, I believe that there are more...companies that are coming to the PJ area, so there [are] more and more business people moving in[to] this area, whether it's international, whether it's local...and we believe that will build up the community...There are some clients that we have here – international [clients] – that are relocating to PJ, so [it's] easy for us – to go and see them.
(CEO, May 2009)

4.8.5 Conclusion

Thus, the main benefits of MSC membership, in terms of Firm G's internationalisation, are not derived from their physical presence in the cluster. Instead, geographic co-location appears to be largely irrelevant, with the main advantages stemming from MSC *Status* through financial and marketing support. Therefore, the key externalities associated with organic clusters, as shown in Table 2.1, do not play a significant role, as far as Firm G's experience in the MSC goes.

Interestingly, however, some of these externalities appear to be prevalent in Petaling Jaya, the location of the firm's headquarters office. According to the respondents, it appears as though Petaling Jaya is growing more rapidly than the MSC cluster, and is attracting more and more international firms and clients to the area, thus providing more opportunities for Firm G to network and gain potentially valuable contacts and knowledge related to international expansion. Therefore, locating in an industrial cluster may not always be necessary for firms to enjoy certain 'cluster' externalities.

4.9 Firm H

4.9.1 Introduction

Firm H is an R&D company that provides various applications, particularly software development and turnkey systems, to private- and public-sector organisations. The firm gained MSC Malaysia Status in 2001, two years after being established. With just 12 full-time employees, it is the joint-smallest company to participate in this study. The company is based in a suburb²³ of Kuala Lumpur; although it also has a small office in Cyberjaya (which remains unoccupied most of the time, although it is used as a ‘correspondence address’) in order to satisfy MSC requirements. According to the Managing Director, engaging in international business activities is vital to firm strategy due to globalisation forces and the drop in available projects in Malaysia. Foreign sales constitute 20 percent of the firm’s total sales, with revenues generated from three international markets: Taiwan, China, and the US.

I conducted four interviews with three senior executives within the firm. The first interview took place in person in June 2008 with the firm’s Managing Director. In April 2009, I had planned to meet the same respondent once again, although the day before the arranged interview, the respondent contacted me to inform me that he did not have time to meet in person this time but eventually agreed to a telephone interview. In November 2009, I contacted the same respondent to ask whether he could introduce me to additional respondents in his firm that he considered would be suitable for my research project. He put my query to the Finance Manager and the Business Development Manager, both of whom agreed to telephone interviews.

4.9.2 Decision to apply for MSC Malaysia Status

²³ It was felt that revealing the suburb would jeopardise the firm’s anonymity, and therefore, this information will not be disclosed in the thesis.

Although the firm's Cyberjaya office provides the firm with a relatively prestigious address, this was not the reason they applied for MSC Status. Instead, it was the tax breaks offered to firms with the Status that appealed most. Therefore, rather than seeking to enjoy any of the cluster externalities listed in Table 2.1, such as access to localised knowledge flows, which some authors argue are the main reasons behind the industrial clustering of firms (Breschi and Malerba 2005; Sorenson 2005), Firm H was more interested in financial incentives that can be enjoyed, for the most part, regardless of geographical location.

4.9.3 Positive impacts of MSC membership on internationalisation

On the whole, the respondents did not feel that MSC membership has had significant impact on their firm's internationalisation. None of the respondents claimed that having a small office in Cyberjaya has made any difference to the firm's international growth. However, one positive impact was discussed briefly by one of the respondents, who suggested that having MSC Status made the firm more likely to be discovered by potential foreign contacts owing to their presence on the MSC's directory.

[We] are more visible, I think, with...international contacts through the MSC...Our company is listed [on the MSC's directory]. So, from there, I think we are visible to the international arena (Business Development Manager, November 2009)

Although it has been suggested in previous studies that operating in clusters enhances firms' visibility amongst potential international contacts (Ffowcs-Williams 1997; Tambunan 2005), this finding is important because it indicates that firms can still increase their 'visibility' to foreign contacts without even physically locating in the cluster. Mere 'membership' of the cluster may suffice in this regard.

4.9.4 Limitations of MSC membership for internationalisation

Overall, though, the respondents revealed that MSC membership has had only minimal positive impacts on their firm's international growth.

...so far, we have not really benefited much from the MSC Status, actually (Business Development Manager, November 2009)

When asked why the firm had not relocated fully to the Cyberjaya office, and whether this could conceivably enhance their international growth, the Managing Director argued that having MSC Status was a sufficient advantage, and that geographic relocation is irrelevant and may even be detrimental due to high rental costs and excessive competition in the cluster.

For me, there wouldn't be any differences between this area and Cyberjaya, because, you know, we'll always be in contact with our international customers...The status is more important than where you are (Managing Director, June 2008)

Moreover, although the MSC regularly organises events aimed at supporting the international growth of local firms in the cluster, it is difficult for Firm H to frequently participate. According to the Business Development Manager, the firm participates only twice a year due to a lack of time and resources. This was echoed by the Finance Manager, who argued that small firms such as Firm H do not have enough people to participate in these events.

...because we're a small company, we have a lack of resources...in the sense of man-power...I mean, of course we have to see to our business first, rather than participate in all these [MSC] exhibitions, and so on (Finance Manager, November 2009)

4.9.5 Conclusion

Membership of the MSC has not had significant impacts on Firm H's internationalisation efforts, with just one notable exception, namely that their visibility to foreign contacts has been increased owing to their presence on the MSC's directory. In one way, this is consistent with some existing literature which suggests

that cluster participation makes firms more likely to be discovered by foreign contacts visiting the area. In another way, this is a relatively unique observation as it indicates that firms may still be found more easily in clusters, without actually being there. In other words, mere ‘membership’ of the MSC cluster has allowed Firm H to enjoy an externality usually associated with geographic co-location. Apart from this, however, MSC Status and MSC (re)location appears to be largely irrelevant to their internationalisation.

4.10 Firm I

4.10.1 Introduction

Firm I is primarily involved in the development of software for mobile technology firms. The company was established in 2006 and was awarded MSC Malaysia Status a year later. Despite receiving MSC Status, though, Firm I has resisted pressures from the authorities to relocate to the cluster. According to the firm's CEO/owner, many of their main customers are located in Kuala Lumpur, and thus there would be disadvantages of being based in Cyberjaya.

Competing in international markets is critical for Firm I, which has a total of 20 full-time employees, due to increased competition in Malaysia from foreign MNEs. With 95 percent of total sales derived from foreign markets, it is the most intense international competitor amongst the firms. The company is already doing business in Indonesia, Singapore and France, and is initiating projects in three more markets in the near future.

I conducted three interviews with two senior executives within the firm. The first interview took place in person in April 2009 with the CEO/owner, who later introduced me to the Project Executive, who also agreed to a personal interview. In November 2009, the CEO/owner was contacted once more for another interview. Despite initially agreeing to a telephone interview, he later insisted on answering questions by email instead. The initial email interview was deemed unsatisfactory as the respondent's answers were too brief and lacked much discussion and therefore, I contacted him once more to ask for more detailed responses to the questions, to which he agreed.

4.10.2 Decision to apply for MSC Malaysia Status

Although it has been suggested that firms usually join clusters in order to gain access to certain externalities associated with geographic co-location, particularly tacit knowledge flows (Breschi and Malerba 2005; Sorenson 2005), the main reason behind Firm I's decision to apply for membership of the MSC was financial. More specifically, the firm was interested in enjoying the tax breaks offered to all firms with MSC Status. In addition, however, Firm I was keen to contribute in some way to Malaysia's economic development, and being a part of the MSC was one way they believed they could do this.

Why did you apply for MSC Status?

Obviously, the biggest reason is what everybody else goes there for: it's basically the tax shield

Were there any other reasons that you wanted MSC Status?

...national interest. By aligning with the MSC, we hoped that our small company could contribute in some way to the growth of the nation... Because we're involved with the MSC, we obviously have some say [in national economic policy]. Because we're in the community of MSC Status companies, we'd be able to put forward our opinions into how the policies may be, you know [formulated]. That was what we were hoping, anyway (CEO/owner, April 2009)

4.10.3 Positive impacts of MSC membership on internationalisation

The respondents were highly critical of the MSC and what they perceive to be a lack of effort to assist local firms' internationalisation. In fact, it was made clear that there were no direct positive impacts of MSC Status on internationalisation.

There are no direct [positive] impacts [of MSC Status on internationalisation] that I can see, other than them [the MSC] giving [us] some financial grants for projects (CEO/owner, April 2009)

Thus, despite the potential benefits of cluster membership that were discussed in the Literature Review chapter, and summarised in Table 2.1 and Table 2.2, Firm I has only benefited from some financial support from the authorities.

4.10.4 Limitations of MSC membership for internationalisation

During the interviews, respondents expressed several reservations about the MSC and how it has, in their view, largely failed to support firm internationalisation. For a start, MSC Status is considered by the firm to be of no use as a marketing tool in overseas markets, with the respondents revealing that they do not include the MSC Status 'logo' on any of their public documents, including their company website and business cards. Furthermore, the CEO/owner argued that Cyberjaya struggles to attract foreign business visitors, with most preferring to visit Kuala Lumpur, although he predicted that this will eventually change.

...from my perspective, as a CEO, if I want to rub shoulders with international players, KL is the place, because most of them, they will come to KL. We have the hotels here, we have the clubbing here, you know, all that stuff. It's not in Cyberjaya. So, from that perspective, Cyberjaya doesn't work. They need to create the environment. Now, Silicon Valley is different, because they've been there for a long time. So, sooner or later, they [the MSC] will create the environment, but it's not there yet (CEO/owner, April 2009)

Moreover, the Project Executive revealed that the firm has not received any support, either financial or marketing support, for international growth from the authorities. According to the CEO/owner, the fault here lies with the MSC because, in his opinion, the MSC people should approach companies and offer support, rather than wait for companies to ask for assistance. In his view, MSC companies should be considered 'customers' of the MSC.

They haven't given [us] much support, you know. I mean, I can say the support from MDEC is minimal (Project Executive, April 2009)

...there are two perspectives to it, ok. If you ask the MDEC people, they will say "well, you didn't apply [for support]", ok? From my perspective, though, that's wrong, because I am the customer; I am the MSC Status company. I am your customer, you have to approach me and offer this support to me to help me become more successful overseas (CEO/owner, April 2009)

Thus, the respondents were critical of both the geographical location of the cluster, as well as the lack of support from policymakers, both of which, they argued, were not conducive to helping MSC firms' international growth.

4.10.5 Conclusion

Clearly, membership of the MSC has had no significant impacts on Firm I's international business activities, with the exception of some financial grants. Relocating to the cluster is not an attractive option for the firm, because it is argued that Kuala Lumpur is more advantageous due to more networking opportunities with international contacts. However, some of the criticism levelled at the MSC may be slightly misplaced. In fairness to the authorities, efforts to build a successful cluster are not helped by firms such as Firm I refusing to live up to their side of the bargain by not relocating to the MSC. The idea that the MSC is there to *serve* MSC companies demonstrates a lack of appreciation and understanding of the potential value that cluster membership can have on internationalisation (as was discussed in detail in the Literature Review chapter), as many cluster externalities result from geographic proximity of co-located actors. At the same time, of course, this highlights some of the difficulties associated with building a policy-driven cluster from scratch, with many firms not fully understanding the potential significance of co-location, and therefore being reluctant to relocate to a new area.

4.11 Firm J

4.11.1 Introduction

Established in 2003, Firm J is made up of 30 full-time employees and is involved in software engineering and systems integration. Competing in international markets is a priority for the firm as they consider the Malaysian market to be saturated, although at present, only one percent of total sales are derived from abroad. To this end, they set up a subsidiary in Indonesia in 2006 and are actively pursuing entry into various regional markets, specifically Thailand, Vietnam and Cambodia, markets that they consider to be less competitive. After the firm received MSC Malaysia Status in 2007, they set up an office in the cluster, although they sold it soon after without having relocated there. However, following a warning from MSC authorities that their Status would be revoked if they did not relocate, the firm now has plans to shift the entire office to the cluster, purely to satisfy MSC requirements.

A total of four interviews were conducted with three respondents from the firm. In May 2009, personal interviews took place with the COO and the Business Development Executive. Six months later, I conducted telephone interviews with the COO once more, and also with the Senior Manager.

4.11.2 Decision to apply for MSC Malaysia Status

Firm J's decision to apply for MSC Status was motivated by their belief that it would support the firm's growth, both domestically and internationally. In addition, the firm was attracted by tax incentives, training, and technological support offered to MSC companies.

Why did you want MSC Status?

First of all, we expect them to...be the catalyst for [us] growing, both domestically and internationally. And then, they also offer tax incentives. They also provide

training, technology help, and technology guidance (COO, May 2009)

Thus, there was some expectation that MSC membership would enhance the firm's international expansion. However, it is clear that the firm felt that mere membership (i.e. without relocation to the cluster) would suffice, as it showed no interest in moving to the MSC initially. Thus, the expected benefits were all support-related, rather than associated with the cluster externalities listed in Table 2.1.

4.11.3 Positive impacts of MSC membership on internationalisation

Although the firm appears to have been somewhat pressured into relocating to the MSC cluster, the respondents nevertheless anticipate that it could be beneficial to their international expansion. According to the COO, meeting this MSC requirement would make it easier for them to work with the officials and to gain any necessary support.

If we comply with the MSC [on relocation], it [would be] easier to engage them...The first question they always ask when we talk to them [is] "do you have an office in the MSC?" So...it [the location issue] is not quite a show-stopper, but sometimes it slows things down (COO, May 2009)

Nevertheless, even without relocating, the MSC has provided some benefits for the firm's internationalisation. More specifically, the MSC has provided Firm J with numerous opportunities to meet with foreign firms and customers in various events organised by the authorities, including business-matching, exhibitions and conferences, although the company's limited resources means they are not always able to participate.

...they [the MSC] do business match-making also, with foreign companies...We receive many emails to join them. They arrange events, they organise seminars, workshops, whatever, but, our [resources] are very tight, so we cannot always go. But, you know, they are doing good things. It's just that we haven't always taken the opportunities (COO, May 2009)

...we do participate in IT exhibitions and things like that throughout the year. These kinds of IT conferences and things are actually initiated by the MSC...Whenever they have these exhibitions and conferences, we are being, sort

of, showcased to the rest of the world (Senior Manager, November 2009)

Interestingly, the firm has been able to participate in these events despite not being physically located in the cluster. The only reason they are not able to participate even more than they already do is because of their limited resources. Thus, although they expect their relocation to the MSC to enhance their international growth, they have still been able to enjoy certain MSC externalities without even operating in the cluster.

