

**VENTURE CAPITAL FINANCING: MANAGERIAL FACTORS AND  
MANAGEMENT CONFLICT IN ICT INDUSTRY**  
**[ベンチャーキャピタルの企業金融: 情報通信産業等における経営問題]**

By

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## ABSTRACT

This research examines the factors responsible for the management conflict between venture capital investors (VCIs) and information and communications technology venture businesses (ICTVBs) in the emerging venture capital and ICT industries in Malaysia. In the management process of venture business, VCIs emphasize financial and managerial considerations while ICTVBs emphasize technical considerations. This is the area of management where conflict is most likely to arise between the two key stakeholders of a venture business (VCIs and ICTVBs are categorized as stakeholders in the economics literature). For a successful venture business, this conflict has to be reduced. Before the start-up stage of a venture business, ICTVBs hold the majority equity. However, at the start-up stage, VCIs play a crucial role in providing additional equity. Once an investment by VCIs is agreed upon and executed, that is, the venture business has started its business operation, careful managerial considerations are important; otherwise, the above-mentioned management conflict is likely to arise and affect the performance of the venture business.

The increasing complexity of managing venture businesses has made it necessary for stakeholders to develop amicable relationships with each other to achieve mutual goals. As a consequence, researchers and practitioners alike have focused their attention on searching for ways to improve relations between stakeholders. On one side, the ICTVBs need financing, management know-how, and marketing contacts, among others. VCIs are in a good position to assist by channelling not only financing but also their practical hands-on experience in business operations, e.g. general management and marketing. On the other, VCIs need information and technological know-how of their venture business from the ICTVBs so that they are aware of the opportunities and threats of their investment. Therefore, if the two key stakeholders wholeheartedly work together to develop their aggregate competence, their venture business will have a better chance for successful results.

The general tenet is that differences do exist in the nature and characteristics of VCIs and ICTVBs, especially their expertise. Thus, a natural move would be to investigate the following. Firstly, what are the specific differences in their expertise? Secondly, do these differences have any impact on their recognition of managerial factors (ROMFs) in managing their venture business? Thirdly, do their ROMFs have any influence on their management conflict? While many past studies have been conducted in developed countries to shed light on issues related to reducing management conflict in venture capital, there is a paucity of empirical studies to investigate the association of ROMFs and management conflict, especially in the ICT industry. In almost all studies, a critical role of VCIs is generating information about the ICTVBs' prospects. While such an emphasis is important, it does little to shed light on the complementary role of key stakeholders' ROMFs in affecting those strategies of reducing management conflict. Thus, it is important to understand their managerial factors, whereby the nature of management conflict between these stakeholders is a consequence of their characteristics.

Here, this explorative study hopes to fill the gap and selects ROMFs as one element of an empirical investigation into reducing management conflict. The main purpose of this research is to empirically establish the theoretical linkage between ROMFs and management conflict across the full venture capital process.

Past studies have tended to focus on venture businesses in general. Building on the knowledge and findings derived from these studies, this research focuses on the following aspects: venture businesses in ICT industry; venture capital financing from pre-investment to post-investment stages, and risk management. The independent variables are the ROMFs at the pre-investment stage, namely: deal origination and screening, evaluation, deal structuring, and at the post-investment stage: monitoring and post-investment activities, acquiring liquidity, and risk management. This research focuses on sources of due diligence, techniques of evaluation, factors or criteria used, risk management and the perception towards market and agency risks, and other related aspects at each stage of the venture capital process. The dependent variable is management conflict with two sub-variables as indicators (i.e. the extent of management conflict experienced and the affected management policies).

The triangulation approach (i.e. multi-methods of investigation and sources of data) was selected for this research, i.e. survey questionnaires, direct interview exercises, and secondary sources. The survey questionnaires were tested in a pilot study before they were used in the field study for data and information collection. Pre-tested questionnaires were mailed to 24 VCI and 100 ICTVBs operating in the Multimedia Super Corridor (MSC), with 18 and 39 replies received, respectively. Then the collected responses were statistically analyzed through two parts. The first part of data analysis is the descriptive statistics, i.e. the profiles of VCI and ICTVBs and case studies. Generally, both the VCI and ICTVBs are just emerging in MSC having the following characteristics: a small number of venture capital executives and technical workers. The second part is the statistical analysis of the hypotheses of this research. It is suggested that if the differences in ROMFs between the VCI and ICTVBs are large, the management conflict between the two will be intensified. For example, the difference in monitoring preferences (i.e. the VCI prefer hands-on approach but the ICTVBs prefer hands-off approach) will intensify their management conflict and ultimately affect the business relationship in their venture business.

The Thesis is divided into five chapters. Chapter 1 is an introduction to the research. The statement of the research problem or the area of interest is discussed; followed by justification, purpose, study design; and finally the organization of the Thesis. Chapter 2 reviews the literature on venture capital and the managerial factors involved. The review is meant to synthesize the various studies on the subject and also to identify the theoretical and conceptual underpinnings of the venture capital dynamics. It also focuses on this research's model of development. The hypotheses to be tested are also derived from the literature reviewed. Chapter 3 outlines the data theory and methodology used for this research. The chapter specifies the conceptual framework of analysis and operational definitions. This chapter also provides the sampling design and the criteria used in selecting the respondents of this research. Chapter 4 presents the

data analysis and reports the results. It covers the descriptive statistics and statistical analysis used to describe and test the hypotheses of this research. The results from the data analysis are then summarized and discussed accordingly. Finally, Chapter 5 concludes this research. This chapter discusses the findings and conclusions that could be derived from the data analysis. It also covers discussions on the theoretical and practical implications of the findings of this research. It also indicates the limitations and suggestions for potential future research on this subject.

The findings indicate that VCI (i.e. the investors as principal) and ICTVBs (i.e. the entrepreneur-owners as agent) have differences in their expertise and ROMFs, but that improvement in information exchange of strategic matters, among others, will help reduce the management conflict between them in their business relationship. The differences in their ROMFs at the pre-investment stage became more important at the post-investment stage and in risk management. However, some aspects of ROMFs are helpful to reduce management conflict between them. Among the important ROMFs indicated by the findings are the improvements in screening, due diligence process, etc. Typically, improvements in information exchange of technological, financial, and entrepreneurialship matters are essential for reducing their management conflict.

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Malaysia recognizes the importance of the public service as means of transforming its socio-economic goals into realities. Therefore, there is not only the need to provide post-graduate studies for public servants but also the need to expose them to other cultures in order that they may have hands-on experiences with addressing socio-economic problems. This research at a well-known Japanese university, which I have undertaken since October 2001, is in fulfilment of such needs. It is out of my sincere gratitude that I acknowledge the Public Services Department of Malaysia (PSDM) and the Japan Bank for International Cooperation (JBIC) for granting me the study leave and scholarship, which has enabled me to pursue this research at the GITS, Waseda University, Japan.

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## ACRONYMS AND ABBREVIATIONS

BNM	Bank Negara Malaysia
Gbps	Gigabits per second
GDP	Gross Domestic Product
GNP	Gross National Product
ICT	Information and Communications Technology
ICTVBs	Information and Communications Technology Venture Businesses
H	Hypothesis
IPO	Initial Public Offering
JBIC	Japan Bank for International Cooperation
K-economy	Knowledge-based Economy
MDC	Multimedia Development Corporation
MECM	Ministry of Energy, Communications and Multimedia
MESDAQ	Malaysian Exchange of Securities Dealing and Automated Quotation
MITI	Ministry of International Trade and Industry
MOF	Ministry of Finance
MSC	Multimedia Super Corridor
MVCA	Malaysian Venture Capital Association
PSDM	Public Services Department of Malaysia
R & D	Research and Development
RM	Ringgit Malaysia
ROI	Return on Investment
ROMFs	Recognition of Managerial Factors
VCIs	Venture Capital Investors

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 INTRODUCTION**

This chapter introduces the focus of this research: the business relationship between the venture capital investors (VCIs) and the information and communications technology venture businesses (ICTVBs) across the full venture capital process. The structure of this chapter is as follows. Firstly, the background and statement of the research problem are introduced. Then the justification, previous studies and purpose, model of study and research design of this research will follow it. Finally, the organization of the Thesis will be explained and followed by a summary. Appendix 'A' reviews the venture capital industry in Malaysia and Appendix 'B' reviews the Multimedia Super Corridor (MSC). Basically, this explorative study examines the differences in the recognition of managerial factors (ROMFs) of both VCIs and ICTVBs and the relationships between their ROMFs and management conflict experienced by them in managing their venture business.

#### **1.2 BACKGROUND OF THE RESEARCH**

This research examines the factors responsible for management conflict between VCIs and ICTVBs in the emerging venture capital and ICT industries in Malaysia. In the management of venture business, VCIs emphasize financial and managerial considerations, while ICTVBs emphasize technical considerations. This is the area of management where conflict is most likely to arise between the two key stakeholders of the venture business. For a successful venture business, this conflict has to be reduced. Before the start-up stage of a venture business, ICTVBs hold the majority equity. However, at the start-up stage, VCIs play a crucial role in providing additional equity. Once an investment by VCIs is agreed upon and executed, that is, the venture business has started its business operation, careful managerial considerations are important; otherwise, the above-mentioned management conflict is likely to arise and affect their business relationship and ultimately the performance of the venture business.

The increasing complexity of managing venture businesses has made it necessary for stakeholders to develop amicable business relationships with each other to achieve mutual goals. As a consequence, researchers and practitioners alike have focused their attention on searching for ways to improve relations between stakeholders. On one side, the ICTVBs need financing, management know-how, and marketing contacts, among others. VCIs are in a good position to assist by channelling not only financing but also their practical hands-on experience in business operations, e.g. general management and marketing. On the other, VCIs need information and technological know-how of their venture business from the ICTVBs so that they are aware of opportunities and threats regarding their investment. Therefore, if the two key stakeholders can wholeheartedly work together to develop their aggregate competence, their venture business will have a better chance for successful outcomes.

The general tenet is that differences do exist in the nature and characteristics between VCIs and ICTVBs, especially their expertise. Thus, a natural move would be to investigate firstly, what are the specific differences in their expertise? Secondly, do these differences have any impact on their recognition of managerial factors (ROMFs) in managing their venture business? Thirdly, do their ROMFs have any influence on their management conflict? While many past studies have been conducted in developed countries to shed light on issues related to reducing management conflict in venture capital, there is a paucity of empirical studies to investigate the association of ROMFs and management conflict, especially in the ICT industry. Here, this explorative study hopes to fill the gap by looking at ROMFs as one element of an empirical investigation into reducing management conflict. Thus, the main purpose of this research is to empirically establish the theoretical linkage between ROMFs and management conflict across the full venture capital process in the business relationship between VCIs and ICTVBs.

### **1.3 STATEMENT OF THE RESEARCH PROBLEM**

The VCIs are known as one of the main risk-financiers that provide financing to the ICTVBs. They act as a financial intermediary between funds providers seeking high returns and entrepreneurs in need of capital financing. The main investment return for VCIs is capital gain from the venture businesses they invest in. One peculiar characteristic of venture capital is the participation of VCIs in the management process of their venture businesses (e.g. direct management, technical & marketing assistance and business networking). Therefore, it can be inferred that VCIs receive money from funds providers (e.g. institutional investors, high net-worth individuals, etc.) and then invest in venture businesses with high growth yet high risk potential (Wright and Robbie, 1997; Lerner, 2000; Cumming and MacIntosh, 2001).

Currently, the importance of ICTVBs to the creation of innovation, employment and entrepreneurship is receiving greater attention by academicians and policy makers (Tether, 1997; Tether and Massini, 1998; Alexander, 2000; Amar, 2000). However, their financial resource shortage remains a major issue that need to be addressed by most economies.<sup>1</sup> And for these ICTVBs, their main assets are intangible assets (e.g. in the form of ideas, know-how, trade secrets and property rights), which are seldom acceptable to use as collateral for financing purpose.

Therefore, venture capital does not come easily to these ICTVBs because it involves meticulous, strategic, managerial factors before and after the decision to invest is made. These managerial factors are important to be considered carefully by the VCIs and ICTVBs for deal origination, screening, evaluating, deal structuring, monitoring or post-investment activities, acquiring liquidity and risk management (Tyebjee and Bruno,

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<sup>1</sup> Van Osnabrugge (2000, p. 92) states that “these early stage firms are most reliant upon outside financing to foster their growth, once the entrepreneurs’ savings and investments by family and friends have dried up”. However, due to their inherent characteristics (e.g. high risk and uncertain nature and etc.) and the imperfect capital market situations, they often have difficulty in securing external financial support from the formal financial institutions.

1984; MacMillan, Zemmann and Subbanarasimmha, 1987; Plummer, 1987; Sahlman, 1990). This implies that due to the high risk of venture businesses, the VCIs and ICTVBs normally use a strategic approach in the management of the venture businesses across the full financing process. In other words, various managerial factors (e.g. practices and procedures) that are recognized by the VCIs and ICTVBs are deemed to be strategic and will affect the performance of their venture businesses. For example, if the VCIs recognized a hands-on approach but the ICTVBs recognized a hands-off approach for monitoring, then this difference to some extent will affect their other managerial considerations and ultimately the performance of their venture businesses.

Generally, for the VCIs, they are acting as agent to their principals, i.e. the funds providers. If their investments give good returns then they might improve their reputation and be capable of getting more funds for their future business. For the ICTVBs, as the borrower, they are acting as the agent to their principals, i.e. the VCIs, who require some return from their investments in them. This research will be using the framework of an applied Principal-Agent analysis, whereby the VCIs are considered as the ‘principal’ and the ICTVBs are considered as the ‘agent’. This classification is appropriate because in venture capital, the VCIs as the financiers (i.e. provider of one of the most critical scarce resources to ICTVBs – capital) have the upper hand compared to ICTVBs as the borrower in their financial contract. Besides this, the classification is also commonly used in the venture capital literature.<sup>2</sup> In addition, in this framework, both views from the VCIs and ICTVBs are investigated in order to add robustness to this research.<sup>3</sup>

As mentioned above, an applied principal-agent analysis has been adopted in this research to provide a framework for the analysis of the relationship between the VCIs and ICTVBs. A detailed explanation on this matter is felt warranted. Here, the VCIs are treated as the principal, and the originator-entrepreneur of a venture business (ICTVB) is treated as the agent.<sup>4</sup> The relationship usually extends beyond the simple provision of capital. The relationship also can be complex because an ICTVB is the majority shareholder of the venture business, thus, maintaining it as the principal, legally and in

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<sup>2</sup> Many studies have investigated the role of VCIs as a principal and ICTVBs as the agent (e.g. Sahlman, 1990; Reid, 1998). However, for our further understanding of the principal-agent relationship, we may also consider the other way too, that is, the VCIs as the agent and the ICTVBs as the principal. This consideration is rooted in the fact that ICTVBs are normally the majority stakeholder in their venture business, and it is they who actually bring in external stakeholders into their business (e.g. VCIs and others). In the context of being the principal, ICTVBs also should be aware that their agent (i.e. VCIs) may give wrong advice or may ‘shirk’ for their own reasons, which may jeopardize the interest of the venture business they contracted into. Following this consideration, it is also fair to assume that both the principal and agent are risk-neutral and risk-averse at a certain point of the venture capital process or by looking at different perspectives at any given time.

<sup>3</sup> This is in line with Reid’s argument (1998, p. 7) that “while differences in the principal and agent relationship and in the extent of contact between them are apparent, the reasons for these variations have not been deeply explored and are still very poorly understood”.

<sup>4</sup> Previous studies using this framework that treat VCIs as a risk neutral principal and ICTVBs as a risk averse agent are, e.g. Chan et al., 1990; Gompers and Lerner, 1994; Admati and Pfleiderer, 1994; and Reid, 1998. This analysis provides an appropriate framework to analyze the relationship between VCIs and ICTVBs. The key characteristic of this analysis is that the agent has an incentive to shirk on effort and to avoid risk. This analysis is also guided by the principles of uncertainty and information asymmetry which are really important in the risky investment opportunities of the venture business in ICT industry.

the business context. However, this status changes in the financial contract between them because the general factor governing its form is that the VCIs offer the ICTVB an opportunity to acquire its much needed additional capital now and for future expansion of the venture business. For this research, the following assumptions are used for the classification of VCIs as principal and ICTVBs as agent in their business relationship:

- a) The VCIs tend to hold less than 50% equity shareholding in the venture business. This is largely due to the fact that currently in the corporate cultures of Malaysia ICTVBs usually hold the majority shareholding of the venture businesses, and for extreme cases, they insist on the one golden share to be retained by them.
- b) Both VCIs and ICTVBs conclude a financial contract, which governs their relationship in managing the venture business they invested into.
- c) The venture business is not currently listed on the stock market and the investment of the VCIs in the venture business has a strictly finite life of just a few years.

Based on the above assumptions, this research emphasizes the subscribing of a financial contract between the VCIs and ICTVBs.<sup>5</sup> Thus, the VCIs would be seen as the principal, who control contractual details and assign tasks, and the ICTVBs seen as the agent, who accept this authority and perform certain tasks on behalf of the VCIs. The dominant motives for them to seek such a relationship are for the VCIs to provide better return on investment and for the ICTVBs to spread the down-side risk of the venture business which they contracted into. The VCIs may be assumed, plausibly, to be risk neutral because their portfolios are large and diversified in terms of investments in venture businesses. The ICTVBs may be assumed, plausibly, to be risk averse because all of the owner-managers' wealth, including goodwill, is tied up in the venture businesses.

Nevertheless, in the absence of perfect foresight, the VCIs as principal face the prospect of incomplete compliance by the ICTVBs as agent. In other words, the VCIs can only judge the effectiveness with which the ICTVBs complete their assigned tasks in an indirect way, e.g. in terms of rate of return, meeting set targets, etc. Typically, the agent is not fully supervised and has a measure of independence which may tempt them to exploit to avoid risk and to shirk on effort. Thus, the VCIs may worry about the ICTVBs, e.g. limiting their effort, undertaking other riskier strategy or project than initially agreed, engaging in excessive business expenses and presenting a flattering but artificial business scenario, etc. In addition, where informational asymmetries are significant between them, the ICTVBs are tempted to defect from financial contracts because it is quite easy to manipulate strategic information to the VCIs about their venture businesses (e.g. overstating performance, understating problems, etc.) to their short-term ends.

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<sup>5</sup> Although a financial contract reduces the potential management conflict in the venture business, unfortunately this contract cannot eliminate conflict, and it can be costly to write and enforce the contract. In other words, the problems associated with asymmetries of information between the VCIs and ICTVBs cannot be fully contracted away.

The interests of the VCIs as principal and ICTVBs as agent can be assumed to be in alignment during the pre-investment stage (i.e. desire to close the deal); however, this is not necessarily the case at the post-investment stage and risk management. Therefore, in this relationship, conceived of as a principal, the VCIs' roles are as follows:

- a) In the pre-investment stage, this relationship places the VCIs in a position where the problem of adverse selection has to be addressed. For example, selecting the right ICTVBs is important because the commitments and intentions of the ICTVBs are uncertain and difficult to gauge upfront, even after intensive screening, due diligence and evaluation.
- b) In the post-investment stage and risk management, this relationship places the VCIs in a position where the problem of moral hazard has to be addressed. For example, the selected ICTVBs, each acting in self-interest and having relinquished a portion of its ownership in the venture business, are motivated to limit effort. Thus, the VCIs, through the financial contract or by other means, attempt to overcome this, e.g. by imposing penalties for failure in meeting performance targets, establishing performance boundaries (e.g. gearing ratio standard) and decision-autonomy limits (e.g. asset disposal) for the ICTVBs. The VCIs also may attempt to influence the ICTVBs by monitoring the effectiveness of the venture business contracted into, through an effective flow of strategic information. It is commonly accepted that the ICTVBs possesses a greater familiarity with their businesses' operations than the VCIs and also have control over the generation of strategic information. For example, given the pursuit of self-interest, the ICTVBs may misrepresent performance or provide information selectively in order to make their venture businesses appear more favourable. Hence, in response, the VCIs may establish disclosure rules to govern the information flow between them. In brief, the VCIs frequently play an active role with the venture business in the post-investment stage and risk management, representing the interests of their fund providers (e.g. small individual investors, government agencies, financial institutions, etc.) and to ensure their invested funds are not at risk but can generate reasonably high capital gains.

As for the ICTVBs, conceived of as agent in this relationship, their roles are as follows:

- a) In the pre-investment stage, this relationship places the ICTVBs similarly as the VCIs, in a position where the problem of adverse selection has to be addressed. This situation stems from the fact that the ICTVBs are still considered as the principal of the venture business at this juncture. Therefore, selecting the right VCIs is also important to the ICTVBs because besides the additional capital that is badly needed, the selected VCIs also could give other value-added services and also become a worthy business partner. However, commitments and expectations of the VCIs are also uncertain and difficult to gauge upfront by the ICTVBs.
- b) In the post-investment stage, this relationship places the ICTVBs in a position as an agent to the VCIs in their financial contract. Two main reasons why the ICTVBs would enter into a financial contract with the VCIs are to gain additional



capital and to spread risk, i.e. by involving the VCIs in the operation of their venture businesses. Therefore, the ICTVBs' roles here are to put forward their efforts to perform certain tasks according to the mutually agreed yardsticks in the contract, e.g. levels of performance to be achieved, timely disclosure of information, and above all, to give good return on investment as expected by the VCIs.

In conclusion, the status of the ICTVBs as principal and VCIs as agent initially, has changed according to the circumstances. When they enter into a financial contract, this turns the VCIs into principal and ICTVBs as agent in the venture capital financing.

In essence, theory on financial contracting states that management conflict will arise and practice confirms its existence.<sup>6</sup> When both parties, i.e. the VCIs and ICTVBs, having different natures and characteristics, get engaged in the financial contracting, that so-called management conflict is most likely to arise. This conflict has to be reduced in order for them to have a successful venture business. This implies that an amicable business relationship is very important for the success of the venture businesses that both parties have contracted into. In this business relationship, there is a separation of ownership and control between the VCIs and ICTVBs and thus is likely to face management conflict. The seriousness of management conflict can be seen from the following perspectives.

From the organizational perspective, for example, due to the asymmetries of information between the VCIs and ICTVBs, management conflict arises for two reasons. Firstly, there is conflict when their desires and goals are in conflict; it is difficult to verify what they are expected to do best for their venture business. For instance, if the VCIs and ICTVBs have different cash-flow and profitability objectives for their venture business that they have contracted into, they are likely in conflict because each of them may regard differently various managerial factors and other considerations as they work towards those objectives. Secondly, there is the problem of risk sharing where both VCIs and ICTVBs may prefer different managerial factors because of the difference in risk preferences. For example, on one side, the VCIs may have higher considerations for agency risks i.e. pertaining to the problems between them and ICTVBs as compared to market risks. On the other, the ICTVBs may have higher considerations for market risks rather than agency risks. In general, other management conflicts which are peculiar to this kind of business relationship between the VCIs and ICTVBs are for example, sorting problems, agency costs and operating-costs.<sup>7</sup> However, the details of actual management

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<sup>6</sup> See, for example, Reid (1998), Sahlman (1990), and Sappington (1991). In the context of Agency Theory, Reid (1998, p. xix) states that "Given that agency problems arise, the issue of how they are resolved, particularly as regards the handling of risk, is subtle". Agency conflict basically relates to the central dilemma of how to get the agents to act in the best interests of the principals in their agency relationship. This dilemma is critical when the agents have an informational advantage (e.g. technical know-how, trade secret, etc.) over the principals and have different interests as well (Jensen and Meckling, 1976; Eisenhardt, 1989; Sappington, 1991).

<sup>7</sup> In the context of agency relationship, adverse selection occurs when the agents misrepresented their abilities when hired by the principals. On the other hand, moral hazard occurs when the agents give effort

conflicts experienced by the VCIs and ICTVBs are presented in the case studies in Chapter 4.

From the financial perspective, there are two main sources for management conflict between the VCIs and ICTVBs as follows. Firstly, the parties involved make managerial decisions that benefit them directly but do not benefit their venture business' economic value. Secondly, the parties involved are more or less effort and risk averse in their managerial decision-making of the venture business. For instance, one of the main areas of disagreement is management costs such as the costs of screening, evaluating, monitoring, gaining and exchanging of information, and bonding between the VCIs and ICTVBs. For example, in the exchange of information between the VCIs and ICTVBs, most likely the VCIs may require more information on the technological aspects of the venture business from the ICTVBs. However, the ICTVBs may refuse to give that information due to trade secret, etc. Thus, the VCIs incur cost through proper legal documentation, etc., in order to ensure the ICTVBs give the information required. As for the ICTVBs, the preparation of legal documentation and other periodical reports involve costs to them. Thus, this implies that without incurring costs, both the VCIs and ICTVBs are likely to face serious difficulty ensuring each of them will act according to the best interests of their venture business.

Both the VCIs and ICTVBs need to reduce management conflict in order to pursue efficient contracts that lead to a successful business relationship.<sup>8</sup> Since it is contended that managerial factors and efficient contracts are pertinent for a successful business relationship in venture capital, it is felt justified to investigate the business relationship between VCIs and ICTVBs across the full venture capital process. Hence, the research problem can be broadly expressed as follows. **Firstly, are the ROMFs of both the VCIs and ICTVBs significantly different? Could this difference contribute to any management conflict experienced in their relationship? In other words, do each party's specific preference, value, usage and application of certain ROMFs contribute to management conflict in their relationship? Secondly, do their ROMFs have any relationship to the management conflict they experience across the full venture capital process?**

#### 1.4 PREVIOUS STUDIES AND THE PURPOSE OF THE RESEARCH

Past studies on venture capital have focused on aspects of institutional framework (Sahlman, 1990; Murray, 1995; Hurry, Miller and Bowman, 1992), investment process (Tyebjee and Bruno, 1984; MacMillan, Zemmann and Subbanarasimha, 1987; Plummer, 1987; Amit, Glosten and Muller, 1990; Admati and Pfleiderer, 1994), monitoring and controlling (Sweeting, 1991; Lerner, 1995; Gompers, 1995; Reid, 1998), acquiring liquidity and investment realisation (Megginson and Weiss, 1991; Murray, 1994; Wright

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lesser than originally agreed upon in the contract with the principals. (Jensen and Meckling, 1976; Fama and Jensen, 1983, Grossman and Hart, 1983; Eisenhardt, 1989; Sahlman, 1990).

<sup>8</sup>According to Fama (1980, pp. 288 – 307), the Principal-Agent analysis seeks to determine the optimal or most efficient contract under varying levels of outcome, uncertainty, risk aversion, information and other variables.

et al., 1993), alternative sources of venture capital (Sykes, 1990; Ehrlich et al., 1994; Van Osnabrugge and Robinson, 2000), and management of risks and management conflict (Sahlman, 1990; Sapienza and Gupta, 1994; Reid, 1998; Higashide and Birley, 2000). Wright and Robbie (1997, p. xxx) remarked in their introduction pages that venture capital has emerged as an important area of finance study for academic researchers.<sup>9</sup>

Many of the studies reviewed have focussed on developed countries with the setting of a developed venture capital industry. Their main subject is on the overall VCIs (whether institutions or independent private companies) with investment focus in the general small and medium venture businesses. However, studies in developing countries are very few. Furthermore, study that focuses on VCIs' investment focus specifically in ICT industry is almost nonexistent, at least in the Malaysian context.<sup>10</sup> Appendix 'A' reviews the current state of venture capital industry in Malaysia against several selected countries as the background information to this research.

In addition, most studies have concentrated on the perspective of the VCIs in addressing the management conflict, not the perspective of the ICTVBs (except for a few, e.g. Reid, 1998; Sahlman, 1990). These studies also focus the mitigation of management conflict at the post-investment stage of the venture capital process, almost ignoring the pre-investment stage and overall risk management.<sup>11</sup> Therefore, it is felt that research which focuses on both perspectives (i.e. VCIs as financiers and ICTVBs as borrowers) and investigates the differences in their ROMFs and the relationships between their ROMFs and management conflict across the full venture capital process is considered timely.

Since many facets of the venture capital still remain unknown, especially in developing countries, it is hoped that this research will fill the gap and add vigour to our understanding of the business relationship between VCIs and ICTVBs and the association between their ROMFs and management conflict in pursuing an efficient contract and amicable business relationship between them.

In the effort of leapfrogging from industrial age into information age, Malaysia has established the Multimedia Super Corridor (MSC) in 1996 and conceived it as the new engine of economic growth (as discussed in Appendix 'B'). However, there are still

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<sup>9</sup> For example, they argue that "rather than focusing on the narrow view that venture capital investment is about investment in new (innovative) start-ups, it is important to investigate the range of investment activities actually undertaken by venture capitalists. Not only does this approach key in more closely with what venture capital firms do, but it also permits greater application of the important finance and accounting concepts and issues".

<sup>10</sup> Lerner (1999, p. 286) asserts that (except for Singapore, Taiwan and Israel) "regardless of the term we use, the reality is that the venture capital industry remains underdeveloped in the developing world, and analyzing the classical model of venture capital in this context would be fruitless". This view is supported by Mani and Bartzokas (2002) in their study on venture capital industries in developing countries. They found that these economies are new to venture capital and on a world scale, their venture industries are very "insignificant" (e.g. Thailand, Vietnam, New Zealand, Philippines, Indonesia, Sri Lanka, Pakistan, etc.).

<sup>11</sup> In relation to this argument, Mitchell, Reid and Terry (1995, p. 188) contend that despite flourishing theoretical studies, "the empirical character of the venture capital investor (VCI)/investee relationship is still very poorly understood".

many institutional challenges that need to be addressed in order to assure the overall success of the MSC. For example in the aspect of nurturing ICTVBs in the MSC, the key success factor needed among others is venture capital.<sup>12</sup> Thus, an in-depth study on venture capital to better understand the business relationship between the VCIs and ICTVBs is timely and pertinent for the success of nurturing ICT entrepreneurship in the MSC in particular and in Malaysia in general.<sup>13</sup>

As for Malaysia's capital market, venture capital is relatively new but critical in financing the ICTVBs and promoting ICT entrepreneurship. This implies that a good developed capital market is important for the overall development of an economy, especially for developing countries like Malaysia. Therefore, this research is felt justifiable and will enrich the awareness of the role of venture capital in Malaysia.<sup>14</sup> In brief, besides enriching the general knowledge on this subject, hopefully this research will also contribute to closing the information gap in the emerging venture capital and ICT industries in Malaysia.

The destructive consequences of management conflict are well known in the literature. According to the behavioral sciences, which emphasize the personal and organizational costs of conflict, conflict is to be reduced or mitigated.<sup>15</sup> For example, Jensen and Meckling (1976) described that management conflict between managers and investors can affect the willingness of investors to provide financing. The situation becomes worse due to the informational asymmetry problem.<sup>16</sup> VCIs and ICTVBs are likely to face this problem. In their business relationships, management conflict may arise between them (e.g. goal incongruity, measurement uncertainty, information disparity, risk aversion, etc.) that may affect the performance of their venture businesses.

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<sup>12</sup> According to the Ministry of Finance, Malaysia received a soft loan recently from Japan Bank for International Cooperation (JBIC) amounted to RM1.6 billion to finance an ICT fund. In relation to this aspect, Abdullahi (2001, pp. 183 – 188) argues that amongst the major challenges faced by Malaysia's effort to move towards a knowledge-based economy is the government's challenge to garner enough funds and make such funds available to local ICTVBs to enable them to produce competitive goods and services.

<sup>13</sup> For these VCIs, they are not only managing their own funds but also funds received from government or government agencies.

<sup>14</sup> In relation to this, Kitamura (2001, pp. 32 - 33) in discussing the organizational approach to the financial systems in Central Asia succinctly states that the financial infrastructure in these countries is fragile, that the information systems are incomplete and biased, and that the financial sector contributed partially to the general economic activities – thus making financial intermediation between the fund surplus and deficit units very difficult. Kitamura further argues that "Naturally a good financial infrastructure is needed for a good financial information system, which, in turn, is needed for a good financial market where good-quality financial products and services are provided, renovated and promoted".

<sup>15</sup> Besides the definitional approach, conflict has also been conceptualized in terms of its characteristics. For instance, Molnar and Rogers (1979) studied two major organizational conflicts, namely, structural and operating conflicts. Structural conflict involves rules that govern a relationship, whereas operating conflict involves the interpretation and application of such rules.

<sup>16</sup> The informational asymmetry problem refers to a situation where there are differences in the types of information held by each economic agent. The information can be obtained but is unevenly distributed, and the differences in the information held by each of them are unobservable. In the financial system, this situation creates problems on two fronts: before the transaction is entered into (i.e. adverse selection problem) and after (i.e. moral hazard problem) (Akerlof, 1970; Jensen and Meckling, 1976; Greenwald, Stiglitz and Weiss, 1984; Eisenhardt, 1989).

As it was mentioned earlier, studies on financial contracting found that management conflict is a serious issue. Therefore, the main purpose of this research is to shed some light on this subject by empirically investigating the theoretical linkage between the ROMFs of both the VCIs and ICTVBs and management conflict experienced by them in managing their venture business. Hopefully, this research can contribute well to the literature on management conflict in the emerging venture capital and ICT industries in Malaysia.

In venture capital, mechanisms employed to reduce management conflict have been explored in depth in a series of theoretical studies. From the perspective of Principal-Agent analysis in venture capital, this conflict usually refers to the agency conflict, i.e. between the VCIs or financiers as the principal and the ICTVBs or borrowers as the agent. These studies include active monitoring (Timmons and Bygrave, 1986; Busenitz, Moesel and Fiet, 1997; Hellmann, 1998), exchanging of accounting and strategic information (Reid, 1998; Wright and Robbie, 1996), screening mechanisms employed (MacMillan, Zenmann and Subbanaramsimha, 1987), incentives to exit (Berglof, 1994; Black and Gilson, 1998), proper syndicating of financing (Admati and Pfleiderer, 1994), and staging of actual financing (Sahlman 1990).

Almost in all cases, a critical role of VCIs is generating information about the ICTVBs' prospects. While such an emphasis is important, it does little to shed light on the complementary role of key stakeholders' (i.e. the VCIs and ICTVBs) ROMFs in affecting those strategies of reducing the management conflict. Thus, it is important to understand the managerial factors, whereby the nature of management conflict between these stakeholders is a consequence of their characteristics. For instance, the degree of differences of expertise (in terms of information, knowledge, and skills) and the ROMFs of both VCIs and ICTVBs are the basic proxies, among others, for the occurrence of management conflict in their business relationship.

From the theoretical perspective, this research is an attempt to identify whether another variable, which is called "recognition of managerial factors (ROMFs)" of the key stakeholders in venture business, has a role in explaining the management conflict in the actual venture business relationship. Therefore, firstly, this research is an attempt to provide evidence based on venture capital in a developing country about the differences of ROMFs of these key stakeholders and the relationships between their ROMFs and management conflict across the full venture capital process as actually experienced by them. By testing several hypotheses, this research will provide explanation of the nature of the differences and relationships between the investigated variables.<sup>17</sup> Secondly, this research also examines the relevancy of ROMFs and management conflict in the real world of business relationships between VCIs and ICTVBs by using the MSC as the case study.

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<sup>17</sup> Wright and Robbie (1997, p. xxx) contend that there is an emerging issue concerning the appropriate conceptual underpinning to the relationships both between funds providers and VCIs and between the latter and their investees (i.e. the ICTVBs). They further stress that there is also relatively little analysis of how ICTVBs select between competing sources of finance – the formal and informal financial institutions.

From the practical perspective, firstly, this research attempts to provide some indication and direction regarding the roles of VCIs in the ICTVBs' growth and ICT entrepreneurship in the MSC, Malaysia. Since venture capital is considered one of the key success factors in promoting ICT entrepreneurship in a technology park, hopefully the additional knowledge from this research will promote the successful implementation of the MSC in Malaysia.<sup>18</sup> This aspect is significant because in Malaysia, VCIs (i.e. especially public-sector initiated) manage a large amount of funds from the public sector (as discussed in Appendix 'B'), and they have the responsibility to effectively contribute to closing the financial resource shortage of the ICTVBs. Secondly, this research also aims to find answers to the following questions: What are the specific differences in the expertise of both the VCIs and ICTVBs? Do these differences have any impact on their ROMFs in managing their venture business? Do their ROMFs have any influence on the management conflict they experience in managing their venture business? And finally, what are the bases for further research in this subject?

## 1.5 MODEL OF STUDY AND RESEARCH DESIGN

The type of investigation for this research is firstly, to examine the differences between the ROMFs of both VCIs and ICTVBs. Secondly, is to examine the relationships between their ROMFs and management conflict.<sup>19</sup> Figure 1.1 illustrates the model of study of this research. Basically, this figure illustrates the flow of the operational activities of this research. It begins with a review of background information, theory of the firm and related concepts as shown at the upper level. In the middle level, the activities shown are literature review on venture capital and focal and data theories. Finally, the lower level shows the data collection and analysis. The drafting of the Thesis is done simultaneously at each level of the study.

This research is based on a synthesis of theoretical findings of previous selected studies done on the venture capital industries of developed countries. Based on their information and knowledge, this research focuses on the following aspects: venture businesses in ICT industry; venture capital from pre-investment to post-investment stages; and risk management. The unit of analysis is the business relationship between the VCIs and ICTVBs. This research is guided by a research design (which will be explained in greater detail in Chapter 3) and is illustrated in Figure 1.2. This figure illustrates schematically the salient aspects of the framework employed for this research. These aspects are the problem statement, details of study, measurement issues and data analysis.

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<sup>18</sup> See, for example, Miller and Cote (1987), Mansell and Wehn (eds.) (1989), Gilder (1989), Higgins and Savoie (eds.) (1988), and Masey et al. (1992).

<sup>19</sup> Sekaran (1992, p.100) defines this type of study as "when the researcher is interested in delineating the important variables that are associated with the problem, it is called a correlational study". The intention of this type of study is to examine the influence and some relationship among the variables investigated.

The theoretical framework of this research is guided by the Theory of the Firm and related concepts as the background theory.<sup>20</sup> The schematic interrelationship among the variables (that is, the independent variables and dependent variable) that are to be investigated in this research are summarized in Figure 1.3 following. In this figure, the stages of venture capital process are shown on the left (i.e. pre-investment stage, risk management and post-investment stage. Specific sets of independent variables (i.e. the ROMFs of both VCIs and ICTVBs) to be investigated are in the middle and the dependent variable with its indicators on the right.

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<sup>20</sup> This research includes studies on the current state of Malaysia's venture capital industry and the MSC's financing environment as background information, the Theory of the Firm and related concepts as the background theory, the Agency Theory as the focal theory, the Principal-Agent analysis as the framework, the data theory, the methodology and data analysis.

Figure 1.1: Schematic diagram of the model of study

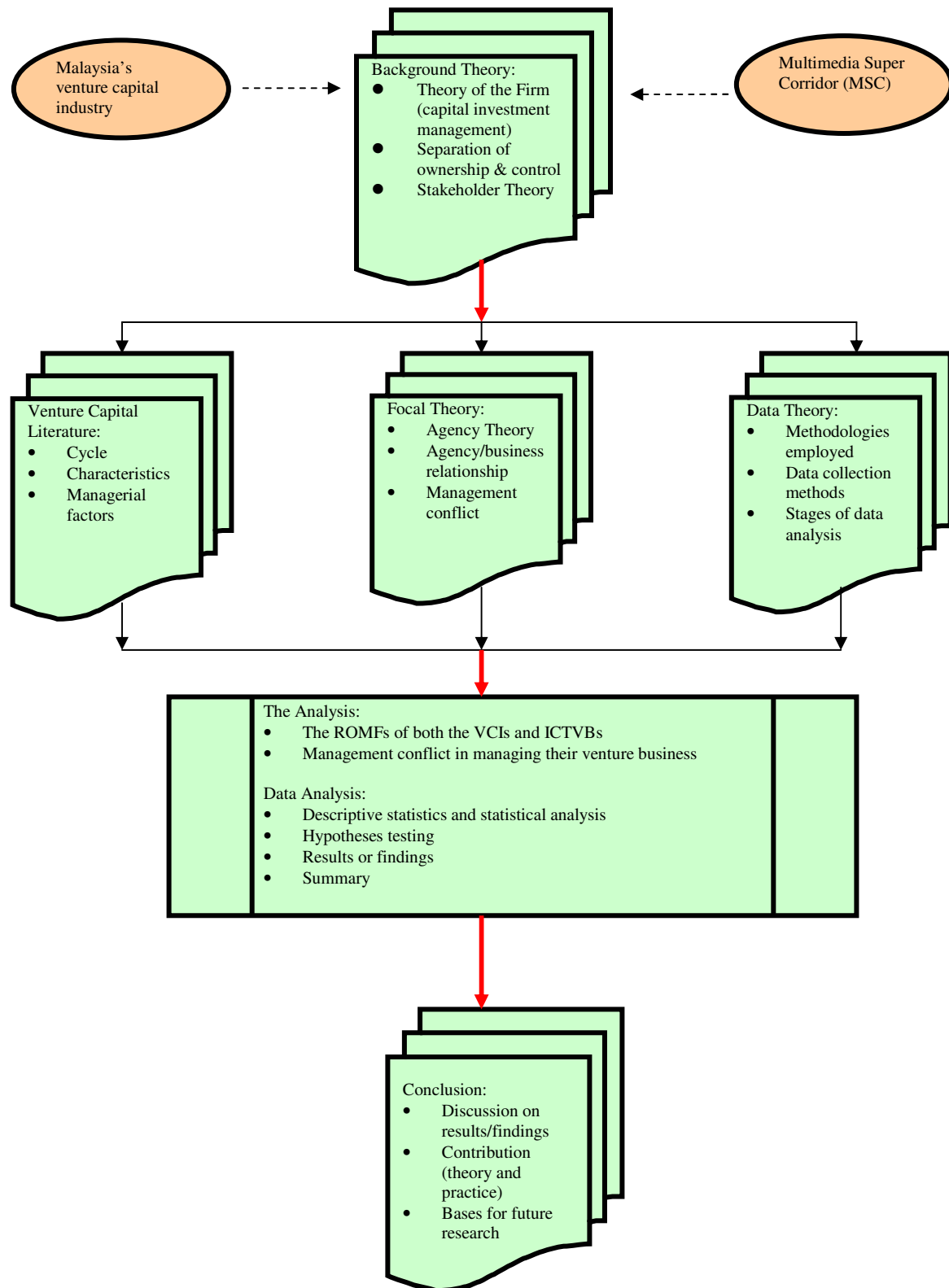




Figure 1.2: Schematic diagram of the research design

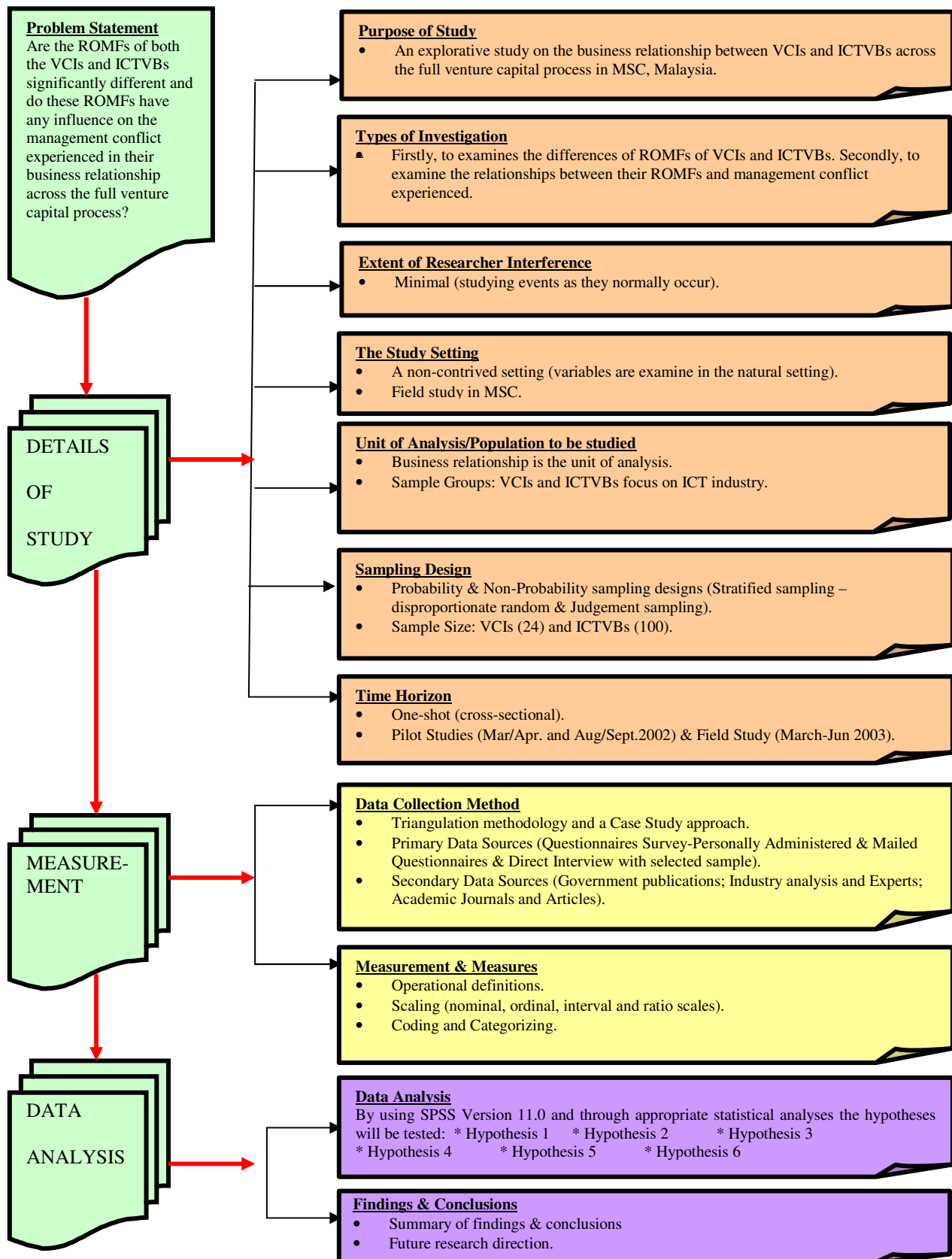
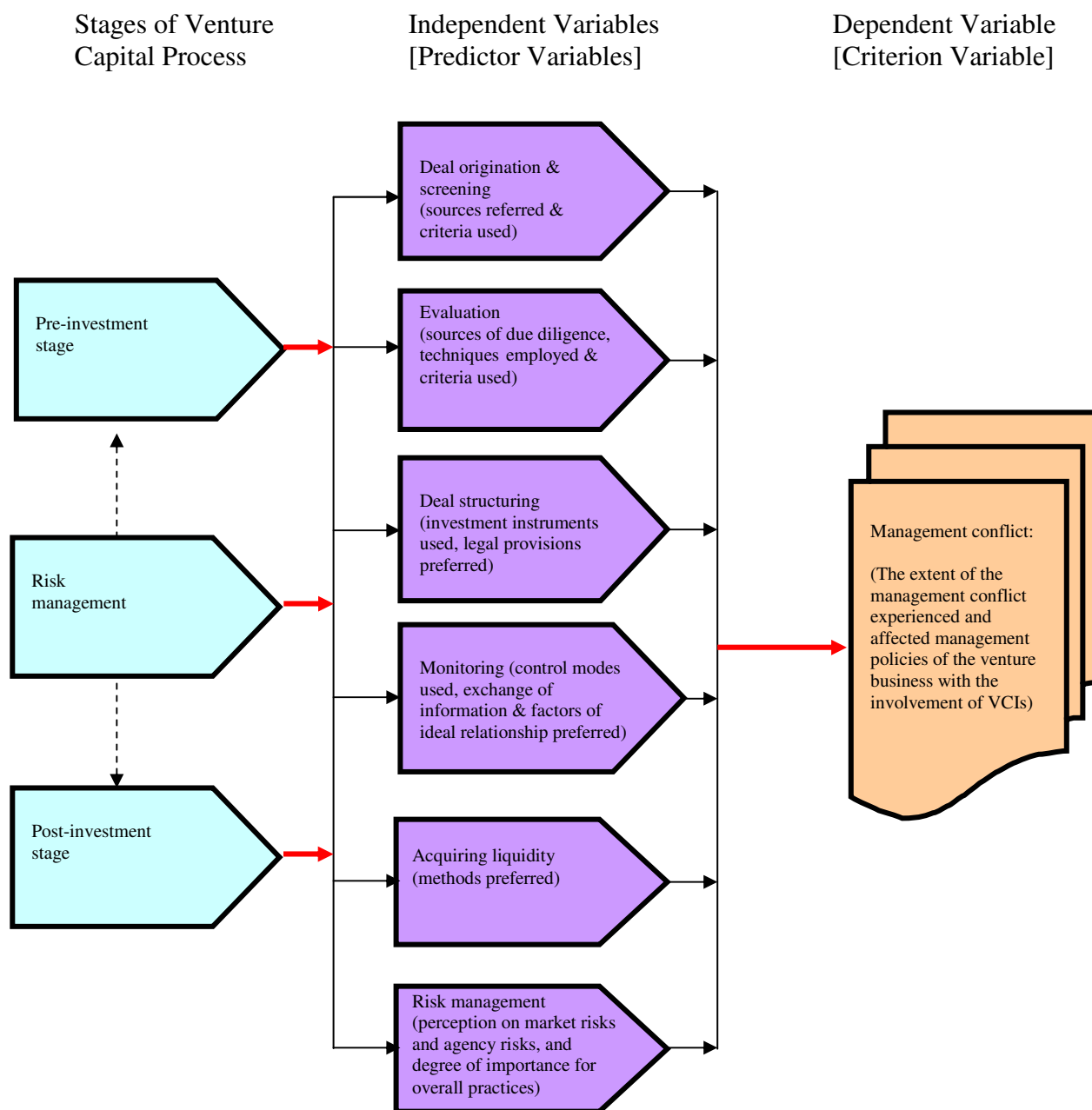


Figure 1.3: Schematic diagram of the theoretical framework

## 1.6 ORGANIZATION OF THE THESIS

This Thesis is divided into five chapters. Chapter 1 is an introduction to the research. The statement of the research problem or the area of interest is discussed; followed by justification, purpose, study design; and finally the organization of the Thesis.

Chapter 2 reviews the literature on venture capital and the managerial factors involved. The review is meant to synthesize the various studies on the subject and also to identify the theoretical and conceptual underpinnings of the venture capital dynamics. It also focuses on this research's model of development. The hypotheses to be tested are also derived from the literature reviewed.

Chapter 3 outlines the methodology used for this research. This chapter provides the description of the respondents, the criteria used in selecting them, and arrangement for access to these respondents. The chapter also specifies the sampling design, data collection methods, the operational definitions, and finally it explains the conceptual framework of this research.

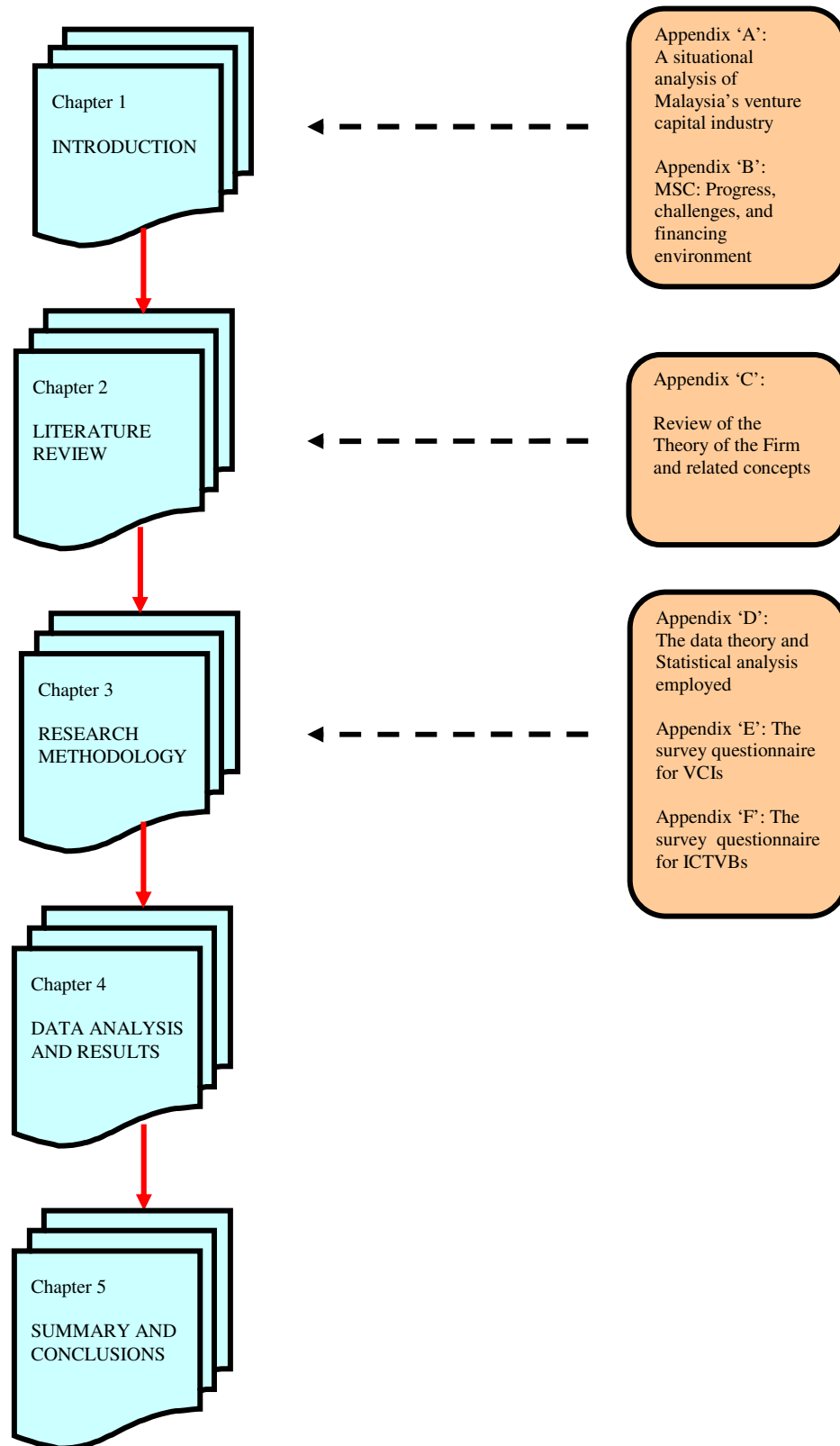
Chapter 4 presents the statistical analyses of this research and reports the results. It covers the descriptive statistics, case studies and statistical analyses used to describe and test the differences and relationships between the independent and dependent variables and the extent of the variance that could be accounted for by the independent variables on the dependent variable. All of the hypotheses of this research will be tested. The results from these statistical analyses are then summarized and discussed accordingly.

Finally, Chapter 5 concludes this research. This chapter discusses the findings and conclusions that could be derived from the descriptive statistics and statistical analysis. It also covers discussions on the theoretical and practical implications of the findings of this research. In addition, the limitations will be indicated. Suggestions and directions for potential future research on the subject will also be highlighted.

Figure 1.4 illustrates the schematic diagram of the contents of this Thesis. Basically, there are five chapters and six appendices. For Chapter 1 (Introduction), there are two appendices, i.e. Appendix 'A' and Appendix 'B' offering the background information of this research. For Chapter 2 (Literature Review), the background theory and related concepts of this research are discussed in Appendix 'C'. For Chapter 3 (Research Methodology), there are three appendices, which discuss the data theory (Appendix 'D') and show the survey questionnaires for the VCIs (Appendix 'E') and the ICTVBs (Appendix 'F'). Then Chapter 4 is the Data Analysis and Results, and finally, Chapter 5 is the Summary and Conclusions.

## **1.7 SUMMARY**

This chapter justifies the requirement for an empirical research on the differences of the ROMFs of both the VCIs and the ICTVBs, and the relationships between their ROMFs and management conflict experienced in their business relationship across the full venture capital process. The next chapter introduces the literature review on venture capital and the derivation of the hypotheses of this research.

Figure 1.4: Schematic diagram of the Thesis

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 INTRODUCTION

This chapter reviews the theoretical literature on venture capital. It starts with the literature review on the background of venture capital, which includes its cycle, characteristics, managerial factors, and management conflict. The contributions of several authors and researchers on these subjects are reviewed. Then it will be followed by the synthesis of their works, which facilitates the model development and the derivation of hypotheses for this research. Next, there follows a brief discussion on the theoretical underpinnings of venture capital, and finally the last section summarizes this chapter. The background theory of this research is based on the Theory of the Firm and its related concepts, which are discussed in Appendix ‘C’ of this Thesis.<sup>1</sup>

#### 2.2 BACKGROUND ON VENTURE CAPITAL

This section and the following Section 2.3 review some of the works of the authors and researchers in the subject of venture capital. Their contributions facilitate in developing the construct to test the differences of ROMFs of both VCIs and ICTVBs and the relationships between their ROMFs and management conflict experienced by them in managing their venture business across the full venture capital process.

In terms of definition, Wright and Robbie (1997, p. xiii) state that venture capital can be defined broadly “as the investment by professional investors of long-term, risk equity finance where the primary reward is the eventual gain, rather than interest income or dividend yield”.<sup>2</sup> In another definition, Lerner (2000, p. 203) defines venture capital “as equity or equity-linked investments in young privately held companies, where the investor is a financial intermediary who is typically active as a director, advisor, or even manager of the firm”. A similar definition, according to Cumming and MacIntosh (2001, p. 1), is that “venture capital investors are financial intermediaries (in essence a kind of specialized mutual fund) which receive capital contributions from institutional investors or high net worth individuals across the economic spectrum, and invest the pooled deposits in small, private and mainly high technology businesses or entrepreneurial firms with potentially high growth”. In a much broader perspective, Liles (1974) states that venture capital involves “investment in any high risk financial venture; investment in unproven ideas, products, or start-ups situation i.e. the provision of what is called ‘seed-capital’; investment in going concerns that are unable to raise funds from conventional public or commercial sources; and investment in large and – in some cases – controlling interests in publicly traded companies where there is a considerable degree of uncertainty” (cf. Pfirrmann, Wupperfeld and Lerner, 1997, p. 9). These definitions imply

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<sup>1</sup>The related concepts are Separation of ownership and control; Stakeholder Theory; ICTVBs and their financial resource shortage; and the Agency Theory (as the focal theory for this research).

<sup>2</sup> According to Paqvalen (2001, p. 4), this term is used interchangeably with private equity [including both management buy-outs (MBO) and management buy-ins (MBI)] in Europe but not in the U.S.

that venture capital involves the provision of equity finance to venture businesses that are typically small in size, unquoted on the stock market and provide an opportunity for gain through growth potential, contingent on acquiring finance to permit new investment. In addition, Mitchell, Reid and Terry (1995, p. 187) contend that normally the VCIs expect to earn an adequate investment return within a few years through one of the methods for acquiring liquidity (e.g. initial public offerings (IPO), mergers and acquisitions, secondary sale, etc.). Besides the understandings from these definitions of venture capital, Section 3.7.3 in Chapter 3 uses a specific definition for VCIs for the operational purpose of this research.

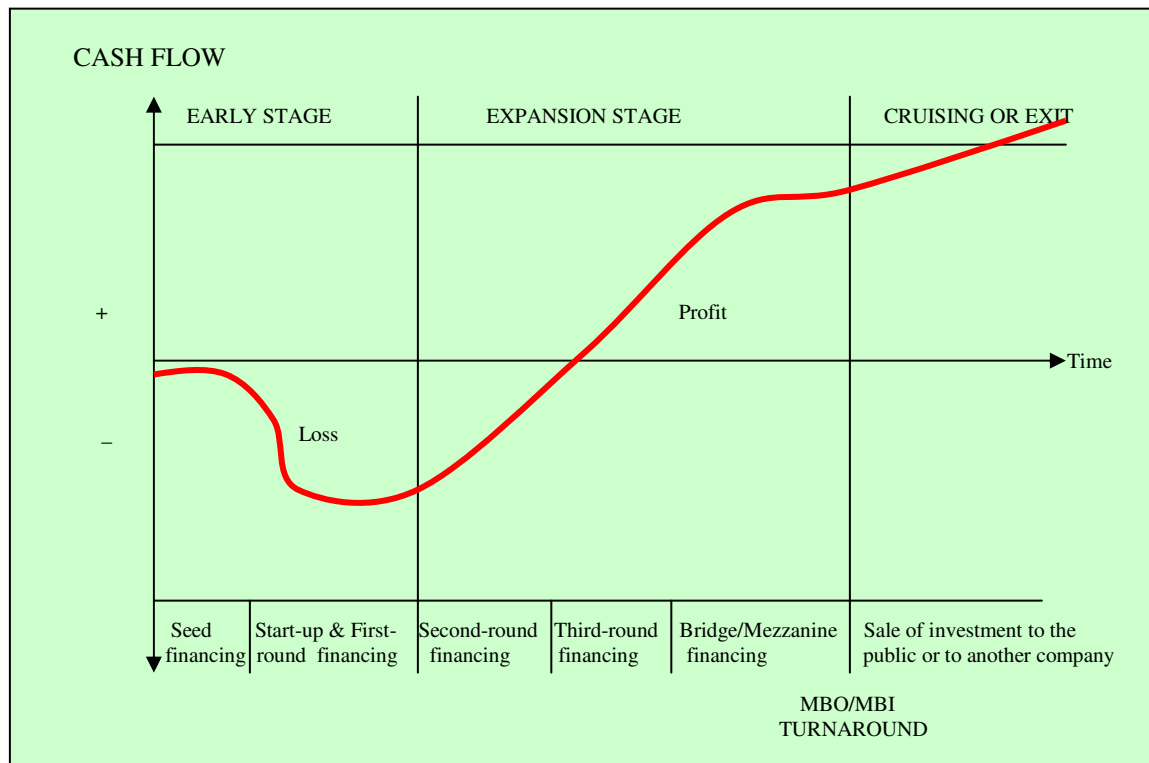
### **2.2.1 Venture capital cycle**

Various scholars have approached the analysis of any industry dynamics by looking for regularities in terms of a life cycle through which the industry passes. Hence, this implies that in order to understand the venture capital industry, one must first understand the whole venture cycle. Generally, according to Gompers and Lerner (2001, p. 152), a venture capital cycle “starts with raising a venture fund; proceeds through the investment in, monitoring of, and adding value to firms; continues as the venture capital firm exits successful deals and returns capital to its investors; and renews itself with the venture capitalist raising additional funds”.

Venture capital financing can be categorized into different phases that normally correspond to the ICTVBs’ developmental stages. The phases of venture capital financing vis-à-vis the development stages of ICTVBs are illustrated in Figure 2.1 following. Each phase is related with different financial and managerial requirements. The phases are as follows:

- a) When a venture business is formed, it is usually funded by the VCIs in three stages as follows, which all fall under the terms of “early stage financing”.
  - i) Seed financing – small amounts of capital received by an ICTVB to investigate a business model and transform it into a tangible business plan. Key management personnel of the ICTVB have not been chosen.
  - ii) Start-up financing – larger amounts of capital received by an ICTVB to fund products/services development and initial marketing. Basically, the ICTVB is organized and the key personnel have been chosen.
  - iii) First-round financing – this type of financing enables an ICTVB to develop a prototype and to begin producing and selling its products/services. Thus, financing is needed for commercialization and to initiate sales.

Figure 2.1: Phases of venture capital financing and ICTVBs' growth stages



Source: Adapted from Auer (1990) [cf. Paqvalen, K. K. (2001, p. 6)]. "How does the venture capitalist-entrepreneur relationships translate to the performance of the venture?". Seminar Paper. Espoo, Finland Helsinki University of Technology, Institute of Strategy and International Business.

- b) Once a venture business is generating revenue and is at its expansion stage, it seeks later-round financing from the VCIs as follows.
  - i) **Second-round financing** – this type of financing is used for initial expansion for an ICTVB that is already in business, whereby it is producing and delivering its products/services to customers.
  - ii) **Third-round financing** – additional capital are required for further expansion and growth. This type of financing can involve large amounts of funds earmarked for expanding the ICTVB' production, changing the marketing strategy, or improving existing products/services. Usually, the ICTVB is breaking even or showing some profit track record.
  - iii) **Mezzanine or Bridge financing** – This type of financing keeps the ICTVB growing until it can go public and normally is meant to last to a year, at the most.
  - iv) **Leveraged Buyouts** – Funds from VCIs are also used to assist finance leveraged buyouts to enable the management team of the ICTVB to acquire



control of the venture business (i.e. management buy-in [MBI]), or to help the ICTVB acquire other businesses that are synergistically viable to its existing business (i.e. management buy-out [MBO]).<sup>3</sup> Normally, the acquired business is often restructured and the ICTVB's assets are used for collateral (Gladstone, 1988; Sagari and Guidotti, 1992; Paqvalen, 2001).<sup>4</sup>

Generally, factors that influence VCIs in making investment in ICTVBs are, for example, their business preferences, diversification strategies, stage of financing, etc. As for the ICTVBs, their business purposes and developmental stages influence their financing needs. In reality, the VCIs are already involved in the venture businesses at the pre-investment stage by giving advice, mentoring the ICTVBs, etc. (although at this stage VCIs have very limited say and practically have to rely on the technological knowledge of the ICTVBs). And at the post-investment and in risk management of the venture businesses, the VCIs' roles are more crucial for their expansion. Thus, without marginalizing the importance of mezzanine or bridge financing and leveraged buyouts, this research focuses on the early stage, second and third-round financing from the VCIs, largely due to the nature of things, i.e. majority of the ICTVBs in the sample are at their early and growth stages of development.

### **2.2.2 Characteristics of venture capital**

In terms of characteristics, Chan (1999, pp. 15–17) states that venture capital has several key features as follows: i) VCIs are neither short-term nor long-term financiers; ii) VCIs contribute more than finance to their investee firms; iii) VCIs tend to be an expensive source of financing; iv) VCIs fill a void between sources of funds; v) VCIs view themselves as risk financiers; vi) VCIs are highly selective; and vii) VCIs are biased towards certain industries. These characteristics imply that VCIs are not only different from other types of financiers (e.g. banks) but also are recognized as specialists and risk-takers in financing high-risk venture businesses such as the ICTVBs. For example, VCIs normally search actively for a deal, i.e. searching for the right and most promising prospective ICTVBs to invest in. Once they make their investments in ICTVBs they tend to be active investors i.e. involved in the operation of the venture businesses. In addition, Sagari and Guidotti (1992, p. 8) contend that VCIs play different roles compared to conventional financial institutions, and these roles are as follows: i) analyzing the investment idea from both technological and business perspectives, ii) contributing in the preparation of the business plan and investment prospectus, iii) estimating the risk-reward ratio of the investment, iv) assisting in finding individuals who are capable of forming a qualified technical and managerial team, v) assisting in obtaining additional financing, vi) participating as active advisors to facilitate the success of the venture business, and vii) assisting in developing supplier relations and in marketing products, often through networking contacts. These roles imply that to be successful, VCIs should have a mix of

<sup>3</sup> The concepts of MBI and MBO are normally differentiated by many economists.

<sup>4</sup> According to Paqvalen (2001, p. 6), recently there is an additional stage called breed or pre-seed financing which is associated with the rapidly changing ICT industry. For example, in most developed countries (e.g. Japan) they have the so-called incubation system that provides, among others, the avenue for the VCIs and ICTVBs to get to know each other at this very early stage and thus be able to develop their business relationship further.

excellence in various skills, experiences, and knowledge (e.g. pertaining to financial, managerial, market, and technical matters).

### **2.3 MANAGERIAL FACTORS**

VCIs' active involvement with the ICTVBs does not exist in a vacuum. They come into contact as the result of a financial resource shortage known as the 'equity gap' problem (as discussed in Appendix 'C'). Murray (1994, p. 73) defines 'equity gap' as "a situation whereby there is insufficient provision of long-term, external equity sources to finance the creation and development of the young and growing business". In fact, Murray further contends that a venture business financed by an early stage fund may well face two equity gaps: i) first gap occurs when trying to obtain initial funding to create the venture business, and ii) second gap occurs when attempting to attract additional funding for further expansion of the venture business after the initial funding has been exhausted. In another definition, Mason (1996, p. 4) defines this gap as "the absence of small amounts of risk capital from institutional sources for companies at the seed, start-up and early growth stages which arises because the fixed costs of investment appraisal and monitoring make it uneconomic for venture capital funds to make small investments, and also because of the reluctance of banks to make unsecured lending" (cf. Van Osnabrugge and Robinson, 2000, p. 38).

With the notion that these ICTVBs do contribute to the overall economic development, efforts to bridge this financial resource shortage is crucial, particularly in developing countries. The literature surveyed admits that informal financial institutions, such as individual investors, VCIs, business angels, and corporate venture companies, are important sources of risk financing to these ICTVBs, especially in developed countries (Sykes, 1990; Ehrlich et al., 1994; Van Osnabrugge and Robinson, 2000).

Lerner (2000, pp. 203–207) argues that small ICTVBs that are backed by VCIs have been particularly strong innovators. Lerner found that VCIs not only contributed a relatively modest share but also provided critical early financing and management guidance to start-up ICTVBs involved in biotechnology, computer networking and the Internet. In return, these venture businesses have used the capital, expertise and contacts provided by their VCIs to establish themselves as market leaders. Lerner also contends that some of these potentially profitable start-up ICTVBs would be unable to access normal financing if VCIs did not exist due to factors such as uncertainty, asymmetric information, and the nature of intangible assets involved as collateral for financing purposes and the availability of mechanisms to address the changing business environment.

The following section will discuss in detail the managerial factors pertaining to the practices and procedures at each stage of the venture capital process. Most of these references are made in the context of VCIs, based on the findings of previous studies that have been concentrated on the VCIs' perspective in addressing management conflict (as discussed in Chapter 1). However, some references will be made accordingly in the context of ICTVBs.

### **2.3.1 Pre-investment stage**

#### **2.3.1.1 Deal origination and screening**

It is a widely accepted fact that VCIs receive thousands of venture proposals for financing every year. However, only a handful of proposals are accepted for in-depth evaluation at this early stage of the financing process. Among the managerial factors employed are selecting the sources of deal origination and criteria used for screening purposes (Sahlman, 1990; Tyebjee and Bruno, 1984). A reliable source of deal origination is important as it helps to improve reliability in the screening process of prospective ICTVBs. These sources are for example when the ICTVBs approach the VCIs directly, referral processes (e.g. from the venture community, venture businesses, banks, etc.), active search by the VCIs for deals, and other mechanisms (e.g. technology exhibitions and conferences, and etc.). In the context of ICTVBs, these sources also help them in identifying suitable VCIs for their financing and other value-added services (e.g. business networking, marketing contacts, etc.) that the selected VCIs can offer to their venture business.

The screening process involves the usage of some broad criteria that normally correspond to the individual VCIs' and ICTVBs' preferences. The most common criteria for screening are as follows: i) the size of investment required, ii) the production technology involved, iii) the location of the venture, iv) the stage of financing required, v) the management team and track record, and vi) the markets for the products and services. According to Sagari and Guidotti (1992, p. 12), many VCIs "choose areas in which they have expertise, which facilitates the in-depth evaluation of the firm and the post-investment monitoring processes". In supporting this argument, for instance, Tyebjee and Bruno (1984) found that 63% of their sample of VCIs followed the criteria of technology and market sector of their venture preferences in their screening process. As for the ICTVBs, these criteria are important to increase the probability of their application for financing being accepted by the VCIs because the VCIs are known to be selective.

#### **2.3.1.2 Deal evaluation**

For the VCIs, the potential ICTVBs are rigorously reviewed with the main objective of making the decision to invest or otherwise. In the context of ICTVBs, they also need to check the potential VCIs as to make sure that they can get financing and acceptable business partners for their venture business. The managerial factors involved are referring sources of due diligence, employing evaluation techniques, and selecting the evaluation criteria to be used. These factors are crucial in venture capital because the success of the investment depends on the sources of information gathered for the purpose of future management of the investment and the venture business. Basically, four main aspects are focused on here namely the quality of their management team, characteristics of the products and services, technology to be employed, and market potential.

Empirical studies on the evaluation criteria that are considered crucial for venture capital found that the quality of the management team is more important than other criteria such as market attractiveness, product characteristics and etc. (Wells, 1974; Poindexter, 1976; Tyebjee and Bruno, 1984). For instance, Wells (1974) found that management commitment, product, and market criteria rank higher than industry or technology and cash-out method criteria. In another study in the U.S., Tyebjee and Bruno (1984) found that the managerial capabilities and resistance to environment threats are two criteria that have the highest impact on reducing risk of the investment. They also found that market attractiveness and product differentiation criteria have improved significantly the expected return of the investment.