4.11.4 Limitations of MSC membership for internationalisation

Although the respondents are confident that their planned relocation to the MSC will boost their firm's international growth, it should be noted that being based in central Kuala Lumpur has had some positive impact itself. More specifically, Kuala Lumpur, which is a relatively heavily populated urban space, particularly in comparison to Cyberjaya, is considered by the respondents to be a good location for developing social contacts that can be useful for internationalisation. For instance, the COO mentioned how he sometimes enjoys a game of golf at a local club in the city with various key contacts, who have provided useful information related to international activities. By contrast, Cyberjaya is considered too 'remote' and populated mainly by technical specialists, with few marketing and sales people, who may be able to provide additional knowledge related to international markets, based there.

...this is the city centre, so this is the area that you'll meet the people that will [help] bring you to the international stage...It's about logistics. It's a lot easier to meet people over here, the international people are around here...Cyberjaya is too remote, and it's more 'technology people' over there. Most of their [Cyberjaya-based firms'] sales offices are in central KL (COO, May 2009)

...sometimes we play golf at the [nearby Royal Selangor Golf] Club with some other businesspeople, and we sometimes talk about opportunities overseas, like in Indonesia (COO, November 2009)

Moreover, it was argued that there is a lack of awareness of the MSC overseas. In part, this was blamed on a lack of marketing activities by the MSC aimed at promoting the cluster, and the value of MSC Status, abroad.

...Indonesians know about MSC, but I don't think they really value it very much. Why not?

It's not been well publicised. I think that MDEC needs to sell [the] MSC more aggressively to international markets (COO, May 2009)

...to be honest with you, I don't see any impact [of having MSC Status] so far...If you've been certified an MSC company...it doesn't carry so much weight if you are abroad. It's like there's not much value on that (Business Development Executive, May 2009)

Finally, it was suggested that MSC membership has thus far had only limited impact on Firm J's international growth because the firm has yet to 'work closely' with the policymakers. In other words, it is suggested that in order for membership of the cluster to have any significant benefits for international growth, firms need to work with the authorities and actively seek out their support, rather than sitting back and waiting for any potential benefits to materialise on their own. As noted earlier, part of the firm's reasoning for relocating to the cluster in the near future is to be able to work more closely with the policymakers in order to receive greater support.

We just don't have a full-time person to communicate with the MSC. We attend some of their seminars, but we don't have enough [people] to follow up further (COO, May 2009)

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This question of how much the MSC helps our international business [growth] goes back to our degree of engagement with them. If we really get into their circle, I think we would benefit, but at the moment we haven't really engaged them enough (COO, November 2009)

4.11.5 Conclusion

Being based in central Kuala Lumpur has had some benefits for Firm J's internationalisation, particularly in networking terms. Furthermore, their association with the cluster (through MSC Status) has not proved to be a valuable marketing tool in overseas markets, as suggested by previous studies (Brown and Bell 2001; Brown and McNaughton 2003). Nevertheless, the firm is evidently quite positive about the potential impact that relocating to the cluster can have for their international development. It is not clear from the interviews, though, whether the potential advantages that are perceived are related to cluster externalities associated with

geographic co-location in the cluster, or to marketing and financial support offered by policymakers, although, given that the firm already enjoys access to valuable social contacts in their present central-Kuala Lumpur location, it is more likely to be the latter.

5 CROSS-FIRM FINDINGS

5.1 Introduction

This chapter presents the cross-firm findings. Here, the aim is primarily to enhance generalisability and to ensure that ‘the events and processes in one well-described setting are not wholly idiosyncratic’ (Miles and Huberman 1994, p. 172). The search for patterns was assisted by listing similarities and differences between each group of firms along the dimensions that were developed earlier (see section 3.16.6), e.g. cluster vs. non-cluster; smaller vs. larger firms; and so forth. Moreover, in line with Eisenhardt (1989), possible explanations are offered for why variations may occur. The findings are once again presented through the lens of the research question, and thus the discussions below are structured in a very similar way to the within-firm findings:

- Decision to apply for MSC Malaysia Status
- Positive impacts of MSC membership on internationalisation
- Limitations of MSC membership for internationalisation

5.2 Decision to apply for MSC Malaysia Status

Even though the backgrounds of the firms were different in several ways (e.g. location, size, etc.), it became evident that there was consistent reasoning behind most of the firms’ decisions to apply for MSC Malaysia Status, namely financial benefits in terms of tax breaks for up to ten years.

Table 5.1: Cross-firm matrix showing reasons for applying for MSC Malaysia Status

	Motivation for applying for MSC Status				
	Financial gain (tax breaks)	Marketing, financial support from MSC	Cluster externalities (Table 2.1 and Table 2.2)	Prospect of enhancing internationalisation	To support government
Firm A	✓✓	✓	×	×	×
Firm B	✓✓	✓✓	×	×	×
Firm C	✓✓	×	×	×	✓
Firm D	✓✓	✓✓	×	×	×
Firm E	×	✓✓	×	✓	×
Firm F	✓✓	✓✓	×	×	×
Firm G	✓✓	✓	×	×	×
Firm H	✓✓	×	×	×	×
Firm I	✓✓	×	×	×	✓
Firm J	✓	✓	×	✓✓	×
✓✓ Strong evidence* ✓ Some evidence* × No evidence					

There was little difference across the groups. The firms, whether based inside or outside the cluster, were all primarily drawn to applying for MSC Status by the tax incentives on offer. However, there was some difference, though not very much, between the cluster- and non-cluster firms in terms of the importance of MSC support. More specifically, for two of the non cluster-based firms (Firm H and Firm

* These ‘measurements’ are based on the researcher’s interpretation of the data and should not be taken as an objective measurement

D), the possibility of receiving support from MSC policymakers was not a factor in their decision to join the MSC, with Firm G and Firm J not considering it a significant factor. By contrast, amongst the cluster-based firms, only Firm C did not consider MSC support to be a factor, while Firm A felt it was not a significant factor.

Similarly, there was some variation depending on firm size, although, again, this was also minimal. Two of the smaller firms, Firm H and Firm I, did not consider potential support from the MSC to be a factor in their decision to join the MSC. By contrast, the same was true for only one of the larger firms, Firm C, although both Firm A and Firm G felt that it was only a moderate factor. Finally, two of the more internationalised firms, Firm C and Firm I, joined the MSC in part to show their support for the government initiative. However, this was not even a minor factor for any of the less internationalised firms.

Thus overall, the most important incentive for the participant firms to join the cluster was the opportunity of enjoying tax breaks for several years. Surprisingly, and in contrast to what has been suggested in some of the literature (e.g. Breschi and Malerba 2005; Sorenson 2005), none of the cluster externalities that can potentially enhance internationalisation (see Table 2.1), were considered to be of any significance here. However, the provision of human and financial support from policymakers, which is arguably an externality associated more with policy-driven clusters than with organic clusters, is of some significance, although the financial support offered to MSC firms (i.e. tax breaks) may only have indirect impacts on internationalisation. Thus, the firms in this study were attracted more by externalities associated with financial and marketing support than those related to geographic co-location in clusters.

5.3 Positive impacts of MSC membership on internationalisation

From the within-firm findings, seven dimensions of advantages of MSC membership for internationalisation were identified: 1) Marketing and financial support from MSC; 2) Events organised by MSC authorities; 3) Enhanced visibility overseas (i.e. greater ‘chance of discovery’ (Brown and Bell 2001)); 4) High-quality infrastructure

in MSC; 5) Knowledge acquisition through social interaction in the MSC; 6) MSC Malaysia Status/Cyberjaya address as a marketing tool; and 7) Proximity to airport. These are summarised in the matrix below, with an interpretative ‘measurement’ of how significant each factor was for the firms’ internationalisation. It should be noted that some of these factors may overlap, particularly the ‘Marketing and financial support from MSC’, which could be extended to ‘Events organised by MSC authorities’, ‘Enhanced visibility overseas’, etc. However, these factors have been kept separate here to allow for a clearer understanding of how MSC membership has enhanced internationalisation. Moreover, and as was pointed out several times in the within-firm findings section, geographic co-location within the cluster is irrelevant to some of these factors, e.g. marketing/financial support received from the MSC. On the other hand, certain factors, such as proximity to the airport, are only applicable to those firms that are fully based in the cluster.

Table 5.2: Cross-firm matrix showing positive impacts of MSC membership on internationalisation

	Positive impacts of MSC membership on internationalisation						
	Marketing/ financial support from MSC	Events organised by MSC	Enhanced visibility overseas	High-quality infrastructure	Social interaction in MSC	MSC Status/ Cyberjaya address as marketing tool	Proximity to airport
Firm A	✓✓	×	✓	×	×	×	×
Firm B	✓✓	✓✓	×	×	✓	✓	×
Firm C	×	×	✓✓	✓	×	×	✓
Firm D	×	×	×	×	✓	×	×
Firm E	✓✓	✓	×	×	×	✓	✓
Firm F	×	×	×	✓	×	×	×
Firm G	✓✓	✓✓	×	×	×	×	×
Firm H	×	×	✓	×	×	×	×
Firm I	✓	×	×	×	×	×	×
Firm J	×	✓	×	×	×	×	×
✓✓ Strong evidence* ✓ Some evidence* × No evidence							

* These ‘measurements’ are based on the researcher’s interpretation of the data and should not be taken as an objective measurement

5.3.1 Marketing and financial support from MSC

Some variation can be seen when comparing each of these factors across the firms. With regards to the first factor, there was strong evidence that marketing and financial support from the MSC has enhanced the internationalisation of three of the five firms based in the MSC cluster. By contrast, only one firm outside the cluster (Firm G) had significantly benefitted from this support, in terms of internationalisation, while another firm (Firm I) claimed that there was only some positive impact. This may not be too surprising, given that MSC Status, and thereby all the benefits associated with it (including financial and marketing support), is awarded to firms on the condition that they relocate at least 10 percent of their workforce to the cluster. Therefore, it is likely that the MSC authorities would be more willing to offer support to those firms which have satisfied this location requirement.

There was no significant variation based on the firms' activities, although four out of the seven firms in the application software sector suggested that MSC financial and marketing support has had some impact on internationalisation, with just one of the remaining three firms from outside this sector reporting any positive impact. Clearly, though, given the disproportionate distribution of firms across the sectoral groups, it is not possible to reach any kind of solid conclusion.

In addition, there was some difference based on firm size, with three of the larger firms arguing that MSC support has had a significant impact on internationalisation. On the other hand, just one of the smaller firms considered this support to be significant to their international growth, although another firm suggested there was a slight impact. This is surprising, given that smaller firms tend to rely more on external resources, including cluster resources, than larger firms (Altenburg and Meyer-Stamer 1999; Christensen and Lindmark 1993). Nevertheless, it should be remembered that a) all the case firms are classified as SMEs, and b) three of the larger firms in the study felt that MSC support has not had any impact on internationalisation whatsoever.

There were also some slight differences between less internationalised and more internationalised firms, with three in the former category claiming that MSC support has enhanced (or, in the case of Firm A, is perceived as having the potential to enhance) internationalisation considerably. In comparison, just one of the more internationalised firms, Firm E, felt that MSC support has had a significant impact, although Firm I also suggested that there was a small impact. The differences here could be due to the fact that the more internationalised firms are more established overseas and rely on alternative means to improve their international growth, whereas the less internationalised firms are likely to be more dependent on the MSC for financial and marketing support. Again, however, it should be noted that three of the less internationalised firms felt that MSC support has had no impact on internationalisation at all.

Finally, there was no significant variation amongst firms based on the length of time elapsed since being awarded MSC Status and the first round of interviews, with half of the firms in each category (i.e. those with five or more years of MSC Status, and those with less than five years) reporting no impact whatsoever on internationalisation of marketing and/or financial support from the MSC.

5.3.2 Events organised by MSC

There was less variation across firms in terms of the impact of MSC-organised events on internationalisation. In the first category of firms, cluster vs. non-cluster, the impact was more or less equal, with one firm in each dimension claiming that there was significant impact, and one firm claiming that there was some impact. For three firms in each category, there was no impact at all.

Similarly, there was no significant variation between firms based on the nature of their activities. In terms of firm size, however, the impact of these MSC events on the international expansion of the larger firms in the study seemed to be slightly greater, with three of the firms in this category claiming that there was impact, and, in two of these cases, the impact was deemed significant. By contrast, just one of the firms in the smaller category, Firm E, suggested that there was some impact on

internationalisation, but the impact was not considered to be significant. As mentioned previously, smaller firms often rely more on external resources than larger firms (Christensen and Lindmark 1993), and thus it is somewhat surprising that firms in this category revealed that the impact of MSC events on internationalisation is relatively low. At the same time, though, it is worth remembering that three of the larger firms also indicated that these MSC-organised events have had no impact on their international growth at all.

There was some variation between ‘less internationalised’ and ‘more internationalised’ firms, with three firms in the former category suggesting that participating in MSC events has had an impact on their internationalisation, and in two of these cases, the impact was regarded to be significant. On the other hand, just one firm, Firm E, felt that these MSC events have had an impact, but even then, it was not considered significant. Given that firms in the former category have not established themselves overseas to the extent of firms in the latter category, it is likely that they are more dependent upon these MSC events to help enhance their international growth. The more internationalised firms, however, are more likely to rely on alternative means to strengthen their international positions.

Finally, in the category of ‘length of time elapsed since being awarded MSC Status’, although one firm in each category (i.e. ‘five years or more’, and ‘less than five years’) reported a significant impact of MSC events on internationalisation, four out of the six firms in the former category reported no impact whatsoever, compared to just two out of four in the latter. A possible explanation for this slight variation may be that firms with more experience of operating in the MSC have also participated in more MSC events, and thus feel that the benefits are somewhat repetitive and less impactful than they were when they first took part in these events. By contrast, the firms that are still relatively new to the MSC events may feel that these events offer a novel, fresh, and more significant impact on their international expansion.

5.3.3 Enhanced visibility overseas

Although it has been suggested that operating in clusters can improve firms' chances of being discovered by potential foreign buyers and partners (Brown and Bell 2001), just one of the cluster-based firms in this study, Firm C, claimed that MSC-location has helped them to gain additional foreign contacts (another cluster-based firm, Firm A, also claimed that MSC membership has enhanced their visibility internationally, but they were referring to their presence on the MSC's directory, rather than their physical location in the cluster). In the non-cluster category, just one firm suggested that being part of the MSC has made them slightly more visible abroad, also through their inclusion in the MSC directory. Interestingly though, unlike Brown and Bell's (2001) study, which suggested that operating in clusters increases the chances of being 'discovered' during unplanned, spontaneous encounters with foreign visitors, Firm C's visibility to international contacts appears to have been enhanced in large part thanks to efforts by policymakers to bring foreign visitors to the cluster and to actively showcase MSC-based firms.