### 2.3.1.3 Deal structuring

The managerial factors of deal structuring in venture capital also poses many challenges. Deal structuring refers to the set of contractual arrangements negotiated between the VCIs and the ICTVBs with the intention of reconciling any conflicts that arise in their venture businesses. Sagari and Guidotti (1992, p. 20) state that issues to be negotiated are normally related to: i) the kind and mix of financial instruments to be used (e.g. the capital structure), ii) the pricing of the deal, and iii) other terms of the agreement (including warranties and covenants). In relation to this, Kaplan and Stromberg (2000a, p. 2) argue that financial contracting in venture capital as compared to the real world contracts is more complex than the existing theories predict.<sup>5</sup> In their study, they found that amongst the distinguishing characteristics of venture capital is the allowance of VCIs and ICTVBs to allocate cash flow rights, board rights, voting rights, liquidation rights and other control rights. It is also common for VCIs and ICTVBs to include non-competing and vesting provisions that make it more expensive for each of them to leave the venture business, thus mitigating the potential management conflict between them. Finally, they also found that cash flow incentives, control rights and contingencies implemented in the contracts are used more as complements than as substitutes. The arguments above indicate that contractual arrangements through legal documentation are a crucial tool in the deal structuring of venture capital for both the VCIs and ICTVBs.

## 2.3.2 **Post-investment stage**

### 2.3.2.1 Monitoring

The main purpose of monitoring is to minimize losses by anticipating possible conflicts in the business relationship between the VCIs and ICTVBs. The managerial factors involved are such as, choosing what types of monitoring are preferred, exchanging strategic information (e.g. financial and technological information), providing advice and information as required, and determining factors of an ideal relationship. Through strategic monitoring, both VCIs and ICTVBs have ample and timely information for any further corrective decisions and actions to be made. This is

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<sup>5</sup> In their study, they compared the characteristics of real world financial contracts to their counterparts in financial contracting theory. Their study involved actual contracts between VCIs and ICTVBs in the U.S., that is, 213 venture capital investments made in December 1986 to April 1999 in 119 ICTVBs by 14 VCIs.

much easier said than done though. In their business relationship, both parties will incur monitoring costs to a certain extent. For instance, both parties incur costs when they monitor and infuse financing, such as costs of legal documentation of their contracts and costs of other valuable resources (e.g. man-hour, man-power, etc.)

In one of the pioneer studies on venture capital using an applied Principal-Agent analysis, Sahlman (1990, p. 518) concludes that venture capital is characterized by substantial uncertainty about payoffs on individual investments and a high degree of information asymmetry between the principal and agent.<sup>6</sup> Therefore, certain standard managerial factors have evolved, including staging the commitment of financing, basing compensation on value created and preserving mechanisms to force the agent to distribute capital and profits. Sahlman also found that the business relationship of VCIs and ICTVBs shared several common elements such as staging the commitment of financing and preserving the option to abandon, compensation schemes, which are based on incentives to create value for both parties and are defined mechanisms to acquire liquidity.

Reid (1998) did a study in the United Kingdom's venture capital industry to explore the relationship between VCIs as the principal and mature small firms as the agent.<sup>7</sup> From this study, Reid (1998, p. 259) found that the trading of management accountancy information between them is valuable and provides a rich and highly organized information set upon which economic agents can predicate their decision-making. Reid also stresses that in the contracting relationship between the principal and agent, there exists management conflict due to the problems of adverse selection, moral hazard and asymmetry of information. Reid found that certain managerial factors such as using a fine filter on proposals, requiring high rates of return and strongly resisting downside risk exposure were employed in order to limit the adverse selection pre-investment problems. Whereas, to attenuate moral hazard post-investment problems, right monitoring and an unwillingness to bear all risk measures were employed. Reid's arguments imply that monitoring and control devices do have a practical edge for both VCIs and ICTVBs, which promotes efficiency in the way predicted by the Principal-Agent analysis.

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<sup>6</sup> Sahlman's study focused on the relationship between funds providers and VCIs and also between VCIs and the ICTVBs in which they invest. The study was done in the U.S. and covers the period from 1980 to 1988. According to Sahlman, the agency contract contained certain standard procedures to address three fundamental problems, namely, the sorting problem (i.e. how to select the best VCIs and the best ICTVBs), the agency problem (i.e. how to minimize the present value of agency costs) and the operating-cost problem (i.e. how to minimize the present value of operating-costs including taxes).

<sup>7</sup> By using an applied Principal-Agent analysis, Reid focused on the importance of risk and information to the relationship of the principal and agent through four aspects namely risk management, information demand, information development and the exchange of risk and information.

### 2.3.2.2 Acquiring liquidity

In highlighting the means of acquiring liquidity for the VCIs and ICTVBs to choose, Gladstone (1988) identifies six main methods: i) sale of the ICTVBs' shares in a public offering, ii) sale of shares to other ICTVBs, iii) repurchase of shares by the ICTVBs, iv) sale of shares to other VCIs, v) reorganization of the ICTVBs, and vi) liquidation of the ICTVBs. In relation to this, Barry et al. (1990) contend that sale of the ICTVBs' shares in an initial public offering (IPO) and trade sale are considered to be the most popular methods of acquiring liquidity in venture capital. In a recent study, Cumming and MacIntosh (2000) also describe five main methods of acquiring liquidity namely an initial public offering (IPO), acquisition exit, a secondary sale, a buyback and a write-off. Their empirical study based on Canadian and American evidence supported that the choice of acquiring liquidity is related to the desire to minimize moral hazard and informational asymmetries between the VCIs and ICTVBs and hence to maximize the capital gain.<sup>8</sup> These studies imply that there are many methods of acquiring liquidity available for the VCIs and ICTVBs but the most chosen method is the IPO. This is particularly true in developed countries with established capital markets and venture capital industries but it still remains to be seen in most of the developing countries.

### 2.3.2.3 Risk management

Overall risk management is also important for both the VCIs and the ICTVBs. In other words, the managerial factors based on the strategic importance of certain types of risk (e.g. management risk, inexperience risk, competitive risk, viability risk, and cash-out risk) by both VCIs and ICTVBs are a crucial aspect of managing their venture business. Besides this, their perceptions towards overall market and agency risks can also have some repercussions on the management conflict experienced in the business relationship across the full venture capital process. Market risk refers to the degree of uncertainty related to gaining a competitive advantage due to environmental factors (Porter, 1980; Tyebjee and Bruno, 1984; Barney et. al, 1989; Fiet, 1995). Managerial factors of this risk include the aspects of technical obsolescence, many competitors, many substitutions of products or services, weak customer demand, and market attractiveness. On the other hand, agency risk could be related to the divergent interests between the VCIs and ICTVBs, and the managerial factors include the aspects of potential dishonesty, short-term self-interest seeking, many venture businesses to be monitored, contractual ambiguities, differences in cash flow and profitability objectives, and manipulation of profitability.<sup>9</sup>

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<sup>8</sup> In another study, Cumming and MacIntosh (2001, p. 39) found that the theory and evidence relate the total venture capital investment period to various factors. These factors are as follows: the market and book values of the ICTVBs, the stage of its development at the time of initial investment, the nature of its assets and the industry it operates in, the type of venture capital fundraising and the reason for acquiring liquidity. They also contend that there is a causal link from each of these factors to investment duration, and they conjecture that total venture capital investment duration has a role in mitigating informational asymmetries between the VCIs and ICTVBs.

<sup>9</sup> For example, Fiet (1995) did a study on risk avoidance strategies employed by 141 VCIs and 83 business angels in the U.S. and found that differences in their strategies for evaluating risk lead them to hold predictably different views of the dangers of market and agency risks. VCIs were found to attach more

### 2.3.3 Management conflict in venture businesses

As discussed in Appendix 'C', the theoretical and conceptual framework on separation of ownership and control is based on the seminal work of Berle and Means, (1967) which has led to further studies on this subject in modern organizations (Beed, 1972; Jensen and Meckling, 1976; Demsetz, 1988).<sup>10</sup> In an environment where ICTVBs receive financing from external equity, there is a situation for a separation of ownership and control as well as diversity of stakeholders, which are bound to govern the management of the venture businesses. Moreover, related to the focus of this research, with the expected differences in the areas of expertise between VCIs (which are inclined to be more expert in financial matters) and ICTVBs (which are inclined to be more expert in technological matters) contracting into venture businesses, they will certainly face some conflicting aspects in managing together their venture business. This kind of business relationship implies that both parties will have to manoeuvre their resources and managerial factors for the success of their venture businesses.

Following the arguments in the literature reviewed, for example, due to asymmetries of information, management conflict will arise between the contracted parties, i.e. the VCIs and ICTVBs.<sup>11</sup> The conflict is related to adverse selection and moral hazard problems. Adverse selection relates to misrepresentation by the VCIs and ICTVBs as to their real abilities. Adverse selection occurs due to the fact that either VCIs or ICTVBs cannot completely observe and verify the other's abilities when they engage in the business relationship. For example, either the VCIs or ICTVBs are so-called experts in their respective fields but how far this is true is subject to real situations that arise when they manage their venture business together. Moral hazard arises when the VCIs and ICTVBs do not put forth the effort originally agreed upon in the contract or when they act on their own agendas to withhold or modify crucial information (Grosman and Hart 1983; Fama and Jensen, 1983; Eisenhardt, 1989; Jensen, 1994; Hart, 1995).<sup>12</sup> For example, the ICTVBs are supposed to have more information and knowledge about the technological aspect of their products or services than the VCIs. Thus, the ICTVBs can possibly withhold some important technological information (e.g. unproven prototype, etc.) that can affect the success of their venture business.

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importance to market risk than agency risk, but the converse is true for the business angels. Fiet further states that ICTVBs with a technical or market advantage would probably find a more receptive investor audience among VCIs.

<sup>10</sup> In their study on 200 of the largest American corporations, they found that 44% were in the category of ultimate management control while 23% were in the category of minority control. Thus, they conclude that due to the extensive dispersal of ownership structure in these corporations, the separation of ownership and control has become virtually complete. This study also remains a standard reference on the unquestioned fact of the separation of effective control from ownership of the firm.

<sup>11</sup> This concept is critical in the theories of property rights and corporate governance (Alchian and Demsetz, 1972), the transaction costs economics (Williamson, 1979), the agency theory (Jensen and Meckling, 1976; Eisenhardt, 1989; Sappington, 1991) and the game theory (Hillier, 1997).

<sup>12</sup> According to Ayres and Cramton (1994, p. 6), "moral hazard is the contracting problem that arises when the actions of one of the contracting parties are unobservable. Adverse selection is the problem that arises when an attribute of one of the contracting parties is unobservable".

Management conflict can promote challenges, heightened attention, and efforts, but extreme or uncontrolled conflict threatens chaos in a venture business.<sup>13</sup> The assumption of management rationality, whereby the VCIs and ICTVBs can see the objectives of their venture business and can react logically, implies that it is sufficient to bring about cooperation and success to their venture business. Nevertheless, the literature reviewed and realities prove this basic assumption to be an illusion after all. In relation to this, there are four complications in the VCIs and ICTVBs' business relationship that may affect their venture business as follows: i) goal incongruity, e.g. selected methods and specifications may be different between them; ii) measurement uncertainty, e.g. a great deal of uncertainty in evaluating how well both of them are performing; iii) information asymmetry between them; and iv) risk aversion that affects their performance.

Higashide and Birley (2000) did a study on factors associated with the inter-organizational conflict between VCIs and the entrepreneur team at the post-investment stage of the venture capital process. Based on the sample of 80 VCIs in the United Kingdom, they found that conflict as disagreement can be beneficial for the venture business performance but conflict as personal friction is negatively associated with performance. They also stress that it is important to manage conflict well both in the pre-investment (e.g. due diligence and deal structuring processes) as well as in the post-investment stages.

In addition, the contextual influences affecting the business relationship between the VCIs and ICTVBs largely pertain to agency risks, market and business risks, task uncertainty, and degree of influence (Sapienza and Gupta, 1994; Gorman and Sahlman, 1989; Barney et al., 1989; Paqvalen, 2001). Agency risks are related to the probability that either the VCIs or ICTVBs will act contrary to the wishes of each other. Market or business risks are related to the uncertainty of venture businesses vis-à-vis the business environment in which they operate, which affects their competitiveness. According to Paqvalen (2001, p. 21), task uncertainty refers to the "gap between the information necessary to make effective decisions and the information available to decision makers". The degree of influence refers to the actual percentage of shareholding of each stakeholder (i.e. between the VCIs and ICTVBs) in the venture business, which normally determines the degree of influence they have.

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<sup>13</sup> In a broader perspective, this kind of business relationship is affected by various conflicts, complications and contextual influences. For instance, conflict is where two or more parties try to occupy simultaneously the same scarce resources state (e.g. power or space), but only one can do so. Classical management theory and human relations philosophy state that conflict indicates a breakdown of organization or a failure of management. Potential conflict arises when both parties draw on common resources, when their tasks are interdependent, and when they pursue incompatible objectives. Hence, conflict is endemic in organizations because of a lack of consensus on expectations and prescriptions for various organizational positions or because of a lack of uniform commitment to organizational objectives. However, from the point of view of both organizational and individual group goals, some types of conflict are detrimental (i.e. disadvantageous or damaging, resulting in cooperation standstill, disrupted flow of organization process, etc.) and others are beneficial (i.e. conflict can result in a reduction of tension or confrontation that may improve the relationship).



#### **2.3.4 Mechanisms used to reduce management conflict**

In venture capital, mechanisms employed to reduce management conflict have been explored in depth in a series of theoretical studies. These studies have covered such topics as active monitoring (Timmons and Bygrave, 1986; Busenitz, Moesel and Fiet, 1997; Hellmann, 1998), exchanging accounting and strategic information (Reid, 1998; Wright and Robbie, 1996), screening mechanisms (MacMillan, Zenmannn and Subbanaramsimha, 1987), exit incentives (Berglof, 1994; Black and Gilson, 1998), proper syndicating of financing (Admati and Pfleiderer, 1994), and staging of actual financing (Sahlman 1990). Some of these studies are discussed below. Nevertheless, the findings of these studies have been somewhat inconclusive. These studies have neglected the aspect of the nature and characteristics of key stakeholders. In addition, most of these studies have assumed that the key stakeholders of the venture business are relatively homogeneous, e.g. in terms of their expertise and risks preferences.

Almost in all cases, a critical role of VCIs is generating information about the ICTVBs' prospects. While such an emphasis is important, it does little to shed light on the complementary role of key stakeholders' ROMFs in affecting those strategies of reducing management conflict. Thus, it is important to understand their actual ROMFs, whereby the nature of management conflict between these stakeholders is a consequence of their characteristics, among others.

Staged financing is perhaps the most potent control mechanism VCIs can employ. Prospects of the ICTVBs are periodically re-evaluated and the shorter the duration of the staging of financing, the better VCIs monitor ICTVBs' progress and the greater the need to gather new information. Gompers and Lerner (1999, pp. 130 – 131) state that commonly used mechanisms are the staging of financing, informal monitoring and controls, stock grants and stock options, and additional compensation controls to reduce potential gaming or shirking by ICTVBs. They also argue that “it is the non-monetary aspects of venture capital that are critical to its success”. They examined the staging of financing using a random sample of 794 venture capital-financed businesses in the United States. They found that the staging of financing allows VCIs to gather new information and monitor the progress of the venture businesses, maintaining the option to abandon these businesses periodically. They also argued that increases in asset tangibility increase financing duration and reduce monitoring intensity.

Gorman and Sahlman (1989) did a survey to explore VCIs' monitoring of ICTVBs in the U.S. They found that although VCIs are not usually involved in the day-to-day management of the venture business, they check between financings to limit opportunistic behaviour by ICTVBs between evaluations. In another study, Hurry, Miller and Bowman (1992) compared the monitoring techniques of United States' and Japanese VCIs in the United States' market. They found that the United States' VCIs are more likely to have greater incentives and ability to monitor ICTVBs than the Japanese VCIs who tend to make fewer investments but take larger equity stake. They also found that close formal monitoring techniques are less prevalent in the Japanese market.

A proper syndication of financing is another mechanism used to reduce management conflict in venture capital. Admati and Pfleiderer (1994) develop a rationale for syndication in later rounds of venture financing, based on informational asymmetries between the initial VCIs and other potential investors. They argue that the only way to avoid opportunistic behaviour by ICTVBs is if lead VCIs maintain a constant share of the ICTVBs' equity.

In relation to the above studies, Gompers and Lerner (2001, p. 152) contend that venture capital has developed a variety of mechanisms to address management conflict that emerges at each stage of the financing process. Some of these mechanisms include meting out financing in discrete stages over time, syndicating investments with other VCIs, taking seats on the ICTVBs' board of directors, and compensating arrangements including stock options (Tyebjee and Bruno, 1984; Sahlman, 1990).

### **2.3.5 Linking ROMFs to management conflict**

The discussion above about business relationships in venture capital involves management conflict which needs to be reduced by both the VCIs and ICTVBs in order to achieve an efficient contracting relationship to make their venture business a successful one. The managerial factors of venture capital constitute important means to reduce management conflict that is bound to be encountered in their business relationship. This implies that their ROMFs are expected, to some extent, to be used to reduce management conflict and thus be capable of increasing the economic value of their investment and venture business. Hence, these ROMFs are deemed necessary to be investigated in order to better understand how management conflict can be reduced.

## **2.4 HYPOTHESES OF THE RESEARCH**

The focus of this research is the business relationship between VCIs and ICTVBs across the full venture capital process. Based on the literature reviewed above and judging from their expected differences in areas of expertise, it can be inferred that their ROMFs would also be different and thus could be one of the causes of management conflict experienced by them in their business relationship. Based on the rationales and arguments from the same literature reviewed, it can also be inferred that certain ROMFs of both VCIs and ICTVBs can influence the management conflict experienced in their business relationship. For instance, by rigorously scrutinizing ICTVBs before making capital investment and later on by monitoring them systematically after making the investment, VCIs can minimize some of the information asymmetries which are important to their investments' success. As for the ICTVBs, they can focus on the success of their business ideas rather than worry about their financing constraints. Hence, with both parties having the same intention of reducing management conflict, the success of their venture business stands a better chance and becomes more promising.

Therefore, the first part of this research is the examination on the differences of the ROMFs between them whereby it posits a significant difference of ROMFs between the VCIs and ICTVBs across the full venture capital process. For example, due to their

differences in expertise and ROMFs, the VCIs and ICTVBs may have different managerial considerations on certain aspects of managing their venture business, e.g. on the budgeting for R&D, staffing of manpower, marketing of product and services etc. This conceptual hypothesis is further categorized into three operational hypotheses as follows:

H1: There is a significant difference in ROMFs between VCIs and ICTVBs at the pre-investment stage.

H2: There is a significant difference in ROMFs between VCIs and ICTVBs at the post-investment stage.

H3: There is a significant difference in ROMFs between VCIs and ICTVBs for risk management.

Then, the second part of this research is the examination of the relationships between their ROMFs and management conflict experienced across the full venture capital process.<sup>14</sup> Thus, the other conceptual hypothesis of this research posits a negative relationship between their ROMFs and management conflict experienced by them across the full venture capital process. For example, at the post-investment stage i.e. with reasonably smooth exchanges of strategic business information between the VCIs and ICTVBs in the management of the venture business, this may reduce their management conflict as both of them are aware of what are the appropriate managerial considerations for their venture business. This conceptual hypothesis is further categorized into three more operational hypotheses as follows:

H4: There is a significant negative relationship between their ROMFs and management conflict at the pre-investment stage.

H5: There is a significant negative relationship between their ROMFs and management conflict at the post-investment stage.

H6: There is a significant negative relationship between their ROMFs and management conflict for risk management.

For this research, the independent variables are their ROMFs at the pre-investment stage namely: deal origination and screening processes, evaluation process, contracting or deal structuring processes, and at the post-investment stage the variables are namely: monitoring and post-investment activities, acquiring liquidity, and risk

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<sup>14</sup> It is expected that appropriate ROMFs will in turn reduce management conflict between the VCIs and ICTVBs accordingly. In this research, the management conflict indicators are assessed in such a way that higher scores represent greater magnitude of management conflict experienced. Thus, in the statistical term, an inverse or a negative relationship between the independent and dependent variables is expected, meaning that as one variable increases the other decreases. For example, 'free-sharing of information' is one of the sub-variables for managerial factors of an ideal relationship for monitoring. So, if the respondents give a higher score to it, then 'free-sharing of information' is associated with a lower score for the management conflict indicators.

management. The sub-variables to be investigated are sources of due diligence, techniques of evaluation, factors or criteria used, risk management and the perception towards market and agency risks, and other related aspects at each stage of the venture capital process. The dependent variable is management conflict with two sub-variables as indicators (i.e. the extent of management conflict experienced and the affected management elements). In testing the above hypotheses, the important requirements would be to specify the research design and its conceptual framework, to identify the data collection methods, to devise a practical survey instrument and lastly to analyze the data collected. These aspects will be explained in greater detail in Chapter 3 and Appendix 'D' of the Thesis.

## **2.5 THEORETICAL UNDERPINNINGS OF VENTURE CAPITAL**

The above review on venture capital indicates that generally this industry is an important financial segment of the overall capital market and economy. For example, Cumming (2001, pp. 1–3) argues that the study of venture capital is important because the success of the venture capital and entrepreneurial industries in a country has important implications for economic growth and innovation. However, venture capital is heavily characterized by management conflict and other agency costs (Sahlman, 1990; Reid, 1998; Gompers and Lerner, 1999).

This implies that an important question arises as to the needs for strategic ROMFs to achieve efficient financial contracting and business relationship among the VCIs and the ICTVBs. In relation to this, there is growing literature on venture capital regarding how management conflict is reduced through various mechanisms. As it was noted earlier, the focus on generating information about the ICTVBs' prospects is important but it does little to shed light on the complementary role of key stakeholders' ROMFs in affecting the strategies of reducing the management conflict. Thus, it is important to understand their managerial factors, because doing so will help us better understand the complementary role of their nature and characteristics in affecting those strategies of addressing management conflict.<sup>15</sup>

In addition, the importance of venture capital in developed countries, and indications from the main literature to date, strongly suggests its potential importance for developing countries such as Malaysia. Hence, this research on the business relationship between VCIs and ICTVBs across the full venture capital process is an attempt to further enrich the literature on this subject. The empirical evidence that will be based on the emerging venture capital and ICT industries in Malaysia will add richness to the general knowledge because the settings of this research will be slightly different from developed countries with an established venture capital industry (as discussed in Appendix 'A').

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<sup>15</sup>There is also an emerging issue regarding the appropriate conceptual underpinning to the relationship of the principal and agent in the venture capital. Along similar argument, Kaplan and Stromberg (2000a, p. 1) contend that despite the burgeoning volume of literature on the principal-agent problem in financial contracting theory, "empirical work has lagged behind in comparing the contracts and actions of real world principals to their counterparts in financial contracting theory".

The literature also largely concentrates on a mixture of small and medium venture businesses with diversity in types of business. However, this research focuses solely on VCIs and venture businesses in the ICT industry. These ICTVBs with their peculiar characteristics (as discussed in Appendix 'C') will provide additional information to the general knowledge of venture capital. Views from both VCIs and ICTVBs are studied across the full venture capital process. Therefore, this research is different from previous studies which mostly are a one-sided affair (i.e. normally from the VCIs' perspective) and also concentrate on the post-investment stages of the venture capital process.

## **2.6 SUMMARY**

In general, there is no doubt that the literature on venture capital is abundant and keeps growing. Nevertheless, there are very few empirical studies on the subject matter of this research, that is, firstly an examination into the differences of ROMFs of both the VCIs and ICTVBs, and secondly an examination into the relationships between their ROMFs and management conflict experienced by them across the full venture capital process. This Chapter reviews the managerial factors at each of the venture capital process. The literature reviewed facilitates the development of the model for conducting this research. This research attempts to extend the literature by investigating empirically the business relationship between VCIs and ICTVBs in managing their venture business. The following Chapter 3 specifies the methodology of this research. It also includes the conceptual framework of analysis and the data collection methods to be employed.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

This chapter outlines the research methodology of this research. It starts with the description of the sample, the sampling design, the data collection procedures, and the discussion of how access was achieved to gather the information will follow. Then, the methods of analysis which include the conceptual framework and operational definitions are discussed. Appendix 'D' reviews the details of data theory and also explains the statistical analysis employed for this research. Appendix 'E' and Appendix 'F' are the survey questionnaires for the VCIs and ICTVBs respectively.

#### **3.2 DESCRIPTION OF THE SAMPLE**

##### **3.2.1 The selection criteria of the VCIs and ICTVBs**

For this research, 24 VCIs and 100 ICTVBs were selected as the sample. Basically, the criteria for their selection are as follows:

- a) They must be classified as a locally incorporated business entity in Malaysia.
- b) Their business focus must be on ICT industry.
- c) They must be representative and accessible.

According to the Bank Negara Malaysia, there are 46 venture capital companies and funds as of the end of 2002 (BNM Annual Report, 2002).<sup>1</sup> Hence, the population sample of the VCIs which focus solely on ICT industry is naturally limited due to the fact that the Malaysia's venture capital industry is relatively new (as discussed in Appendix 'A') and in the growing stage of the industrial cycle. These VCIs include both the private and government-funded venture capital companies. For example, all of the 19 venture capital companies listed in the 'Funding Guide & Directory for the ICT/Multimedia Industry', 1<sup>st</sup> Edition, May 2002 by Multimedia Development Corporation (MDC) were automatically selected. Besides fulfilling the above criteria, these VCIs also represented two-thirds of the total population of venture capital companies currently operating actively in the industry. Since almost half of these VCIs are government initiated and/or funded, the accessibility will be high.<sup>2</sup>

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<sup>1</sup> According to the Malaysian Venture Capital Association, there are currently 49 members, comprised of 31 Venture capital companies, 13 associate companies (corporate) and 5 associate (individuals) members. These members are involved in the venture capital investment.

<sup>2</sup> This is partly due to the fact that the researcher himself is being an official at one of the central ministries, the Ministry of Finance, Malaysia. In addition, any attempt to enrich information facilitating the management of government funds by these VCIs is certainly a move in the right direction.

Since the focus of this research is on venture capital financing, it is appropriate to select ICTVBs that actually received financing from VCIs.<sup>3</sup> Hence, the ICTVB lists given by the VCIs were used to select these ICTVBs. These ICTVBs also are involved in software development (engineering and business application), content development, internet-based business, hardware design, systems integration, computer and system security, telecommunication and network technologies, other multimedia technologies and life sciences.

Based on the criteria above, the sample of the VCIs and ICTVBs selected is considered sufficient for this research. Their businesses are located in or around the MSC and the Kuala Lumpur-Selangor areas which are considered as prime location in Malaysia.<sup>4</sup> In a recent study about locational tendency of ICTVBs in Malaysia, Seta, Onishi and Kidokoro (2001) identify Kuala Lumpur-Selangor corridor, Penang and Johor as the three main cores. According to them, more than half or 65.7% of ICTVBs in Malaysia are concentrated in the Kuala Lumpur-Selangor area. They also state that the MSC strategies led by the Malaysian government to make a new agglomeration to a suburb of Kuala Lumpur have some degree of influence to locations of these ICTVBs.

### **3.2.2 The selection criteria of the interviewees**

This research also seeks further information and clarification on the subject of examination from the VCIs and ICTVBs. Thus, direct interview exercises with selected internal and principal shareholders of the VCIs and ICTVBs were conducted for inside views and interpretation of the actual, strategic, managerial practices and procedures.<sup>5</sup> By virtue of their status, power, and involvement, they are the most informed about their venture business activities; therefore, a direct observation of their strategic managerial factors is appropriate and justified for this research. The selection of the interviewees was based on the following criteria:

- a) They are the highest level of management in their organization.<sup>6</sup>
- b) They are perceived having comprehensive knowledge and working experience in venture capital financing and managing venture business.

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<sup>3</sup> Although there are 914 MSC-Status ICTVBs operating in the MSC as at August 11, 2003, but not all of them get financing from VCIs.

<sup>4</sup> In relation to this, the agglomeration of ICTVBs, whether in developed or developing countries, is generally found to be concentrated in central business district or sub-centres as in New York, San Francisco, Tokyo (Ogawa and Ishikawa, 1989 and 1990; Yukawa, 1998, 1999 and 2000), except some cases in Germany (cf. Seta, Onishi and Kidokoro (2001, p. 2).

<sup>5</sup> For example, Kanter et al. (1992, p. 234) suggest that in evaluating changes in organization—both from the context of the organization and individuals – information and clarification from the management (e.g. manager) and shareholders are important because they are the internal stakeholders. They further state that these internal stakeholders take various strategic managerial actions with reasonable assurance that the desired consequences will stem from these actions.

<sup>6</sup> This is in line with the classification suggested by Snow and Hrebiniak (1980, p. 324) whereby they classify top managers as including chief executive officers, presidents, vice-presidents, chairmen of the board, general or group managers, and division managers.

### 3.3 SAMPLING DESIGN OF THE RESEARCH

Based on the above explanation, the sampling design of this research is a mixture of probability and non-probability sampling designs. On one hand, it is a probability sampling design (i.e. specifically, it is a disproportionate stratified sampling design) in the sense that the population was first divided into two meaningful segments (i.e. the VCIs and ICTVBs). Then, based on criteria described above, other than their original population numbers, the respondents were selected. However, on the other hand, it is also partly a non-probability sampling design (i.e. specifically, it is a judgement sampling design) in the sense that the respondents were selected on the basis of their expertise in the subject investigated (i.e. venture capital financing and managing venture business). Justifications for the selection of these sampling designs are obviously due to the representativeness of the sample which is important for the purposes of a wider generalization and as the only meaningful way to investigate the task at hand.<sup>7</sup>

### 3.4 DATA COLLECTION METHOD

The primary data and information for this research were collected using questionnaire surveys and direct interview exercises. The literature suggests that survey studies can be defined as planned data collection for description or prediction and for analyzing the relationship among selected variables and these studies collect data and information through questionnaires or through telephone or direct interviews (Oppenheim, 1966; Dillman, 1974; Nachmias and Nachmias, 1996).

This research was also entirely based on a survey conducted in Malaysia. The choice of Malaysia was based on the following justifications. Firstly, an investigation of past research shows that there has been little study done on this subject in the context of developing countries. Moreover, no significant research on venture capital for ICTVBs has been done in MSC. Hence, this research will help to fill these gaps. Secondly, since 1996, Malaysia has launched the development of MSC as the new engine of economic growth (as discussed in detail in Appendix 'B').<sup>8</sup> Therefore, there is a need for the government to address any institutional impediments (e.g. ineffective venture capital, etc.) for the successful implementation of MSC to be the "Asian Silicon Valley" which still remains to be seen.<sup>9</sup>

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<sup>7</sup> According to Sekaran (1992, p. 236), "the generalizability of all non-probability sampling designs is very restricted, but they have other advantages and are sometimes the only viable alternative for researcher".

<sup>8</sup> According to Jomo and Felker (1999, p. 24), Malaysia has embarked on the 'latest and most ambitious industrial technology policy initiative thus far' by the establishment of MSC. The authors argue that many concerns have been raised with regard to MSC such as whether any government can adequately plan for future developments in the extremely fluid and unpredictable ICT industry.

<sup>9</sup> The other justifications are firstly, the researcher has since 1984 been employed at the Ministry of Finance, Malaysia where he has been directly involved in formulating implementation policies of MSC. Secondly, Malaysia too is the home country of the researcher and hence constitutes further incentive for him personally.



### 3.4.1 Primary data sources

As discussed in Appendix 'D', both questionnaire surveys and interviews are appropriate for this research. The details of these methods of data collection are as follows:

#### 3.4.1.1 Survey questionnaires

This research was based on two sets of structured survey questionnaires, whereby, one set was meant for the VCIs and the other set was for the ICTVBs. The two sets of survey questionnaires employed were similar in nature except for different wording and phrases used to match the respondents' groups that were being investigated. Please refer to Appendix 'E' and Appendix 'F' respectively. The survey questionnaires were mailed to the chief executive officers of the selected respondents to get their responses on the questions concerning their ROMFs across the full venture capital process and for risk management and information on their business relationship. For the independent and dependent variables questions, they were based (with some modifications after the pilot studies) on studies done by Tyebjee and Bruno (1984), Sahlman (1990), Fiet (1995), Wright and Robbie (1996), and Reid (1998).

Basically, the structure of the survey questionnaires is as follows. Overall, the survey questionnaire for both sets of respondents consists of thirty-one close-ended and four open-ended questions each. The close-ended questions use rated or ranked scales which have several ordered response categories.<sup>10</sup> The questions are grouped into five parts. Part 1, basic information, aims to obtaining basic data from the respondent that may be analyzed for any relationship with other variables. Part 2, managerial practices and procedures, aims to obtain information and opinions pertaining to their ROMFs. This part covers five topics as follows: deal origination and screening (Section A), evaluating (Section B), contracting and deal structuring (Section C), monitoring and post-investment activities (Section D), and acquiring liquidity (Section 5). Part 3, risk management, aims to obtain information on their ROMFs for risk management and their perception towards market and agency risks. Part 4, information on the business relationship, aims to obtain information on management conflict experienced while managing their venture business. Finally, Part 5, general information, aims to obtain the respondent's general opinion on the prospect of venture capital and ICT industries in Malaysia.

#### 3.4.1.2 Direct interview

The main purpose of this interview is to supplement the data and information gathered from questionnaire surveys. Further information on certain issues which require an in-depth understanding and investigation can be sourced from this interview. Not all of

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<sup>10</sup> These ordered response categories or Likert scales strictly are ordinal data; however, many social scientists or researchers assume these scales provide interval data (Burns, 2000; Bryman, 2001). For instance, Bryman (2001, p. 222) states that reason for this is "of the relatively large number of categories they generate". Thus, this research presumed these ordered response categories as interval data accordingly.

the respondents were interviewed but only selected ones with prior consent of the interviewees.

### **3.4.2 Secondary data sources**

For this research, data and information were also collected and examined from the following secondary sources:

- a) Academic journals, articles and newsletters published and reported in the mass media.
- b) Government publications—such as BNM Annual Reports, Treasury’s Economic Reports, Statistic Department’s Reports, Ministry of International Trade and Industry (MITI) industrial reports and others.
- c) Industry analysis and studies by relevant entities and experts in the local venture capital industry such as the Malaysian Venture Capital Association, Ministry of Energy, Communications and Multimedia (MECM), Multimedia Development Corporation (MDC) and others.
- d) Survey data such as census records or data collected from previous studies.
- e) Other related written materials, e.g. information surveyed from unpublished and published non-confidential government documents. There is quite an abundance of non-confidential data and information available from many central ministries, agencies and departments on various aspects of the Malaysian economy, the MSC and ICTVBs.<sup>11</sup>

## **3.5 HOW ACCESS WAS ACHIEVED**

Two pilot studies in the form of preliminary meetings, discussions and direct interviews were conducted in March/April, 2002 and August/September 2002. The objectives of these pilot studies were to test the instruments of research and to evaluate the willingness of the respective respondents to be involved in this research.

Prior to the first pilot study, the selected VCIs were contacted through telephone and then followed-up by sending the Pilot Study survey questionnaires to them. Accompanying these questionnaires, two letters of introduction were attached. These letters of introduction are from the researcher’s supervisor and from the Secretary, MOF (Incorporated) Coordination, Privatization and Public Enterprise Division, Ministry of Finance, Malaysia. The letters of introduction and the Preface of the Pilot Study survey questionnaires explained the purpose of the research and asked for consent and

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<sup>11</sup> As the Cabinet of Ministers in Parliament formulate the policies of the government, investigation into policy formulation should only theoretically be made at the ministerial level. In this respect, the investigation of this research would only be contained to relevant government publications and interviews with senior officials involved in the related policy formulation process, e.g. venture capital, etc.

cooperation to allow the researcher to carry out the survey and to collect preliminary data and information, particularly their list of ICTVBs' addresses and contact persons. The responses from these introductory letters were encouraging with all the five VCIs expressing their support for this research.<sup>12</sup> The second pilot study was conducted in August and September 2002 for further information gathering with the prospective respondents (i.e. including several ICTVBs).

The field study was conducted in March and April, 2003. Prior to the actual field study, necessary assistance from the Malaysian Venture Capital Association (MVCA) was sought to get its members' cooperation accordingly. In order to achieve a high response rate, the survey questionnaires were accompanied by two letters of introduction, one from the supervisor of this research and the other from the Deputy Minister of Finance, Malaysia. Basically, the letter from the supervisor indicated that this research was meant to satisfy the academic requirement for the PhD program. The letter from the Deputy Minister of Finance, Malaysia indicated the importance of this research to the government as any attempt facilitating additional knowledge about the local venture capital industry is a purposeful exercise.<sup>13</sup> In addition, the researcher also made a pledge to the respondents that the data and information collected would be used strictly for research purposes. Lastly, an official cover letter from the Ministry of Finance, Malaysia was attached to the mailed survey questionnaires. The chronology of events of the field study for this research is shown in Appendix 'D'.

### 3.6 METHODS OF ANALYSIS

Primary data and information collected from the survey questionnaires (which constitute the crucial instruments of this research) and supplemented from the interview exercises, were scrutinized and analyzed using both the descriptive and inferential statistical methods.<sup>14</sup>

The following sub-sections explain the detail of the conceptual framework and the operational aspect of this research. The conceptual framework elaborates the measurement issues of the independent variables (i.e. ROMFs in venture capital process) and their sub-variables (i.e. the observable variables or dimensions) and the dependent

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<sup>12</sup> According to one of the chief executive officers, to his knowledge there is no academic research yet that documents venture capital industry in MSC, Malaysia. This view was equally matched with the view of the official in charge of the venture capital industry at the Ministry of Finance who expressed that this research will add information and further understanding in the local venture capital industry. These views were expressed during the Pilot's study interview sessions conducted on March 4, 2002 and March 27, 2002.

<sup>13</sup> To the researcher's knowledge, there is no research done in Malaysia that involves a letter of introduction from the ministerial level. However, for this research, the Honorable Deputy Minister of Finance himself has showed his personal support by giving his letter of introduction. This support is highly appreciated by the researcher as it improved the response rate of the survey.

<sup>14</sup> For example, Foster (2001, p. 6) states that "descriptive statistics are used to describe and summarize sets of data" while "inferential statistics are used in generalizing from a sample to a wider population, and in testing hypotheses, that is, deciding whether the data is consistent with research prediction". Following this understanding, in this research the descriptive statistical methods were used to provide key profile information of the respondents under examination while inferential statistical methods described the implications from the data collected.

variable (i.e. management conflict) and its indicators used in this research. The framework also explains the operational definitions used.

### **3.6.1 The conceptual framework of analysis**

#### **3.6.1.1 Independent variable (i.e. ROMFs of VCIs and ICTVBs)**

The data and selection of these variables were derived from the survey questionnaires and literature reviewed. Basically, the independent variables used in this research referred to the strategic managerial practices and procedures at each stage of the full venture capital process (i.e. both at the pre-investment and post-investment stages, and risk management). These variables and their sub-variables were as follows (the numbers in brackets represent the actual number of sub-variables to the main variables in the survey questionnaires):

- a) Deal origination and screening:
  - i) Sources referred (3) – i.e. directly by cold calls (i.e. either the ICTVBs approach directly the VCIs and vice versa), through referral process, and other mechanism (if any).
  - ii) Screening criteria used (7) – size and policy of investment, production technology involved, location of venture, stage of financing required, management team and track record, markets for products/services, and other (if any).
- b) Evaluation:
  - i) Sources of due diligence referred (5) – i.e. carry out own market evaluation, obtain independent market reports, reliance on personal references, reliance on independent accountant's report, and other source (if any).
  - ii) Evaluation technique used (6) – i.e. pay-back, internal rate of return, net present value, accounting rate of return, qualitative assessment, and other technique (if any).
  - iii) Evaluation criteria considered (16) – i.e. market attractiveness ( i.e. access to market, market need for product/services, size of market, and growth potential of market), product differentiation (i.e. technical skills, profit margins, uniqueness of products/services, and patentability of products/services), managerial capabilities (i.e. management skills, marketing skills, financial skills, and references of investor/entrepreneur), environment threat resistance (i.e. protection from competitive entry, resistance to economic cycles, protection from obsolescence, and

protection against down-side risk), and cash-out potential (i.e. opportunities for exit, and merger/acquisition potential).

c) Deal structuring:

- i) Types of investment instrument preferred (5) – i.e. issues of common equity, issues of preferred equity, short-term loans (debt), long-term loans (debt), and other type (if any).
- ii) Financial contract agreement (9) – i.e. provisions normally included.

d) Monitoring:

- i) Types of monitoring preferred (3) – i.e. specific contractual monitoring (legally defined), non-contractual monitoring (trust and understanding), and both types of monitoring above.
- ii) Exchange of information preferred (14) – i.e. advice and contact [i.e. business/entrepreneurialism, tax and legal matters, personnel and recruitment policy, public policies and institutions, current scientific/technological development, and other (if any)], category of information required [i.e. technology and markets, managerial and technical staffs, budgets, capital structure and investments, business strategy, management and financial accounts, supply sources, and other (if any)].
- iii) Factors in determining ideal relationship preferred (7) – i.e. maximum return on investment, appropriate capital structure, efficient risk-sharing, free sharing of information, increasing motivation, enhancement of reputation, and other factors (if any).

e) Acquiring liquidity:

- i) Methods of acquiring liquidity preferred (6) – i.e. initial public offering, mergers and acquisition, secondary sale, buy-back, write-off, and other method (if any).

f) Risk management:

- i) Strategic importance of overall risk management (5) – i.e. management risk, inexperience risk, competitive risk, viability risk, and cash-out risk.
- ii) Perception on market and agency risks (16) – i.e. market risks [i.e. unattractiveness of the industry, weak demand, small market, many competitors, many potential new competitors, technical obsolescence, many substitute products/services, and other (if any)], agency risks [i.e.

both parties having different cash flow objectives, both parties having different profitability objectives, many ventures to be monitored, contractual ambiguities, manipulation of profitability, short-term self-interest seeking, potential dishonesty, and other (if any)].

### 3.6.1.2 Dependent variables (i.e. Management conflict)

In this research, management conflict indicators were measured in terms of affected management aspects of the venture business and the extent of management conflict experienced. These indicators were considered appropriate because as it was discussed in Appendix 'C', firms do not operate in a vacuum because so many stakeholders' needs have to be addressed and met. In managing venture business, the existence of external key stakeholders such as VCI's can be very serious because their involvement is not only providing financing, but they also tend to get involved in the managing of the venture business. In other words, both VCI's and ICTVBs want to make sure their investment is good and capable of getting back the amount invested as well as a huge profit. Thus, the affected management policies of the venture business with the involvement of the VCI's, which in turn will influence the extent of the occurrence of their management conflict, were considered justified indicators to be investigated.

In addition, these two indicators were considered pertinent for increasing the complexity of managing the venture business contracted between the VCI's and ICTVBs. The data on these indicators were also collected from the same survey questionnaires. The selection of these indicators to assess management conflict was derived from the literature. They are as follows (the numbers in brackets represent the actual number of sub-variables to the main indicators in the survey questionnaires):

- a) Affected management policies of the venture business (8) – i.e. corporate mission and objectives, corporate strategy, organization structure, management system, decision-making process, information and control, incentive and reward system, and other (if any).
- b) Extent of management conflict experienced (4) – i.e. the frequency of management conflict encountered in their business relationship.

The above variables or indicators and their sub-variables formed the basis for the construction of the questions in the survey questionnaires. The survey questionnaires were pre-tested to selected respondents in order to check the clarity of the questions. From the responses and interviews, it was concluded that the respondents were able to comprehend the terminologies and wordings used in the survey questionnaires.<sup>15</sup>

Based on the literature reviewed on venture capital, related theories, and concepts and how these concepts were operationalized (as discussed in Chapter 2 and this Chapter), a model is presented in Figure 3.1 to show the business relationship between the VCI's

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<sup>15</sup> The survey questionnaires were drafted in English (i.e. there were no Bahasa Malaysia versions – the national language in Malaysia).

and ICTVBs in managing their venture business together. Basically this figure explains the governing factors (e.g. separation of ownership and control i.e. pertaining to the shareholding of the venture business between the VCIs and ICTVBs, etc.) that can affect their business relationship. Besides these factors, their business relationship is further affected by management conflict due to the differences in expertise and asymmetries of information between them. Thus, the management conflict needs to be reduced through reducing the asymmetries of information and using strategic ROMFs, among others. By doing so, hopefully their management conflict and other related costs can be reduced and ultimately improve their business relationship and the success of their venture business. (These strategic ROMFs will be discussed later in the Thesis).

In addition, Figure 3.2 following illustrates the assessment flow between the independent and dependent variables. This figure illustrates the specific sets of ROMFs (i.e. the independent variables) and the management conflict (i.e. the dependent variable) indicators that are to be investigated. For example, the ROMFs at the deal origination and screening are sources of reference made by the VCIs and ICTVBs to get to know each other and to know what screening criteria they used. The indicators of management conflict are such as the affected management policies of the venture business with the involvement of VCIs (e.g. management system, decision-making process, information and control, etc.) and the actual occurrence of the conflict experienced (e.g. constantly, sometimes, rarely, etc.).

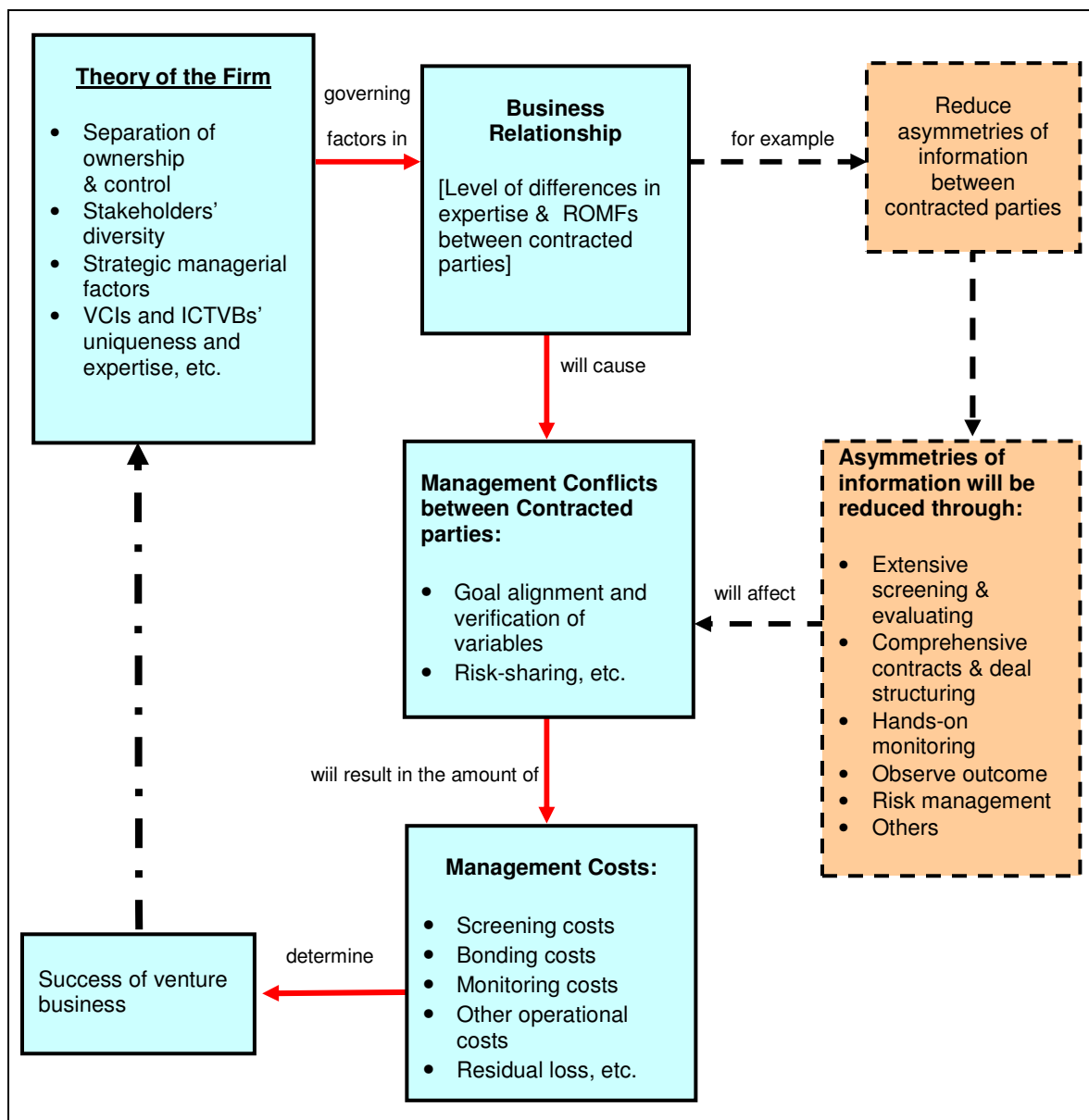
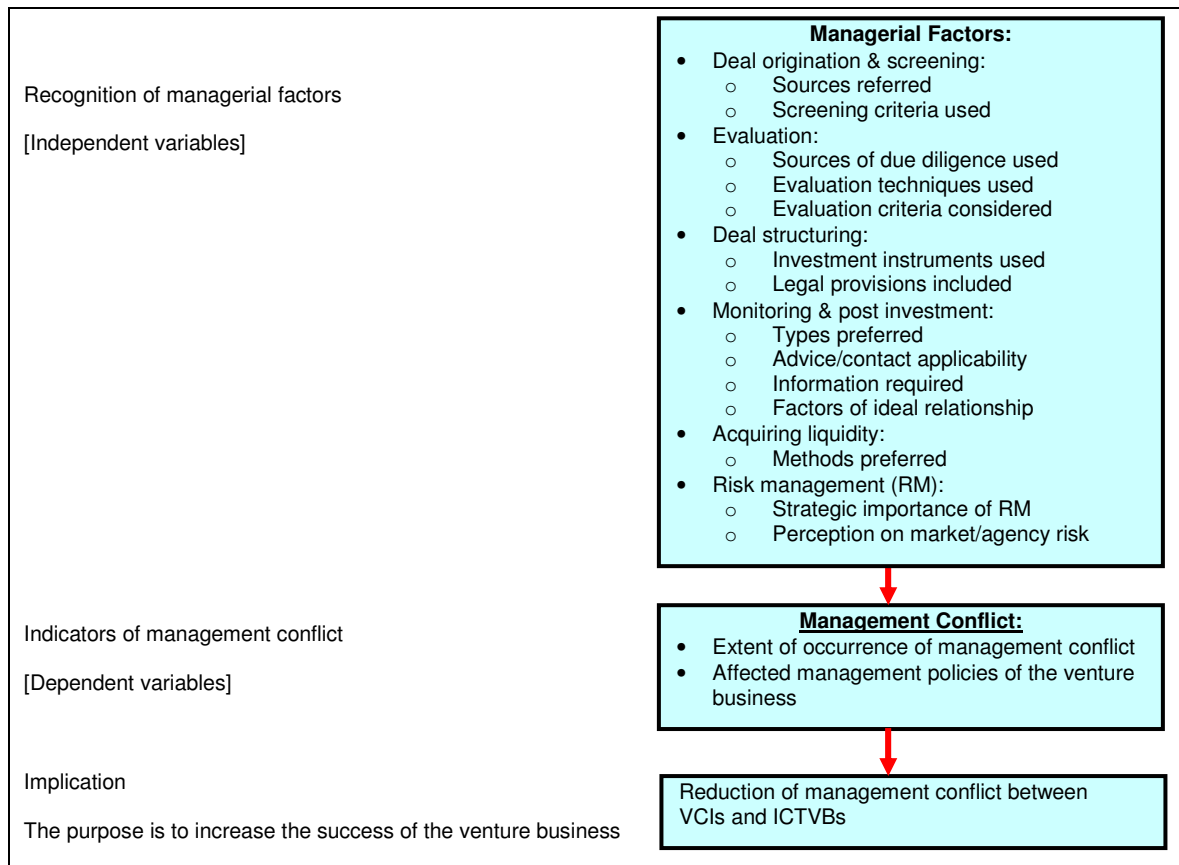
Figure 3.1: Explanatory relationships expected between VCIs and ICTVBs



Figure 3.2: Illustration of the assessment between independent and dependent variables.



### 3.6.2 Operational definitions

In this Thesis, several terminologies are frequently mentioned and for the purpose of the whole research, these terminologies were defined as follows:

#### 3.6.2.1 Venture capital investors (VCIs)

This term refers to both private and government initiated venture capital companies locally incorporated in Malaysia. Besides their private funds they also manage funds directly or indirectly from the Government of Malaysia and/or quasi-government entities. Their investment focuses is in the ICT industry and operate their businesses in and around the MSC and the Kuala Lumpur-Selangor areas in Malaysia.

#### 3.6.2.2 ICT venture businesses (ICTVBs)

This term refers to the venture businesses locally incorporated in Malaysia. Their business focuses is in the ICT industry and operate their businesses in and around the MSC and the Kuala Lumpur-Selangor areas in Malaysia.

### 3.6.2.3 Venture capital process

This term refers to the financing stages of venture capital and covers the full scope of venture capital financing activities at the pre-investment stage, post-investment stage, and risk management. The activities of venture capital financing can be described as an orderly process involving five sequential steps: deal origination, deal screening, deal evaluation, deal structuring, and post-investment activities, which include acquiring liquidity and risk management (Tyebjee and Bruno, 1984; MacMillan, Kulow and Khoylian, 1988; Sahlman, 1990; Fried and Hisrich, 1994). The involvement of meticulous and lengthy activities implies that due to the high risk of their venture business, both the VCIs and ICTVBs have to be cautious and strategic in their managerial factors starting from the pre-investment stage, and then following through to the post-investment stage and for risk management.

### 3.6.2.4 Recognition of managerial factors (ROMFs)

This term refers to the strategic managerial practices and procedures of the VCIs and ICTVBs that facilitate or hinder the management and success of the venture business that they contracted into. In other words, this term relates to their specific preferences, importance and applicability of certain managerial practices and procedures in managing their venture business. For example, for due diligence and screening, the VCIs may prefer their own search for ICTVBs to invest and also they may prefer to use other independent market reports as the main screening criteria. Another example is for evaluation of the deal; the VCIs may prefer the market and cash-out potential as the main evaluation criteria to be used. As for the ICTVBs, they may have other preferences in terms of the sources of due diligence, screening and evaluation criteria to be used. Thus, this implies that their individual preferences may be due to their own expertise, business experiences, etc. In the context of reducing management conflict, these managerial practices and procedures are crucial for both parties. Other specific examples of the ROMFs of the VCIs and ICTVBs are given in the related context of discussion throughout the Thesis.

### 3.6.2.5 Business relationship

This term refers to the management relationship between the VCIs and ICTVBs engaged in co-operative efforts to manage the venture business they contracted into. Hence, contracts (whether behaviour-based or outcome-based) were employed to address management conflict that may arise in the course of this business relationship (Jensen and Meckling, 1976; Fama and Jensen, 1983; Hart, 1995). Following this understanding, business relationship is the unit of analysis for this research.

### 3.6.2.6 Management conflict

This term refers to the conflicts experienced by the VCIs and ICTVBs in managing together their venture business. Since this research focuses on two key stakeholders' business relationship in venture capital financing, this term covers agency conflicts or problems that are impossible to fully contract away by both parties. According to the literature reviewed, examples of management conflict between the VCIs and ICTVBs are as follows. Firstly, conflicts in alignment and verification of goals for their venture business are such as cash-flow and profitability objectives, R&D expenditures, etc. Secondly, conflicts in risk sharing of their venture business are such as the differences in the perception between the VCIs and ICTVBs on market and agency risks, etc. These conflicts lead to an increase in costs and risks, e.g. screening costs, bonding costs, monitoring costs, and other related operating-costs (Jensen and Meckling, 1976; Fama, 1980; Eisenhardt, 1989; Sahlman, 1990; Van Osnabrugge, 2000). Other specific examples of management conflict between the VCIs and ICTVBs are given in the related context of discussion throughout the Thesis, particularly in the case studies of Chapter 4.

## **3.7 SUMMARY**

In conclusion, this chapter has discussed the methodology and the conceptual framework of analysis for this research. The data and information were collected through the survey questionnaires and supplemented by direct interview with selected respondents. The survey questionnaires were pre-tested in the first pilot study before it was used in the field study for the data and information collection. Then the collected responses were statistically analyzed. The next chapter will discuss and report the results of the descriptive statistics and statistical analysis on the data and information collected during the field study, which was conducted in March – April 2003.

## CHAPTER 4

### DATA ANALYSIS AND RESULTS

#### 4.1 INTRODUCTION

This chapter presents the results of the analyses of data collected for the research. Primary data and information were obtained from survey questionnaires sent to 24 VCIs and 100 ICTVBs operating in and around MSC, Malaysia (as discussed in Chapter 3). The mailed questionnaires were replied to by 19 VCIs and 41 ICTVBs. However, as expected, minor irregularities were encountered in the completed questionnaires (such as, non-response and unintelligible entries) which resulted as non-usable questionnaires. The effective response rate for the total sample of fifty-seven respondents was approximately 47%.<sup>1</sup> These sample size and percentage are considered reasonably effective for this research.<sup>2</sup> This chapter is organized as follows. The following section contains the descriptive statistics that analyze information on the main characteristics and profiles of VCIs and ICTVBs and case studies of selected samples. Then it is followed by the statistical analysis of the t-Independent Samples test used to test the differences of the ROMFs between VCIs and ICTVBs (i.e. for hypotheses H1, H2 and H3). The Pearson's Product-Moment correlation analysis is used to test the relationships between their ROMFs and management conflict indicators (i.e. for hypotheses H4, H5 and H6). Finally, the last section summarizes this chapter.

#### 4.2 CHARACTERISTICS OF VCIs AND ICTVBs IN MALAYSIA<sup>3</sup>

This section describes the essential background and several main characteristics of the VCIs and ICTVBs in Malaysia. It also highlights the focus on MSC as the exemplary case in Malaysia where this research was conducted in pursuing a better understanding of venture capital financing for the ICT industry.

For much of the 1990s, many researchers discussed and documented the so-called Asian Economic Miracle that would lead Asia into the rapid economic growth of the new knowledge-based economy. However, major international developments, e.g. the Asian Financial Crisis 1997-1998 and the technology bubble-burst of April 2000, among others,

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<sup>1</sup> The non-usable questionnaires were one case from VCIs and two cases from ICTVBs. According to Bryman (2001, p. 96), the effective response rate is the percentage of a sample that agree to participate. Its calculation is as follows: Number of Usable Questionnaires divided by [Total Sample – Unsuitable or Uncontactable Members of the Sample] x 100.

<sup>2</sup> Sample sizes larger than 30 and less than 500 are appropriate for most research (Roscoe, 1975; Sekaran, 1992). For example, according to Sekaran (1992, p. 254), “as a rule of thumb, sample sizes between 30 and 500 could be effective depending on the type of research questions investigated”.

<sup>3</sup> Data and information for this section were sourced from Bank Negara Malaysia annual reports. The industry sources were from the Ministry of Finance (MOF), Ministry of International Trade and Industry (MITI), Multimedia Development Corporation (MDC) and Malaysia Venture Capital Association (MVCA). Under the *Guidelines for Registration of Venture Capital Corporations (VCCs) and Venture Capital Management Corporations (VCMCs)*, which came into operation in 2002, all registered VCCs and VCMCs are required to submit annual activity reports to the Securities Commission within 30 days from every year-end.

provided proof that the miracle was short-lived because of the adverse impacts on many of these countries, including Malaysia. In brief, faced with the new reality and increasing global competitiveness, Asian countries are diligently developing various initiatives in order to strengthen their internal economic structure, particularly the development of their small and medium size venture businesses to be the catalyst for future economic growth. In Malaysia, among the major initiatives taken by the government are the establishment of MSC in 1996 and further developmental strategies for venture businesses. These initiatives are also in tandem with the Vision 2020 which envisages the transformation of the country into a knowledge-based society and developed status by the year 2020 (as discussed in Appendix 'B').

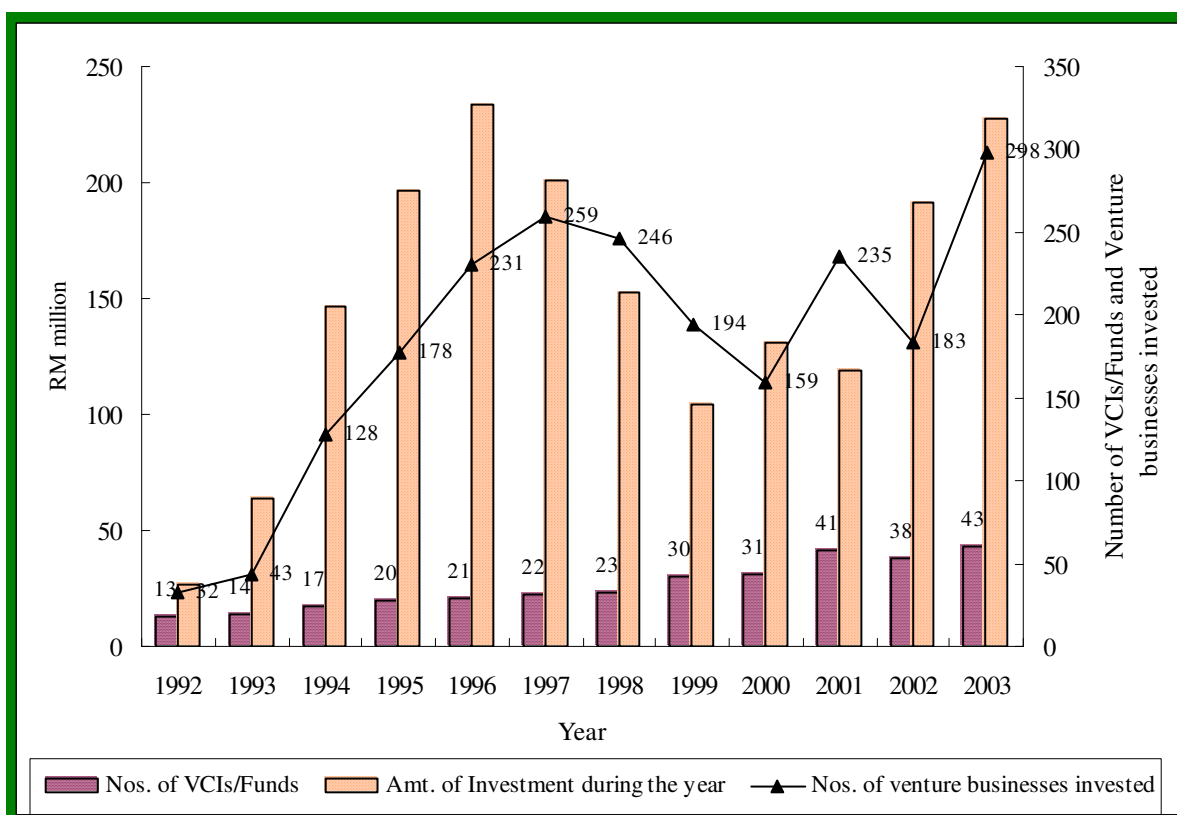
#### **4.2.1 Main characteristics of VCIs in Malaysia**

Silicon Valley, Taiwan, Singapore and many others have demonstrated that a vibrant venture capital industry can be a major catalyst to economic growth. Statistically, VCI-backed businesses have better results and greater chance of success than the average non-VCI-backed businesses. For example, the U.S. venture capital industry is famous for giving birth to many of the largest businesses such as Apple Computers, Compaq, Microsoft, Intel, Sun Microsystems, Netscape, etc. Thus, the emphasis on venture capital as the main alternative source of financing for venture businesses is not unique to Malaysia because it is based on the generally proven belief that developing a vibrant venture capital industry is indeed an integral part of the new knowledge-based economy. The following are some main characteristics of the industry and VCIs that are worth noting.

##### **a) Emerging nature of the industry**

Historically, Malaysia's development of this industry lagged behind the more developed countries, e.g. Japan, Taiwan, Singapore, etc. Although the first VCI was established in 1984, it was not until 1992 that the government started to seriously develop this industry through the establishment of the Malaysia Technology Development Corporation (MTDC) focusing on technology financing to the venture businesses. Other initiatives were also taken by the government and other VCIs emerged during the period prior to 1995, but it was not until 1996 (i.e. the establishment of MSC) that the pace of the development of this industry seemed to really take off. This trend can be clearly seen in figure 4.1 which shows the distribution of the number of VCIs and venture businesses invested and the amount of investment made.

Figure 4.1: Key statistics of Malaysia's venture capital industry



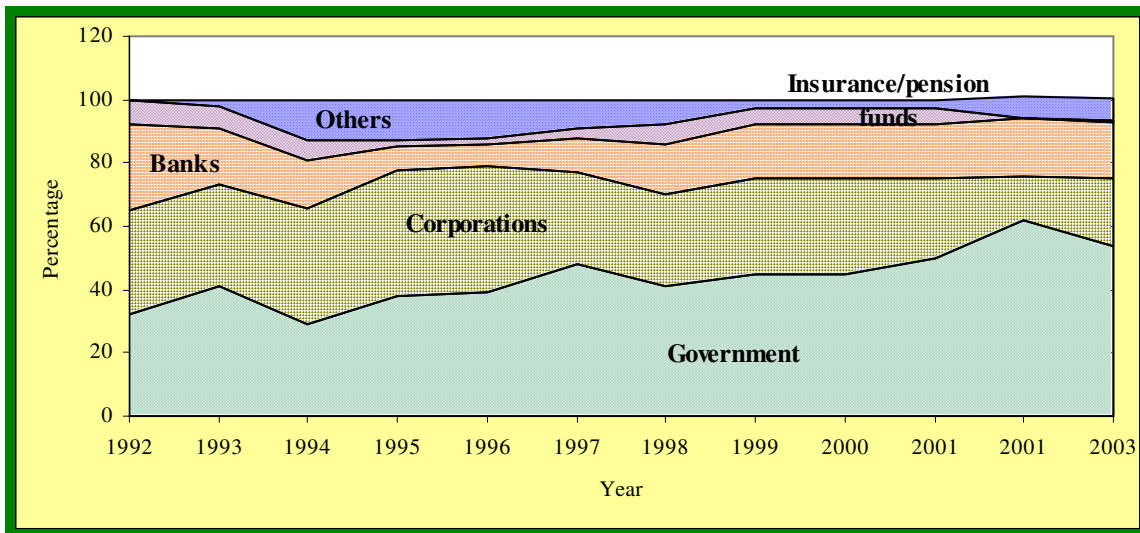
Source: Based on data from Bank Negara Malaysia annual reports. (Since 1998, the exchange rate for Ringgit Malaysia (RM) has been fixed at RM3.80 to US\$1.00).

From this figure, the number of VCIs has increased steadily, from 13 in 1992 to 21 in 1996 and to 43 in 2003. The number of venture businesses invested also has increased significantly, from 32 in 1992 to 231 in 1996 and to 298 in 2003. Similarly, the total annual amount of investments by VCIs also showed an increasing trend, from merely RM26 million in 1992, which increased to RM234 million and RM227 million in 1996 and 2003 respectively. Nevertheless, these figures also show that there were slight dips during the period of 1998 to 2001 due to the impacts of the Asian Financial Crisis and the technology bubble-burst. According to the industry sources, generally, Malaysia's venture capital industry is still in its infancy compared with those in other neighboring countries such as Taiwan, Singapore and Hong Kong. For instance, the size of funds of these industries in Singapore and Hong Kong are 10 and 32 times larger than in Malaysia respectively.

#### b) Government as the main player

Since 1992, the government has continued its efforts in supporting this industry by providing adequate liquidity and incentives to meet the industry needs. Historically, the government was the main provider of funds to this industry as shown in figure 4.2 below.

Figure 4.2: Distribution of main sources of funds for Malaysia's venture capital industry



On average, 43% of the total sources of funds for this industry were from the government, followed by 30% from corporations, 16% from banks and other financial institutions, 4% from insurance and pension funds and 7% from other sources (i.e. individuals and foreign VCIs). This is in contrast with developed countries, e.g. over 50% of funds for the venture capital industry in the U.S. are from private pension funds, endowments, insurance companies, etc.

The government also has established several government-owned VCIs to manage specific funds, e.g. Perbadanan Usahawan Nasional Berhad (PUNB), Malaysia Venture Capital Management Berhad (MAVCAP), Kumpulan Modal Perdana Sdn. Bhd., MIMOS, etc. In 2002, the government also established the Malaysia Debt Ventures (MDV) with a total funds of RM1.6 billion (i.e. sourced from the Japan Bank for International Cooperation), which mainly provides project-based loans to high value-added ICTVBs and other high-growth businesses and thus supplements VCIs and bank financing to these businesses. Moreover, since the government also holds many of the corporations and banks, its role, perhaps, is even more substantial. Other initiatives taken by the government are, for example, the Capital Market Masterplan, which was launched in 2001. This plan includes recommendations for the future direction of this industry, e.g. the establishment of Islamic venture capital funds, matching services, etc. These facts suggest that the government is the main player in this industry through its substantial roles in providing funds and developmental measures, and perhaps similar situations can be found in most other developing countries.

### c) Domination by local VCIs

Unlike Taiwan, Hong Kong or Singapore with more developed venture capital industries, Malaysia's industry is dominated by local VCIs. Historically, there are few foreign VCIs with an established presence in Malaysia, e.g. the South-East Asia Ventures Investments (SEAVI) and H & Q Asia Pacific Venture Management Pte. Ltd. (H & Q),

both are from the U.S., PNB Nomura Jafco Management Sdn. Bhd. (PNBNJ) and BI Walden Management Sdn. Bhd. (BIWalden). According to the industry sources, currently, both SEAVI and H & Q are no longer active in Malaysia, but PNBNJ and BI Walden are still active. For instance, BIWalden has invested RM20 million in the last three years. Due to the Asian Financial Crisis that engulfed Asian countries, the government introduced selective capital control measures as a pre-emptive step in September 1998, which included making the national currency (RM=Ringgit Malaysia) non-tradable outside Malaysia and pegging the RM at RM3.80 to US\$1.00. Although these measures are a desired policy to support growth and to improve Malaysia's competitiveness and balance of payments, unintentionally this policy discouraged foreign investors including VCIs to operate in Malaysia.

As noted earlier, the majority of the VCIs in Malaysia have been either government-related or bank-related, and in almost all cases, they have chosen to manage their own funds rather than to outsource to other private independent VCIs which are considered to be more experienced and professional as commonly practiced in other developed countries. As a consequence of the domination of local VCIs and the reluctance to outsource, these VCIs are found to be lacking necessary expertise for helping venture businesses. This situation is different from other developed countries, e.g. in the U.S., where there are many successful entrepreneurs who became VCIs and who possessed experience, expertise and the funds to help other new entrepreneurs to build their businesses.

#### d) Limited number of venture capital professionals

According to the industry sources, Malaysia also lags behind others in terms of number of venture capital professionals. Besides this shortage, the VCIs also do not seem to have the necessary expertise in appraising and running ICT venture businesses. As noted above, this could be due to the reluctance in the past to outsource the management of funds from the government and banks to private independent VCIs. Thus, it is not surprising to note that private independent VCIs have not featured substantially in Malaysia's venture capital industry, as they are unable to raise substantial amounts of funds to manage although they might have the necessary experience and expertise in venture businesses. Nevertheless, this situation is changing now as the government in 2001 has started to outsource its funds by selecting four private independent VCIs. The number of venture capital professionals also has gradually increased over the past couple of years as a result of a huge amount of funds having been allocated by the government to the industry. For instance, there are 153 venture capital professionals in the industry as of the end of 2003 as compared to 95 in 2001 (Securities Commission Annual Report 2003).



#### 4.2.2 Main characteristics of ICTVBs in Malaysia

The role of small and medium-size venture businesses in the economic growth of many developed countries is well documented, e.g. these businesses created the majority of new employment and innovation that drove economic growth in the 1990s. For example, at its peak, Silicon Valley had more than 7,000 venture businesses that together created more than 50,000 new jobs each year. In fact, they contributed to turning California into one of the largest economies in the U.S. with a GDP exceeding many other developed countries. In Asia, the achievements of Taiwan and Korea, for example, have most successfully emulated that of Silicon Valley. For instance, many of the venture businesses in Taiwan and Korea have become world-class suppliers of electronics products.

Recognizing the importance of these small and medium size venture businesses in becoming the engine for economic growth, the Malaysian government has and will continue developmental measures to assist these businesses (Eighth Malaysia Plan 2001-2005). The government has continued its efforts in the creation of an enabling environment for the development of venture businesses across all sectors of the economy, e.g. strengthening the infrastructure, building the capacity and improving the access to financing. These measures have become inevitable, particularly due to the adverse impacts of the Asian Financial Crisis and the technology bubble-burst. For instance, during the economic boom of the 1990s, venture businesses had less difficulty in getting financing from traditional sources, e.g. commercial banks. However, after the Asian Financial Crisis, lending by banks to these businesses in Malaysia has decreased substantially coupled by the continuing effects of non-performing loans and other ongoing international uncertainties. In relation to this scenario, ICTVBs face even greater challenges because of their nature, e.g. little or no collateral and their 'high-risk high-return' kind of business that normally makes it difficult for them to secure financing from banks (as discussed in Appendix 'C'). Thus, like their counterparts globally, have to rely on alternative sources of financing, especially from the VCIs.