Given that only one firm in the study, Firm C, claimed that membership of the MSC has significantly enhanced their chances of being discovered by foreign contacts, it is no surprise that variation across the firms is somewhat limited. There was a slight variation across firms, though, based on the third category, firm size, with Firm A and Firm C, both amongst the 'larger firm' category, reporting some positive impact. Of particular interest here is the case of Firm C, which is often 'showcased' by the government to foreign visitors. Being the largest firm in the study, not only does it have the largest facility amongst the case firms, but it also boasts state-of-the-art, imported equipment, and thus is perhaps considered more likely to make an impression on potential foreign investors, which could be the reason why they, and none of the other firms in the study, are included in these government-sponsored tours.

Finally, there was some noticeable variation based on the length of time elapsed since being awarded MSC Status. Three of the six firms with MSC Status of five or more years reported some positive impact on internationalisation, in terms of their visibility overseas. By contrast, none of the firms with less than five years MSC Status reported any impact at all. A possible reason for this is that the firms who have had MSC Status for longer have obviously also had a presence on the MSC directory for longer,

and have thus had more opportunity to be discovered and contacted by overseas customers and potential trade partners. Those firms who have had MSC Status for less time, on the other hand, have also been on the MSC's directory of companies for less time too, and have thus been visible to overseas contacts for less time.

5.3.4 High-quality infrastructure

Given that only two firms in the study, Firm C and Firm F, considered MSC infrastructure to be helpful to internationalisation (and in neither of these cases was the impact deemed significant), there was very little variation across firms. However, with regards to the first dimension (cluster vs. non-cluster), it is interesting to note that one of the firms, Firm F, which does not even have an office in the MSC, regarded certain infrastructure in the cluster to be of high quality and conducive to their international growth. Thus, occasional visits to Cyberjaya from outside the MSC appear to be sufficient for the firm to enjoy access to the cluster's infrastructure, which enhances the firm's internationalisation in a small way.

5.3.5 Acquiring knowledge through social interaction in the MSC

Again, just two firms, Firm B and Firm D (both based in the cluster), considered this factor to have any impact on internationalisation, and for neither of these firms was the impact considered to be significant. As a result, there is little variation across firms. However, this factor is mainly relevant for firms that are based inside the MSC, and it is apparent that knowledge dissemination through social interaction, which is central to the success of many well known clusters around the world (Dahl and Pedersen 2004; Saxenian 1994), and constitutes a crucial source of competitive advantage for firms trying to operate in international markets (Bonaccorsi 1992; Brown and McNaughton 2003), is lacking in the MSC cluster. According to one respondent, the MSC has a 'premature environment', while other respondents pointed out the lack of social amenities, including coffee bars, pubs, restaurants, etc. In response, the authorities appear to be trying to stimulate social gatherings, with some of the respondents noting such events as football competitions, the 'Cyberjaya

Games' sports tournament, and tree-planting to raise environmental awareness. However, these have not yet been sufficient in generating a dense social environment within the cluster in which tacit knowledge that can help firms to improve their international competitiveness diffuses through the region. Whether this can be achieved in the long run is open to question, but unfortunately is beyond the scope of the present study. However, it does seem to support the arguments of certain scholars who insist that knowledge is unlikely to flow very significantly between firms within clusters built from scratch due to the embedded nature of social relations, which may be far more difficult to build from scratch (Cinti 2008; Hospers and Beugelsdijk 2002; Ionescu 2005; Xu and McNaughton 2006).

The only other observable variation across the groups of firms is that the two firms which reported that they had acquired knowledge that was conducive to internationalisation through social interaction within the cluster had also been awarded MSC Status five or more years before the first round of interviews. By contrast, none of the firms which had been awarded MSC Status less than five years before the first interview claimed that they had gained any internationalisation knowledge through interacting with other actors in the cluster. However, it is not clear whether this is due to the fact that both Firm B and Firm D were located inside the cluster, while all the firms with less than five years of MSC Status were located outside the cluster, or whether it is due to the length of time since being awarded MSC Status, or indeed a combination of the two.

5.3.6 MSC as a marketing tool for firms in international markets

Despite suggestions in the literature that operating in clusters can improve firms' international activities owing to association with the cluster's 'brand name' (Brown and Bell 2001; McNaughton and Brown 2006), just two of the firms in this study, Firm B and Firm E, revealed that membership of the MSC has slightly enhanced their image abroad, but in different ways. Given the relatively low impact of this factor overall, variation across firms was rather low. For Firm B, the emphasis was on the value of *MSC Status*, with the firm using the logo on their letterheads, business cards, etc. when dealing with international clients who, it was argued, are impressed by their

MSC Status. In Firm E's case on the other hand, it was suggested that the government's efforts in attracting big-name MNEs to Cyberjaya has added prestige to their Cyberjaya address, which is gradually becoming recognised overseas. The fact that both of these firms were located inside the cluster, with none of the firms located outside the cluster reporting any positive impact on their internationalisation, is of some interest as it suggests a possible cluster-location impact – at least in the case of Firm E (Firm B's argument was not really associated with cluster *location* per se, but rather with '*membership*' of the MSC, which, as noted, does not necessarily imply MSC location). However, the variation is minimal, and thus it is not possible to jump to any firm conclusions on the impact of locating in the MSC cluster.

At the same time, both Firm B and Firm E had also been awarded MSC Status five or more years prior to June 2008, with none of the firms who had been members of the MSC for less than five years reporting any impact on internationalisation associated with the MSC 'brand'. It is possible that both Firms B and E, with eight and six years experience of MSC Status respectively, have had more experience in marketing and publicising their association with the MSC, compared to those firms who have been MSC Status firms for less time.

However, what is of interest here, particularly in terms of policy implications, is the low impact that association with the MSC's or Cyberjaya's 'brand name' has had overall. As suggested in the Literature Review chapter, building a cluster from scratch in a relatively short period of time may be physically feasible, but it may take longer for the cluster to establish an international profile. It was argued that this was particularly likely to be the case for high-tech clusters in developing or emerging markets, such as Malaysia, due to the preference amongst most consumers for products from the developed world, particularly the West (Ahmed et al. 2002; Leonidou et al. 2007). Given that many of the respondents felt that the MSC was not well known outside Malaysia, this appears to be the case here.

5.3.7 Proximity to airport

Finally, the proximity of the MSC cluster to the Kuala Lumpur International Airport was considered to be somewhat helpful to conducting international business by just two firms, Firm C and Firm E. Clearly, this factor is only of relevance to the cluster-based firms, given the relative proximity of Cyberjaya to the airport, although it is worth noting that no other firms in this category regarded it to be of any importance for their international activities. Nevertheless, the fact that at least these two firms should cite this factor is likely to be of some relief to policymakers, given that the initial plan was to construct a ‘corridor’ (hence the name) running from the new airport, which opened around the same time as the launch of the cluster in 1998, up to Kuala Lumpur, with Cyberjaya constituting the core of the MSC. In terms of theory, it suggests that careful planning of a policy-driven cluster, specifically with regards to locational decisions, can be of benefit to internationalising firms, even if, as in this case, it is just in a small way.

5.4 Limitations of MSC membership for internationalisation

From the within-firm findings, seven dimensions of the limitations of MSC membership for internationalisation were developed: 1) Lack of knowledge flows; 2) Limited MSC support; 3) Lack of awareness of MSC overseas; 4) Non-MSC locations more conducive to internationalisation than MSC-location; 5) Limited impact of MSC-organised events; 6) Poaching of skilled workers by other MSC firms; 7) Poor planning by policymakers with regards to geographic focus of MSC. These are summarised and displayed in the matrix below. An important point to note here is that most of these factors do not necessarily *obstruct* internationalisation. Rather, they highlight various drawbacks and contradictions to potential advantages of membership of, and location in, the MSC cluster. Hence, this subsection is titled ‘*Limitations* of MSC membership for internationalisation’, rather than ‘*Disadvantages* of MSC membership for internationalisation’.

Table 5.3: Cross-case matrix showing limitations of MSC membership on internationalisation

	Limitations of MSC membership on internationalisation						
	Limited knowledge flows amongst MSC firms	Limited MSC support for internationalisation	Limited MSC awareness overseas	Non-MSC location conducive to internationalisation	MSC events not useful/difficult to participate	Loss of skilled workers to other MSC firms	Lack of focus of MSC location
Firm A	✓	✓✓	✓	N/A	×	×	×
Firm B	✓	×	×	N/A	×	×	×
Firm C	✓✓	✓	✓	N/A	×	✓	×
Firm D	×	✓✓	×	N/A	×	×	✓✓
Firm E	✓	✓	×	N/A	×	×	×
Firm F	✓	✓	✓	✓✓	✓	×	×
Firm G	✓	×	×	✓	×	×	×
Firm H	×	×	×	✓	✓	×	×
Firm I	✓✓	✓✓	✓	✓✓	×	×	×
Firm J	✓✓	✓	✓	✓✓	✓	×	×
✓✓ Strong evidence* ✓ Some evidence* × No evidence N/A Not applicable							

* These ‘measurements’ are based on the researcher’s interpretation of the data and should not be taken as an objective measurement

5.4.1 Limited flow of knowledge related to enhancing internationalisation within the MSC

Intra-cluster knowledge flows are central to the success of clusters and the (international) competitiveness of firms in clusters (Bonaccorsi 1992; Fernhaber et al. 2008), and thus this factor is of particular importance for this study. Eight out of the ten firms in this study were critical of the lack of knowledge flows within the MSC, which restricted their ability to potentially acquire further knowledge about internationalisation, with some variation occurring across the firms. In the first dimension (cluster versus non-cluster), the variation was not hugely significant. Nevertheless, what is surprising is that, although the non-cluster firms are not actually based in the MSC cluster, four out of the five in this category felt that one drawback of relocating to Cyberjaya, in terms of its impact on international growth, was the perceived lack of networking opportunities there, particularly when compared to their present locations in and around Greater Kuala Lumpur. In particular, it was suggested that parts of Kuala Lumpur and Petaling Jaya are highly strategic locations for developing relationships with actors with international knowledge and experience, and that the social scene in these areas allows for regular informal meetings to take place, unlike in Cyberjaya, where the lack of social amenities makes any meetings more formal. As one respondent put it:

There are more international players, more international clients around here [Kuala Lumpur] than in Cyberjaya. So, we know more about what's going on by being here....Also, we are in informal settings over here, but there aren't many informal settings in Cyberjaya, which is also very far away. People need to make an effort to go there, and so the interaction there is always more intentional. And sometimes, when people are more intentional, they don't tell you what they actually want, they don't tell you 'off the record' kind of things which are usually more valuable (Business Development Executive, Firm J, April 2009)

Further, some respondents were critical of the way in which the cluster has been planned, arguing that the basic layout of the cluster restricted opportunities for networking and gaining additional knowledge of international operations. As stated in the previous chapter, one firm, Firm E, was limited to regularly interacting with fellow domestic SMEs as they were based in one part of the cluster, with international

firms located in another section of the city. Moreover, as noted earlier, one of Firm C's respondents felt that Cyberjaya lacks a residential environment, and thus interaction between the actors in the cluster is limited to office hours. These views were echoed by the respondent from TeAM, who argued that the offices are too far apart from one another, and that Cyberjaya's population quickly drops after 5pm each day, which limits opportunities for social interaction:

So, in your opinion, why has social interaction between actors in the MSC been limited?

Firstly, I think it's the physical layout [of the cluster]. I think because many buildings are actually located far apart from each other - I mean 'far' for Malaysian standards. For instance, the Ericsson building is right across the street from the NTT Dokomo office, but then not many people will want to walk across the street to the other side because it's so hot! Secondly, Cyberjaya is what I call a 'day city'. A lot of the people tend to drive home, back to Kuala Lumpur or PJ [Petaling Jaya] after 5 o'clock or 6 o'clock. So, therefore the interaction time is just 9-5, you know. But between 9 and 5, they're always in their office! You tend to find that people don't really stay around Cyberjaya after 5:30 (TeAM representative, June 2008)

Thus, many of the firms based outside the cluster appear to be aware of the lack of social networking opportunities within the MSC, and consider this to be an important factor behind their refusal to relocate to the area.

In the second dimension (based on the nature of the firms' activities), there was no significant variation across the firms. However, there was some variation based on the third dimension, i.e. firm size, with larger firms more critical of the lack of knowledge flows within the cluster and the impact this has had in terms of limiting opportunities for firms to gain additional valuable knowledge of international activities. Out of the six firms with more than 20 full-time employees, five expressed notable criticism. This is slightly surprising, particularly given that, as previously mentioned, Cyberjaya's layout appears to limit opportunities for smaller firms to develop contacts with international players. However, it should be noted that a) two of the four smaller firms in this study are based outside Cyberjaya, and b) all the firms in the study are SMEs anyway. Nevertheless, a further explanation for this observation could be related to the direct intervention by MSC authorities, who often offer to assist smaller firms to work with big multinationals, as argued by the MSC respondent in this study:

How do you offer MSC Status companies the chance to further develop international contacts?

...with smaller firms, regardless of whether they offer software solutions or hardware products, what we do is we go to big companies like Ericsson, Nokia, IBM, etc., and offer them their solutions, which we feel can be used as part of their global product. So, we really try to help the smaller MSC companies connect with these big [international] players (MSC respondent, May 2009)

Thus, it is possible that smaller firms are assisted more by MSC authorities in establishing relationships with international firms in the cluster, thus potentially helping them gain useful contacts, as well as knowledge and experience, that can enhance their international growth.

There was also some variation across firms with regards to the firms' international intensity, with more internationalised firms appearing more critical of the lack of knowledge flows within the cluster than less internationalised firms. This is slightly surprising as it might have been expected that the less internationalised firms would be more dependent on knowledge flows within the cluster to help support internationalisation, with the more internationalised firms being less dependent on this factor. However, it is possible that the more internationalised firms have been more exposed to alternative sources of knowledge, and are better positioned to offer criticism of the lack of knowledge flows within the MSC.

Finally, there was also some variation across firms based on the length of time they had been awarded MSC Status. Two of the six firms with five or more years of MSC Status claimed that a lack of flow of knowledge related to internationalisation was not a problem they had experienced in the MSC. By contrast, all four firms which had been awarded MSC Status less than five years prior to June 2008 considered this to be a limitation of the MSC. Although it is not possible to jump to a firm conclusion here, because the other four firms with more than five years' MSC Status felt this was a limitation for internationalisation, it is worth suggesting that this small variation may be related to the fact that firms which have been members of the MSC for longer may have developed more networks within the cluster and have acquired more useful knowledge as a result, compared to those firms who are relatively newer members.

5.4.2 Limited support from MSC policymakers for internationalisation

Some variation can be seen when comparing the perception of this factor across firms. In the first dimension (cluster versus non-cluster locations), firms based in the cluster felt more strongly than firms based outside the cluster that MSC support has not had sufficient impact on internationalisation. In fact, just one firm, Firm B, was not critical of any lack of support offered to firms by the authorities. By contrast, firms based outside the cluster appeared less critical of MSC support, with just one firm, Firm I, expressing significant dissatisfaction. This variation between firms, depending on whether they are located inside or outside the cluster, could be due to the fact that firms which have satisfied MSC requirements and relocated to the cluster are likely to expect more support than those firms which have not satisfied the location requirement and thus may not expect to receive considerable MSC support as a result.

In the second dimension (firms' activities), it was interesting to note that all three firms outside the application software sector felt that there was limited support from the MSC for firm internationalisation. This is slightly surprising, given that the MSC is focusing on developing three key sector 'themes', of which creative multimedia and software companies more broadly are parts:

...we're focusing on [developing] three central 'themes': the shared service outsourcing, the creative multimedia – or animation – [and] software companies
(MSC representative, May 2009)

However, it should also be noted that four of the seven application software firms also claimed that MSC support for internationalisation was limited, and thus this may be a more general feature of the MSC, rather than one exclusive to firms outside this particular sector.

There was also a slight variation based on the firms' size (the third dimension), with smaller firms appearing more discontent with lack of MSC support for international growth. Three of the four firms with fewer than 20 full-time employees, Firm E, Firm D and Firm I, felt that the MSC's minimal support for internationalisation limited

their international competitiveness, with the latter two particularly critical of the MSC's failure to proactively support MSC firms and promote them overseas. Although four of the six larger firms also complained about limited MSC support, just one of these, Firm A, who have not yet initiated international activities, considered this factor to be a significant limitation for their international growth. The variation here could be related to the fact that smaller firms are usually more dependent upon external resources for internationalisation than larger firms (Christensen and Lindmark 1993), and thus any limitation in MSC support is likely to be more acutely felt by these firms.

Finally, although there was no significant variation based on the amount of elapsed time since the firms had been awarded MSC Status, there was variation between the firms based on the fourth dimension, namely their international intensity. Surprisingly, firms with greater international intensity were more critical of the MSC's lack of support for internationalising firms, with all four firms in this category suggesting that this factor has restricted further potential international expansion. By contrast, three of the less internationalised firms in the study felt that lack of MSC support was irrelevant to their relatively limited international activities. This is somewhat surprising as it may have been expected that the less internationalised firms would be more dependent on MSC support for their internationalisation compared to the more internationalised firms. However, a possible explanation here could be that the less internationalised firms have had less exposure to alternative sources of internationalisation support compared to the more internationalised firms, and are therefore less critical of any lack of MSC support.

It is worth highlighting here that some firms considered the effects of MSC support to be both helpful and limited for internationalisation at the same time. In other words, while certain elements of MSC support were perceived to be highly beneficial for internationalisation, more is expected, and thus the impact is also limited.

5.4.3 Lack of MSC awareness overseas

Based on the interviews with the firms in this study, MSC membership and location does not constitute a valuable marketing tool which can be used to enhance international growth, with just two firms revealing that there was some positive impact. This finding contradicts some existing studies which suggest that firms in clusters are often at an advantage as they are able to ‘free ride’ on the cluster’s brand name (Brown and Bell 2001; McNaughton and Brown 2006). Establishing the MSC’s ‘brand’ overseas is a problem that has also been acknowledged by policymakers, who admit that it is not an easy task to build a reputation for the cluster:

What are the main problems facing the MSC, in terms of establishing a successful cluster?

Well, it’s all about the branding of the MSC. Our main setback has been [related to] branding, because in this part of the world, you associate a brand to a product, but [the] MSC is not a product, it’s a programme initiative of ICT of the country. People overseas associate the MSC with a product...If you look at Silicon Valley, they came from a central theme, which is about silicon and microchips, and that’s why they call it Silicon Valley. Over here, I think we missed that.

Are you saying that the MSC lacks a central theme which people can associate it with?

Yeah, it should have been more themed, in my opinion. But we’ve realised our mistake and now we’re trying to rectify it. So now we’re focusing on [developing] three central ‘themes’: the shared service outsourcing, the creative multimedia – or animation – [and] software companies (MSC respondent, May 2009)

At the same time, however, none of the firms were highly critical of this, even though it was acknowledged by five of the firms that the MSC is largely unknown or not perceived with great value abroad. The three remaining firms were unsure of the MSC’s reputation overseas and the impact it has had on their international expansion. Nevertheless, some criticisms were levelled at the MSC’s limited profile overseas, with some variation between the firms. First, there was slight variation based on location, with three of the five firms based outside the cluster indicating that their association with the MSC has had no impact on internationalisation, compared to just two firms within the cluster. Although the variation is minimal, it is possible that it is related to the fact that firms outside the cluster possibly undervalue the impact of MSC Status. As noted earlier, two firms in the study consider MSC membership/location to be useful to international growth, in terms of a marketing tool – and both of these firms are based inside the cluster. Although the MSC may not have the profile of such clusters as Silicon Valley, it may be helpful in a small way,

something which certain non-cluster firms in this study do not seem to appreciate. An example is that of Firm I, whose respondents shrugged off any notion of the MSC's reputation overseas and have even removed the 'MSC Status logo' from their public documents, such as their company website and business cards.

In terms of activity, there was a slight variation across firms, with four of the seven application software firms questioning the MSC's limited profile overseas and whether any association with the cluster is of any help to international growth. By contrast, just one of the three firms outside this sector, Firm C in the creative multimedia sector, expressed similar views, although again, given the uneven distribution of firms between sectors within the sample, it is difficult to jump to any solid conclusions.

In the third dimension, based on firm size, the larger firms were more critical of the MSC's limited profile overseas, with four of the six firms claiming that being associated with the MSC does not have any effect on international activities, compared to just one of the four larger firms. This is somewhat surprising as smaller firms are usually more dependent upon external resources (Christensen and Lindmark 1993), and it is not clear why there is this disparity across the firms.

There was no noticeable variation across firms in terms of their international intensity, with half the firms in each category claiming that the MSC's limited reputation overseas restricts their ability to use their MSC Status as a marketing tool to enhance international competitiveness.

Finally, there was some variation based on the length of time the firms had had MSC Status. Three of the four firms which had been awarded MSC Status less than five years prior to 2008 argued that the MSC lacked a reputable profile abroad, compared to just two out of the six firms which had MSC Status for five or more years prior to the first round of data collection. Again, this variation could be down to the fact that those firms with less experience in the MSC may be expecting a greater impact on internationalisation as a result of their MSC membership, whereas those firms which had been in the MSC longer may have become accustomed to the MSC's limited international profile and no longer felt the impact as significantly.

5.4.4 Non-MSC location conducive to internationalisation

During interviews with the non-cluster firms, respondents were asked why their firm had chosen to remain outside the MSC, particularly given that studies have suggested that there are potential advantages of operating within clusters for internationalisation. In response, respondents not only offered criticisms of the MSC project and cluster, but they also defended their current locations, arguing that relocating to the MSC was unnecessary or irrelevant because they could enjoy more externalities outside the cluster than they could if they relocated there.

Given that this factor is only applicable to half of the firms in the study (i.e. the firms based outside the cluster), comparing between all the firms in the study is not possible. However, two of the firms in the cluster category, Firm A and Firm C, both have experience of operating outside the cluster and were asked to compare between the cluster- and non-cluster locations and their impact on internationalisation. In Firm A's case, it was argued that the geographic location of any firm is largely irrelevant to international business. In Firm C's case, though, the COO acknowledged that it was easier for the firm to operate internationally from inside the cluster due to the available infrastructure in Cyberjaya and its proximity to the airport. At the same time, though, it was stressed that their situation was rather unusual as their previous location was very remote and that this was not reflective of more 'typical' non-cluster locations such as Kuala Lumpur and Petaling Jaya.

Has relocating to Cyberjaya helped your international growth? Yeah, but mainly because of where we were before! The previous location was not practical – it was on top of a bloody mountain! It just wasn't practical. At least here, we have connectivity; we can get to KL or the airport quite easily. So, it's helped in that sense (COO, Firm C, April 2009)

Although the literature often emphasises how cluster environments provide firms with unique opportunities to acquire knowledge and develop relationships through informal interaction, which can potentially help to improve international business activities (Bonaccorsi 1992; Brown and Bell 2001; Fernhaber et al. 2008), our findings seem to paint a quite different picture, with four of the five non-cluster-based

firms arguing that their locations are far better than the MSC cluster for networking and developing international contacts. It has already been noted that respondents were often critical of the lack of social amenities in Cyberjaya, and therefore it is not necessary to repeat this here. Nevertheless, this highlights once again the difficulties that the policymakers have faced in seeking to build a new cluster from scratch and to try and set up an alternative networking hub to the likes of Kuala Lumpur and Petaling Jaya. Simply building a new cluster has not resulted, as yet, in the automatic and instant emergence of an additional urban space where actors exchange important information about internationalisation during regular informal meetings.

5.4.5 MSC events not useful/difficult to participate

The remaining factors were not considered to be significant by most of the firms in this study, although it is still worth mentioning them as they highlight some interesting aspects of the MSC and some of its limitations in terms of supporting firm internationalisation. The first of these relates to the impact of MSC events on internationalisation which, as shown in Table 5.2, was regarded to be helpful by four of the firms in the study. However, three of the firms in the study, Firm F, Firm H and Firm J, revealed that these MSC events were either largely irrelevant to internationalisation or were difficult to participate in. In Firm F's case, it was argued that MSC-events were largely social events (presumably aimed at trying to stimulate the development of social relationships between actors), which did not offer any information or advice on international growth. Both Firm H and Firm J on the other hand, felt that their lack of human resources leaves them with not enough people to participate regularly in MSC events.

Despite the fact that only three firms were critical of these MSC events, there is some noticeable variation, particularly in terms of the first dimension, namely location (cluster versus non-cluster), with all three firms being based outside the cluster. This is important because most of these events, which are aimed specifically at MSC firms, take place in Cyberjaya, and therefore firms which are based there are obviously better placed to participate. That these events are geographically localised and far away from firms outside the cluster is not necessarily a result of poor planning

or coordination on the part of MSC policymakers. Clearly, as part of efforts to build the cluster, events are often focused on Cyberjaya, the core of the MSC, and firms with MSC Status should have relocated some or all of their operations to the cluster, at least in theory. Moreover, there is some noticeable variation with regards to international intensity, with all three of these firms being among the group of less internationalised firms in the study. This is interesting as it could possibly be suggested that greater participation in MSC events could potentially enhance their international growth, particularly when one considers that four of the firms in the study felt that these MSC events were helpful for improving their international competitiveness.

Finally, there was some variation across firms with regards to the length of time that had elapsed between being awarded MSC Status and the first round of interviews in June, 2008. Two of the four firms which had received MSC Status less than five years before the first interview felt that events organised by the MSC were not particularly conducive to internationalisation, compared to just one of the six firms which had been awarded MSC Status five or more years before 2008. It is possible that this is due to the fact that firms with more experience in the MSC have had the time to participate in a larger number of these events, thus enhancing the possibility that at least some of these events have been helpful for internationalisation, compared to those firms who are relatively new to the MSC and have only had the opportunity to participate in fewer events.

It should be noted that, although Firm J was critical of the difficulty in participating in MSC events due to their lack of human resources, as pointed out earlier, they also revealed that they have participated in certain MSC events which have been of some use for their international growth. It was argued that, overall, these MSC events are helpful for internationalisation, but the firm has not yet been able to participate in more events, although their imminent move to the MSC is believed to provide them with the platform to engage in these events more regularly.

5.4.6 Loss of skilled workers to other MSC firms

Just one firm in the study, Firm C, reported that their international growth has been affected by the loss of certain skilled workers to other firms in the MSC, and thus it is not possible to offer a comparison across the firms. Nevertheless, it is important to discuss this factor briefly because it is the only factor that actually has a *negative* impact on internationalisation, rather than merely being a factor that fails to further enhance internationalisation.

Many studies have suggested that the interfirm mobility of skilled labour within clusters is a key mechanism for the diffusion of tacit knowledge (Angel 1989; Fallick et al. 2006; Morosini 2004), which can potentially improve international expansion (Blostrom and Kokko 1998). However, none of the firms in this study have observed this phenomenon within the MSC, with the only exception being Firm C, who, rather than acquiring new workers (and thereby additional knowledge), have thus far only *lost* workers to other firms. This interfirm ‘poaching’ of skilled workers is less emphasised in the literature, but is by no means absent (see, e.g., Power and Lundmark 2004; Stuart and Sorenson 2003). According to Firm C’s respondents, the workers were attracted by the higher salaries and the chance to work for a well-known MNE, which suggests that there may be disadvantages for local cluster firms in emerging and developing markets surrounded by foreign MNEs.

5.4.7 Lack of focus of MSC location

As with the previous factor, just one firm in this study, Firm D, was critical of the lack of geographical focus of the MSC. However, this observation has important implications for understanding the nature of the cluster, and therefore it is felt that it merits some discussion. Although Cyberjaya constitutes the core of the MSC, the government has subsequently introduced additional MSC ‘zones’ in and around Kuala Lumpur and even in other states throughout the country. According to the Firm D respondent, this has resulted in a lack of ‘cluster identity’ for the MSC, which means that any externalities associated with successful clusters such as Silicon Valley are unlikely to materialise in the MSC.