The following are some main characteristics of the ICT industry and ICTVBs in Malaysia that are worth noting because these characteristics might create difficulty for the ICTVBs to procure financing for their business needs.

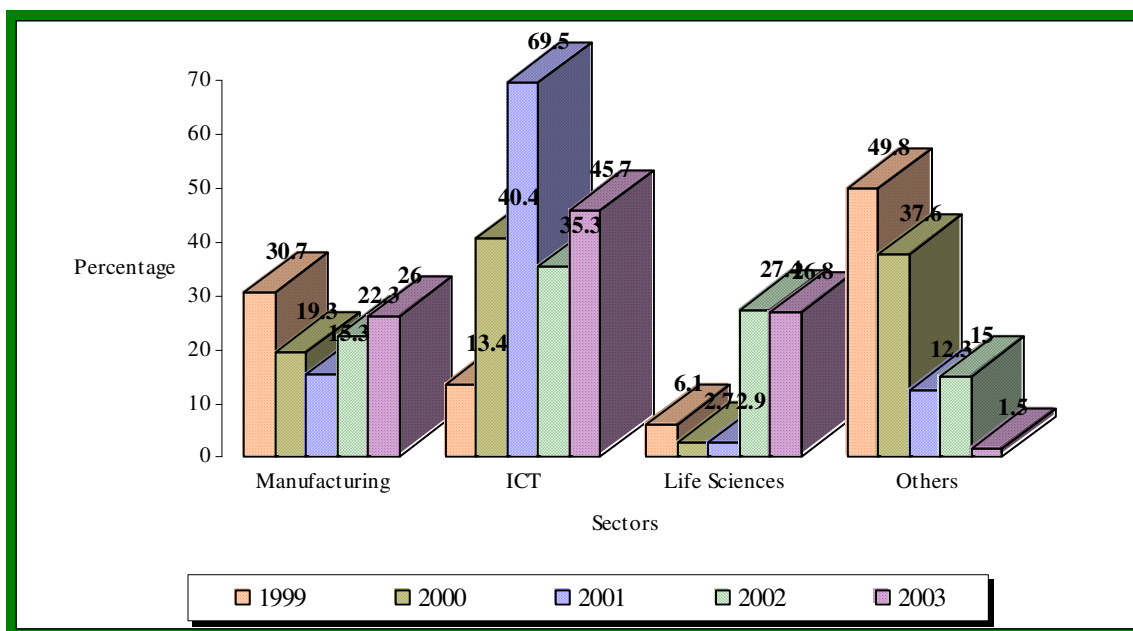
##### a) Emerging nature of ICT industry

The Malaysian economy is an open economy and international trade makes up more than half of the GNP. Traditionally, a substantial proportion of its exports are primary commodities which are subject to international price fluctuations. Thus, the government has encouraged the growth of manufacturing in the resource-based industries. Nevertheless, realizing the hollowing out effects of its traditional economics sectors and the need to drive the economy towards higher productivity through technology, a strategic initiative in the establishment of MSC in 1996 was taken by Malaysia (as discussed in Appendix 'B'). Besides spearheading Malaysia's industrialization, MSC is

now a place where ICTVBs can develop. The investment opportunities for venture capital financing also have been further enhanced with the establishment of MSC.

In terms of yearly investments of VCIs by economic sectors, there was a significant shift in their preferences with many of them now investing in the new growth sectors of ICT and life sciences as shown in figure 4.3 below.

Figure 4.3: Distribution of VCIs' investments by economic sectors



Source: Based on data from Bank Negara Malaysia annual reports.

From this figure, on one side, consonant with the industrial development in Malaysia, VCIs' investments in manufacturing are still strong, averaging annually at 23% for the period of 1999 to 2003. On the other, ICT and life sciences have attracted significant interest among the VCIs over these last couple of years with an annual average of 54%. Nevertheless, according to the industry sources, the fact remains that Malaysia's emerging ICT industry has yet to produce a success story of any home-grown ICTVBs becoming world-class businesses, e.g. Acer in Taiwan, Hotmail in India, Creative Technologies in Singapore. Perhaps, the reason for this is largely due to the innovative capacity of these ICTVBs in Malaysia not being as strong as in most of the developed countries. For instance, the total expenditure on R&D as the percentage of GDP for 2000 was only 0.5% in Malaysia compared to 3.1% in Japan, 2.7% in Korea and 1.9% in Taiwan (World Competitiveness Report 2002). Currently, there is a 30% shortage of scientists and technologists across all industry sectors in Malaysia. In relation to this, one of the thrusts in the National Science & Technology Policy 2, which was launched in 2003, is to create a competent R&D workforce with at least 60 scientists and engineers per 10,000 of the population by the year 2010.

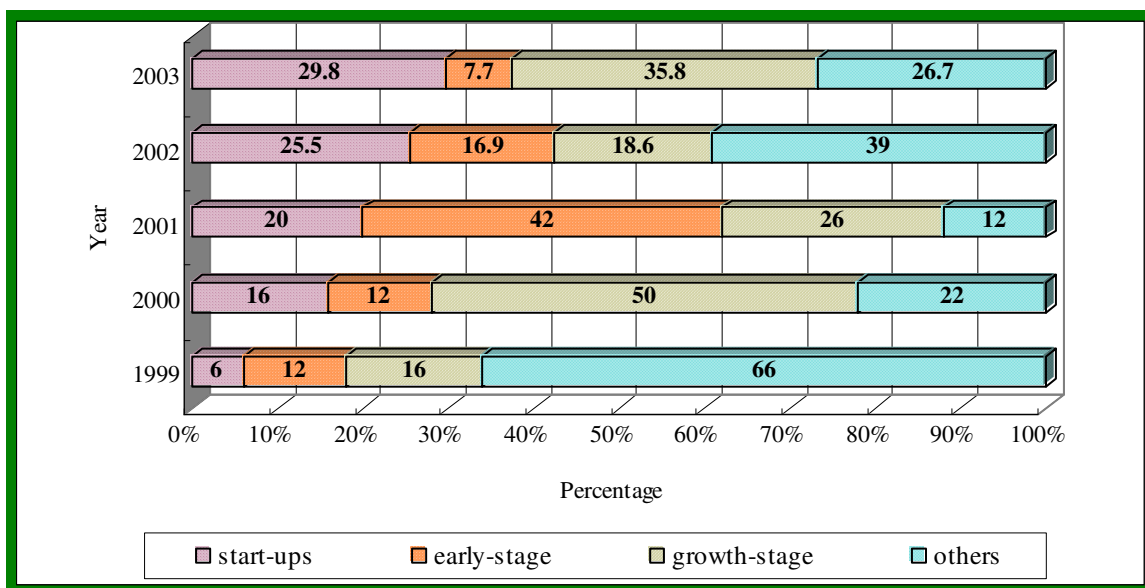
Thus, it is not surprising that many VCIs in Malaysia are complaining that they are seeing a lot of ideas but most are business ideas without that unique breakthrough technology behind them. In brief, the emerging nature of the ICT industry in Malaysia could be one of the reasons that VCIs and other investors have yet to accumulate a sufficient stock of know-how (e.g. venture business operations, R&D activities, etc.) and capacity of credit analysis (e.g. appraising technology-based businesses) in their transactions with ICTVBs.

b) Domination by ICTVBs at the early stage of growth

Since the establishment of MSC in 1996, the proliferation of ICTVBs has been very encouraging and has exceeded the original target set by the government (as discussed in Appendix 'B'). According to MDC, the number of ICTVBs is expected to increase further from 914 as of August 2003 to more than 1,300 in 2004. The government has continued its efforts in supporting the growth of ICTVBs by launching several measures in its Economic Stimulus Package in 2003 and the 2004 Budget, e.g. the establishment of Malaysia Debt Ventures Berhad, Cradle Investment Programme, etc. Among the main objectives of these measures were to produce quality ICTVBs and in turn generate a more vibrant and sustainable entrepreneurial environment in Malaysia (BNM Annual Report 2003).

In relation to this, venture capital financing is gaining recognition as an alternative source of funds for ICTVBs. There was encouraging development over these few years whereby investments by VCIs in ICTVBs at the start-up and early stages were on an increasing trend, with an annual average of 38% compared to 29% for ICTVBs at the growth stage and 33% for others (e.g. bridge/mezzanine/recapitalization and pre-IPO) as shown in figure 4.4 below.

Figure 4.4: Distribution of VCIs' yearly investments by stages of venture businesses



Source: Based on data from Bank Negara Malaysia annual reports.

Prior to 1999, the majority of VCIs' investments were in the ICTVBs at the later stage. However, since 1999 the numbers of investments in ICTVBs at the start-up and early stages have increased significantly, particularly due to the increased allocation of funds by the government to invest in the new growth sector of ICT. The higher percentage of VCIs' investments in the ICTVBs at the start-up and early stages suggests an increase in risk tolerance of the VCIs in supporting ICTVBs during the more risky period of their developmental growth. Nevertheless, this fact also suggests that as most of these ICTVBs are starting anew, they normally do not have track record, collateral, etc., thus, not many investors would want to venture into the unknown, except specialist investors such as VCIs.

c) Fragile foundations in managerial resources

In tandem with the nature of the start-up and early stages, these ICTVBs apparently have some structural deficiencies in their business managerial aspects, e.g. lack of experience, incomplete management team, etc. For instance, many of these ICTVBs have a shortage of R&D specialists (34.8%), technicians (29.9%) and marketing specialists (25.3%), etc. (JBIC, 2001). JBIC further stresses that the current situation of these ICTVBs in Malaysia is that they are not only having a shortage of marketing experts, but also training programs for managers and supervisors are still in a state of development. It is logical that to succeed the business idea or technological know-how, the ICTVBs must complement it with management, corporate finance and marketing expertise, among others. Thus, it is important that these ICTVBs be prepared to work with those who have these expertises because this will not only improve the chances of success but should there be failure, ICTVBs will not bear the whole risk.

d) Corporate culture of the ICTVBs

According to the industry sources, in Malaysia, it is quite common for ICTVBs to keep their technical knowledge to themselves. These ICTVBs will not share this technical knowledge with others for fear of losing their advantage. This situation is perhaps contrary with the developed countries where technical knowledge is freely disseminated and shared through publications and other means, whereby the innovator will be paid royalty or some sort of fees. For instance, JBIC (2001) contends that venture businesses in Malaysia were reluctant to disclose information to the outsiders because they looked on it as part of their business strategy and trade secret. The insufficient information disclosures by these businesses were not only in R&D activities, financial conditions but also in some extreme cases, all information about business operations.

Another corporate culture of the ICTVBs in Malaysia is that they are reluctant to dilute the ownership of the venture business. It is quite common for the originators or entrepreneurs to hold the majority shareholding of the venture businesses because they have invested a lot of personal wealth and efforts in building their business. According to Bank Negara Malaysia, the reluctance to dilute ownership by the venture businesses is one of the factors that have hampered the development of vibrant venture capital financing in Malaysia.

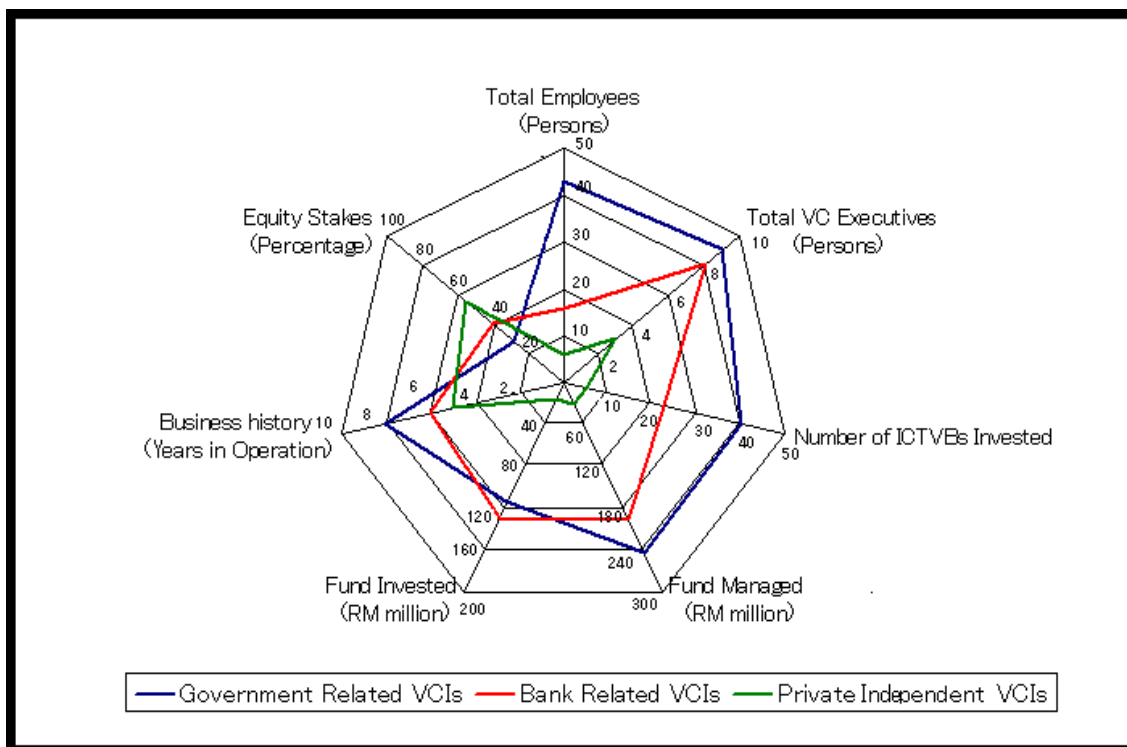
In summary, the establishment of MSC, with one of its objectives to successfully create clusters of ICTVBs has been considered as the main initiative by the government to spearhead Malaysia into the new knowledge-based economy and developed nation status in 2020. Given that this new economy is expected to be driven by venture businesses with lots of ideas but no track record, venture capital financing is seen as having a critical role to play as an alternative source of funds to finance these businesses. Although the Asian Financial Crisis and technology bubble-burst have affected the business climate in Malaysia and globally, MSC remains a highly ambitious initiative and thus presented the avenue for this research to study venture capital financing for ICTVBs. Hopefully, the discussion above on some of the main characteristics of the industries, VCIs and ICTVBs in Malaysia, which constitute the marked different settings from developed countries, will enrich the understanding of this research.

### 4.3 PROFILES OF VCIs AND ICTVBs IN THE SAMPLE

#### 4.3.1 Profile of VCIs (N=18)

This section analyzes the profile of VCIs in the sample. The dimensions analyzed are business history (i.e. year of incorporation), total employees and venture capital executives, amount of funds managed and invested, number of venture businesses invested, and equity stakes. Figure 4.5 shows the distributions of the different types of VCIs in the sample.

Figure 4.5: The profiles of VCIs in the sample according to type



Source: Survey on Venture Capital Financing in Malaysia conducted in March – April 2003.

The chosen 18 VCIs in the sample are comprised of 6 government-related, 4 bank-related and 8 private independent VCIs. The following explanations in this paragraph and the next one are based on average figures. For the government-related VCIs, their average number of years in operation is 8 years with 43 total employees and 9 venture capital executives. Thus far, the number of venture businesses that they have invested is 40 businesses with total investments of RM114 million. In terms of total funds under their management, the amount is RM245 million. They usually take an equity stake of 28% in the venture businesses that they invested. The bank-related VCIs also have been in operation for quite some times, on average 6 years. Their total employees and venture capital executives are 16 and 8 persons respectively. They have invested in approximately 23 venture businesses with total investments of RM129 million. This amount was higher than the government-related VCIs' investments, reflecting that they are not as cautious as the government-related VCIs, which manage public funds. The amount of funds under their management is also comparable to the government-related VCIs, i.e. RM198 million. However, they managed to get an equity stake of 40%, which was much higher than the government-related VCIs.

Although there were many private independent VCIs in the sample, they are typically young, having 5 years business history. They also manage small amounts of funds, i.e. RM30 million, and their total employees number 6 persons and 3 venture capital executives. The number of venture businesses that they invested is 5 businesses with total investments averaging RM15 million only. In terms of equity stake, these private independent VCIs manage to get 55%, i.e. the highest among the VCIs in the sample. This fact suggests that they are the most cautious among these VCIs because they manage their own funds, and also they are willing to take more risk in the venture business through their holding of a higher percentage of the equity.

In general, the majority of these VCIs are new in this emerging industry in Malaysia. A closer look at the data also revealed that perhaps due to the Asian Financial Crisis, the incorporation of VCIs decreased as only one was incorporated during this time. However, the number of incorporated VCIs increased sharply during the period of 2000 to 2002, suggesting that after the technology bubble-burst subdued and several encouraging measures were taken by the government (e.g. tax incentives and additional ICT funds from the Japanese government, etc) this industry began to experience recognition in financing ICTVBs. Most of them are also relatively small in size as compared to VCIs in the developed countries. The limited number of venture capital executives suggests that the man-power capabilities (e.g. know-how) and real personal experience of running a venture business are still lacking and will be among the major constraints in developing a vibrant industry in Malaysia (as discussed in Appendix 'A'). In addition, only 24% of these VCIs have an equity stake of over 51% per investment made in the venture businesses. These facts suggest that it is difficult for the VCIs to have a majority shareholding (i.e. 51 % and above) of the venture business they

invested.<sup>4</sup> This is partly due to the corporate culture of the ICTVBs in Malaysia as noted earlier, e.g. reluctance to dilute their share ownership, etc.

These VCIs received approximately 125 venture proposals and from this number, 75 proposals or 60% were reviewed and only five proposals or 4% were invested annually. These facts suggest that the VCIs are very selective in making their investments as prescribed by the literature reviewed, particularly in the high-risk venture businesses in ICT industry. Though normally success is not guaranteed, the VCIs have to be stringent in selecting ICTVBs because their main objective is to make capital gains, thus targeting the right ICTVBs is important for them. Moreover, as noted earlier in Section 4.2 that the ICT industry in Malaysia is relatively new and dominated by ICTVBs at the early and growth stages, VCIs are naturally cautious as there are still many unknowns about these ICTVBs. Like elsewhere, the technology bubble burst has in fact affected Malaysia's nascent ICT industry where some ICTVBs failed and VCIs that did invest are believed to have suffered losses. While failed investments are quite normal in the ICT and venture capital industries, the fact remains that VCIs have to be prudent in making their investments.

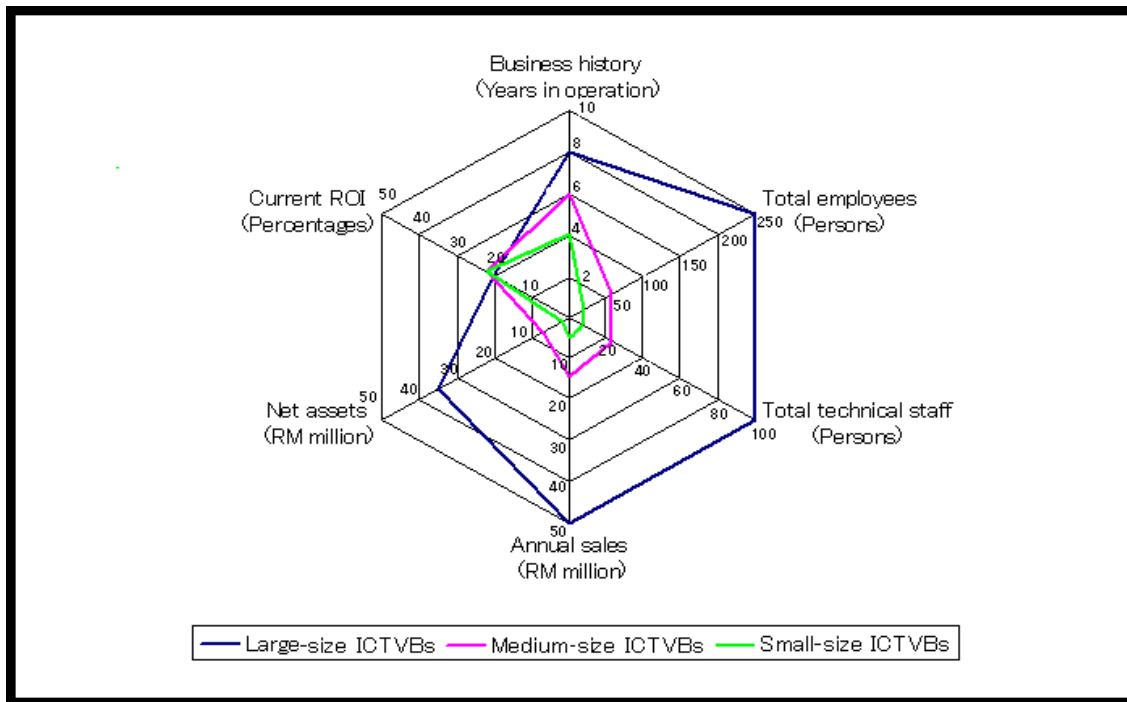
#### **4.3.2 Profile of ICTVBs (N=39)**

This section analyzes the profile of ICTVBs in the sample. The dimensions analyzed are business history (i.e. year of incorporation), total and technical employees, net assets, annual sales, current rate of return on investment (ROI) and business focus. Figure 4.6 below shows that 39 ICTVBs were selected for this research, which comprises 8, 9 and 22 large, medium and small-sized ICTVBs respectively. This classification is based on the total employees, i.e. more than 100 persons (large-size), 50 to 100 persons (medium-size) and less than 50 persons (small-size). Moreover, size classification of these ICTVBs is very useful because it normally corresponds to their business history and accounts for the differences in tax and financial treatments, among others.

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<sup>4</sup> The literature reviewed indicates that VCIs usually own less than 50% of the shares in ICTVBs. For example, in the U.S., the average equity stake is 25% (Carter and Van Aiken, 1994), while in the U.K. most VCIs also take a 10 – 30% equity stake in their investment (Cary, 1995) [cf. Van Osnabrugge and Robinson, 2000, p. 183].

Figure 4.6: The profiles of ICTVBs in the sample according to size



Source: Survey on Venture Capital Financing in Malaysia conducted in March – April 2003.

(Note: The maximum scale for equity stakes is 50% because some of these ICTVBs have good performance and ROI).

The explanations in this paragraph and the next one are based on average figures as shown in figure 4.6 above. The large-size ICTVBs have been in operation for about 8 years with total employees and technical staff of 250 and 100 persons respectively. Thus, they are considered established businesses with net assets of RM35 million and annual sales of RM50 million. Currently, their businesses manage to yield a 20% return on investment. These facts suggest that these ICTVBs are mostly at the growth stage and have a complete management team, track record, etc. The medium-size ICTVBs are also quite established with 6 years of business history. Typically, they employ about 57 total employees and have 23 technical staff. Their net assets are RM7 million and annual sales of RM14 million, i.e. lower than the large-size ICTVBs. Nevertheless, their current rate of return on investment (ROI) is slightly higher, i.e. about 22% annually.

The small-size ICTVBs mostly started their businesses just about 4 years ago and only have 19 total employees with typically few technical staff, i.e. 7 persons. Since they are at their early stage of development, they have a smaller amount of net assets (i.e. RM2 million) but stated annual sales of RM5 million. They also stated that currently their businesses manage to generate return on investment of 22% per year and most of them are involved in Internet-based, software and content development businesses. In Malaysia, although the large-size ICTVBs dominate, the medium and small-size ICTVBs have each shown a reasonably good performance with a slightly higher ROI than the large-size

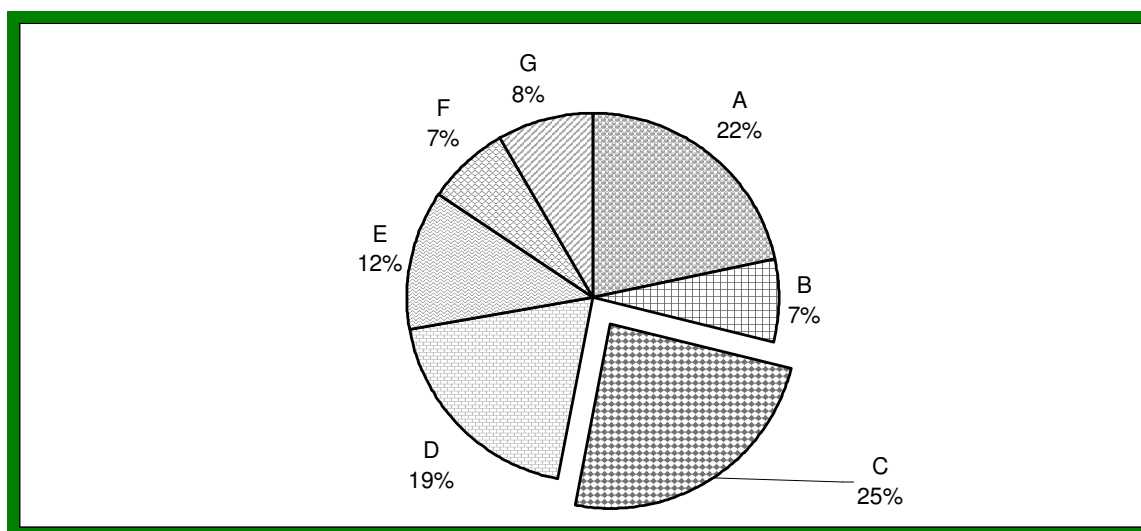


ICTVBs. However, compared with other developed countries, there is still some room for improvement in performance and ROI for these ICTVBs.

A detailed examination of the data revealed that thirty-one or 80% of them were incorporated for less than ten years with relatively fewer total employees and technical staff as compared to most ICTVBs in the developed countries. These facts suggest that the ICT industry is emerging in Malaysia similarly with the venture capital industry. Although there was an increase in the number of ICTVBs incorporated, particularly with the establishment of MSC in 1996 and after the technology bubble-burst subdued in the later part of 2000, these ICTVBs are relatively small in size, and most of them are in their early and growth stages of their development.

Their main technological focuses are shown in figure 4.7 below. Based on frequency counts, the majority or 80% of them were involved in capital-intensive new technology-based production businesses (e.g. system integration, telecommunications, software and hardware development) in comparison to 20% involved in less capital-intensive businesses such as education and training, consultancy, and life sciences. This fact suggests that capital is critically important to support their venture businesses. Thus, specialized financiers such as VCIs are needed as most of these ICTVBs are at their early and growth stages and thus require a lot of capital now and also to finance their future expansion programs.

Figure 4.7: Distribution of main technological focuses of ICTVBs



Legend:

- A = Computer/Security System& Integration
- B = Telecomm./Networking/Data & Support Centers/Heavy Users
- C = Software/Content Developments & Specialized Business Applications
- D = Internet-based Businesses
- E = Education/Training & Consultancy
- F = Hardware Design & Electronics
- G = Other (i.e. Life Sciences/Biotechnology/Production/Animation)

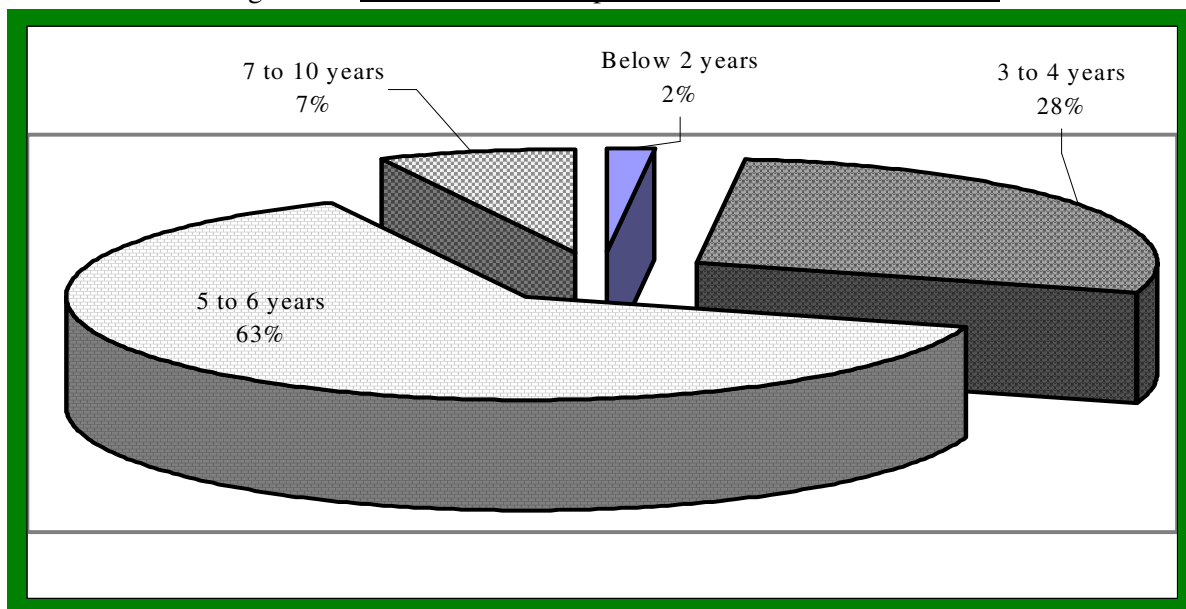
Source: Survey on Venture Capital Financing in Malaysia conducted in March – April 2003.

#### 4.4 TOTAL SAMPLE (N=57)

For the total sample (i.e. both VCIs and ICTVBs), 22 respondents or 39% of them allocated a period for planning of investment of less than two years, twenty-six or 46% of them allocated period of three to four years, and nine or 15% of them allocated period of more than five years. This fact suggests that both VCIs and ICTVBs are proper and diligent in managing their business by allocating quite a longer time frame for planning their investment.

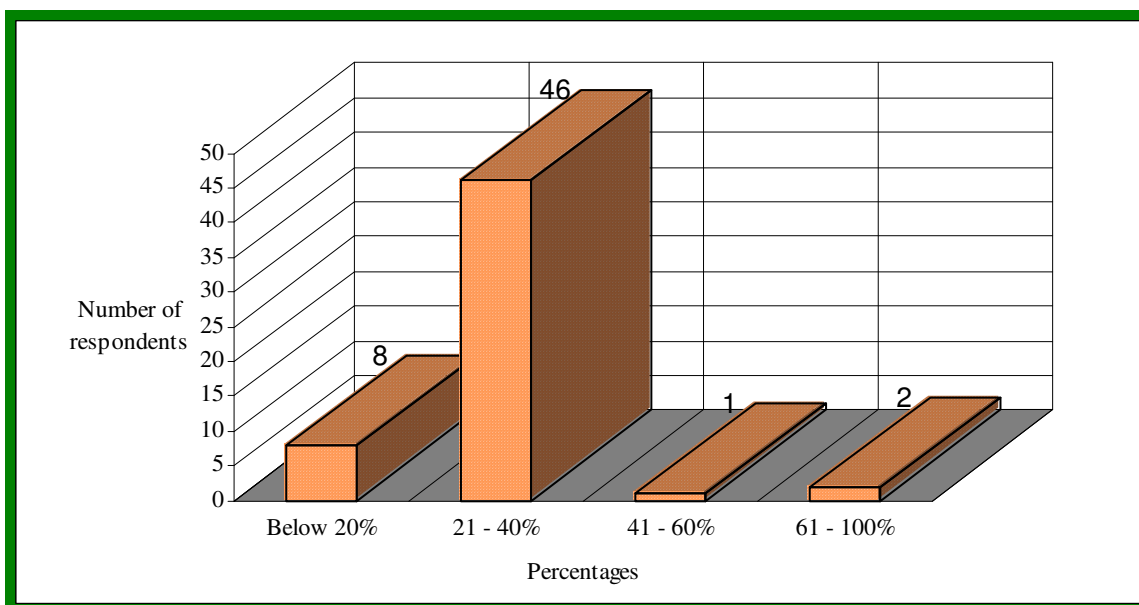
Their distribution of acceptable investment duration and preferred rate of return on investment (ROI) is shown in figures 4.8 and 4.9 following. Thirty-six or 63% of them preferred five to six years of investment duration. This fact suggests that both VCIs and ICTVBs prefer quite a long investment duration. Reasons for this are for example, most of these VCIs manage government funds with longer maturity periods thus allowing them to be quite patient in their investment in ICTVBs. This is quite different from the developed countries (as discussed in Appendix 'A') whereby normally the VCIs would like to acquire liquidity for their investment as early as possible (e.g. within 2 years or at the most 3 years in the U.S.). Another reason is perhaps due to the availability of ample avenues for acquiring liquidity for their investments such as special stock exchanges for technology-based venture businesses (e.g. NASDAQ in the U.S., JASDAQ and MOTHER in Japan, etc). As for the ICTVBs, since most of them are young and at their early and growth stages they probably require longer investment duration before they could generate good returns. In terms of preferred rate of return on investment (ROI), forty-six or 81% of them preferred ROI of 21% to 40%. This fact indicates that this is quite high as compared to the normal 10% to 15% for manufacturing and other kinds of businesses in Malaysia.

Figure 4.8: Distribution of acceptable investment duration (N=57)



Source: Survey on Venture Capital Financing in Malaysia conducted in March – April 2003.

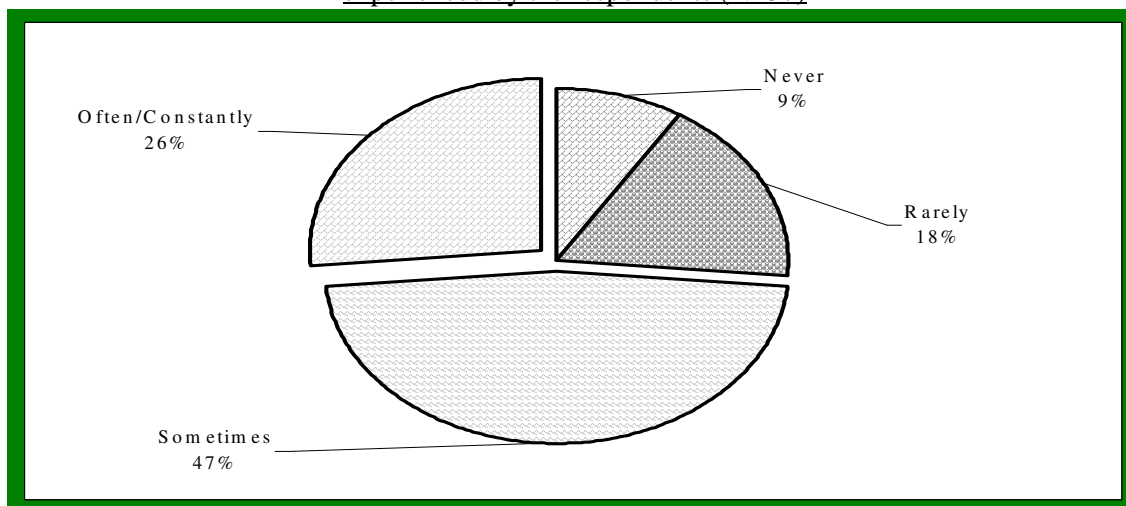
Figure 4.9: Distribution of acceptable return on investment (ROI) (N=57)



Source: Survey on Venture Capital Financing in Malaysia conducted in March – April 2003.

In their business relationship, 73% of them experienced management conflict “sometimes and often or constantly” in comparison to 27% “never or rarely” and the distribution can be seen in figure 4.10 below. This fact suggests that management conflict is a serious matter in their business relationship as prescribed in the literature reviewed. Perhaps, this is partly due to the emerging nature of both industries. The majority of the ICTVBs are also at their early and growth stages, which inevitably have many management problems. Thus, both the VCIs and ICTVBs need to find ways and means for an amicable business relationship as this is important to the success of the venture business they contracted into.

Figure 4.10: Distribution of extent of management conflict experienced by the respondents (N=57)



Source: Survey on Venture Capital Financing in Malaysia conducted in March – April 2003.

## 4.5 CASE STUDIES

This section presents six case studies (i.e. three each for VCIs and ICTVBs), which aim to show the detail of the differences in their ROMFs and management conflict experienced as observed in the practical venture capital process. Hopefully, from these case studies, several hypothetical observations can be derived on the business relationship between VCIs and ICTVBs, particularly regarding their ROMFs and the management conflict that they experienced. As the researcher has pledged confidentiality to the respondents, references to each case will only be referred by numbers, e.g. VCI One, ICTVB One, etc.

### 4.5.1 VCIs' case studies

The following cases are of the VCIs based on their size and sources of funding. They are as follows:

#### a) VCI One

VCI One is a venture capital company that manages the largest funds in the industry and is owned by the government. It was incorporated in 2001 and was allocated funds totalling RM500 million for the purpose of providing financing and nurturing the development of the ICT and venture capital industries in Malaysia. Its main investment focuses are in ICT and high-growth sectors, e.g. ICT domains, Internet-based domains, life sciences, etc. Its geographical focuses are Malaysia and also overseas. It has total employees of 36 which include 14 venture capital executives, making it among the larger size VCIs in terms of personnel and funds. Currently, the total amount invested in 17 venture businesses is approximately RM100 million with an available balance to invest of RM400 million. The percentages of equity stake per investment made are in the range of minimum 10% and maximum of 49%. The acceptable duration of investment preferred by VCI One is between 3 to 7 years with a minimum return on investment (ROI) of 25% per year. Normally, the time taken by VCI One in making an investment, i.e. from receiving a venture proposal to completion of investment could vary from three to nine months, depending on each case.