...the MSC has no identity at all. I’m sad to say that. I think one of the sad things

about the project was that when the government wanted to build up Cyberjaya as the MSC centre, they should have stuck to it, and got everyone to go there. A few years after that, though, they declared KL Sentral [an area near Kuala Lumpur's central business district] as an MSC-Status [zone] and now Johor and everything else ...so now that the MSC has spread out beyond Cyberjaya, any other company in [the] Klang Valley can have MSC Status, because they have made many MSC zones. So, in the near future, they'll say "oh, don't worry, you can place your company anywhere in Peninsula Malaysia – even East Malaysia [on the island of Borneo] – and you'll be called an MSC company". So it's become so generalised already. The main reason that people were told to move to Cyberjaya was because they wanted to create a cluster of companies here. But now, they make it so easy that the whole country is an MSC zone! There's no identity anymore, you know? The government are not focused. If you want to make a cluster, just keep everybody in one place! If you look at Silicon Valley, the labs, the IT guys, whatever – they are all in the Silicon Valley, which is what we are [in Cyberjaya]...But now the whole of Malaysia seems to be becoming an MSC zone, so what is an MSC company? (International Sales and Marketing Manager, Firm D, April 2009)

Although none of the other firms included in the final thesis echoed these comments, a respondent from one of the firms which was later excluded from the study (due to lack of further access for data collection) made a similar critical observation, arguing that the firm had decided to relocate to Cyberjaya, attracted by the 'cluster vision' presented to them by the government, but then relocated back to their original location after the authorities introduced additional MSC zones before the city had achieved significant success as a cluster. These observations are important as they demonstrate both the potential difficulties associated with trying to geographically 'shift' an industry to a new cluster as well as what may be considered relatively poor planning on the part of policymakers, who were perhaps overly hasty in trying to expand a cluster which had not yet developed into a major geographical industrial hub.

This criticism was put to the respondent from the MSC, who acknowledged that expanding the MSC to additional areas may not have been the most ideal approach.

Why did the MSC decide to introduce several MSC areas on top of Cyberjaya? Why did you not just focus on Cyberjaya, and try to build this area up first before introducing new MSC zones?

That decision was [taken] by the previous government. They wanted to be fair and just not make this [Cyberjaya] too elitist as a location. So, the intention was to spread it out. Maybe in hindsight, that wasn't the best thing to do...

Is that your opinion, or is it also MDEC's general opinion?

Well, MDEC will have to echo what the government wants to do. But we have

certain issues, like when a company says “I’ve got to be close to my customers, and I’m doing great stuff over here! Why can’t where I am become a [MSC] zone?” So, we have to do a bit of a trade-off. So, if they’re in Penang [state in northern Malaysia], they would have to go all the way down to Cyberjaya, where we’ve carved out this area, which isn’t very fair (MSC respondent, May 2009)

On the one hand, it seems as though the authorities acknowledge that expanding the MSC to include additional zones may not have been the best approach, but on the other hand, it is argued that, as the MSC is intended for all of Malaysia (ultimately of course, as noted in the Introduction chapter of this thesis, one of the primary objectives of the MSC was to push Malaysia into being a knowledge-based economy), it is unfair to be overly narrow in the geographic reach of the programme. However, this demonstrates a lack of awareness and understanding of the nature and role of industrial clusters, which are, by their very nature, geographically localised. Therefore, efforts to stretch the geographic reach to include firms who seek to benefit from MSC Status, tax breaks, etc., but who do not wish to relocate to the cluster, shows some misunderstanding of the very nature of clusters.

5.5 Conclusion

The previous two chapters have presented the key findings of this study. Whereas Chapter 4 analysed individual firms in depth, this chapter has attempted to compare across the firms, offering possible explanations for any dissimilarities based on a) their location, b) the nature of their activities, c) their size, d) their international intensity, and e) the length of time that they have been MSC Status firms.

It is crucial to note at this point that one of the main features of qualitative data is that they are open to multiple interpretations (Miles and Huberman 1994; Stake 2010), and that to be completely unbiased or objective is impossible. Therefore, it is important to bear in mind that the interpretations of the data are likely to be somewhat subjective. Nevertheless, though subjective, the interpretations are grounded in the data, as evidenced by the inclusion in both of these chapters of key quotations from respondents.

The following chapter is devoted to discussing the overall findings of the study and how they add important new insights into existing theory. Although this was also done to some extent in these two Findings chapters, the focus was more on ‘showing’ the data, and thus an explanation of the theoretical implications was somewhat limited. Thus, the next chapter goes into greater depth on the overall significance of the findings for the literature.

6 DISCUSSION OF KEY INSIGHTS FROM THE FINDINGS

6.1 Introduction

The previous two chapters offered an in-depth exploration of the study's findings. This chapter is devoted to a discussion of the key insights from the findings in relation to the study's main research question established in Chapter 1, and how the findings fit in the overall body of extant literature. Thus, these insights will help to build a more clear understanding of how operating in a policy-driven cluster can potentially affect the internationalisation of firms.

The chapter consists of two parts, with the first part discussing the limitations that may be inherent in a policy-driven cluster which can restrict its potential impact on firm internationalisation. More specifically, we discuss why a policy-driven cluster may not be significantly conducive to internationalisation due to potentially limited knowledge flows between firms, poor planning by policymakers, the time needed for the cluster to fully establish itself, and a lack of understanding of the role and nature of clusters, both by policymakers and firms. In the second part, the key advantages of operating in a policy-driven cluster for internationalisation are highlighted. More precisely, potential support from policymakers, in terms of marketing/financial support, and various events that can be organised by the authorities, and their impact on internationalisation are discussed.

6.2 Limitations of a policy-driven cluster for internationalisation

In the introduction chapter of this thesis, the following research question was set: *“how does operating in a policy-driven industrial cluster impact firm*

internationalisation?” In other words, we wanted to gain a better understanding of the way in which policy-driven clusters affect internationalisation. From the analysis of the interview data, which was presented in the previous two chapters, it can be suggested that a policy-driven cluster built from scratch may suffer from certain limitations which are not conducive to supporting the international expansion of firms. In particular, four broad factors appear to be prevalent from the data:

- 1) Lack of knowledge flows within the cluster;
- 2) Weaknesses in planning and regulation of the cluster by policymakers;
- 3) Time required for cluster to establish itself as a global ‘brand’; and
- 4) Lack of understanding amongst firms of the nature of clusters

Each of these factors will now be discussed in turn.

6.2.1 Lack of knowledge flows within the cluster

Given that (a) localised knowledge flows are often regarded as key to the success of clusters (Tallman et al. 2004) and can be a vital source of enhancing internationalisation (Bonaccorsi 1992), and that (b) the lack of knowledge flows within the MSC appears to be a significant limitation of the MSC, it is suitable to begin our discussion on the inherent difficulties policymakers are likely to face when seeking to build clusters from scratch with the role of localised flows of knowledge within the cluster.

As was discussed in the Literature Review chapter, access to localised tacit knowledge is often considered to be central to improving firm competitiveness in industrial clusters, and is potentially a vital source for enhancing firm internationalisation, given the crucial role that (experiential) knowledge plays in the process, as evidenced most aptly by the well-known Uppsala internationalisation model (Johanson and Vahlne 1977; 1990). Extant literature revealed that firms in clusters often have access to localised tacit knowledge within clusters due to, for instance, regular, informal face-to-face interaction between actors in the cluster, the

existence of a pool of specialised, skilled workers within the cluster, and the regular movement of these workers between firms.

Thus, operating in industrial clusters may significantly expand the knowledge base of firms, which can ultimately boost international growth, as shown by some of the few studies that have been undertaken related to the subject (Fernhaber et al. 2008; Rabellotti 1999; Sopas 2001). What is important though, particularly in view of the present research, is that most of these studies were based on ‘organic’ clusters that emerged mainly due to market forces, and it was not clear whether a cluster built from scratch by policymakers would provide a similar environment for firms, in terms of its ability to generate knowledge flows that could aid the internationalisation process. Based on the findings of this study, it appears that a policy-driven cluster may struggle to generate localised knowledge flows, thus limiting its ability to significantly enhance internationalisation.

We now offer a more detailed discussion of why this may be the case.

6.2.1.1 Regular, informal face-to-face interaction between actors in the cluster

Arguably the main mechanism through which knowledge flows within clusters is the frequent, casual, face-to-face interaction that occurs due to geographic proximity between actors (Dahl and Pedersen 2004; Felzensztein and Gimmon 2009). In her influential comparative study between the Silicon Valley and Route 128 clusters, Saxenian (1994) argued that the success of the former was largely the result of the intense exchange of ideas among individuals during informal conversations. Based on the findings of this study, however, it appears that the exchange of knowledge between firms owing to regular informal interaction may not occur in a policy-driven cluster, at least not in the short run, due to a number of factors.

First of all, it is important to note that social and business relationships are likely to co-evolve; close business interdependence and relationships create social capital between network members, which may in turn reinforce collaborative business

interaction and knowledge-sharing. In other words, these relationships, which are closely linked to community, culture and social capital (i.e. the degree of trust in social relations), usually require time to fully establish themselves, and are difficult to create instantaneously (Cinti 2008; Hospers and Beugelsdijk 2002; Ionescu 2005). Therefore, the diffusion of tacit knowledge, including experiential knowledge that can boost internationalisation, through social interaction is unlikely to occur in the short run in a cluster that is built from scratch.

Policymakers may be able to attract entrepreneurs and other key actors to a new cluster (although, as this study shows, even this may not be easy), but this does not necessarily mean that they will instantly form informal, trusting relationships with one another and share valuable knowledge and information that can help their international growth. In urban spaces which have gradually (and ‘organically’) evolved over time, people tend to know one another through regular meetings, thus developing higher levels of trust, which, in turn, often leads to the exchange of tacit knowledge (Dahl and Pedersen 2004). However, in a cluster that has been purpose-built in a comparatively much shorter time, these networks will undoubtedly take time to develop.

Second, the exchange of knowledge through social interaction in a policy-driven cluster may be limited to some extent by the fact that very few of the cluster’s entrepreneurs actually *live* in the cluster. This means that opportunities for interacting within the community are limited to just the office hours. The importance of living nearby or within the cluster for social interaction is highlighted by Sopas’ study of how operating in the plastic moulds cluster of Marinha Grande, Portugal has been beneficial for the export performance of firms:

‘Since these entrepreneurs were also living in Marinha Grande, kinship, neighbourhood and other kinds of ties overlapped. As a result, even if two people living in Marinha Grande did not know each other personally, they most probably had common acquaintances that acted as brokers’ (Sopas 2001, p. 41, emphasis added).

In the case of a policy-driven cluster built from scratch, the area may take time to emerge as a popular place to live (for example, in our study, as noted earlier, one respondent claimed that Cyberjaya lacked ‘a sense of being a city’). Thus, a policy-driven cluster which is built from scratch may be able to attract industry to relocate, but policymakers may face difficulties in establishing a residential hub, thus limiting opportunities for the exchange of tacit knowledge (such as experiential knowledge concerning internationalisation) between cluster-based firms.

A third problem is related to the government’s planning and regulation of a policy-driven cluster. More specifically, policymakers should ensure that firms seeking to join the cluster, either to enjoy any financial incentives or in the hope of accessing various externalities typically associated with clusters, must be fully (re)located inside the cluster. Firms wishing to enjoy any financial benefits provided by the government should be required, not just encouraged, to move to the cluster. As has been stressed in this thesis already, clusters mainly derive their strength from the geographic co-location of actors, and policymakers who do not prioritise this feature may be harming the cluster’s potential of growing into a fully-fledged cluster capable of significantly enhancing firm internationalisation, because a low population within the cluster restricts the ability of cluster firms to attain new knowledge through, not only social interaction with other actors, but also, for example, the imitation of other firms (Arikan 2009; Pouder and St. John 1996; Suire and Vicente 2009).

At the same time, policymakers must ensure that all the facilities are in place in the cluster to maximise the chances of the cluster being able to significantly enhance internationalisation. For instance, a lack of social amenities in a policy-driven cluster may limit social interaction, and therefore the exchange of tacit knowledge, between firms and other actors. In this study, there was criticism amongst various respondents of a lack of coffee bars, restaurants and the like in Cyberjaya. Although these may appear to be rather trivial observations, the importance of restaurants, cafes, bars, and other social amenities to generating informal interaction and knowledge exchange between people cannot be underestimated (Imagawa 2005; Lundquist and Power 2002) as they provide the necessary outlets for individuals to meet in an informal setting. Moreover, it should be noted that this lack of social amenities in the cluster is also likely to restrict interaction between firms and researchers and academics in any

specialised university that has been developed in conjunction with the cluster, thus preventing firms from acquiring new technical, marketing and other knowledge generated by the university that may enhance internationalisation. Clearly, this is not a problem that is likely to occur in more ‘organic’ urban areas, but in a policy-driven cluster created from scratch, policymakers could overlook the value of these social amenities and focus more on technical infrastructure.

Whether the emergence of strong social ties between cluster members can be achieved over a more substantial period of time is unclear. Unfortunately, the long-term success of policy-driven clusters is beyond the scope of this thesis, and will require a more longitudinal approach. The study has merely revealed that bringing firms and other economic actors in one industry into a particular area (i.e. a cluster) may be difficult, and may not automatically or instantly generate intense networking and interaction effects, and is therefore not necessarily a guaranteed mechanism for ensuring the exchange of knowledge conducive to internationalisation, in the short run at least. Thus, contrary to what Gertler (1995) has suggested, just ‘being there’ may not necessarily provide firms in clusters with easy access to tacit forms of knowledge. Moreover, the popular assumption in the literature that clustering necessarily leads to knowledge exchange through social interaction and networking, leading to the enhancement of internationalisation (Brown and Bell 2001; Sopas 2001; Zucchella et al. 2007), needs to be reconsidered, particularly in the context of a policy-driven cluster.

However, it is worth noting that, at the time of writing, the MSC authorities appear to have recognised this problem and are taking certain steps to try to resolve it. The respondent from TeAM noted that:

I think MDEC realised that that [social interaction between actors in the cluster] is a missing component, and that’s why they’ve organised a lot of activity more recently, to try to get the people out of their offices, out of their buildings. I know the landlord of the SME Technopreneur Centre. They have regular monthly get-togethers of all the tenants, in that building, to try and encourage dialogue, and get people to interact (TeAM representative, June 2008)

Again, though, whether measures such as these can be effective in helping firms to gain and exchange knowledge that can help the internationalisation process cannot be determined in this study.

6.2.1.2 The existence of a pool of specialised, skilled workers within the cluster, and localised interfirm mobility of these workers

One of the underlying elements of the success of clusters such as Silicon Valley and Hollywood is the existence of a localised pool of workers with specialised skills which can support greater learning, entrepreneurship and innovation (Raco 1999). In addition, it is commonplace in many clusters for these workers to move between different firms within the cluster, bringing new knowledge to the absorbing firm (Almeida and Kogut 1999; Boschma et al. 2009). Therefore, it is often argued that, thanks to the pool of skilled workers and localised interfirm labour mobility, operating in clusters can provide firms with the chance to expand their knowledge base (Bramwell et al. 2008; Morosini 2004), including of course their knowledge of international activities.