At the pre-investment stage, the specific ROMF of VCI One normally uses for deal origination is an active search personally and through the referral process (i.e. usually from other VCIs or banks), for venture businesses to invest. For screening criteria, VCI One uses the production technology, the management team of the venture businesses and the market potential of the products/services as among the most important criteria. As for evaluation of venture business proposals, the main sources of due diligence VCI One normally uses are their own market evaluation as the most essential and followed by independent markets reports and personal references. VCI One also uses the internal rate of return (IRR) and net present value (NPV) as the most essential evaluation techniques to evaluate venture business proposals. The most important evaluation criteria VCI One uses are the market attractiveness and the cash-out potential of the venture businesses. For deal structuring, VCI One prefers using a specific investment instrument, particularly

in the form of preferred and common equity but not in the form of debt (whether short or long-term). In its financial contract agreements with venture businesses, almost all the normal legal provisions are included, particularly the board structure, information rights and other negative covenants. VCI One stresses that “we invest public money so we have to invest conservatively and go for relatively safe investments which are sure will produce positive returns”.

At the post-investment stage, VCI One prefers both the specific contractual monitoring (i.e. legally defined) and also the non-contractual monitoring (i.e. based on trust and understanding). In maintaining its business relationships with the venture businesses, VCI One requires board directorship and submission of periodical reports of the business’s progress from them. In the aspect of information exchange with its venture businesses, VCI One usually provides advice and contacts for business and other entrepreneurship matters to them because these are considered most important for their success. In return, VCI One requires certain types of information from them, e.g. budgetary and capital structure, financial and management accounts, and most importantly the technological information of the venture business. As for factors in determining ideal business relationships with its venture businesses, VCI One gives priority to motivation and reputation factors. Finally, for the method of acquiring liquidity of its investment in the venture businesses, initial public offering (IPO) is the most preferred method to VCI One.

For the overall risk management of the venture businesses, VCI One rates management risk (e.g. less effort, not articulate of the venture businesses) and inexperience risk (e.g. poor leadership and poor track records of the venture businesses) as the two most strategic and important aspects for the success of the venture businesses. VCI One has quite a balance perception towards market and agency risks in managing the venture businesses. In terms of expertise, VCI One claims that it has very good knowledge in managerial staff and reasonably good knowledge in markets, budgetary and capital structure. VCI One’s involvement in its venture businesses must have a very great deal of influence in their management, particularly in the decision-making process, management system, information and control. Otherwise, it is difficult to monitor these venture businesses.

On the extent of occurrence of management conflict with its venture businesses, VCI One experiences this conflict constantly. Thus, VCI One ranks the ROMFs for deal structuring, monitoring and overall risk management as most important to reduce its exposure to this conflict with its venture businesses. According to VCI One, examples of the management conflict it normally faces with venture businesses are matters pertaining to R&D expenditures, production costing, failures in meeting performance targets, etc. VCI One also comments as follows: “ideally, entrepreneurs should learn how to work with us in an interactive manner. They need to show us the real value of their business”.

## **b) VCI Two**

VCI Two is a private venture capital company, i.e. a subsidiary of a well-known commercial bank in Malaysia. It was incorporated in 1992 and its main investment focuses are in ICT, multimedia, biotechnology and advance manufacturing sectors primarily in Malaysia. The total number of employees is 20 which include 13 venture capital executives, putting it in the medium size category. Currently, the total amount invested in 36 venture businesses is approximately RM250 million with an available balance to invest of RM120 million. The percentages of equity stake per investment made are anything from 5% to 30%. The acceptable duration of investment preferred by VCI Two is between 3 to 7 years with a minimum return on investment (ROI) of 25% per year. The time scale taken by VCI Two in making an investment in the venture businesses is usually less than six months.

At the pre-investment stage, the typical ROMF of VCI Two usually uses for deal origination of venture businesses to invest is an active search personally and through the referral process (e.g. outsourcing). VCI Two normally uses the size & business model, the production technology, the management team of the venture businesses and the commercialization of the products/services as the most important screening criteria. The most essential sources of due diligence used by VCI Two are independent markets (i.e. accountant) reports and technical due diligence from other experts. In evaluating the business's proposal from venture business, VCI Two uses the internal rate of return (IRR), net present value (NPV) and qualitative assessment as the most essential evaluation techniques. As for the evaluation criteria used, VCI Two typically emphasizes the importance of market attractiveness, the managerial capabilities and the cash-out potential of the venture businesses. VCI Two prefers an investment instrument in the form of preferred equity with convertibles in its deal structuring with the venture businesses. VCI Two normally insists on legal provisions that are specifically defined, particularly the information rights, negative covenants and conversion rights of preference shares at an agreed value. VCI Two says that "different VCIs have different expectations, thus, entrepreneurs need to fully comprehend the complexity we face in trying to benchmark the hundreds of proposals that we received. We also need to operate within the operational guidelines and the cost of funds to be met".

According to VCI Two, it usually prefers both the specific contractual monitoring (i.e. legally defined) and also the non-contractual monitoring (i.e. based on trust and understanding). VCI Two normally requires board directorship and compulsory submission of periodical reports of businesses' progress (i.e. quarterly or if necessary on a monthly basis) for maintaining its business relationships with the venture businesses. VCI Two also prefers to maintain close personal relationships with the venture businesses. In the aspect of information exchange with its venture businesses, VCI Two usually provides advice and contacts for entrepreneurship and personnel matters to them as these are considered the most important aspects for their success. However, VCI Two insists on information about the revenue model, financial and management accounts, technological and supply sources from the venture businesses. VCI Two gives priority to the maximum return on investment, appropriate capital structure and free-sharing of information as the

most important factors in determining ideal business relationships with its venture businesses. As for the method for acquiring liquidity of its investments, initial public offering (IPO) is VCI Two's most preferred method.

For the overall risk management of the venture businesses, VCI Two rates inexperience risk (e.g. poor leadership and poor track records of the venture businesses) as the most strategic aspect for the success of the venture businesses. VCI Two ranks agency risks much higher than market risks in managing the venture businesses. VCI Two claims that it has very good expertise in budgetary and capital structure but is not really knowledgeable in technology and technical staff matters. According to VCI Two, its involvement in the venture businesses must have a very great deal of influence in the decision-making process, management system, information and control of the venture businesses.

Thus far, VCI Two claims that it has cultivated a reputation for working closely with its venture businesses by displaying a high level of its commitment towards them. However, on the extent of occurrence of management conflict with its venture businesses, VCI Two experiences this conflict sometimes, e.g. over matters pertaining to production issues, operating expenses and failures in meeting targets (e.g. sales and profit targets). VCI Two's most important ROMFs for reducing this conflict are evaluation, deal structuring and monitoring, and it further comments that "the biggest issue is to have a regular meeting (i.e. formal or not formal) where both parties can have better understanding on their respective expectations".

### **c) VCI Three**

VCI Three, as an institution, is a private independent venture capital company in Malaysia. It was incorporated in 2001 and manages a small amount of funds totalling RM25 million and has total employees of only 4 which include 3 venture capital executives, making it among the small size VCIs in terms of personnel and funds. As a person, VCI Three is a well-known player in Malaysia's venture capital scene. He has spent 14 years in the banking and investment field with an international banking group. VCI Three's main investment focuses are in the ICT and multimedia sectors, e.g. software and content development. Its geographical focus is predominantly Malaysia. Currently, its investments in 6 venture businesses amounts to approximately RM10 million with an available balance to invest of RM15 million. The percentages of equity stake per investment made are in the range of minimum 10% and maximum of 70%. VCI Three prefers 3 – 4 years of investment duration in the venture businesses and with a minimum return on investment (ROI) of 35% per year. Normally, the time taken by VCI Three in making investment in venture businesses varies from three to six months, depending on the stage of investment.

At the pre-investment stage, the specific ROMF of VCI Three uses for deal origination is conducted an active search personally, or through the referral process or through trade exhibitions. For screening criteria, the management team of the venture businesses, the production technology and the market potential of the products/services

are the most important criteria used by VCI Three. A personal reference is the main source of due diligence and qualitative assessment is the most essential evaluation technique to evaluate venture business proposals. VCI Three also stresses “skip the number on a business plan, any body can run a spread sheet program. A sound business concept is far more important and a weak management team rarely succeeds”. Market attractiveness and managerial capabilities of the venture business are used as the main evaluation criteria by VCI Three, and it normally requires an investment instrument in the form of preferred equity for deal structuring. In its financial contract agreement with the venture businesses, all the normal legal provisions are included especially the board directorship, information rights and compulsory check signatories.

For monitoring its venture businesses at the post-investment stage, VCI Three prefers both the specific contractual monitoring and also the non-contractual monitoring (i.e. based on trust and understanding). To maintain its business relationships with the venture businesses, VCI Three insists on a board directorship and submission of periodical reports of businesses’ progress. VCI Three usually provides advice and contacts for business, consulting services and marketing assistance to its venture businesses and requires technological and managerial information from them. VCI Three considers efficient risk-sharing and free-sharing of information as the most important factors for ideal business relationships with its venture businesses. VCI Three prefers initial public offering (IPO) and secondary sale in order to acquire liquidity of its investments in venture businesses.

To VCI Three, the most important aspect for the success of the venture businesses is the management risk (e.g. less effort, not articulate of the venture businesses). However, VCI Three has higher perception towards agency risks than market risks in managing the venture businesses. VCI Three claims that it has very good knowledge of capital structure, investments, markets, budgetary and business strategy. VCI Three believes that its involvement in the venture businesses must have a very great deal of influence in the information & control and incentive & reward system of the venture businesses in order to monitor their performance.

On the extent of occurrence of management conflict (e.g. matters pertaining to the strategic information required, failures in meeting set targets and differences in cash-flow and profitability objectives) with its venture businesses, VCI Three experiences this conflict very often and ranks highest for the ROMFs in evaluation, deal structuring, monitoring and overall risk management. According to VCI Three these are very helpful in reducing this conflict with its venture businesses based on its experience thus far. Finally, VCI Three comments that “we are calculated risk takers not gamblers. Conflict with them is inevitable because we have different priorities. For example, they view product development and production as top whilst we are just the opposite. To us, financial and operating leverages are as important as technological leverages”.



#### 4.5.2 ICTVBs' case studies

The following cases are of the ICTVBs based on their size of employees. They are as follows:

##### a) ICTVB One

ICTVB One was incorporated in 1994 and its main business focuses are in hardware design, electronics, engineering and specialized business applications. Its total employees number 450, which includes 70 technical staff, making it among the established and larger-sized venture businesses in Malaysia. Currently, its net assets are RM10 million with an annual sales volume of approximately RM15 million. The desired duration of the VCIs' investment in its venture business is 5 years with a minimum return on investment (ROI) of 25% per year. So far, it has successfully secured two rounds of financing from the VCIs. Based on its experience, normally the time taken by VCIs in making investment in ICTVB One has been three to six months. According to ICTVB One, this is considered fast and could be due to its good track record, e.g. management team and proven products.

At the pre-investment stage, the specific ROMF of ICTVB One used for deal origination is to approach the VCIs directly. For screening criteria, ICTVB One uses its production technology, management team and the market potential of its products/services as the most important criteria in preparing proposals to the VCIs. The main sources of due diligence normally used by ICTVB One are to carry out its own market evaluation and personal references (e.g. agencies and dealers) as the most essential sources to support its proposal. ICTVB One prefers to use the internal rate of return (IRR) as the most essential technique to evaluate its venture proposals. According to ICTVB One, in order to increase the probability of its proposals being accepted by the VCIs, the market attractiveness, product differentiation and managerial capabilities are the most important evaluation criteria it normally uses. For deal structuring, ICTVB One issues preferred equity as the specific investment instrument to entice the VCIs. In its financial contract agreement with the VCIs, besides the normal legal provisions, it insists on the provision of its 'golden share' to be included.

At the post-investment stage, ICTVB One prefers non-contractual monitoring (i.e. based on trust and understanding). In maintaining its business relationships with the VCIs, ICTVB One allows board directorship and provides periodical reports of its business progress to them. In the aspect of information exchange with its VCIs, it usually provides current technological information to them so that they can understand better its business. In return, ICTVB One requires information on budgetary and capital structure, financial and management accounts, and also assistance on marketing contacts from them. As for factors in determining ideal business relationships with its VCIs, ICTVB One gives highest priority to the maximum return on investment and efficient risk-sharing factors. Finally, for the method of acquiring liquidity for its venture business, the buy-back and initial public offering (IPO) methods are the most preferred methods of ICTVB One.

ICTVB One considers its venture business as a high-risk type of business. Therefore, for the overall risk management of its venture business, ICTVB One rates competitive risk (e.g. low growth rate, unanticipated competition) and viability risk (e.g. no product protection, unfamiliar industry) as the most strategic and important aspects for the success of its venture business. ICTVB One has a higher perception towards market risks as compared to agency risks in managing its venture business. In terms of expertise, ICTVB One claims that it has very good knowledge in all aspects of its venture business, e.g. managerial staff, markets, technology, etc. According to ICTVB One, the involvements of VCIs thus far have affected quite a great deal of influence in the decision-making process and information and control of its management.

On the extent of occurrence of management conflict with its VCIs, it experiences this conflict sometimes, thus, ranks the ROMFs for screening, deal structuring, monitoring and overall risk management as helpful in reducing this conflict to a certain extent. In relation to this, ICTVB One comments that “we do have our ups and downs, but I guess that’s just part of the game. We focus on our business idea while they always expect to see a realistic plan with a decent chance of success”.

#### **b) ICTVB Two**

ICTVB Two was incorporated in 1997 with 53 total employees, which includes 25 technical staff, making it among the medium-sized venture businesses in terms of personnel. It is a software venture business that specializes in web and mobile Internet-based wireless solutions and services as well as Internet and Intranet application development. Currently, its net assets are about RM5 million and an annual sales volume of approximately RM10 million. To ICTVB Two, the acceptable duration of the VCIs’ investment in its business is 5 years with 25% minimum return on investment (ROI) per year. According to ICTVB Two, the time taken by the VCIs to invest in its venture business is from six to nine months, and it stresses that “we wasted almost two years trying to borrow money, but we hit only brick walls (i.e. the main reason being that we are running a technology company). Finally, in 2000, we managed to raise funds from the VCIs who saw enough value in our business proposition to give him some money”.

Based on its experience, the specific ROMF it uses for deal origination are direct approaches to the VCIs and also the referral process. ICTVB Two uses screening criteria according to the stage of financing it requires, production technology, management team and market potential of its products in preparing its proposal to the VCIs. ICTVB Two carries out its own market evaluation and prefers the usage of the internal rate of return (IRR) and net present value (NPV) as the evaluation techniques to support its venture business proposal. In presenting its proposal to the VCIs, it also emphasizes the market attractiveness, product uniqueness and protection from obsolescence of its product as the main evaluation criteria. ICTVB Two issues common equity to the VCIs in its deal structuring. Almost all the normal legal provisions are included in its financial contract agreement with the VCIs, particularly the form and terms of investment, board structure and employment contract. However, ICTVB Two is unsatisfied with the information rights due to its concern on trade secret and intellectual property rights.

If possible, ICTVB Two prefers non-specific contractual monitoring (i.e. based on trust and understanding) from the VCI. Besides allowing a board directorship, it also provides periodical reports of its business progress to the VCI. In addition, it usually provides information on its business strategy, management and financial accounts and technological information because these are most applicable for the VCI's understanding on its venture business. However, ICTVB Two required information on public policies, tax and legal matters from the VCI. Regarding the most important factors for an ideal business relationship with its VCI, it gives priority to the efficient risk-sharing and reputation factors. According to ICTVB Two, the buy-back and secondary sale methods of acquiring liquidity for its venture business are the most preferred methods.

For the overall risk management of its venture business, ICTVB Two rates viability risk (e.g. no product protection, no market acceptance) and cash-out risk (e.g. not highly liquid) as the most important aspects for the success of its venture business. Thus, ICTVB Two has a higher perception towards market risks than agency risks in managing its venture business. In terms of its expertise as compared to its VCI, ICTVB Two claims that it has very good knowledge of technology, market, technical and managerial staff but satisfactory knowledge in financial and business matters. According to ICTVB Two, the VCI's involvement in its management has affected a very great deal of influence in the decision-making process, management system, information and control.

Normally ICTVB Two has conflicts with its VCI on matters pertaining to R&D expenditures, marketing budget and strategies, strategic information requirement and failures in meeting set targets. ICTVB Two experiences these conflicts quite often and ranks the ROMFs for evaluation, deal structuring and monitoring as most important for reducing its conflict with the VCI. ICTVB Two says that "granted that we normally lack a proper grounding in managing business and often did not know how to draw up a credible business plan but they also should know that they only had banking expertise but none at all in technology".

### **c) ICTVB Three**

ICTVB Three is a developer of mobile games as well as entertainment services for the mobile content market and now is focussing on providing entertainment to the youth segment with a lifestyle of mobile usage. It was newly incorporated in 2002 and has only 8 total employees, which includes 4 technical staff. Currently, its net assets stand at RM0.3 million with annual sales of approximately RM0.5 million. Since it is quite new, the desired timescale of the VCI's investment in its business is between 6 to 7 years with a minimum return on investment (ROI) of 20% per year. It took almost a year before ICTVB Three managed to secure financing from the VCI. ICTVB Three recounts that "in the beginning, as with other new start-ups, the going was really tough. We have been pounding the streets many times over in search of financing".

In securing financing from VCI, the specific ROMF ICTVB Three uses for deal origination is to approach directly the VCI. ICTVB Three uses its production technology

and the market potential of its products as the most important screening criteria to support its application, and it also carried out its own market research as the main source of due diligence. In order to evaluate its venture business proposal, ICTVB Three uses the pay-back and internal rate of return (IRR) evaluation techniques. In addition to this, ICTVB Three uses the production differentiation and market attractiveness evaluation criteria to lend further support to its financing application to the VCIs. For deal structuring, ICTVB Three issued common equity to the VCIs and stresses that all the normal legal provisions are included, e.g. form and terms of investment, buy-back provision, and right of first refusal, but it hesitates on the information rights provision.

At the post-investment stage, ICTVB Three prefers the non-contractual monitoring (i.e. based on trust and understanding) as compared to the contractual monitoring. ICTVB Three comments that it has to allow a board directorship and also to submit many required periodical reports to the VCIs. Nevertheless, if possible, it prefers the VCIs' involvement in its venture business be limited to the provision of capital only. In the aspect of information exchange with the VCIs, it normally requires advice and contacts for business, marketing, tax, legal and public policies, as these are most important for its success. In return, ICTVB Three agrees to provide information on the technological, budgetary, financial and management accounts. ICTVB Three reiterates that it gives highest priority to the maximum return on investment factor in having an ideal business relationship with its VCIs. For the method of acquiring liquidity of its venture business, buy-back and mergers are the most preferred methods to ICTVB Three.

ICTVB Three rates management risk (e.g. reacts to risk badly, not articulate about its venture business) and competitive risk (e.g. low growth rate, longer gestation period of its venture business) as the most strategic aspects for the success of its venture business. When asked about the importance of market and agency risks in managing its venture business, ICTVB Three has a higher perception towards market risks. ICTVB Three says that it has very good knowledge in technology, technical staff and markets compared to its VCIs. ICTVB Three also stresses that until now, the VCIs' involvement in its management has affected a very great deal of influence in the management system, decision-making process, information and control.

ICTVB Three experiences management conflict with the VCIs constantly over such issues as setting financial budgets, costing of production, producing information for operating decisions, and many other things. Hence, it ranks the ROMFs for deal structuring, monitoring and overall risk management as the most important and helpful to reduce its conflict with the VCIs. ICTVB Three says that "the VCIs imposed all sort of conditions on us, which could put us at risk of losing the right of our intellectual property. They also are too risk-averse which could cost our survival and market penetration. It could be better if less arguing but more practical action. After all it's about willingness to get the hands dirty, so let's move things forward".

### 4.5.3 Main observations from case studies

The diversity of the case studies presented above is apparent. Despite this diversity, there are some common grounds between them. Among the main observations that could be derived from these case studies are the following:

- a) Both VCIs and ICTVBs operate in risky environments, especially where both venture capital and ICT industries are relatively new as in Malaysia. Apparently there are many expectation and expertise gaps between them, suggesting that there are many new learning curves to be discovered. For example, VCIs need more professionals with in-depth technical knowledge, preferably from their own personal experience of running a venture business. Meanwhile, ICTVBs need to fully understand potential VCIs, especially in choosing the right one to approach for financing (i.e. not only to be their financiers but also to be their business partners).
- b) By nature, apparently, there are differences in the expertise between VCIs and ICTVBs. Thus, these differences influence their ROMFs almost throughout the entire venture capital process. Initially at the pre-investment stage, their ROMFs fit their desire to conclude a deal, e.g. on one side, VCIs expect to have potential capital gains and to share technical expertise from ICTVBs, and on the other, ICTVBs expect to relieve their capital scarcity and to share the downside risk of their venture businesses with VCIs. In other words, regarding the comparative advantages of each party in their business relationship, those of the VCIs seem to reside largely in the supply of capital and business management, and those of the ICTVBs reside largely in technological knowledge, efforts and commitments. However, at the post-investment stage and for risk management, their ROMFs do not seem to fit well enough in their business relationships, leading to management conflict between them. In general, their ROMFs at the pre-investment stage are viewed by them as means of addressing adverse selection problems and their ROMFs at the post-investment stage, particularly monitoring, are means of addressing moral hazard problems as prescribed in the literature reviewed.
- c) Following the b) observation above, management conflict between VCIs and ICTVBs seems to be unavoidable. The vicious circle starts with differences in expertise, expectations and ROMFs, which then increases the acuteness of the information asymmetries between them, and ends with conflict in managing the venture business they contracted into. These cases indicate that the extent of occurrence of management conflict is reflected largely at the post-investment stage, particularly on the monitoring aspects (e.g. exchanging of strategic information and performance measurements) and overall risk management issues. Based on these case studies, table 4.1 below illustrates hypothetically the extent of occurrence of management conflict between the VCIs (i.e. according to their sources of funds) and ICTVBs (according to their developmental stages).

Table 4.1: Extent of management conflict based on types of VCIs and ICTVBs' growth stages

<b>ICTVBs/VCIs</b>	<b>VCIs (Government-related)</b>	<b>VCIs (Banks-related)</b>	<b>VCIs (Private Independent)</b>
ICTVBs at seed stage	Strong	Strong	Strong
ICTVBs at start-up stage	Strong	Semi-strong	Strong
ICTVBs at growth or expansion stage	Semi-strong	Weak to semi-strong	Strong
Preference	Low-risk ICTVBs	Medium-risk ICTVBs	Niche or high-risk ICTVBs

Based on the above table, clearly it can be seen that the views of the VCIs and ICTVBs on the management conflict they experienced are mixed.

For the VCIs, the government-related VCIs are seen to be very cautious, and the time they took to make the investment is quite long, i.e. 6 to 9 months. They also seem to lack expertise in the technological aspect of the venture business, perhaps due to their lack of experience. Thus, it is not surprising when they encounter stronger management conflict with the ICTVBs at almost all stages of development. As for the bank-related VCIs, due to their established nature and having managed to inculcate reasonably good relationships with the ICTVBs, they encounter weaker to semi-stronger management conflict with the ICTVBs at almost all stages of development. Although the time taken for investments to be made was less than 6 months, they also lack the technological expertise of the venture business. For the private independent VCIs, they require higher returns on investment due to their own limited sources of funds. They are also seen to be quite knowledgeable about the technicalities of the venture business, perhaps due to their own experiences in managing venture business. Nevertheless, they are more concerned about agency risks in their relationships with the ICTVBs and also prefer to get involved in the venture business. This hands-on involvement has led them to experience stronger management conflict with their ICTVBs at all stages of development.

For the ICTVBs, it can be seen that their stages of development were significant factors that affected their extent of management conflict with the VCIs. Perhaps, it is the unfamiliarity of the VCIs (e.g. technological aspect of the products/services, management team, no track and market records) of these ICTVBs at the seed and early stages of development that caused them to encounter stronger management conflict. At this early stage, it could be assumed that the ICTVBs have many managerial matters that are still not in place that could affect the smooth running of their venture business. For the more established ICTVBs at the growth stage, they have weaker management conflict with the VCIs because they are already selling their products/services and also have managerial capabilities in running their venture business.

- d) Examples of management conflict between the VCIs and ICTVBs are as follows. Firstly, at the early stage of the ICTVBs' growth, the size of R&D expenditures is important. ICTVBs have promising prospects because of their technological advantage or the uniqueness of their products/services, but VCIs as principals are very much afraid of market uncertainties. In addition, there is no profit generation from the ICTVBs in this stage, thus, they must require them to reduce R&D expenditures. Therefore, their ROMFs relating to the size of R&D expenditures may cause management conflict and deter constructive business management between them.

Secondly, at the growth stage of ICTVBs, both the size of marketing expenditures and marketing strategies are crucial in order to achieve their sales target. The ICTVBs have to compete aggressively in the market place and thus may require an adequate budget and appropriate marketing strategies for their products/services, but VCIs as principals may think this is not necessary as the products/services are quite unique, which naturally should attract customers. Hence, their ROMFs regarding the size of the marketing budget and marketing strategies in achieving their sales target may cause management conflict between them.

Finally, the VCIs have put their invested funds at risk because venture businesses are classed as risky investment opportunities. Thus, the VCIs as principals have to take steps to ensure that they are well served by strategic information, which is of relevance to their managerial decisions on a timely basis. However, the ICTVBs may not be willing to provide all the information required by the VCIs due to trade secret or intellectual property rights. Therefore, their differences in ROMFs pertaining to exchange of strategic information may cause management conflict between them.

- e) In general, there is also conflict over realizing the investment of the venture business. For the VCIs, an initial public offering (IPO) seems to be the most preferred method of acquiring liquidity of their investments in venture businesses, partly due to reasons such as hefty capital gains potential and an increase in their reputation, etc. The VCIs may also wish to realize a venture business's profits rather than to keep investing in its future development in order to distribute profit to its fund providers, particularly when the venture business is financially viable but too small to go for IPO. In contrast, ICTVBs prefer the buy-back and secondary sale for acquiring liquidity. Perhaps, this could be due to their corporate culture (e.g. on dilution of ownership) or other institutional constraints in the capital market in Malaysia (e.g. difficulty in fulfilling listing requirements). Moreover, the ICTVBs' motivation to start a venture business may not be solely future wealth maximisation but may involve other personal needs and satisfaction, e.g. personal independence and peer recognition, etc. In such cases, the sale of the venture business or floatation through IPO would not be a consideration by the ICTVBs. As a result, these different preferences may lead to management conflict between them.

- f) The government-related and bank-related VCIs tend to make larger investments and invest for longer periods in the ICTVBs (as in the case of VCI One and VCI Two). They also require a lower percentage of equity stakes and rate of return on investment, perhaps due to their financial strength, among others. In contrast, the private independent VCIs (as in the case of VCI Three) tend to invest for a shorter period and are personally involved in the management of the ICTVBs. However, they prefer a higher percentage of equity stakes and rate of return on investment, partly due to their own funding source. However, all these VCIs preferred both contractual and non-contractual monitoring on the ICTVBs, suggesting their preference for a hands-on approach. Typically, these VCIs always require representation on the board of directors of the venture businesses, reflecting their tight monitoring and control of the ICTVBs.
- g) The large-size ICTVBs tend to have not many difficulties in getting financing from VCIs and experience weaker management conflict with the VCIs, partly due to their proven track records and managerial capabilities (as in the case of ICTVB One). However, this is the opposite for the small-size ICTVBs. They have difficulties in convincing VCIs for financing (as in the cases of ICTVB Two and ICTVB Three). They also tend to have stronger management conflict with VCIs, especially at the post-investment stage and in risk management of the venture capital process. As for exchanging of information, all of these ICTVBs typically tended to retain their strategic technological information (e.g. trade secret and intellectual property rights). Typically, these ICTVBs prefer a non-contractual type of monitoring by the VCIs, reflecting their preference for hands-off approach.

The above observations are hypothetical in nature although they are based on six case studies and direct interviews. However, it is clear that management conflicts are widely present and not ignorable in the business relationship between VCIs and ICTVBs. Rather, they have created serious business problems that could determine the success of venture business activities and future technological innovations. The following sections present a series of statistical analyses for further discussions.

#### **4.6 TESTING OF DIFFERENCES IN ROMFs BETWEEN VCIs AND ICTVBs**

The t-Independent Samples test is used to determine if the means of two unrelated samples differ. This test is selected to determine whether the difference between means for the scores of VCIs and ICTVBs is significant.<sup>5</sup> For the purpose of this research, if more than half of the tested variables are found to be statistically significant (i.e. based on

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<sup>5</sup> Statistically, the determination is done by comparing the difference between two means with the standard error of the difference in the means scores of VCIs and ICTVBs. According to Foster (2001, p. 167), this test is an analysis of variance on the absolute deviation of the means scores of the samples and thus when interpreting the significance value of this test, “remember that it is the absolute value of *t* is taken: ignore the negative sign”.



the results of the t-values and level of significance), they will provide the basis for accepting or rejecting the hypotheses tested (as discussed in Appendix 'D').<sup>6</sup>

#### 4.6.1 Testing of differences in expertise

Before hypotheses H1, H2 and H3 were tested, the t-Independent Samples test was used to test the differences in expertise between the VCIs and ICTVBs in ten areas. The ten areas of expertise tested (i.e. business strategy, markets, budgets, capital structure & investments, management account, financial account, managerial staff, technology, supply sources and technical staff) are considered important aspects that are needed by both VCIs and ICTVBs, particularly to manage their high-risk kind of venture business. Therefore, if their expertise in these main aspects is equally good (i.e. not much difference between them), they may manage the venture business contracted into without much conflict, e.g. there are minimal asymmetries of information between them. They also should be able to understand each other better and thus be capable of agreeing on similar managerial considerations for the benefit of their venture business.

The results showed that there are significant differences in six areas of expertise between them as shown in table 4.2 below. For example, the differences of expertise between VCIs and ICTVBs are found to be quite high in budgetary, capital structure and investments, technology and supply sources as indicated by the t-values and significance values. A closer look at the data revealed that VCIs are found to be good in the financial matters while ICTVBs are found to good in the technological matters of the venture business. Thus, it is likely that these differences in expertise, particularly in the financial and technological aspects, would affect their ROMFs and management conflict in managing their venture business together, as being evidenced in the case studies presented earlier.

Table 4.2: The results of t-Independent Samples test on differences in expertise (N=57)

AREAS OF EXPERTISE	t-VALUES	SIGNIFICANCE VALUES
Technology	-2.255	0.030
Budgets	3.105	0.003
Capital Structure and Investments	4.363	0.000
Management Account	3.110	0.003
Financial Account	3.700	0.001
Supply Sources	-3.445	0.001

Note: i) In addition to the six areas in the above table, expertise in Markets and Technical Staff were also found to have significant difference using Mann-Whitney U test, Kolmogorov-Smirnov test, Kruskal-Wallis H test, and Median test. ii) Expertise in Managerial Staff and Business Strategy were not significant in all tests. iii) Please refer to footnote 10 on page 38 (for the t and significance values).

#### 4.6.2 Testing of hypotheses H1, H2 and H3

This section presents the results of t-Independent Samples test used to test hypotheses H1, H2 and H3 of this research.<sup>7</sup> The t-test analysis attempts to identify the

<sup>6</sup> There is no clear-cut criterion used (i.e. pertaining to the numbers of significant variables) to accept or reject a hypothesis because it depends on the researcher to set the cut-off point. For this research, a simple cut-off point of 50% or half of the total variables tested for each hypothesis is used.

differences in the ROMFs between VCIs and ICTVBs that could contribute to the causes of management conflict experienced by them.

Hypothesis H1 states that *“there is a significant difference in ROMFs between VCIs and ICTVBs at the pre-investment stage”*. From a total of 54 variables tested, only 22 are found to have statistically significant difference. Thus, the prediction of **this hypothesis is not supported by the data** since less than half of the variables were significant. Table 4.3 shows the results of t-test analyses for significant variables at the pre-investment stage. For example, the following had statistically significant differences in ROMFs between the means scores of VCIs and ICTVBs, direct approach to the VCIs and referral process for sources of deal origination, etc.

Table 4.3: The results of t-Independent Samples test for hypothesis H1 (N=57)

VARIABLES	t-VALUES	SIGNIFICANCE VALUES
<b>a) Deal Origination &amp; Screening</b>		
<u>i) Sources of Deal Origination:</u>		
Cold calls to VCIs directly	-4.745	0.000
Through referral process	-3.153	0.003
Active search by VCIs	-11.662	0.000
Other mechanisms (trade exhibitions)	-4.618	0.000
<u>ii) Screening Criteria:</u>		
Size & Policy of investment	2.103	0.040
Location of venture	2.618	0.011
Markets for products/services	2.093	0.042
iii) Acceptable investment duration	-3.871	0.000
iv) Time taken for investment decision	-3.208	0.002
<b>b) Valuation</b>		
<u>i) Sources of Due Diligence:</u>		
Obtain independent market reports	2.133	0.037
Reliance on personal references	2.417	0.019
<u>ii) Valuation Techniques*:</u>		
Pay-back	1.899	0.032 (1-tailed)
Accounting rate of returns	3.212	0.002
<u>iii) Valuation Criteria:</u>		
Size of market	-2.116	0.039
Technical skills	-2.395	0.020
Patentability of products/services	-2.550	0.016
Management skills	2.950	0.005
References of investor/entrepreneur	1.781	0.043 (1-tailed)
<u>iv) Deal Structuring:</u>		
Debt (long-term loans)	-6.753	0.000
<u>v) Contract Agreement Provisions:</u>		
Go-along rights	-1.835	0.036 (1-tailed)
Information rights	-1.790	0.039 (1-tailed)
Others (warranties/negative covenants)	-2.774	0.008

Note: \*Variable for Net-Present Value was significant using Kolmogorov-Smirnov test (z stats=1.320; 1-tailed Sig.=0.030) and Median test (chi-squares=7.486/5.957; Sig. Levels=0.006/0.015).

Hypothesis H2 states that *“there is a significant difference in ROMFs between VCIs and ICTVBs at the post-investment stage”*. A total of 30 variables were tested and 17 of them are found to have statistically significant difference. Since more than half of these variables are significant, the prediction of **this hypothesis is supported by the data**. Table 4.4 shows the results of t-test analyses for significant variables at the post-investment stage such as the differences in ROMFs between the means scores of VCIs

<sup>7</sup> The number of variables tested in each of these hypotheses (i.e. H1 to H6) varies because the variables were derived from the literature reviewed which indicate that the managerial factors involved are different at each stage of the venture capital process (as discussed in Chapter 3).

and ICTVBs on monitoring type preference, exchanging of strategic business information, etc.

Table 4.4: The results of t-Independent Samples test for hypothesis H2 (N=57)

VARIABLES	t-VALUES	SIGNIFICANCE VALUES
<b>a) Monitoring Type Preference</b>	3.438	0.002
<b>b) Maintaining Relationship:</b>		
Allow VCIs' director/staff to hold executive position	2.000	0.050
Limit to provision of capital funds only	2.198	0.032
<b>c) Advice Required from VCIs:</b>		
Tax and legal matters	-2.100	0.043
Personnel and recruitment policies	5.050	0.000
Current scientific/technological information	-1.663	0.053 (1-tailed)
<b>d) Information Required from ICTVBs:</b>		
Managerial and Technical staffs	2.282	0.029
Budgets	3.320	0.002
Capital structure and investments	1.866	0.036 (1-tailed)
Business strategy	3.196	0.003
Management and Financial accounts	3.576	0.001
Supply sources	2.834	0.006
<b>e) Factors of an Ideal Relationship*:</b>		
Maximum return on investment	2.086	0.043
Free-sharing of information	3.606	0.001
<b>f) Acquiring Liquidity:</b>		
Mergers and acquisition	4.522	0.000
Buy-back	-3.790	0.001
Write-off	-9.286	0.000

Note: \* Variable for Efficient Risk-sharing was significant using Kolmogorov-Smirnov test (z stats=1.320; 1-tailed sig.=0.030) and Median test (chi-squares=7.486/5.957 and sig. levels=0.006/0.015).