However, the experience of firms in this study indicates that a policy-driven cluster may not necessarily provide these benefits, at least not in the short run. Arguably the main reason for this is that, as mentioned previously, many firms may refuse to relocate to a new cluster built from scratch, and thus the population of skilled workers, and the number of workers moving between firms, is likely to be limited as a result. Thus, the argument here goes back to the difficulty policymakers may face in trying to attract firms and skilled workers to a brand new cluster.

It is important to note though, that, while this may be true, some respondents in this study suggested that a lack of skilled workers was not just a problem confined to the MSC cluster, but that Malaysia *as a whole* lacked these workers. Given that the context of this study is a cluster in an emerging economy, this is an important point, as it highlights additional complexities associated with building a cluster from scratch in these markets. Policymakers in developing and emerging economies must acknowledge the fact that there may be a lack of highly skilled workers in these

countries, at least compared to developed countries, and focus not only on developing the cluster, but also, if possible, providing education and training catered to specific industry needs within the cluster.

6.2.2 Poor planning by policymakers

When analysing a policy-driven cluster, it is inevitable that aspects of the government's planning will be subject to close scrutiny. In this chapter, we have already discussed how poor planning and regulation by policymakers may limit the flow of knowledge within the cluster, thus restricting internationalisation. However, this study revealed two more important potential limitations of policy-driven clusters stemming from some poor planning and regulation by policymakers, which may hold back the cluster's potential to help enhance firm internationalisation²⁴.

1. The choice of location for the cluster
2. The premature decision to 'expand' the cluster

6.2.2.1 Location decision of cluster

The decision on where to build a brand new cluster from scratch is obviously a very important one, given the high costs involved. In the case of the MSC, it was repeatedly suggested that firms were reluctant to relocate to Cyberjaya as the cluster was too far away from Greater Kuala Lumpur, thus distancing workers from their homes and social networks, which, in many cases, have provided them with useful information on international activities. By contrast, an organic cluster is more likely to gradually evolve over time, with the location determined primarily by unprompted market forces, and thus will only emerge if the location (as well as other factors, of course) is suitable and allows it to.

²⁴ This is not to say that policymakers do not make good planning decisions or important interventions – as will be discussed later on in this chapter.

Thus, selecting a location that is desirable to firms and other potential actors in the cluster may help to resolve the ‘low population’ problem that policy-driven clusters may face, which, in turn, may then lead to greater social interaction, observation and imitation, etc. that can potentially enhance knowledge-sharing and internationalisation

6.2.2.2 Decision to ‘expand’ the cluster prematurely

Based on the findings in this study, it can be argued that a policy-driven cluster is unlikely to be every effective in enhancing internationalisation if policymakers expand the cluster geographically before it has actually successfully established itself. As noted earlier, in the case of the MSC, policymakers wanted to ‘spread it out’ to be more inclusive to other regions. However, this type of strategy is unlikely to be conducive to creating a successful cluster capable of improving the international expansion of local firms. Instead, a policy-driven cluster should be nurtured in a more geographically-focused way in order to stimulate the emergence of localised externalities, which are, after all, the main strength of clusters. Expanding a cluster prematurely demonstrates a lack of understanding of the mechanics of industrial clusters, which derive their competitive advantage from their *geographically localised* nature. In order for any policy-driven cluster to establish itself as a globally reputable industrial hub, and to provide a strong foundation to assist the international growth of local firms, policymakers must accept that they can only succeed if they are spatially focused and localised, as it is the externalities associated with the *co-location of key actors* that underlies their potential success.

6.2.3 Time required for cluster to establish itself as a global ‘brand’

Building a cluster from scratch is obviously a costly, risky, and time-consuming task. However, the process of establishing the cluster as a key industrial hub, with a globally-recognised ‘brand name’, may take even longer, as indicated by the findings in this study, where half of the firms claimed that potential overseas consumers and partners were largely unaware of the MSC initiative.

In terms of the impact of a cluster's brand on internationalisation, studies have shown that firms are able to improve their credibility in the eyes of foreign consumers simply by being associated with an internationally recognised cluster (Brown and Bell 2001; McNaughton and Brown 2006; Prashantham 2008b). However, a cluster built from scratch by policymakers will, as has been noted already, likely take time to establish a global brand name for itself, and thus firms may not be able to use the cluster as a marketing tool in overseas markets until it becomes more well known abroad (although this, of course, is not necessarily a formality in itself).

6.2.4 Lack of understanding amongst firms of the nature of clusters

Finally, the findings reveal that some firms may not fully understand the nature of clusters and the ways in which they can potentially enhance internationalisation. For example, according to our findings, firms may seek to join a policy-driven cluster primarily for financial gains, such as any tax incentives offered by governments. In some cases, firms may expect cluster externalities to come to them (via policymakers), rather than actively seeking these externalities out for themselves. Thus, there may be misplaced motives for joining the cluster – 'misplaced' in the sense that these motives may not be related to externalities normally associated with clusters (such as joining networks of firms, expanding their knowledge base, etc.).

This is important as it suggests one of two possibilities. First, there may be a lack of awareness of cluster externalities amongst entrepreneurs who may not understand the potential value for internationalisation of geographic co-location with other actors in the same industry. Second, entrepreneurs may well fully recognise the potential that physical proximity to rivals, customers, industrial associations, etc. can have for internationalisation, but are not convinced that a policy-driven cluster built from scratch will fulfil this potential.

The first case demonstrates that the possible link between clusters and internationalisation is not well established – both within industry, as suggested by the apparent lack of understanding of cluster dynamics amongst some of the

entrepreneurs in this study, and within academia, as indicated by the sparseness of studies on the subject (one of the main purposes of this study is, of course, to try to bridge this gap). A policy-driven cluster may be regarded by people who lack a deeper understanding of cluster nuances as nothing more than a source of financial assistance, rather than a source of competitive advantage that can enhance internationalisation. The second case highlights once again some of the challenges facing policymakers who seek to develop a cluster from scratch. Firms may be reluctant to relocate to, or set up in, a new cluster that has yet to establish itself as a successful regional industrial hub, and may hold back, thus creating a vicious cycle in which the new cluster depends on innovative firms being in the area, but at the same time, these firms are not willing to take the risk of joining a still unproven cluster.

Of course, the flipside to this argument is that the tax breaks and other incentives offered to firms who join the cluster may support internationalisation, regardless of whether or not the firm seeks to engage itself in cluster networks, etc. However, while this is certainly plausible, the main argument here is that firms may have a misconception of the nature of clusters, and how they can potentially aid internationalisation, and this misconception may limit (but not necessarily prevent) the ability of the cluster to enhance internationalisation.

6.3 Positive impacts of policy-driven clusters on internationalisation: support from policymakers

In the literature review chapter of the thesis, it was revealed that a number of authors remain sceptical of purpose-built clusters, believing that clusters that are conceived and developed by more ‘organic’ market forces are more likely to succeed. At the same time, though, it was suggested that cluster planning and intervention by policymakers may have some desirable consequences for firm internationalisation. Based on the findings of the present study, this appears to be true, where some positive impacts on internationalisation can be observed. Crucially, however, these impacts stem primarily from support from policymakers, rather than from the geographic co-location of actors within the cluster. More specifically, marketing and

financial support, and various events organised by policymakers, can potentially provide firms with useful assistance for international expansion.

6.3.1 Marketing and financial support from policymakers

As has been noted, firms may be attracted to policy-driven clusters not by the existence of networks of specialist workers or other typical cluster externalities, but rather by financial incentives offered by policymakers, such as tax breaks. Clearly, this represents an indirect benefit of operating in a policy-driven cluster, because, as noted earlier, firms can use the money saved on taxes to improve their products or to invest in international expansion.

In addition, this study has shown that policymakers may provide marketing and financial support that can directly enhance internationalisation. For instance, they may occasionally invite firms to attend and participate in international exhibitions, and even offer financial assistance to help them. Furthermore, as shown in this study policymakers may actively 'showcase' local cluster firms to potential foreign buyers and investors, thus enhancing their chances of being discovered by important international contacts. Although a similar observation has been made by other researchers (e.g. Brown and Bell 2001), it is important to distinguish between possible spontaneous encounters that may occur in an organic cluster, and more planned, intentional encounters that may take place in a policy-driven cluster due to direct government intervention.

6.3.2 Acquiring knowledge in events organised by policymakers

In addition to this, however, policymakers may offer firms further support in order to help their international growth. For instance, it is possible that, in response to any shortage of spontaneous interaction leading to the sharing of knowledge related to international activities between cluster members, policymakers may organise certain informal events aimed at stimulating the development of social interaction and relationships, such as local sports tournaments and informal dinners within the cluster

community, although, according to respondents in this particular study, this may not necessarily lead to the significant exchange of knowledge related to internationalisation. Nevertheless, it may be a starting point for the development of these relationships in the longer run.

However, according to the findings here, more formal events organised by the policymakers, such as trade fairs, conferences, workshops, and so on, may be more helpful for firms to acquire knowledge that can enhance their internationalisation. Thus, although the “buzz” associated with spatial concentration and regular face-to-face contact (Storper and Venables 2004) may be limited in a policy-driven cluster, at least to begin with, some flow of internationalisation knowledge through a particular region can still take place through these organised events. This is consistent with the views of other authors (e.g. Amin and Cohendet 2004; Bathelt and Schuldt 2008; Maskell et al. 2006; Power and Jansson 2008; Torre 2008) who argue that ‘temporary’ or ‘cyclical’ clusters such as trade fairs and conferences are a sufficient substitute for the buzz of a permanent cluster, and may even exceed it.

Nevertheless, it is reasonable to expect that ‘temporary clusters’ should act as complements to, rather than substitutes for, spontaneous social interaction within clusters, due to the self-sustaining and more persistent impacts of the latter. It is important to distinguish between individual networking *events* and ongoing network relationships. It is the latter that are more useful to innovation and the building up of ownership advantages within firms. Networking events, while clearly useful, are relatively footloose and short-term, and do not typically lead to a cumulative process of knowledge acquisition. Frequent networking events can certainly play a role in facilitating knowledge spillovers, but their impact is limited precisely because they are one-off (albeit recurrent) events. Unless a policy-driven cluster can encourage the propensity of firms and individuals to regularly, informally, and spontaneously interact with one another in the cluster, it may struggle to achieve a profile to rival that of Silicon Valley.

An important point needs to be made here concerning these potential advantages for internationalisation of operating in a policy-driven cluster. As has been stressed on several occasions in this study, many of these advantages appear to be unrelated to

the geographic co-location of actors in a particular area (i.e. the cluster). Although, in theory at least, firms operating in a policy-driven cluster may only be eligible for financial and other support if they (re)locate to the cluster, the findings here suggest that firms may still enjoy these benefits *without* actually relocating there. Moreover, other types of support from policymakers, e.g. in terms of organising various conferences, workshops, trade shows (i.e. ‘temporary clusters’), etc., is also not necessarily an outcome of geographic proximity between actors in a cluster.

Therefore, the potential benefits for internationalisation of operating in a policy-driven cluster may be quite different in nature from those often associated with organic clusters. In the latter, as noted in the literature review chapter, previous studies have suggested that the advantages often stem from externalities related to the geographic co-location of various actors, whereas in the former, it appears that these externalities may not necessarily materialise, or at least not in the short term, and therefore, any advantages may derive primarily from policy support, which, as noted, is not necessarily an outcome of physical proximity between entrepreneurs, industry associations, universities, and other actors. This is an important observation and contribution to the development of theory on cluster impacts on internationalisation, as it appears that including all clusters under one broad ‘cluster’ label may be somewhat misleading given the different ways in which organic and policy-driven clusters seem to affect the process. Although it is still too early to make bold generalisations, the findings here suggest that not all clusters may impinge on firm internationalisation in the same way.

6.4 Conclusion

One of the main objectives of qualitative, case-based research is to integrate findings with extant theory (Eisenhardt and Graebner 2007), and this was what the present chapter aimed to achieve. In order to respond to the research question more effectively, the chapter consisted of two main parts: the limitations and positive impacts of the MSC cluster for internationalisation. The findings were compared with existing related theory, and important new insights were highlighted. In the following

chapter, the significance and theoretical contributions of the insights from this study will be stated more explicitly.

7 CONTRIBUTIONS, IMPLICATIONS, LIMITATIONS AND FURTHER RESEARCH

7.1 Introduction

This final chapter of the thesis discusses the main contributions of the study and its implications for both theory and practice. Given that the objective of the study has been to investigate how operating within a policy-driven industrial cluster affects the internationalisation of firms, the contributions are framed in terms of their relation to this objective. The study has generated important insights for both the internationalisation and industrial cluster literatures. The first part of this chapter discusses the contributions of the study to academic literature, before the implications for both policymakers and managers are explained. It is then stressed that these contributions must be considered in light of the study's limitations, which are discussed. Finally, the chapter concludes with some suggestions for future research directions.

7.2 Implications for theory

The intersection between the economic geography and international business literatures has received relatively little attention from scholars, and hence 'the time was ripe for a clear and consistent analysis of how industrial location concepts from economic geography and regional economics relate to those in the international business management and international economics fields' (McCann and Mudambi 2005, p. 1858). This present study constituted a response to this call and sought to contribute to this relatively underdeveloped stream of research by investigating how operating in a policy-driven industrial cluster can affect the internationalisation of firms. Clustering is at the very core of research in economic geography (Malmberg

and Maskell 2002), although the literature has traditionally focused on ‘spontaneous’ clusters, rather than those created deliberately by policymakers (Su and Hung 2009). The few studies that have been undertaken looking at how clusters affect internationalisation have also centred on organic clusters, which means that existing theory is not only lacking in depth and specificity, but also does not satisfactorily account for different ‘types’ of clusters, such as policy-driven clusters. Therefore, this study, which is situated at the junction between the industrial cluster and internationalisation literatures, has some important implications for theory.

1) Firstly, our findings suggest that the motivations behind firms joining a policy-driven cluster may be associated primarily with any financial incentives offered by policymakers, rather than the hope of enjoying any externalities commonly associated with the geographic co-location of actors. Whereas the literature suggests that firms are usually attracted to organic clusters by the possibility of enjoying various externalities associated with industrial clustering, such as acquiring knowledge through networking and interacting (Breschi and Malerba 2005; Sorenson 2005), this study indicates that this may not be the case for policy-driven clusters. Instead, firms may either be enticed by any financial support offered by policymakers or be required to relocate to the cluster by the government, rather than any externalities that can potentially enhance internationalisation more directly. Alternatively, as in our case study, firms may apply for membership of the cluster, enjoying any financial support on offer, and resist cluster (re)location. Therefore, the motivations behind firms joining a policy-driven cluster may differ from those that lure firms to organic industrial clusters.

2) Secondly, our findings suggest that the impact of policy-driven clusters on internationalisation may derive primarily from the direct intervention of policymakers, rather than any externalities associated with the geographic co-location of actors. Various positive externalities often associated with organic clusters, which can potentially enhance firm internationalisation, may not be experienced by firms operating in a policy-driven cluster. Whereas many successful organic clusters are, according to the literature, characterised by such factors as localised knowledge diffusion through social interaction between cluster actors and a highly-credible international brand name (which firms can use to boost their own credibility in

overseas markets) (Dahl and Pedersen 2004; McNaughton and Brown 2006; Prashantham 2008b; Saxenian 1994), these may not be applicable to a policy-driven cluster for several reasons. For instance, in order for firms to exchange valuable knowledge (e.g. of international opportunities) with one another, there usually needs to be an element of trust, which typically cannot be developed overnight, but requires a long history of social connections. Therefore, a cluster built from scratch by policymakers may require a long time before trust-based relationships between actors emerge, although the scope of this study excludes any possibility of accounting for more long-term scenarios.

At the same time, however, policymakers may intervene to compensate for any lack of externalities typically associated with organic clusters in order to provide support for internationalising firms. In this study, for example, it was revealed that policymakers may offer financial assistance to help firms attend and participate in exhibitions overseas. Alternatively, policymakers may organise regular events themselves, aimed at providing local cluster firms with useful information and knowledge about internationalisation. Moreover, cluster firms may be ‘showcased’ to potential foreign buyers and partners who are invited to the cluster by policymakers, thus enhancing their chances of being ‘discovered’.

However, the positive impacts of operating in a policy-driven cluster may be restricted by certain limitations. Poor planning and regulation decisions taken by policymakers may contribute to the failure of a policy-driven cluster to significantly support internationalisation. For example, in this study, it was shown that knowledge-sharing may be limited in a policy-driven cluster due to a lack of social amenities, such as coffee bars and restaurants, in the area. Thus, policymakers may overlook certain details when building the cluster, which can limit its ability to boost internationalisation.

Therefore, the study offers important insights into the possible nature of the impact of a policy-driven cluster on firm internationalisation, which, as shown in the introductory chapter of this thesis, is something that the international business, and indeed the industrial cluster literature has not sufficiently addressed. Whereas positive organic-cluster externalities are generally derived from the geographic co-location of

actors in a certain industry in a particular place (the cluster), the ways in which a policy-driven cluster may enhance internationalisation may be associated less with proximity factors and more with policy factors, such as financial and marketing support. At the same time, whereas any disadvantages of organic clusters for internationalisation may be related, again, to geographic co-location factors (e.g. congestion), a policy-driven cluster may not necessarily *harm* the international growth of firms significantly, but it may struggle to significantly enhance it due to certain limitations associated with, for example, ill-conceived decision-making by policymakers.

7.3 Implications for policymakers

Policymakers seeking to develop a cluster from scratch to support, amongst other things, firm internationalisation, should understand the nature of industrial clusters. More specifically, it should be recognised that clusters derive their strength from the geographic proximity of related actors in space, and that a policy-driven cluster is more likely to provide an environment conducive to supporting internationalisation if it remains localised. Our study has suggested that policymakers may lack sufficient understanding of the importance of localisation as a key feature of clusters and how this can potentially stimulate the emergence of externalities that may support internationalisation. For instance, in the MSC, policymakers appear to have been too hasty in their decision to ‘expand’ the cluster to new ‘zones’, when greater focus on developing Cyberjaya, the cluster’s core, may have been a more appropriate move. The potential of successful clusters around the world for enhancing internationalisation is based on the co-location of actors in a similar or related industry, and therefore, the localised nature of a policy-driven cluster needs to be prioritised, particularly as the cluster grows.

Moreover, in terms of regulation, the present study has shown that policymakers may be harming the cluster’s development by not sufficiently regulating certain aspects of the cluster. In the case of the MSC, it is clear that the government has been somewhat relaxed on the issue of firm (re)location for some time (Huff 2002; Lepawsky 2009). In order for a cluster to succeed, policymakers must enforce at least the basic features

that are essential to cluster success, including developing its population. By not forcing firms who wish to join the cluster to actually locate inside the cluster, social interaction between entrepreneurs is obviously going to be somewhat limited. Thus, governments should either make greater efforts to raise awareness of the potential value of co-location for internationalisation, and/or offer greater incentives for firms to relocate to the cluster. In some successful clusters, firms often move there voluntarily, but in a policy-driven cluster built from scratch, there may be less incentive, particularly given the fact that these clusters need time to establish themselves as successful regional hubs, and governments must take steps to ensure that firms that want to be part of the cluster must actually locate their facilities inside the cluster, rather than simply being ‘token members’.

The importance of the localised nature of clusters is perhaps most evident in the significance of regular face-to-face interaction between cluster members that characterises many successful clusters around the world (Dahl and Pedersen 2004; Saxenian 1994), and the potential that this has for the exchange of valuable knowledge that can enhance firm internationalisation (Bonaccorsi 1992; Pla-Barber and Puig 2009). Social capital may be the least visible contributor to cluster success, but it is also one of the most important (Rosenfeld 1997), and therefore policymakers must ensure that, not only is the potential significance of interacting with other cluster members fully understood by all actors, but also that the adequate facilities and infrastructure is provided. In our study, social interaction in the MSC was shown to be somewhat limited, and one of the reasons for this was the apparent lack of social amenities, including restaurants, coffee bars, shopping centres, etc. in Cyberjaya. Spontaneous social interaction is unlikely to be commonplace in areas that lack these basic amenities, and therefore, in order for knowledge of internationalisation to flow through social networks within these types of clusters, these facilities need to be put in place. Social relationships between cluster members are often undervalued, possibly due to their somewhat inconspicuous nature (Rosenfeld 1997), but can be a vital tool for supporting firm internationalisation, as they can potentially provide firms with much-needed knowledge and information.

Moreover, frequent, spontaneous social interaction between cluster members can help the cluster to become more ‘self-sustainable’. While policymakers may regularly

intervene in various ways to help support the cluster and firms in the cluster, such as organising various events and workshops aimed at providing local firms with useful knowledge related to international activities, these should ideally act as complements to, rather than substitutes for, spontaneous social interaction within clusters, due to the self-sustaining and more persistent impacts of the latter. We need to distinguish between individual networking *events* and ongoing network relationships. It is the latter that have greater potential to enhance innovation and the ownership advantage of firms. Individual networking events, although very helpful, may not lead to a cumulative process of knowledge acquisition. Instead, in order to enhance firm internationalisation, policymakers should strive to encourage cluster actors to engage in regular, informal, and spontaneous interaction. Therefore, it is vital that policymakers provide the necessary facilities and amenities for cluster members to interact with one another, such as coffee bars and restaurants, and not focus solely on the more ‘visible’ aspects of clusters, such as telecommunications infrastructure and the like.

Finally, policymakers must ensure that the potential benefits of cluster membership for internationalisation are understood by firms. For instance, our findings suggest that many firms may seek to join a policy-driven cluster primarily in order to enjoy financial incentives such as tax breaks. Although this can obviously help firm internationalisation by cutting back on certain costs, the potential significance of co-location with other firms and institutions in similar or related industries should be foremost in this decision. As shown in this study, cluster location is not necessarily required for this kind of financial support from policymakers (even if the policymakers are trying to ensure that it is). In other words, governments could, in theory, provide this kind of support without building a cluster. Clusters, though, can provide firms with unique advantages that can support their international growth, such as expanding their knowledge base, and accessing specialised infrastructure, and it is these factors that should motivate firms to join them. Therefore, policymakers must ensure that firms are aware of the potential value of cluster membership for internationalisation, and not just advertise any financial incentives as bait to attract firms.

7.4 Implications for managers

As noted earlier in the thesis, firms face increasing pressures to compete in international markets, and thus it is important that potential sources of competitive advantage, such as operating in a policy-driven cluster, receive close attention from the scholarly community. To this end, this study has provided some important points for managers to consider. Firstly, managers should make themselves aware of the potential of cluster membership for enhancing their international growth, and not just see them as a means to enjoy tax breaks. For example, managers must appreciate the potential for clusters to expand their knowledge base, including knowledge related to internationalisation, through, e.g., interacting with fellow cluster members. Of course, as previously noted, policymakers must ensure that certain social amenities are provided to encourage this kind of dialogue, but at the same time, managers need to be conscious of the fact that regular social interaction with other actors in the cluster can potentially increase their level of knowledge of international activities quite significantly.

Further, in this study, there was some suggestion that managers not only lack some understanding of the potential *value* of clusters for internationalisation, but also of the actual *role* and *nature* of clusters. For example, one senior manager considered his firm to be a 'customer' of the MSC, and was expecting policymakers to provide them with all the necessary support. While it may not be wrong to expect support from policymakers in a policy-driven cluster, this somewhat reactive position should be balanced with a more proactive stance, as it is also crucial that firms acknowledge that most externalities associated with clusters derive from firms engaging with the community and proactively seeking opportunities for improving their international expansion. For instance, managers could make the effort to initiate social interaction with fellow cluster members, or take steps to observe and possibly even imitate the actions of other successful firms in the cluster.

At the same time, however, this study has shown that operating in a policy-driven cluster may not significantly enhance internationalisation, and therefore managers need to be cautious about committing themselves to cluster membership. Of course, this hesitance amongst managers and other actors could slow the cluster's growth, as

they may not be prepared to devote themselves to a cluster that has yet to prove itself to be an important regional industrial hub. Thus, there is something of a vicious cycle at play, with many firms refusing to commit to the cluster until it establishes itself, while at the same time, for the cluster to be successful, it needs the full support of firms and other actors. Nevertheless, managers should acknowledge that the effects on internationalisation of operating in a policy-driven cluster built from scratch are largely unknown due to the lack of empirical investigation and the absence of any established theory. It is hoped that the present work provides some understanding of this underdeveloped issue upon which future research can build.

7.5 Limitations of the study

The conclusions and implications from this study should be considered in light of its limitations. Firstly, the study is limited by its time-space context. The study focused solely on one cluster, the MSC, in one time period, thus minimising its generalisability to other contexts. Although case studies in general are often accused of lacking generalisability (Naumes and Naumes 2006), single-case studies are particularly susceptible to this criticism given their emphasis on just *one* case (Yin 2009). Moreover, given that the data were collected in three rounds over a period of just 18 months (June 2008; April-May 2009; November-December 2009), it is not possible to ascertain whether the findings will stand true over a longer period of time, say 10 or 20 years. This point must be stressed as it has been shown that clusters often exhibit a life cycle similar to the product life cycle, with origin, growth, and decline/reorientation (Fernhaber et al. 2008; Su and Hung 2009; Swann and Prevezer 1998; Tan 2006). Unfortunately, the time available for conducting the study was restricted, and therefore a longitudinal study was not possible.

Nevertheless, it should be remembered that a qualitative study such as this does not aim primarily at generalisation from sample to population, but rather to understand and interpret the case(s) thoroughly in its (their) own special context(s) (Mills et al. 2010; Simons 2009). This study adopted a single-case design not only due to limited resources available to the researcher, but, more importantly, because this design is often considered suitable for exploratory studies that seek to lay the foundations for

future, broader studies (Ghauri and Gronhaug 2005; Yin 2009). Further, as noted in the Literature Review chapter, each cluster differs from the other, and it is not easy to identify a ‘true’ or ‘real’ cluster anywhere in the world (Waxell and Malmberg 2007), and thus widening the sample would not necessarily enhance the findings to other contexts in a significant manner. Besides, the popular perception that single-case studies cannot be generalised is not one that is universally shared, and intense observation of a single case can sometimes generate more discoveries and pertinent policy implications for support measures than a study based on statistics deriving from larger samples (Brown and Bell 2001; Flyvbjerg 2006).

Moreover, within the case cluster selected for this study, the data were derived from just 10 firms, and therefore one should be cautious of interpreting the results as indicators of the views of other MSC firms. However, the nature of the research problem and question favoured a qualitative approach based on semi-structured interviews with a few respondents, and therefore, the number of firms was restricted to 10. Nevertheless, this particular ‘limitation’ could not be avoided, partly due to difficulty in gaining access to organisations, but also because qualitative researchers are often warned against over-crowding their studies with large numbers of informants (even though no official consensus is available on the precise upper limit) (Eisenhardt 1989; Miles and Huberman 1994).

Secondly, as with any other research method, there are some inescapable limitations associated with interviewing in qualitative research, such as taking what an interviewee says at face value, the risk of influencing, and/or being influenced by, respondents, and focusing on thoughts and reconstructions of events at the expense of direct action (Chrzanowska 2002; Kvale and Brinkmann 2009; Marshall and Rossman 2011). Although these risks are always present, it is hoped that by taking certain steps, such as establishing rapport with the respondents, asking open-ended questions, interviewing, where possible, multiple respondents in each firm as well as representatives from the MSC and TeAM, and collecting data from more than one source (i.e. observations and available public documents), these risks have at least been minimised, even if they cannot be totally avoided.

Thirdly, the potential for researcher bias is inherent in qualitative studies (Maxwell 2005). The validity of qualitative conclusions is threatened either by the selection of data that fit with any preconceptions that the research may have had, and/or data that ‘stand out’ to the researcher (Maxwell 2005; Miles and Huberman 1994). The subjective nature of qualitative data analysis is unavoidable, but various steps were taken to minimise any researcher bias by, for instance, requesting ‘respondent validation’ (Maxwell 2005; Travers 2001), and considering less dominant data (Mills et al. 2010).

Fourthly, the firms used in this study varied considerably in their international scope and particularly their intensity. For instance, Firm A had an international scope of 0, whereas Firm C had 11. Similarly, Firm A and Firm J had an international intensity of 0 and 1 respectively, while Firm D and Firm I had 60 and 95. As a result, the expectation and impact that a policy-driven cluster can have on firms with various levels of international experience is likely to be different. At the same time, however, including firms with varying degrees of internationalisation allowed for a deeper understanding of how the cluster affects internationalisation. If, for example, all the firms had zero international experience, as in the case of Firm A, it would not have been possible to gain insight into how the cluster affects firms with greater levels of international experience, and vice-versa. Clearly, a larger-scale, survey-type study would be able to measure the different impacts more accurately, but this study nevertheless offers some insight into the possible differences and similarities.