Hypothesis H3 states that *“there is a significant difference in ROMFs between VCIs and ICTVBs for risk management”*. From a total of 25 variables tested for risk management, 13 are found to have statistically significant difference. Since more than half of these variables are significant, the prediction of **this hypothesis is supported by the data**. Table 4.5 shows the results of t-test analyses for significant variables of risk management, e.g. the differences in ROMFs between the means scores of VCIs and ICTVBs on management and inexperience risks for general risk management, many substitute products/services for perception towards market and agency risks, etc.

Table 4.5: The results of t-Independent Samples test for hypothesis H3 (N=57)

VARIABLES	t-VALUES	SIGNIFICANCE VALUES
<b>a) General Risk Management:</b>		
Management risk	2.254	0.032
Inexperience risk	2.839	0.008
<b>b) Perception towards Market &amp; Agency Risks*:</b>		
Many substitute products/services	-2.066	0.044
ICTVBs and VCIs having different cash flow objective	2.638	0.011
ICTVBs and VCIs having different profitability objective	2.234	0.030
Many ventures to be monitored	2.485	0.018
Contractual ambiguities	3.787	0.001
Manipulation of profitability	8.917	0.000
Short-term self-interest seeking	7.774	0.000
Potential dishonesty	6.075	0.000
<b>c) Overall Investment Practices:</b>		
Deal origination and Screening	2.303	0.026
Contracting/Deal structuring	2.192	0.033
Monitoring/Post-investment activities	4.140	0.000

Note: \* Variables for Small Market, Many Competitors, and Technical Obsolescence were significant using Mann-Whitney U test and Kruskal-Wallis H test. [For Small Market (M-W U value=247.00; sig.=0.052; K-W chi-square=3.779; sig.=0.052), for Many Competitors (M-W U value=226.50; sig.=0.022; K-W chi-square=5.280; sig.=0.022), and for Technical Obsolescence (M-W U value=5.194; sig.=0.023; K-W chi-square=5.19; sig.=0.023)].

### **4.6.3 General interpretation of the results of H1, H2 and H3**

The results of H1 above clearly indicate that at the pre-investment stage, the ROMFs of both VCIs and ICTVBs are not much different. At this stage, their interests seem to be in alignment with each other, i.e. the desire to close the deal. To the VCIs, the venture businesses offered by the ICTVBs represent potentially profitable investments and also knowledge-sharing opportunities. As for the ICTVBs, the VCIs offer a means to gain additional capital now and for future expansion as well as means to spread the down-side risk for their venture businesses. For example, H1 is not supported by the data because only less than half of the variables tested have statistical significance suggesting most of their ROMFs are not so different at this stage. (This appearance of insignificant in the ROMFs at the pre-investment stage will be discussed later in H4).

However, this alignment is not necessarily the case at the post-investment stage and for risk management. Their ROMFs are found to be different (as indicated by the results of H2 and H3), which may cause management conflict between them. For instance, the results of H2 indicate that VCIs prefer a hands-on approach of monitoring while ICTVBs prefer a hands-off approach. Thus, this difference in preferences could result in management conflict in their business relationship. The results of H3 also suggest that for general risk management, VCIs are more concerned with the risk of the management team and its experience in running the venture business. In contrast, ICTVBs are more concerned about the risk of the technology and marketability of its products and services. Therefore, these differences could influence their managerial stance and thus affect their management conflict. In summary, each of them may have different preferences and may emphasize different techniques or criteria that they think are appropriate to their venture business. As a result, management conflict may arise and deter a constructive business relationship between them.

## **4.7 TESTING OF RELATIONSHIPS BETWEEN ROMFs AND MANAGEMENT CONFLICT**

The Correlation analysis was used to measure the strength of association between the ROMFs and management conflict (i.e. for hypotheses H4, H5 and H6) and the procedure for this analysis was performed by correlating each of the ROMFs of VCIs and ICTVBs with the management conflict indicators. Again, for the purpose of this research, if more than half of the tested variables are found to have statistical significance (i.e. based on the correlation coefficients and the level of significance), they will provide the basis for accepting or rejecting the hypotheses tested. Given that H4, H5 and H6 are directional hypotheses, a one-tailed probability test was appropriate.

### **4.7.1 Testing of hypotheses H4, H5 and H6**

This section presents the results of the Pearson's Product-Moment correlation used to test hypotheses H4, H5 and H6 of this research. This correlation analysis attempts to identify the strength and direction of the relationship between the ROMFs (of both,

VCI and ICTVBs) and management conflict indicators across the full venture capital process.

Hypothesis H4 states that *“there is a negative relationship between their ROMFs and management conflict at the pre-investment stage”*. As mentioned earlier, a measurement of Pearson’s Product-Moment correlation was used to test the strength and direction of the relationship between their ROMFs and management conflict indicators. From a total of 54 variables tested, 32 or more than half of them have negative significance. Thus, the prediction of **this hypothesis is supported by the data**. Table 4.6 shows the results of Pearson’s Product-Moment correlation (i.e. the r values) of these significant variables.<sup>8</sup> The results of H4 suggest that a direct approach by ICTVBs and active search by VCIs for deal origination are important for both parties in order to be able to choose the right business partners for their venture business as early as this stage. Otherwise, both parties will get business partners that are not compatible with each other and later on will have stronger management conflict. The results also indicate that independent market reports are important sources of due diligence that can help both VCIs and ICTVBs to identify compatible business partners and perhaps could minimise their managerial differences, which might occur in managing their venture business later on.

Table 4.6: The results of Pearson’s Correlation for hypothesis H4 (N=57)

VARIABLES	r VALUES	SIGNIFICANCE VALUES
<b>a) Deal Origination and Screening</b>		
<u>i) Sources of Deal Origination:</u>		
Cold calls to VCIs directly	-0.352	0.004
Active search by VCIs	-0.522	0.000
Other mechanisms (e.g. trade exhibition)	-0.417	0.001
<u>ii) Screening Criteria:</u>		
Size and policy of investment	-0.330	0.006
Location of venture	-0.248	0.032 a
Management team and track records	-0.415	0.001
Markets for products/services	-0.295	0.013 a
<b>b) Valuation</b>		
<u>i) Sources of Due Diligence:</u>		
Obtain independent market reports	-0.219	0.050
<u>ii) Valuation Techniques:</u>		
Pay-back	-0.276	0.019 a
Internal rate of return	-0.327	0.007
Qualitative assessment	-0.433	0.000
<u>iii) Valuation Criteria:</u>		
Access to market	-0.330	0.006
Market need for products/services	-0.275	0.019 a
Size of market	-0.409	0.001
Growth potential of market	-0.418	0.001
Technical skills	-0.444	0.000
Profit margins	-0.458	0.000
Uniqueness of products/services	-0.386	0.001
Patentability of products/services	-0.579	0.000
Marketing skills	-0.357	0.003
Financial skills	-0.377	0.002
Protection from competitive entry	-0.319	0.008

<sup>8</sup> According to Cohen and Holiday (1982), the interpretation of the correlation coefficients is as follows (regardless if it is a positive or negative direction): 0.19 and below = very low; 0.20 to 0.39 = low; 0.40 to 0.69 = modest; 0.70 to 0.89 = high; and 0.90 to 1.00 = very high. However, according to Bryman and Cramer (2001, p. 174) “these are rules of thumb and should not be regarded as definitive indications, since there are hardly any guidelines for interpretation over which there is substantial consensus”.

Resistance to economic cycles	-0.241	0.035 a
Protection from obsolescence	-0.338	0.005
Protection against down-side risk	-0.261	0.025 a
Opportunities for exit	-0.262	0.024 a
<b>c) Deal Structuring</b>		
<b>i) Investment Instruments:</b>		
Debt (long-term loans)	-0.365	0.003
<b>ii) Contract Agreement Provisions:</b>		
Registration rights	-0.277	0.018 a
Go-along rights	-0.309	0.010
Pre-emptive rights & rights of first refusal	-0.265	0.023 a
Option pool, vesting schedules & buy-back	-0.229	0.043 a
Other provisions (warranties/negative covenants)	-0.267	0.022 a

Note: r values = the Pearson's Product-Moment correlation coefficients.

a = correlation is significant at the 0.05 level (1-tailed) [and at 0.01 level (1-tailed) for the others].

Hypothesis H5 states that *“there is a negative relationship between their ROMFs and management conflict at the post-investment stage”*. From a total of 30 variables tested, 19 or more than half have negative significance. Hence, the prediction of **this hypothesis is supported by the data**. Table 4.7 shows the results of Pearson's Product-Moment correlation of these significant variables. For example, submission of periodical reports on the progress of the venture business by ICTVBs to VCIs is important because they will be well informed and thus could timely take necessary action if any problem arises with their venture business.

Table 4.7: The results of Pearson's Correlation for hypothesis H5 (N=57)

VARIABLES	R VALUES	SIGNIFICANCE VALUES
<b>a) Monitoring</b>		
<b>i) Maintaining Relationship:</b>		
Submit periodic reports	-0.303	0.011 a
Limit to provision of capital funds only	-0.364	0.003
<b>ii) Advice Required from VCIs:</b>		
Tax and legal matters	-0.261	0.025 a
Personnel and recruitment policies	-0.304	0.011
Current scientific/technological information	-0.393	0.001
<b>iii) Information Required from ICTVBs:</b>		
Technology and markets	-0.382	0.002
Managerial and Technical staffs	-0.308	0.010
Budgets	-0.279	0.018 a
Capital structure and investments	-0.469	0.000
Business strategy	-0.341	0.005
Management and financial accounts	-0.363	0.003
Supply sources	-0.297	0.012 a
<b>iv) Factors of an Ideal Relationship:</b>		
Maximum return on investment	-0.314	0.009
Appropriate capital structure	-0.327	0.007
Efficient risk-sharing	-0.251	0.030 a
Free-sharing of information	-0.445	0.000
Enhancement of reputation	-0.243	0.034 a
<b>b) Acquiring Liquidity Preference</b>		
Buy-back	-0.233	0.040 a
Write-off	-0.293	0.001

Note: r values = the Pearson's Product-Moment correlation coefficients.

a = correlation is significant at the 0.05 level (1-tailed) [and at 0.01 level (1-tailed) for the others].

Hypothesis H6 states that *“there is a negative relationship between their ROMFs and management conflict for risk management”*. A total of 25 variables were tested and 15 or more than half of them are found to have negative significance. Thus, the prediction of **this hypothesis is supported by the data**. Table 4.8 shows the results of

Pearson's Product-Moment correlation of these significant variables. For instance, the experience of the management team and viability of the venture business are important in general risk management. Otherwise, both VCIs and ICTVBs can be easily drawn into conflict whenever their venture business faces the slightest business difficulties.

Table 4.8: The results of Pearson's Correlation for hypothesis H6 (N=57)

VARIABLES	r VALUES	SIGNIFICANCE VALUES
<b>a) General Risk Management:</b>		
Inexperience risk	-0.310	0.010
Viability risk	-0.254	0.028 a
Cash-out risk	-0.238	0.037 a
<b>b) Perception Towards Market &amp; Agency Risks:</b>		
Small market	-0.295	0.013 a
Many competitors	-0.346	0.004
Many substitutes products/services	-0.411	0.001
ICTVBs and VCIs having different profitability objective	-0.344	0.004
Many ventures to be monitored	-0.468	0.000
Manipulation of profitability	-0.296	0.013 a
Short-term self-interest seeking	-0.356	0.003
Potential dishonesty	-0.336	0.005
<b>c) Overall Investment Practices:</b>		
Deal origination and Screening	-0.500	0.000
Evaluation	-0.405	0.001
Contracting/Deal Structuring	-0.259	0.026 a
Overall risk management	-0.310	0.009

Note: r values = the Pearson's Product-Moment correlation coefficients.

a = correlation is significant at the 0.05 level (1-tailed) [and at 0.01 level (1-tailed) for the others].

#### 4.7.2 General interpretation of the results of H4, H5 and H6

The correlation results (supported by the factor and multiple regression results as shown in Appendix 'D') suggest there exists a high relationship between ROMFs and management conflict indicators, thus, indicating some possibility for reducing management conflict. These are as follows.

- a) At the pre-investment stage - Although H1 indicated a small difference in ROMFs, H4 indicated a strong relationship between ROMFs and management conflict. One interpretation of this is that potentially they may have significant difference, which signifies the differences in ROMFs could be revealed in the real interactive communication at the pre-investment stage. Based on this interpretation, improvement in their ROMFs for screening and due diligence at this stage is very important. Both the VCIs and ICTVBs have to be very careful in selecting each other so that their expectations and commitments are in alignment, which may help to reduce management conflict at the post-investment stage and in risk management. The results of H4 indicate that besides their own initiative in searching for a good deal, the VCIs also need to do technical due diligence and need to obtain other independent market reports, particularly on the management team and technological competencies of the ICTVBs. As for the ICTVBs, they also have to improve their ROMFs by choosing the right VCIs not only to get additional capital but also to get other value-added services from the VCIs. Therefore, by improving their ROMFs for screening and due diligence they can minimize their differences in expectations and commitments, and also they can pool their aggregate competency for the betterment of their venture business that

they contracted into. Their ROMFs for evaluation also need to be improved. For example, the usage of product, market and environmental threat resistance as the evaluation criteria by both VCIs and ICTVBs is helpful to reduce their management conflict. These criteria (e.g. patentability of products/services, protection from obsolescence, technical skills, protection from competitive entry, and reasonable profit margins) seem to be the most relevant in evaluating their venture business in the ICT industry, which is known to be very risky.

- b) At the post-investment stage - As discussed earlier, the expertise and ROMFs between the VCIs and ICTVBs are apparently different. Moreover, information asymmetries seem to be quite ubiquitous in their relationship, particularly when more strategic information is needed in the early years (or for young ICTVBs) where VCIs have less familiarity with ICTVBs and there are more risks associated with the venture business. Thus, improvement in their ROMFs for monitoring purposes as suggested by the results of H5, i.e. the strategic information exchange between them, may be useful for reducing their management conflict. For example, the VCIs require information from the ICTVBs on matters pertaining to capital structure, management and financial accounts and technological aspects of the venture business. As for the ICTVBs, they require information on the market, entrepreneurship and other regulatory matters from the VCIs. Therefore, a kind of free-sharing of information arrangement may reduce the tendency of management conflict occurrence between them. In other words, a timely and full disclosure of strategic information will help them to take necessary managerial actions that could enhance the performance of their venture business. In relation to this, the ease of access, the making sense of, and the imputed reliability of the information exchange are important to both VCIs and ICTVBs in terms of monitoring, decision-making and others, which are capable for reducing their management conflict.
- c) Risk management - Improvement in some of their ROMFs in risk management of the venture business is also helpful for reducing their management conflict as indicated by the results of H6. Basically, for mutually beneficial contracting between the VCIs and ICTVBs, their attitudes towards market and agency risks are profoundly influential on the performance of the venture business they contracted into. For example, the VCIs are more concerned with agency risks (e.g. short-term self-interest seeking, potential dishonesty, manipulation of profitability by the ICTVBs, etc.) whereas the ICTVBs are more concerned with market risks (e.g. different cash flow and profitability objectives, many substitute products/services, many venture to be monitored, etc.). Thus, these differences will affect their managerial behavior and may represent the main source of risk and management conflict in their venture business. As a result, although the VCIs and ICTVBs may possess the right knowledge, skills and systems for enhancing the performance of their venture business they might still fail to reach their goals due to dismal attitudes that cause management conflict in their business relationship.



Table 4.9 highlights some examples of the important ROMFs, which are helpful for reducing management conflict for government-related VCI.

Table 4.9: Important ROMFs for reducing management conflict

VENTURE CAPITAL PROCESS	IMPORTANT ROMFs	EXPLANATION
i) Pre-Investment Stage: a) Deal origination & Screening - Sources referred  - Screening criteria used  b) Deal evaluation - Sources of due diligence referred  - Evaluation techniques used  - Evaluation criteria used  c) Deal structuring - Investment instruments used  - Legal provisions preferred	Preference for personally active search, referrals process and direct approach by ICTVBs.  Preference for management team, production technology and market potential criteria.  Preference for own and other independent market reports.  Preference for financial ratios (e.g. IRR, NPV and Pay-back) and qualitative assessment techniques.  Preference for product differentiation, market attractiveness and cash-out potential criteria.  Preference for preferred and common equity.  Preference for information rights and other negative covenants.	Require to build a network and reputation with venture businesses, VCIs and business communities in order to ensure good deals that are easily identified at this early stage.  Require a good set of screening criteria for initial evaluation of the venture business. Most important are the experienced team, technological feasibility, solid value proposition and large market size. If possible, second opinions from other experts are needed.  Require an in-depth investigation on the venture business, e.g. reference checks, financial evaluation (i.e. key revenue and cost drivers of the business model), market potential (i.e. key assumptions of the structure, size, target share, etc.) and technological feasibility.  Require to close a deal (i.e. to design and negotiate details of the financial contract) in a timely framework.
ii) Post-Investment Stage: d) Monitoring - Maintaining relationship  - Exchanging information  - Factors of ideal relationship  e) Method of acquiring liquidity preferred	Preference for board directorship and submission of periodical reports.  Preference for the exchange of strategic business information, particularly technical and financial matters.  Preference for factors on free sharing of information, efficient risk-sharing and appropriate capital structure.  Preference for buy-back and secondary sale.	Require a balanced approach between contractual (i.e. legally defined) and non-contractual (i.e. based on trust and understanding) because most venture businesses prefer the non-contractual monitoring.  Although full disclosure of information is preferable, some areas of confidentiality need to be retained so as not to deter a good business relationship. Moreover, VCIs should be careful not to interfere often in the policies of the venture business because any resultant conflict could affect their business relationship.  Although IPO is preferable, VCIs need to respect the corporate culture of venture business, i.e. reluctant to dilute ownership.
iii) Risk Management: e) Overall risk management  f) Perceptions on market and agency risks	Preference for management, inexperience and cash-out risks.  Preference for balance perceptions towards market and agency risks.	Require to ensure a committed and top-performing management team in the venture business.  Require VCIs to have a common concern on both market and agency risks for a better business relationship.

The above table describes the key learning regarding important ROMFs for government-related VCIs to reduce management conflict with ICTVBs. However, it is also applicable for other types of VCIs with a systematic investment approach.

In general, at the pre-investment stage, VCIs have to proactively search for good deals by identifying the right ICTVBs to invest. Specific screening criteria are needed to identify their business model: required management skills (i.e. that are needed to execute their business model), understanding to assess the technology involved (i.e. the likely future technology developments and their impact on viability of their business model), and analysis of market potential (i.e. reflecting their market structure and size). For the due diligence and evaluation, VCIs have to gather as much information as possible on ICTVBs (i.e. their management team, organization, customer base, revenues, etc.). Then, VCIs have to negotiate and design a financial contract with ICTVBs, which should be acceptable for both parties. At the post-investment stage and for risk management, VCIs have to devise a monitoring system that is effective enough to monitor their investment in the venture business. A smooth exchange of strategic business information, among others, is crucial due to the differences in expertise and ROMFs of the VCIs and ICTVBs.

#### **4.8 SUMMARY**

This chapter covered three aspects, analyzing the main characteristics and profiles of VCIs and ICTVBs, presenting several case studies, and testing the hypotheses. The descriptive statistics shows the emerging nature of both venture capital and ICT industries in Malaysia. For VCIs, the majority of them are in the process of building up their good track record. For ICTVBs, they are mostly at their early and growth stages of development and are involved in new high-technology-based businesses. Generally, their proliferation has been in tandem with the development of MSC since 1996. The case studies show the detail of the differences in their ROMFs and the management conflict they experienced that was observed in practical venture capital process.

The t-Independent Samples tests were used to test hypotheses H1, H2, and H3 for testing the differences of ROMFs of VCIs and ICTVBs that may contribute to the management conflict they experienced. The Pearson's Product-Moment correlations were conducted to test hypotheses H4, H5, and H6 for testing the relationships between their ROMFs and management conflict indicators. All six hypotheses were empirically tested and table 4.10 summarizes the results. Brief interpretations of these results were also made in the context of the VCIs and ICTVBs.

Table 4.10: Summary of the results of all hypotheses tested

HYPOTHESES NUMBER	PREDICTION OF HYPOTHESES	SUPPORTED? YES or NO
H1	There is a significant difference in ROMFs between VCI and ICTVBs at the pre-investment stage.	No
H2	There is a significant difference in ROMFs between VCI and ICTVBs at the post-investment stage.	Yes
H3	There is a significant difference in ROMFs between VCI and ICTVBs for risk management.	Yes
H4	There is a significant negative relationship between their ROMFs and management conflict at the pre-investment stage.	Yes
H5	There is a significant negative relationship between their ROMFs and management conflict at the post-investment stage.	Yes
H6	There is a significant negative relationship between their ROMFs and management conflict for risk management.	Yes

The following Chapter 5 discusses the findings of this research and the conclusions that could be derived from these findings.

## **CHAPTER 5**

### **SUMMARY AND CONCLUSIONS**

#### **5.1 INTRODUCTION**

This chapter presents the summary and conclusions of this research. It starts with a brief summary and then is followed by the discussions of the findings from the descriptive statistics and statistical analysis. Then the following section discusses the theoretical and practical implications of this research. Next, are the discussions on the limitations of this research and possible areas for future research on this subject. Finally, the last section concludes this research.

#### **5.2 SUMMARY OF THE RESEARCH**

The literature reviewed advocates that VCIs are known to be one of the main risk-financiers for ICTVBs, which usually require adequate capital for their success. However, it is when they get involved in a financial contract that so-called management conflict is most likely to arise, due to their differences in nature, expectations and characteristics. For successful venture business, this management conflict has to be reduced. In this process, the ROMFs of VCIs and ICTVBs are crucial, suggesting that the two central concepts of this research were ROMFs and management conflict.

This research focussed on managerial factors in the venture capital process and treated them as independent variables. The independent variables were their ROMFs at the pre-investment stage of the venture capital process namely: deal origination and screening, evaluation, contracting or deal structuring. At the post-investment stage they are namely: monitoring and post-investment activities, acquiring liquidity, and risk management. Sub-variables investigated were the sources of due diligence, techniques of evaluation, factors or criteria used, risk management and the perception towards market and agency risks, and other related aspects at each stage of the venture capital process. The dependent variable was management conflict with two sub-variables as indicators (i.e. the extent of management conflict experienced and the affected management of the venture business). Detailed discussion of these variables and the conceptual framework of analysis can be found in Chapter 3. Data on these variables were gathered from survey questionnaires and supplemented by direct interview exercises with selected respondents.

This research uses the principal-agent analysis as the general framework that focuses on the business relationship between the VCIs (as principal) and ICTVBs (as agent) (as discussed in Chapter 1). Here, it is the VCIs who typically initiate the subscribing of a financial contract that will describe the terms and conditions under which their management relationship takes place. The nature of their financial contracting is voluntary, and both VCIs and ICTVBs do so by an act of conscience, thus expecting benefits from so doing. An applied principal-agent analysis is used to study their business relationship, which involves matters of preferences, judgement, perceptions, attitudes, etc in the venture capital process. Therefore, this approach proved amenable to providing a

better understanding of real financial contracting between the VCIs and ICTVBs within the social laboratory of the emerging venture capital and ICT industries in MSC, Malaysia.

### **5.3 DISCUSSION OF THE FINDINGS**

This research was divided into two parts. The first part focussed on descriptive statistics, which present the profile of VCIs and ICTVBs and several case studies. The second part focussed on statistical analyses, which test the six hypotheses of this research. The discussions of the findings are as follows.

#### **5.3.1 Findings from the descriptive statistics**

The profiles of VCIs and ICTVBs in the sample provided information on their main characteristics but were conceptually not sufficient to address the main investigation of this research, that is, to indicate whether their ROMFs were significantly different and whether their ROMFs were helpful for reducing management conflict. Several case studies of selected VCIs and ICTVBs were presented to show the detail of the differences in their ROMFs and the management conflict they experienced that were observed in practical venture capital process. The following findings that are worth observing are based on the characteristics and case studies and are discussed as follows.

- a) It was found that both venture capital and ICT industries in MSC, Malaysia are relatively new, thus, there are plenty of new learning curves that need to be learned by both VCIs and ICTVBs. The majority of the VCIs and ICTVBs are newly incorporated and have few venture capital executives and technical employees respectively. The VCIs were dominated by local players, government-related and bank-related, and only a few are privately independent. In addition, their actual personal experience and expertise in running a venture business in a risky ICT industry are found to be very limited. The ICTVBs were also mostly at their early and growth stages and were involved in capital intensive new technology-based production businesses, indicating that they needed additional capital, especially from the VCIs to support their venture business at that time as well as for future expansion.

Thus, in these emerging industries, there are likely many expertise gaps and differences in ROMFs that exist between the VCIs and ICTVBs that had caused them to experience management conflict in their business relationship as indicated by the results of this research. Therefore, among others, efforts to converge their expertise and ROMFs are crucial to success. For example, acquiring technological, financial and managerial expertise by both the VCIs and ICTVBs is crucial to smoothly manage their venture business. Perhaps, after a couple of real experiences in the next few years, both VCIs and ICTVBs could learn and improve their learning curves and thus could improve their business relationship.

- b) The VCIs seemed to be too cautious in making their investment decisions in ICTVBs. This can be clearly seen from the amount of time taken (i.e. between 3 to 9 months and some are more than a year) for processing the investment. The numbers of actual investment made were also very few (i.e. below 5 deals) although they received more than 100 proposals annually. Perhaps, the VCIs are far more cautious or became more risk averse recently because many may have lost their money in the technology bubble-burst in early 2000. These VCIs also manage other people's money, thus, they have to be extremely diligent and cautious. Another reason is perhaps the ICT industry in Malaysia is hampered by the limited number of brilliant ICT ideas (i.e. breakthrough technologies) that the VCIs are seeking for. Although there are many business ideas, they are without that unique technology behind them. Most of the VCIs, citing paucity of brilliant deals, beg the question of whether there are a sufficient number of quality ideas surfacing in Malaysia. Perhaps, Malaysia is not alone in this situation as other developing countries too have a similar situation.

Surprisingly, 72% of these VCIs were also found to have preferences for a medium-risk type of venture business as opposed to what the literature advocated that they are among the main risk-financiers for ICTVBs. Perhaps, this preference stems partly from the fact that VCIs were found to be lacking the technological expertise to assist the ICTVBs because generally they come from government, corporate and finance backgrounds, which apparently are not suitable for assisting ICTVBs with building their venture businesses. They also are used to or comfortable with investing in other types of normal businesses that present a lower-risk profile for investment (e.g. manufacturing, services, etc.) in Malaysia. This situation could be different in the developed countries, e.g. in the U.S. where many VCIs were successful entrepreneurs who listed their venture businesses and then moved on to become VCIs. In contrast, currently, there are very few successful entrepreneurs who have become VCIs in Malaysia.

- c) There were also several investment characteristics of both VCIs and ICTVBs that were found to be quite peculiar, at least in the context of MSC, Malaysia. For example, firstly, both VCIs and ICTVBs prefer longer investment duration, between 5 to 6 years. Reasons for this are such as most of the VCIs manage public funds (i.e. government or government agencies), thus, they could afford to be quite patient in getting back their investment and profits. As for the ICTVBs, the majority of them are at their early and growth stages, which require quite a longer duration before they can reap a good return on their investment. Another reason, perhaps, currently the situation in Malaysia is that there are less developed divestment mechanisms for VCIs' investment in ICTVBs, e.g. "over-the-counter" markets or special exchanges for ICTVBs (as discussed in Appendix 'A').

Secondly, the ownership structure of the venture business is found to be that the ICTVBs hold the majority shareholding and the VCIs hold the minority shareholding (but it could be quite substantial, i.e. from 31% to 50%). Perhaps, this is partly due to the ICTVBs' corporate culture in Malaysia that they are very

reluctant to dilute their majority shareholding as they have put tremendous efforts and a huge amount of personal wealth into their venture business. This situation is quite detrimental to the developmental growth of the ICTVBs in the long-term.

Thirdly, their attitudes towards initial public offerings (IPO) as the method for acquiring liquidity for their venture businesses are apparently different. The VCIs preferred the IPO as it can increase their reputation as well as it can provide potentially huge capital gains. In contrast, the ICTVBs seemed not to be interested in an IPO, largely due to their corporate culture that if possible, they want to hold on to their majority shareholding of the venture business as long as they could. Finally, both VCIs and ICTVBs seemed to have quite a high expectation on the return on investment in the venture business, i.e. from 21% to 40%. Although it is natural for investors to expect high return on their investment, these rates are considered on the higher side in Malaysia because of its embedded structural deficiencies, e.g. the size of the domestic market is relatively small and thus far, there are not many breakthrough examples of successful home grown ICTVBs.

- d) The VCIs preferred both the contractual (i.e. legally defined) and non-contractual (i.e. based on trust and understanding) monitoring types, reflecting that they would like to have a hands-on approach in monitoring the venture business. In addition, the VCIs always require a board directorship in the venture business and periodical reporting by the ICTVBs. In contrast, the ICTVBs preferred the non-contractual (i.e. based on trust and understanding) monitoring type by the VCIs, suggesting that they would like for a hands-off approach. Although these differences are understandably natural, their management conflict at the post-investment stage and for risk management became pronounced due to these differences.

For a better way of maintaining their business relationship, both VCIs as principal and ICTVBs as agent have to improve their communication between them (especially for the VCIs) so that they are well informed, and thus they could reduce the monitoring time and cost accordingly. At the post-investment stage, for monitoring purposes by the VCIs, the full disclosure of strategic business information from the ICTVBs is very important as it helps them in making managerial decisions as well as realigning any opportunity and threat that their investment in the venture business encounters. In addition, the frequency, type, detail, etc. of this information from the ICTVBs to the VCIs will lead them to a higher level of trust, understanding and a more productive business relationship.

- e) The extent of occurrence of management conflict experienced between the VCIs and ICTVBs was on the higher side, i.e. 73% experienced “Often/Constantly and Sometimes” as compared to 27% of “Rarely or Never”. These facts suggest that for emerging venture capital and ICT industries like in Malaysia, the high occurrence of management conflict is expected and unavoidable due to reasons as discussed earlier. The management conflict could be much lower in the developed countries with established venture capital and ICT industries. This is a serious

matter in MSC, Malaysia and perhaps is largely due to the corporate culture of the ICTVBs that are too secretive and reluctant to disclose technical information, even to their financiers and business partners such as VCIs. In addition, the ICTVBs in the sample were mostly at their early stages, whereby it can be inferred that they are still in the process of establishing their managerial, production, market capabilities, etc.

### **5.3.2 Findings from the statistical analysis**

The following findings are from the statistical analysis conducted mainly to test the six hypotheses of this research. The results of each hypothesis show the specific differences in their ROMFs and also the specific ROMFs that could be useful for reducing their management conflict. The discussions of these findings are as follows.

- a) Generally, the statistical findings of this research indicated that the conceptual framework used is supported by the data. The results of the data analysis (Tables 4.3 to 4.8) did not support hypothesis H1 but supported hypotheses H2 to H6 (as discussed in Chapter 4). Basically, these findings demonstrated that VCIs and ICTVBs not only had differences in expertise but also recognized different managerial factors at the post-investment stage and for risk management in the venture capital process. Thus, these differences may be inferred as one source of the causes of management conflict experienced in their business relationship. The findings also showed that some of their ROMFs might be useful for reducing any management conflict experienced by them (as discussed in Chapter 4). However, because the conceptual framework of ROMFs and management conflict in venture capital financing has not been extensively applied, the findings of this explorative research may not be widely applicable.
- b) Hypothesis H1 was not supported by the data, and the results clearly indicate that at the pre-investment stage, the ROMFs of both VCIs and ICTVBs were not much different. At this stage, their interests seemed to be in alignment with each other, i.e. the desire to close the deal. To the VCIs, the venture businesses offered by the ICTVBs represented potentially profitable investments and also knowledge-sharing opportunities. As for the ICTVBs, the VCIs offered a means to gain additional capital both at that time and for their future expansion. However, this alignment was not necessarily the case at the post-investment stage and for risk management. Their ROMFs were found to be different (as indicated by the results that H2 and H3 were supported by the data), which may cause management conflict between them. In managing the venture business, each of them may have different preferences and emphasize different techniques or criteria that they think appropriate to their venture business. As a result, management conflict may arise and deter constructive business management between them.



- c) In general, all hypotheses H4, H5 and H6 were supported by the data and the results indicated that at every stage and for risk management there were inverse or negative relationships between their ROMFs and the management conflict experienced, suggesting some relation to the argument in a) above. Some of the examples of specific ROMFs that can be useful for reducing management conflict are as follows, active search by both VCIs and ICTVBs for a deal (for sources of deal origination), submission of periodical reports (for maintaining relationship), free-sharing of information (for factors of an ideal relationship), awareness of inexperience risks (for general risk management), etc.

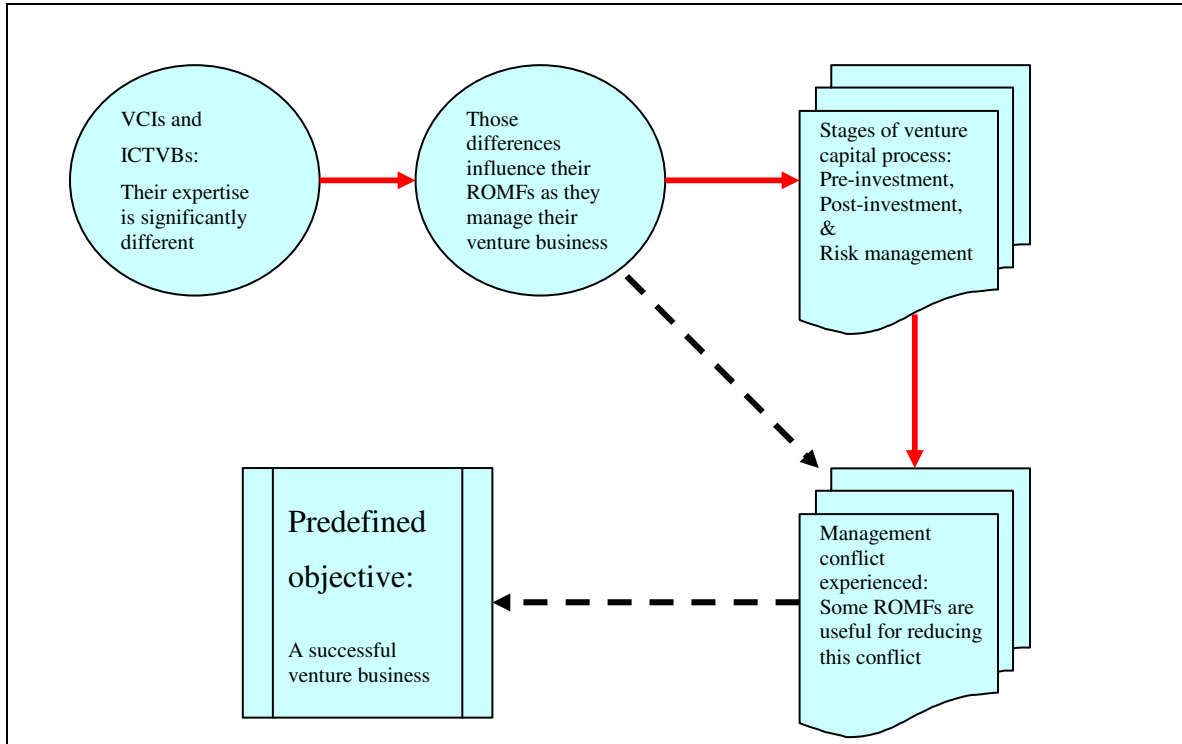
## **5.4 IMPLICATIONS OF THE FINDINGS**

Hopefully this research will make a valuable contribution both at the theoretical and practical levels, particularly regarding the business relationship between VCIs and ICTVBs across the full venture capital process. The discussions on the main theoretical and practical implications are as follows.

### **5.4.1 Theoretical implications**

There are two probable theoretical implications that can be derived from the findings of this research as follows:

- a) This research attempted to identify whether the independent variables (i.e. ROMFs of VCIs and ICTVBs) could be categorized as additional mechanisms for reducing management conflict in venture capital as a whole. This research has empirically established a theoretical link between ROMFs and management conflict in the venture capital process for ICTVBs in MSC. The results indicated that each of the three groups of independent variables (at the pre-investment stage, post-investment stage, and risk management) has its own merits in explaining the differences of their ROMFs, and the relationships of their ROMFs and management conflict experienced. However, there would be greater explanatory power if these groups were combined. The general interpretation here is that the association of the differences in ROMFs on management conflict is affected by the interaction of these three groups of independent variables.
- b) This research has also developed a framework for assessing the ROMFs on management conflict for successful venture businesses. According to the literature reviewed, the basic proxies for the occurrence of management conflict between the VCIs and ICTVBs are such as differences in expectations, motivations, commitments, dispersion of ownership structure, etc. However, this research proposes that the degree of differences in expertise between VCIs and ICTVBs and their ROMFs (as indicated by the results) is another basic proxy for the occurrence of management conflict in their business relationship. This framework (as illustrated in Figure 5.1) is felt practical and applicable for future research, especially for the ICT industry in developing countries.