Fifthly, all the firms that provided data for the study were classified as SMEs, and thus the extent to which these findings are applicable to larger firms is not clear. Nevertheless, as noted in Chapter 3 of the thesis, SMEs were selected for several reasons. First, from a practical perspective, key decision makers are usually more accessible in SMEs than larger firms (Chetty 1996; Ghauri and Firth 2009). Second, given the nature of today’s marketplace, SMEs and larger firms increasingly face similar international problem (Ruzzier et al. 2006). In fact, these internationalisation problems are often more challenging for smaller firms to overcome than larger firms due to their lack of resources (Fernhaber et al. 2008). As a result, the impact of external resources, e.g. clusters, tends to be more profound for SMEs than larger firms (Altenburg and Meyer-Stamer 1999; Christensen and Lindmark 1993; Visser

1999). Third, given that most firms with MSC Status are classified as SMEs, it was necessary to select these as they were more representative of the wider population.

Finally, it should be noted that in two of the firms in this study, and also in TeAM and the MSC, I was only able to interview one respondent, and as a result, one-informant bias may occur. This point highlights the difficulty qualitative researchers often face with regards to access. Gaining access to the MSC was particularly troublesome and involved around one year of correspondence with various representatives before finally being granted an interview. Although I had developed a rapport with the respondent from each of the aforementioned two firms, my requests for further interviews with additional managers were denied. However, this problem is common for researchers studying smaller firms, and in any case, the firms' small size meant that both respondents were closely involved with the major decision-making, including those related to internationalisation.

7.6 Directions for future research

Although this study has enabled me to investigate the ways in which a policy-driven industrial cluster affect firm internationalisation, I was not able to address all of the research gaps related to this topic. While the focus on one particular research question, which was deemed the most appropriate at this stage of the problem, has shed some light on the nature of the topic, further investigative work should be carried out to supplement the present study and to extend our knowledge further. Therefore, this thesis concludes with some suggestions on how future research can build upon the present study.

An obvious starting point would be to undertake a study to test the conclusions arrived at in this study. Preferably, this study would be quantitative in nature, and could involve the distribution of questionnaires in a large-scale survey, so that the effects of policy-driven clusters on internationalisation can be *measured*, and not just explored. Ideally, the study should incorporate more than just one cluster, so that comparisons can be made and a more clear understanding of the topic can be gained. For instance, distributing a survey questionnaire to firms in various policy-driven

clusters in different parts of the world will generate valuable findings to help us better understand the extent to which operating in these environments affects internationalisation. Respondents may be asked to rank the degree of impact that a particular phenomenon, e.g. knowledge acquired through events organised by cluster policymakers, has had on their international growth on a seven-point Likert scale. While the present study has generated some insight into the type of impact that policy-driven clusters may have on internationalisation, it is not clear from the findings how much internationalisation is affected. Thus, research seeking to offer some measurement of the cluster impact would help fill this gap.

As noted earlier, the resources available for the present study made multiple visits to several clusters unfeasible, as qualitative researchers are often required to spend considerable time observing the study's setting and interviewing various respondents. However, a questionnaire administered through electronic means (e.g. email, website, etc.) would not necessitate extended personal visits by the researcher(s), thus enabling him/her/them to integrate multiple clusters into the study for comparison.

Another possible avenue for future researchers wishing to expand on the present study is to conduct a longitudinal study of the impact on internationalisation of one or several policy-driven clusters. As noted previously, the time available for conducting a qualitative study on this occasion prevented me from investigating the impact of the MSC cluster on internationalisation over time and in the long run. However, clusters often exhibit a life-cycle, with growth and decline and it would be interesting to see if the impact of policy-driven clusters on firm internationalisation varies over a period of, say, 20 years. Researchers seeking to undertake this task may follow either a qualitative and/or quantitative path. Although the population of long-standing policy-makers may be somewhat limited, the findings from this particular investigation would deepen our understanding of policy-driven clusters and how they affect internationalisation. While the present study was limited to one particular time period stretching just 18 months, it is vital that future research acknowledges the life cycle character of most clusters (Fernhaber et al. 2008; Swann and Prevezer 1998). It may be, for instance, that policy-driven clusters affect internationalisation in different ways and to different degrees earlier on in its life cycle. A longitudinal qualitative study would shed light on whether and how the nature of the cluster impact changes

over time, while a longitudinal quantitative study would generate insight into whether and how the degree of the impact varies during the cluster's life cycle.

Finally, a useful avenue for future research to follow would be to undertake a direct comparison between a policy-driven cluster and an organic cluster. Although I have made some comparisons between previous studies based on organic clusters and the present study based on a policy-driven cluster, these comparisons are obviously somewhat limited by the fact that the studies are separate, and therefore did not have identical research objectives, questions, investigators, and so on. A study of this nature could, again, be either qualitative, quantitative, or both. Qualitative research would help us understand more clearly the differences between the *type* of impact of these two types of clusters on internationalisation, while quantitative research would be better placed to examine the differences in the *extent* of the impact between the clusters.

A study explicitly comparing the effects on internationalisation between an organic cluster and a policy-driven one has, to the best of my knowledge, not been conducted. Therefore, concluding that their impact on internationalisation may differ from one another is, to a certain degree, tentative at present, which makes a comparative study of this nature an important step in extending our understanding of clusters and their impact on internationalisation.

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Appendix I: Approximate Map of MSC Cluster



Appendix II: Approximate interview questions

1	<p>Please tell me about yourself:</p> <ul style="list-style-type: none"> • What is your educational background? • What is your role in the company? • How long have you been working here?
2	<p>Please tell me a bit more about your company:</p> <ul style="list-style-type: none"> • When was it established? • When did you receive MSC Malaysia Status? • How many full-time employees are there? • How important is internationalisation to your company? • What is the nature of the international activities you are currently engaged in (e.g. exporting, overseas subsidiaries, etc.)? • How many countries outside Malaysia does your company generate revenue from? • What percentage of total sales is derived from markets outside Malaysia? • What are the main difficulties your company has faced with regards to internationalisation?
3	<p>What are your thoughts on my current research?</p> <ul style="list-style-type: none"> • In your opinion, how does operating in the MSC affect the internationalisation of local companies?
4	<p>What were the main reasons behind the decision to locate the company in this particular location?</p> <ul style="list-style-type: none"> • In what ways is this location beneficial for your company, in terms of internationalisation? • Why has the company not relocated to the MSC?²⁵
5	<p>What were the main reasons behind your company applying for MSC Malaysia Status?</p> <ul style="list-style-type: none"> • In what ways has having MSC Malaysia Status affected your internationalisation? • How would you describe the general response from overseas customers, trade partners, etc. towards your MSC Malaysia Status? <ul style="list-style-type: none"> – Why do you think they have this kind of response?
6	<p>How has operating in the MSC affected your company's internationalisation?</p> <ul style="list-style-type: none"> • What kind of support do you receive from the MSC for internationalisation? <ul style="list-style-type: none"> – How does this help your internationalisation?
7	<p>Do you sometimes interact with people from other companies (local and foreign) and institutions in the MSC/local area on a social basis?</p> <ul style="list-style-type: none"> • With whom do you interact? • How often do these interactions take place?

²⁵ Question aimed at firms outside the MSC cluster

	<ul style="list-style-type: none"> • What do you normally talk about? • Have you ever asked someone from outside the firm for help or tips on international markets/solving difficult technical problems? Who? • How do these interactions influence your international business activities? <ul style="list-style-type: none"> – What type of knowledge and information do you share? <p>***</p> <ul style="list-style-type: none"> • What factors prevent you from interacting more regularly with others in the local area? • What is the main source of your knowledge of internationalisation?
8	<p>Is there a large supply of skilled, specialised workers in the MSC?</p> <ul style="list-style-type: none"> • Do these workers often move between different companies in the MSC? • Have you ever acquired/lost any workers from/to other MSC companies? • How has this affected your internationalisation?
9	<p>How much impact do you think universities in the MSC, such as the Multimedia University, have on the performance of MSC firms?</p> <ul style="list-style-type: none"> • Has your company ever benefitted from access to these universities' resources, such as facilities, students, academic output, etc.? • How has it affected internationalisation?
10	<p>Do you sometimes observe and get some useful ideas from the actions, output, etc. of other MSC companies, or companies in your local area?</p> <ul style="list-style-type: none"> • Why not? • To your knowledge, do other companies ever imitate you? • How has this affected your performance, particularly with regards to internationalisation, if at all?
11	<p>In what ways does operating in the MSC help you to detect international demand trends?</p>
12	<p>What are your thoughts on the infrastructure of the MSC?</p> <ul style="list-style-type: none"> • How does the infrastructure in the MSC support your internationalisation?
13	<p>Is there a large supply of intermediate inputs, such as components, spare parts, etc., within the MSC?</p> <ul style="list-style-type: none"> • So, where do you normally obtain these types of intermediate inputs?
14	<p>Do you think that operating in the MSC makes your company more likely to be found, or discovered by foreign contacts?</p> <ul style="list-style-type: none"> • Could you please elaborate on why or why not? • Could you please highlight any personal experiences?
15	<p>Do you feel that operating in the MSC means that there is more pressure on your company to stand out from other MSC firms and to constantly improve?</p> <ul style="list-style-type: none"> • Could you please explain why/why not? • [If yes] in what ways does this pressure influence your internationalisation, if at all?
16	<p>Is there a strong presence of venture capitalists in the MSC?</p> <ul style="list-style-type: none"> • [If not] where do you normally obtain financial support for internationalisation?

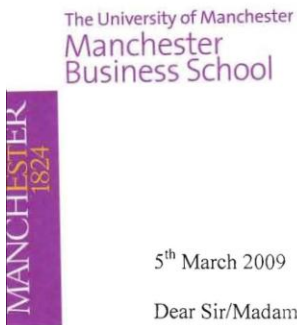
17	<p>Do you consider the MSC [or your local area] to be too congested?</p> <ul style="list-style-type: none"> • [If not] why do you think there are not that many people here?
18	<p>Do you ever feel any pressure to conform to certain MSC ‘ways of doing things’?</p>
19	<p>In your opinion, is your company over dependent on any MSC resources, services, etc.?</p>
20	<p>Given that one of the primary objectives behind the development of the was to develop Malaysia’s economy, does your association with the MSC, through your MSC Status, mean that your own objectives need to be altered in any way, so that they are in line with these MSC goals?</p> <ul style="list-style-type: none"> • How does this affect your internationalisation?

Appendix III: List of codes

Airport	Proximity to airport
Alternative Support	Alternative means for enhancing internationalisation (e.g. company awards, contacts outside MSC, etc.)
Collaboration	Collaborations with other actors in MSC and/or local area
Conform	Pressures to conform to MSC
Congestion	Congestion of MSC cluster or local area
Dependence	Dependence on MSC resources, services
Detect International	Detecting international demand trends
Discovery	Chance of discovery by foreign contacts and potential trade partners
Expand MSC	Respondent views on decision to 'expand' MSC to other areas besides Cyberjaya
Firm Location	Factors behind firm location decision
Internationalisation Barriers	Difficulties firm faces with regards to internationalisation
Imitation	Observation and imitation of other organisations
Intermediate Inputs	Intermediate inputs, intermediate services
Infrastructure	Infrastructure in MSC
Interaction	Interaction between cluster actors
Internationalisation	International activities of firm (importance of internationalisation, scope, extent, etc.)
Lack Population	Lack of population within MSC cluster
Location Impact	Impact of physical location (i.e. Cyberjaya, Petaling Jaya, etc.) on internationalisation
MSC Competition	Competition in MSC
MSC Support	Marketing, financial, and other support received from MSC authorities
MSC Events	Events organised by MSC to assist firm internationalisation (e.g. workshops, seminars, etc.)

Mobility	Interfirm labour mobility
MSC Brand	MSC 'brand', profile in overseas markets
MSC Difficulties	Difficulties facing MSC/MDEC in developing and supporting cluster
MSC Measures	Measures taken by MSC authorities to try to improve MSC performance and internationalisation of MSC firms
MSC Events	MSC networking events, workshops, conferences, etc.
Pool	Pool of skilled workers
Pressure	Pressure to stand out in MSC
Residential	Residential factors in MSC
Social Amenities	Social amenities in MSC (which are conducive to social interaction)
Universities	Impact of universities (e.g. Multimedia University) on firm internationalisation
Venture Capital	Venture capitalists in MSC

Appendix IV: Scanned documents for initial contact with firms



Manchester Business School
The University of Manchester
Booth Street West
Manchester
M15 6PB
www.mbs.ac.uk

5th March 2009

Dear Sir/Madam,

I would like to introduce Christopher Richardson, who is a PhD student at the Manchester Business School, University of Manchester. His research, which is supervised by me, is investigating the connection between the Multimedia Super Corridor (MSC) industrial cluster and the international growth of Malaysian firms in the information and communications technologies (ICT) sector. The research focuses on the experience of Malaysian firms operating inside and/or outside the MSC cluster. In my considered opinion, this research can generate insights likely to contribute to enhancing the performance and competitiveness of businesses that operate in these sectors.

Christopher has the aptitude and the intellectual calibre to progress this promising research to a successful completion. I am writing to you to ask that you kindly respond positively to his request for information and allow him to conduct an interview with one of your key decision makers/managers that you deem to be appropriate informant with respect to his research inquiry. To assist you in this, Christopher can provide a brief synopsis of the research prior to interviews; any information that you provide will be treated with confidentiality and will be incorporated into the study in a way that does not reveal the identity of responding businesses.

If you would like further information, please feel free to contact me on telephone number +44(0)161-306-3462 or fax number +44(0)161-306-3505. If you prefer to email me, please send your emails to Mo.Yamin@mbs.ac.uk.

With sincere thanks in anticipation of your cooperation

Yours sincerely

A handwritten signature in black ink that reads 'M. Yamin' with a horizontal line underneath.

Dr M Yamin
Reader in International Business
Manchester Business School

<http://www.personal.mbs.ac.uk/myamin/index.aspx>

Our Ref: LABC

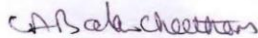
5th March 2009Manchester Business School
Postgraduate Research Programmes
The University of Manchester
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Manchester
M15 6PBtel +44(0)161 306 1320
www.mbs.ac.uk**To Whom It May Concern****Mr. Christopher Richardson (ID: 5613771)**

This is to confirm that Mr. Richardson is registered as a full-time student on the Postgraduate Research Programme at Manchester Business School, at the University of Manchester.

He joined the PhD Programme in September 2007, and is currently in his 2nd year of study. He is required to submit his thesis by 30th September 2011. His earliest Graduation would take place in December 2011.

If you require any further clarification, please contact me at Lynne.Barlow@mbs.ac.uk or by telephone on +44 (0)161 - 275 6591.

Yours faithfully,

**Mrs. Lynne Barlow-Cheetham**
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