Figure 5.1: Framework for assessing ROMFs and management conflict

Based on Figure 5.1 above, the strengths of the VCIs are found to be in the provision of capital, financial expertise and general business management, whereas the strengths of the ICTVBs are found in the technical knowledge and commitments to their venture businesses. Therefore, hypothetically these differences influenced their ROMFs at each stage and for risk management in the venture capital process and increased the problems of information asymmetries between them, which led to their management conflict in the business relationship.

#### 5.4.2 Practical implications

There are several managerial implications that can be drawn from the findings of this research. The discussions on these implications are as follows:

- a) In Malaysia, there seem to be very few people who really understand both technological and financial management of venture business. This is also quite true for other developing countries. Therefore, there is a need for further training of the VCIs who are good in financial and managerial matters to learn more on the technological matters. Reciprocally, the ICTVBs also need to learn more about financial and managerial matters of venture business. If both VCIs and ICTVBs could improve their expertise in these main aspects, they could have a better opportunity to gather their aggregate competency for the betterment of their venture businesses.

Perhaps, an improvement in the incubation system in MSC could provide the much needed avenue for both VCIs and ICTVBs to get acquainted with each other at the very beginning. Central to the role of this incubation system are the elements of technology commercialization and entrepreneurship. It also has to emphasize the engagement of network partnership linkages, e.g. technology networks, financial networks and market networks. Thus, this incubation system shall assume the role of facilitator in assisting the technological and financial outreach programs for access to both VCIs and ICTVBs to find resources they need, be it technology, capital, market, management, etc. This type of incubation system is well established in most developed countries such as Japan, the U.K., Finland and others. For instance, there are networks of incubation systems (e.g. “Innovation Plaza”) throughout seven advanced regions established by the Japan Science & Technology Corporation (JST) in Japan to help ICTVBs in nurturing and developing their business ideas into reality.

- b) Real and direct communication especially on the exchange of strategic information between the VCIs and ICTVBs seemed to be very important for reducing their management conflict. The management conflict between them seemed very strong at the early and growth stages of the ICTVBs’ development, e.g. conflict relating to size of R&D, production issues, size and strategies of marketing and failures of meeting performance targets (as indicated in the case studies). This is quite normal since most ICTVBs at their early stage are not yet fully established, e.g. managerial and production capabilities, products/services track records, etc. And the VCIs also lack their understanding and familiarity with these new ICTVBs. In other words, fledgling ICTVBs at their early stage have too many unknowns, from an inexperienced management team to a fragile customer base to an uncertain market for initial public offerings.

There was also no uniformity on the management conflict by the types of VCIs. For instance, because there was a lack of understanding and interactive communication between the government-related VCIs and the ICTVBs, they experienced management conflict constantly. The bank-related VCIs also require deeper communication with the ICTVBs to minimise their management conflict between them. As for the private independent VCIs, they are more concerned with the agency risks, which imply management conflict could take place even though the ICTVBs try to comply with the financial contract requirements. Perhaps, this is due to the fact that these private independent VCIs manage their own funds and their special expertise about venture businesses.

- c) The findings also showed the significant nexus between ROMFs and management conflict in managing venture business. Differences in expertise that influenced the differences in ROMFs are crucial because the performance of their venture business could be jeopardized if management conflict is not reduced. Moreover, the differences in their ROMFs at the pre-investment stage became more important at the post-investment stage and in risk management, suggesting that

for a constructive business relationship both VCIs and ICTVBs should reconcile their differences in ROMFs as early as the pre-investment stage.

In order to reduce management conflict between the VCIs and ICTVBs, they should reassess the impacts of their ROMFs on management conflict experienced by improving some of these ROMFs to facilitate reducing the management conflict (as discussed in Chapter 4). Among the important ROMFs indicated by the statistical analysis were the improvements in screening and due diligence, etc. (at the pre-investment stage), improvements in information exchange on strategic financial and technological matters, etc. (at the post-investment stage), and improvements in their attitudes towards agency and market risks (in risk management).

- d) The findings are also relevant in enhancing the Malaysian government's efforts in developing and improving the awareness about venture capital financing for the ICT industry in MSC. The findings from this research, which have implications for the practices of government-related VCIs can be used for guidance on improving existing inadequacies and can help achieve greater financial intermediation between VCIs and ICTVBs in MSC (as discussed in Appendix 'B'). For example, the improvement in their ROMFs for screening, due diligence, and evaluation at the pre-investment stage are important and could help them to reduce management conflict. The improvements in their ROMFs pertaining to the smooth exchanges of strategic business information between them at the post-investment and in risk management are also helpful to reduce their management conflict.

In addition, allocation of public funds to these VCIs has been steadily increasing, thus, achieving excellence in the management of these funds is very important because the success or failure of these ICTVBs can significantly affect government investments. In Malaysia, these VCIs are indirectly assigned a leading and instrumental role in the development of ICT entrepreneurship in MSC.

However, keeping in mind that both venture capital and ICT industries are just emerging and that the ICTVBs' talent pools in Malaysia are limited, there is a need to make better use of the international expertise (as discussed in Appendix 'A'). For instance, foreign VCIs (e.g. from Singapore, Taiwan, Japan, etc.) should be encouraged to invest in Malaysian ICTVBs because at this stage, the industry is dominated by local VCIs that are mostly ex-corporate officials and ex-bankers working with financial institutions. These foreign VCIs will not only bring additional funds but also their expertise and experiences as well as their capability of diversifying the risks in investing in the ICTVBs. As for the ICTVBs, the need to increase their talent pools will require continuous input in increasing both the overall level of technological knowledge and R&D capabilities that can be learned from the multinational companies operating in MSC.

- e) From the methodological point of view, the statistical results suggest that variables used to evaluate the ROMFs and management conflict must be comprehensive. The independent variables at pre-investment and post-investment stages of the venture capital process should be selected with appropriate sub-variables that can probably provide better information on the impact of the ROMFs on management conflict. This observation is particularly relevant for ICT industry, which has its own peculiarities and is labeled as a risky investment environment.

## **5.5 LIMITATIONS OF THE RESEARCH**

The following are some limitations that this research faced, largely on the data collection. The discussions are as follows.

- a) Sample limitations -- The first limitation was related to the number of VCIs and ICTVBs that could be selected for the study. The number of VCIs was originally not large, which is in tandem with emerging nature of the industry in Malaysia. In addition, the number of ICTVBs that are actually involved with venture capital financing was not large either in comparison to the total ICTVBs operating in MSC. These constraints caused the small sample size that in turn could have affected the variance of the variables. As noted earlier, majority of the ICTVBs in the sample are at their early stage and several of them are at the growth stage. Thus, an in-depth study on the relationship between management conflict and the success or failure of the ICTVBs could not be fully undertaken, among others.
- b) Statistical limitations -- Due to the constraint of sample size, statistical limitations are unavoidable. A much bigger sample size might be desirable to ensure higher validity and generalization of the results. This research was also unable to search for or formulate comprehensive variables because the conceptual model on ROMFs and management conflict in venture capital financing has not been extensively validated by empirical measurement. In this research, nevertheless, necessary measures were taken to ensure that all requirements of the statistical analysis were met and that the results were also interpreted cautiously.
- c) Information limitations -- Another limitation of this research was the use of surveys, which did not permit the researcher to clarify ambiguities faced by the respondents in completing the questionnaire. Some of the respondents contacted the researcher to seek clarification on some items in the questionnaire. In addition, this research was unable to secure confidential information (e.g. the financial contract documents, etc.) from the respondents due to the existence of non-disclosure agreements (NDA) between VCIs and ICTVBs. Although the use of both survey questionnaires and direct interviews with selected respondents would enable the researcher to gather useful data and information, which is crucial in social science research, it was found that due to confidentiality, the comprehensiveness of the data and information is still quite limited.

## 5.6 SUGGESTIONS FOR FUTURE RESEARCH

Empirical research on the subject of this research is very limited, and such findings (i.e. particularly the statistical results) presented in this Thesis may not be permanent in nature. It is felt that these findings are not sufficient to provide definitive answers, and more research will be needed to provide clear direction and further knowledge on the subject. Based on several limitations of this research as explained above, future research should also consider the following aspects.

- a) It is contended from the findings of this research that management conflict is a serious matter in venture capital financing. Both VCIs and ICTVBs have to find ways and means to reduce this conflict because it could affect their business relationship in the venture business. The literature reviewed suggests that this conflict does exist in venture capital financing in the developed countries but it is more pronounced in the developing countries (as indicated by this research) with less established venture capital and ICT industries. Therefore, future research should study the relationship between this conflict and the actual success or failure of venture businesses. This is quite pertinent for ICT industry due to its peculiarities and risky nature. Although to gather relevant data and information could be quite difficult (e.g. to solicit information from the VCIs and ICTVBs who are willing to admit their failure, to choose what criteria to use for the classification of success and failure in venture business, etc), this could be interesting in pursuing a better understanding of this conflict in venture capital financing.
- b) It is also contended from the findings of this research that the extent of management conflict occurrence between the VCIs and ICTVBs seemed to correspond with the stages of ICTVBs' development. For example, ICTVBs at the early stage encountered strong conflict due to reasons that have been discussed earlier. For ICTVBs at the growth stage, they experienced this conflict to a weaker degree. In other words, these facts suggest that the less successful ICTVBs (i.e. at the early stage) have a lot of conflict with the VCIs but quite successful ICTVBs (i.e. at the growth stage) have lesser conflict with the VCIs. Therefore, future research should study in detail this conflict vis-à-vis the status of the ICTVBs' growth because the business relationship between the VCIs and ICTVBs could be different accordingly.
- c) It is also contended that different types of VCIs (i.e. the government-related, bank-related and privately independent VCIs) seemed to behave differently in managing their investment in ICTVBs. Perhaps, this is largely due to differences in their sources of funds, experiences and expectations. In addition, the government-related and bank-related VCIs constitute the main players in the venture capital industries in most of the developing countries. This is quite different from the developed countries where the privately independent VCIs' roles are substantial. Therefore, future research should study in greater depth this

aspect as it can further enrich the knowledge of venture capital financing in general and for ICTVBs in particular.

- d) In Malaysia, the venture capital industry is dominated by local VCIs with limited expertise and experiences. In order to have vibrant venture capital financing in MSC, Malaysia, established VCIs from the neighbouring countries such as Singapore, Taiwan, Japan and Hong Kong should be encouraged to invest in the Malaysian ICTVBs. As discussed earlier, these foreign VCIs could bring additional funds, expertise and experiences to the Malaysian venture capital industry. Thus, future research could study the performance of venture businesses that receive financing from the local VCIs against the foreign VCIs because this could further enrich the knowledge on the implication of international financing, among others.
- e) It is also suggested that future research should identify the similarities and/or differences in the relationship between ROMFs and management conflict of ICT versus non-ICT industries. In addition, the use of a bigger cross-sectional sample between industries could improve generalization and statistical validity. Additional knowledge from this perspective will facilitate the formulation of guidelines for managing successful venture businesses involving venture capital financing.
- f) The model on venture capital has been developed with the perspectives of developed countries. It was recognized from this research that approaching the complexity of venture business management only from the experiences of developed countries with established venture capital and ICT industries might not reflect the total picture of venture capital financing. Therefore, it is proposed that more research in developing countries will add more knowledge and provide a clearer perspective to evaluate venture capital financing for venture businesses.
- g) From the methodology point of view, it is suggested that a number of methods be used to study the ROMFs and management conflict, such as, direct interviews with specific dyad relationships between VCIs and ICTVBs. In addition, future research should benefit from more complete availability and comprehensive information. These different sources of information can provide more valid data on this subject. Future research should also look into a broader selection of independent and dependent variables to cover, such as other main elements of managerial factors and management conflict in venture capital financing.

## 5.7 CONCLUSIONS

In conclusion, this research contributes to the substance of knowledge about venture capital financing in general and the implications of ROMFs on management conflict between VCIs and ICTVBs in particular. Relevant hypotheses have been proposed and tested. Probably, among the most important general conclusions that may be derived from the findings of this research can be briefly summarized as follows:

- a) The roles of VCIs as principal and of ICTVBs as agent are found to be clearly demarcated, with the VCIs providing financial and managerial commitments and the ICTVBs providing technological knowledge and commitments. Their expertise is also clearly distinguishable, with the skill sets of each being almost separated, i.e. the VCIs are so-called expert on financial and managerial matters and the ICTVBs on the technological matters. Thus, these differences increase the acuteness of information asymmetries between them that may contribute to the management conflict.
- b) Theoretically, VCIs and ICTVBs should not be having management conflict in managing their venture businesses because they could have agreed upon the terms and conditions in their financial contracts. However, in reality, due to their differences in expertise and ROMFs (as proposed in this research), they may have management conflict.
- c) Differences in their ROMFs at the pre-investment stage become more pronounced at the post-investment stage and for risk management. This fact suggests that in order for both VCIs and ICTVBs to reduce their management conflict in the venture business, it is important to reconcile their differences in ROMFs as early as at the pre-investment stage, and then continue to improve them at the post-investment stage and in risk management. In addition, selecting the right business partners upfront seems to have been crucial for both VCIs and ICTVBs.
- d) Improvements in some of their ROMFs are useful for reducing management conflict between them. For example, their ROMFs in screening, due diligence and evaluation at the pre-investment stage; in exchanging strategic business information at the post-investment stage; and in the need for a balanced attitude towards market and agency risks in risk management are found to be useful for reducing this conflict.
- e) The exchange of strategic business information through interactive communication between the VCIs and ICTVBs constituted central importance at the post-investment stage and risk management, particularly for monitoring purposes by the VCIs as principal. This matter seemed to be among the most important challenges of venture business management in the emerging venture capital and ICT industries in Malaysia and, perhaps, other developing countries too.

In general, the findings of this research indicate that VCIs and ICTVBs have differences in their expertise and managerial stances, but improvement in information exchange on technological, financial and business strategies, among others, will reduce management conflict between them. Hence, this confirms that improving expertise and ROMFs on management conflict between VCIs and ICTVBs for successful venture businesses is a useful undertaking. In other words, seeking to make a constructive business relationship between the VCIs and ICTVBs operating with incomplete information, among others, in risky environments of the emerging venture capital and ICT industries is indeed a theoretical and practical goal.



## **APPENDIX 'A'**

### **A SITUATIONAL ANALYSIS OF MALAYSIA'S VENTURE CAPITAL INDUSTRY<sup>1</sup>**

#### **1. INTRODUCTION**

This appendix provides a brief overview on venture capital industries in Malaysia, the U.S., Japan, Taiwan, and Singapore. While venture capital industry is firmly developed in the U.S., many other countries have experienced considerably difficulty trying to develop a vibrant industry. This is particularly true for developing countries that have differences in their institutional environments. Thus, a situational analysis is made in the context of the general characteristics of the industries in these countries to look into the similarities and differences between Malaysia and these countries. In particular, the potential effects of institutional differences upon the development of venture capital financing in the Multimedia Super Corridor (MSC) can also be looked into. This appendix is organized as follows. Section 2 reviews the general characteristics of venture capital industries in Malaysia and the selected countries. Then, a comparison between those characteristics against Malaysia is made. Section 3 discusses several differences that could possibly affect a vibrant industry in Malaysia. Section 4 discusses several indirect supportive roles by the government for this industry. Finally, Section 5 summarizes this appendix.

#### **2. VENTURE CAPITAL INDUSTRY IN SELECTED COUNTRIES<sup>2</sup>**

##### **2.1 Overview of the industry**

On global level, this industry is experiencing considerable growth over the recent past. Spreading from the U.S., this industry has become a critical factor in financing ICTVBs. However, recent cross-country studies advocate that the development of this industry in each country is different due to factors such as the national, economic, political and social environments. Specifically, the heterogeneity of each country in terms of their stage of economic development, institutional systems, and business environments fundamentally affect the development of their venture capital industries (Aylward, 1998; Kenny, Han and Tanaka, 2002; Mani and Bartzokas, 2002; Lockett and Wright, 2002).<sup>3</sup>

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<sup>1</sup> Part of the paper entitled 'Venture capital financing in a technology park: A case study of the Multimedia Super Corridor (MSC), Malaysia' presented by the researcher at the international workshop jointly organized by the Waseda University-MMU on March 3, 2004 at the Malaysia Multimedia University (MMU), Cyberjaya, Malaysia. It was published in the Journal of International Business and Entrepreneurship (JIBE), (July 2004, Vol. 10, No. 2, pp. 37 – 70).

<sup>2</sup> There are several reasons for selecting these countries. Firstly, the U.S. is selected due to its pioneering role and has a successful vibrant venture capital industry. Secondly, Japan is chosen due to its status as the Asia's top industrialized country. Thirdly, Taiwan and Singapore are selected due to their rapid development of venture capital industries in Asia. Finally, Malaysia is the case study of this Appendix. However, some comparisons for specific context are also made with other countries accordingly.

<sup>3</sup> For instance, in their study on the development of venture capital industry in the East Asian nations, Kenny, Han, and Tanaka (2002, p. 2) contend that the diversity of these nations "in terms of their national

This is reflected in the uneven development of venture capital industries across the world. For instance, in terms of size, Table A shows the uneven spread of total venture capital funds under management in the selected countries and Malaysia. Table B shows the uneven investment breakdown for the year of 2002 in these countries. Clearly, both of these tables indicate the distinct differences, with the largest and most active are those in the U.S. and followed by Japan, Singapore, Taiwan, and Malaysia.

Table A: Selected national venture capital pools 1992 – 2002 (US\$ Million)

Country/Year	1992	1993	1994	1995	1996	1997
United States	30,557	31,894	34,841	38,465	46,207	59,615
Japan	16,028	17,750	17,750*	14,851	11,254	7,722
Taiwan	470	508	562	696	1,336	1,913
Singapore	896	1,013	1,833	3,164	3,981	4,468
Malaysia	147	160	194	437	448	406

Country/Year	1998	1999	2000	2001	2002
United States	84,180	145,196	233,666	233,666**	251,400
Japan	12,513	21,729	21,138	21,515	22,300
Taiwan	3,598	4,447	5,852	6,261	6,400
Singapore	5,258	7,791	9,286	9,754	10,200
Malaysia	460	667	587	811	836

Note: \* 1993 figures; 1994 figures are not available. \*\* 2000 figures; 2001 figures are not available.

Source: National Science Board – Science and Engineering Indicators 2002; 2002 PricewaterhouseCoopers/Venture Economics/NVCA US Money Tree Survey; and AVCJ – The 2004 Guide to Venture Capital in Asia.

Table B: Investment breakdown by country from 1<sup>st</sup>. January to 31<sup>st</sup>. December 2002

ITEM/COUNTRY	U.S.	Japan	Taiwan	Singapore	Malaysia
Amount Invested (US\$ million)	21,179.01	2,067.24	154.75	189.03	21.18
Number of Deals (disclosed)	3,011	44 (3)	9 (9)	19 (15)	11 (7)
Number of Investees	3,011	44	9	19	10

Source: 2002 PricewaterhouseCoopers/Venture Economics/ NVCA US Money Tree Survey; AVCJ (January 2003).

In terms of sources of funds for the venture capital industry, traditionally pension funds, endowments, and private individuals form the main sources in the U.S. In contrast, corporations, banks and insurance companies are the main sources in Japan and Taiwan. In Malaysia and Singapore, funds from government agencies are the main sources followed by corporations, and banks and insurance companies. In terms of the distribution of investments stage-wise for venture capital industries of these countries, more than 50% usually went to the expansion stage (which includes mezzanine, buy-out and turn-around) and followed by the start-up stage. For the seed stage, only small fractions (i.e. less than 10%) of investments are made.

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systems of innovation, levels of entrepreneurship, political economic development, varying labor practices, corporate ownership regulations, educational achievement, and business cultures means that each country and its venture capital industry has a different evolutionary trajectory”.

## 2.2 Comparison of characteristics of the industry

A situational analysis is made to highlight the general characteristics of this industry in the selected countries and compares them with that of Malaysia. The estimation of which countries have developed a successful vibrant venture capital industry is still open to debate, but this will show a reasonable benchmark of this industry in Malaysia. For this purpose, the following dimensions are considered: a) the financial system, b) the primary locus of industrial innovation, c) the history of the industry, d) the operational characteristics of the industry, and e) the technological and business environments. Table C following summarizes the general characteristics of venture capital industries of selected countries.

Table C: General characteristics of venture capital industries in the U.S., Japan, Taiwan, Singapore, and Malaysia.

DIMENSIONS	U.S.	JAPAN	TAIWAN	SINGAPORE	MALAYSIA
<b>a. Financial system.</b>	Market-based/ separation of commercial & investment banking.	Bank-based (with keiretsu ties)/separation of commercial & investment banking.	Bank-based/separation of commercial & investment banking.	Bank-based/separation of commercial and investment banking.	Bank-based/separation of commercial and investment banking; Islamic banking.
<b>b. Primary locus of industrial innovation.</b>	Research Universities & Companies.	Companies.	Companies.	Companies & Government agencies.	Companies & Government agencies.
<b>c. History of the VC industry:</b>					
First public effort to foster enterprise creation.	1958: Small Business Inv. Act.	1963: Small Business Inv. Companies.	1973: Industrial Research & Technology Institute (ITRI).	1998: Kent Ridge Digital Laboratories (KRDL) – a technical research institution for creating entrepreneurs.	1996: SMIDEC is established – planning & overall coordination of SMEs.
First venture capital organization involving not-for profit institutions.	1946: American Research & Development Corporation.	1975: Center for Promotion of R&D Intensive Businesses.		1985: EDB Venture Capital Fund – an initial effort by the government.	1992: Malaysian Technology Development Corporation (MTDC).
First private venture capital firm.	1958: Draper, Gaither, Anderson.	1973: Japan Associated Finance Co. (JAFCO).	1984: Multiventure Investment Inc. (i.e. Acer subsidiary).	1983: South East Asia Venture Investment (SEAVI).	1984: Malaysian Ventures Sdn. Bhd.
Dates of important legal changes/public policy measures.	1979: Change of ERISA's prudent man rule – pension funds could invest in venture capital.	1994: reinterpretation of Anti-Monopoly laws – private equity firms can hold majority stakes. 1995: Loss-making firms can list on OTC. 1997: private firms can effectively issue stock options. 1997: change pension funds law – pension funds can invest in venture capital.	1983: Tax incentives Statute encouraging individuals to invest in venture capital firms. 1991: The above Statute is revised to allow corporate investors the same 20% tax reduction investing in venture capital firms.	1999: Technopreneurship Program is launched to encourage high- technology entrepreneurship. 1999: Technopreneurship Investment Fund (TIF) with US\$1.0 billion to invest in venture capital funds. 1999: Revisions in bankruptcy laws, employer stock option plans and tax system to	1996: MSC is established; 1999: MSC Ventures – about US\$110 million funds for high- technology investments. 2001: MAVCAP - US\$131million of funds for ICT investments. 2002: Malaysia Debt Ventures Bhd. (MDV)- with a US\$420 million loan from Japanese government, it offers project debt financing for ICT/high growth

<p><b>d. Operational characteristics of VC industry:</b> Creation of public equity market dedicated to high-growth enterprises.</p>	1971: NASDAQ.	1963: OTC; 1999: MOTHERS (Market for High Growth and Emerging Stocks). 2000: NASDAQ (a joint venture between Osaka Stock Exchange & Softbank Corp).	1988: the TSE created a third category of listings with more lenient requirements.	encourage venture capital investing.  1996: SESDAQ.	sectors. 2003: Cradle Investment Program - (a RM100 million pre-seed fund).  1997: MESDAQ.
Structure of venture capital funds.	Limited partnership (LP) with specific duration (normally 10 years).	Captive open-ended funds (i.e. funds provided by corporate parent firms – banks, securities firms & insurance companies).	Open-ended funds (i.e. venture capital funds are evergreen and need never liquidate their investment).	Limited partnership with specific duration.	Limited partnership with specific duration.
Sources of venture capital funds.	Endowments, pension funds, and wealthy individuals.	Corporations, banks and insurance companies.	Corporations and private individuals.	Corporations, government, and banks & insurance companies.	Government, corporation, banks & insurance companies.
Form of investment.	Mixed but usually prefer Equity.	Mixed but usually prefer Loans.	Mixed but usually prefer Equity.	Mixed but usually prefer Equity.	Mixed but usually prefer Equity.
Investment focus.	ICT, biotechnology and medicine/health.	Manufacturing, retail and ICT.	Electronics and ICT.	ICT and medical.	Traditionally in manufacturing but lately in ICT.
Stage of investment.	All stages but Seed and Early stage are substantial.	Usually later stage (Pre-IPO).	Start-up & Expansion stage.	Start-up & Expansion stage.	Majority in later stage but lately in seed and early stages.
Investment duration.	Average 5 years.	Average over 5 years.	Average 5 years.	Average 5 years.	Average over 5 years.
Hands-on/hands-off preference.	Hands-on.	Hands-off.	Hands-on.	Hands-on.	Hands-on.
Current state.	‘Developed’	‘Under Performer’	‘Silicon Valley-like’	‘Silicon Valley-like’	‘Under Performer’
Main drivers.	Market-driven system.	Bank-driven system and large SME sector.	Entrepreneurial in electronics, PC and semiconductor; Linkages with U.S. Silicon Valley; Supportive government; and National emphasis on education.	Government-driven (as part of wider strategy to stimulate change towards an entrepreneurial, innovation-based strategy); Venture capital exporter; Linkages with U.S. Silicon Valley.	Government-driven and funded; Linkages with U. S. Silicon Valley.
<b>e. Technological/Business environments.</b>	Technology-intensive; Low regulation density; High entrepreneurial and technological R&D capacity; Developed independent venture capitalists; High commercialization of technologies & inventions; and High	Technology-intensive; High regulation density; High technological R&D capacity; High risk averse character of financier; Limited number of independent venture capitalist; Quite low	High regulation density (e.g. banks only 5% of the total capital in a single fund; insurance companies own 25% of anyone fund's total capitalization; pension funds are forbidden from investing in venture capital); Many	High regulation density (but revisions were made to encourage entrepreneurship and venture capital investing); High technological R&D capacity (in hard disk drives & semiconductor	High regulation density; Low technological R&D capacity; Less developed independent venture capitalists (dominated by local); Low deals flow.

	deals flow.	deals flow.	independent venture capitalists; Quite high deals flow.	foundry); Limited number of private venture capitalists (but generally are experienced); Low local deals flow.	
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Source: Abbot and Hay (1995); Kuemmerle (2001); Mani and Bartzokas (2002); Kenny, Han and Tanaka (2002); Harding (2002); and Venture Capital Financing in Malaysia (VCFM) Survey 2003 conducted by the researcher.

## 2.3 Similarities and differences

Based on Table C above, the U.S. has the complete and right kind of characteristics for a vibrant venture capital industry. Its market-driven system, excellent technological and business environments, and low-regulation density for the industry (particularly by allowing pension funds and endowments to invest in venture capital funds) are seen to be the important factors for a developed industry. In contrast, although Japan has started quite early and has the second largest pool of venture funds in the world, paradoxically its industry is still labeled as ‘Under Performer’. Among the main reasons that may contribute to this below-expectation performance are its bank-driven system with high-risk averse character, high-regulation density, captive open-ended funds, and preference of hands-off style in managing venture businesses (Kenny, Han and Tanaka, 2002).

As for Taiwan and Singapore, their industry sizes are much smaller than those of the U.S. and Japan. Nevertheless, their industries are rapidly developing into ‘Silicon Valley-like’. Reasons that could possibly contribute to this good performance are, for example, the linkages with the U.S. Silicon Valley, supportive governments, and quite developed independent venture capitalists. One peculiar characteristic of the Taiwan industry is its structure of venture capital funds, i.e. evergreen open-ended funds with no specific duration. The Singapore case presents a successful role of its government in supporting a vibrant venture capital industry (i.e. similar to the Israel case). Besides a huge sum of money allocated by the government (i.e. US\$1.0 billion), the industry is further promoted with revisions of laws and regulations to facilitate a vibrant venture capital industry.

## 3. MALAYSIA’S CASE

In Malaysia, the industry size is the smallest among these selected countries (as shown in Table A). Generally, the industry has several common attributes like others for a vibrant industry. However, the industry’s current state is just emerging with little evidence of success and is also labeled as ‘Under Performer’ like Japan. Of the many possible differences that might have contributed to this below-expectation performance, this appendix highlights the following.

Firstly, is the minimal presence of private equity funds for ICTVBs’ financing, which could be inferred as less-developed independent venture capitalists. This situation is different from the cases of the U.S. and Taiwan. In Malaysia, the source of funds for the industry has always been the government, e.g. 45% and 41% in 1999 and 2000

respectively, compared to corporations of about 30% and private individuals of less than 2%. According to the industry sources, besides initiating and funding many VCIs, the government also provides various grant schemes for ICTVBs (as discussed in Appendix 'B'). Thus, inevitably these actions by the government have unintentionally discouraged private equity funds as well as the development of private equity financing. Private independent venture capitalists and business angels are also too selective in their investments. For instance, Boocock and Ismail (1997, p. 7) state that business angels in Malaysia only involved "the tightly-knit Chinese and Bumiputera communities". Besides financial deregulation, there is a need of more outsourcing and co-management of the government venture funds, encourage Islamic-based venture capital financing, promote key high growth industries, among others, in order to develop private equity financing.

Secondly, is the minimal early-stage financing for ICTVBs. Traditionally, venture capital financing for early-stage investments in Asia is low (i.e. between 2% to 8% of the total yearly investments), and this is different from the U.S. whereby the amount of investment is quite substantial (i.e. about 20% of the total yearly investments).<sup>4</sup> In Malaysia, this aspect is important because the majority of the ICTVBs are in their early stage of development, approximately 70% to 80% (Nazrin, 2003). For instance, the ICTVBs operating in MSC are quite young with 80% of them being incorporated for less than ten years (VCFM Survey, 2003).<sup>5</sup> The VCIs are also selective in their investments in the ICTVBs. According to the same survey, 72% of the VCIs prefer medium-risk type of venture businesses and this is not compatible with the high-risk type of ICTVBs. Since the industry is still developing, factors such as VCIs' focus on building a profitable track record, lack of time and fundamental expertise to nurture ICTVBs, and the need to balance between resources and returns might be the reasons why early-stage financing is minimal. Thus, if this aspect is not overcome, most likely these young ICTVBs will not survive due to the lack of actual financing from these VCIs. Although there are various grant schemes, the market-driven application criteria and the difficulty in obtaining information about these schemes, may still lead to low early-stage financing of ICTVBs in the near term (as discussed in Appendix 'B').

Finally, the technological and business environments are different in Malaysia. According to Kuemmerle (2001, p. 258), the characteristics of a country's venture capital industry are closely linked to the characteristics of a country's sources of technological invention. This is practically true for Malaysia and other developing countries. The technological R&D capacity in Malaysia is comparatively lower than other selected countries. For instance in 1999, based on the leading indicators of technological competitiveness, Malaysia scores fairly well for national orientation (69.5) and socioeconomic infrastructure (58.9) but falls short for technological infrastructure (31.9) and productive capacity (44.1). In contrast, Taiwan scores much better than Malaysia with national orientation (90.7), socioeconomic infrastructure (74.2), technological

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<sup>4</sup> However, lately this trend is changing though. For instance, investments in seed and start-up stages in 2000 have increase drastically throughout Asia: Japan (19%); Taiwan (33%); Singapore (30%); and Malaysia (30%) [AVCJ: The 2002 Guide to venture Capital in Asia].

<sup>5</sup> VCFM Survey 2003 is the survey of venture capital financing in Malaysia conducted by the researcher for this research.

infrastructure (43.6), and productive capacity (53.7).<sup>6</sup> In terms of the density of venture capital professionals against the total labor force, the Malaysian industry has limited numbers compared to other countries. For instance in 1999, the total number and density index per 10,000 labor forces of these professionals in Malaysia is 78 (0.084) compared to 1,711 (0.252) in Japan and 453 (2.331) in Singapore (Mani and Bartzokas, 2002).

In the U. S., there are 9,190 venture capital professionals as at the end of year 2002. According to the VCFM Survey (2003), the VCIs in MSC are young with seven or fewer venture capital executives. Therefore, it is a vicious circle indeed, i.e. with a lower technological R&D capacity and limited experience (which is reflected in the limited number of venture capital professionals) that will in turn lower the number of deals flow in venture capital industry in Malaysia. In addition, the business practices in Malaysia are quite similar to other Asian countries but differ from that of the U.S.<sup>7</sup> For instance, usually ICTVBs are found to be quite reluctant to dilute ownership and to disclose important information when seeking external financing. These business practices are not compatible to the VCIs' practices of hands-on involvement because their investments in these high-risk ICTVBs are at stake.<sup>8</sup> Therefore, these technological and business environments have to be improved for a vibrant venture capital financing in Malaysia.

#### **4. INDIRECT SUPPORTIVE ROLE OF GOVERNMENT FOR VENTURE CAPITAL INDUSTRY**

Generally, by encouraging entrepreneurship, the government is principally creating a more dynamic economy, which would essentially lead to an increase in private equity financing. As discussed above, this industry in Malaysia is relatively new and labeled as 'Under Performer' at this stage. Thus, improving financial intermediation between ICTVBs and VCIs is needed, and the creation of a financial environment in which both of them can thrive is critical, especially in MSC.

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<sup>6</sup> According to the National Science Board, these indicators are sourced from Alan L. Porter, J. David Roessner, Nils Newman, and Xiao-Yin Jin, 2000, "Indicators of Technology-Based Competitiveness of Nations, Summary Report". Explanation of the indicators are as follows: National Orientation (NO) provides evidence that a nation is taking directed action to achieve technological competitiveness; Socioeconomic Infrastructure (SI) assesses the social and economic institutions that support and maintain the physical, human, organizational, and economic resources essential to the functioning of a modern, technology-based industrial nation; Technological Infrastructure (TI) assesses the institutions and resources that contribute to a nation's capacity to develop, produce, and market new technology; and Productive Capacity (PC) assesses the physical and human resources devoted to manufacturing products and efficiency with which those resources are employed.

<sup>7</sup> Kenny, Han and Tanaka (2002, p. 14) contend that the Asian private equity is less-developed because of the unwillingness of the owners of firms to sell control over existing firms, e.g. the cases of Japan and Korea where the *keiretsu* and *chaebol* ties are still strong.

<sup>8</sup> For example, JBIC (2001, pp. 39 – 44) found that there are four factors on the part of these venture businesses that contributed to the difficulty in obtaining financing as follows: i) reluctant in disclosure of information; ii) inadequate physical collateral for new loans; iii) fragile foundations in human, technological resources, and business strategies; and iv) fragility in managerial resources (e.g. capabilities of managers and making use of trade associations and industry information).

At this stage, the government has been directly involved by allocating substantial amount of funds (RM998 million from 1996 to 2005) and initiating many VCIs. For a successful operation, it is felt that this industry needs the government's indirect involvement through its institutional, supportive role. The literature reviewed suggests that government policies can affect the growth of this industry in an economy (Lerner, 1999; Jeng and Wells, 2000).<sup>9</sup> In this respect, government's indirect supportive role in the following aspects is discussed accordingly.

Firstly, the new economy needs a knowledge-based entrepreneurs and the risk-taking kind of venture capital financing. Very large pools of local talent and management are required so that there will be a situation of significant inflows of innovative ideas and venture business deals. Increasing the supply of a knowledge-based entrepreneurs and awareness about this industry will also lead to a more vibrant ICT entrepreneurship in MSC. Variations in entrepreneurial activities, VCIs' investment skills, and networks of professional business-support intermediaries are crucial for an effective venture capital industry (Harding, 2000; Harrison and Mason, 2000).<sup>10</sup>

Secondly, tax incentives for VCIs' and deregulation in the financial sector need to be improved.<sup>11</sup> Tax policies (especially capital gains taxes) have substantial impact on the supply of venture capital and ability of ICTVBs to finance new businesses (Carleton, 1986; Libecup, 1986). Although flexible incentives were already given to VCIs, further deregulation in the financial sector may be needed.<sup>12</sup> Table D following shows the expectations by VCIs and ICTVBs on what government could do to encourage faster growth of private sector financing, particularly for venture capital.

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<sup>9</sup> For example, according to Kenney, Han, and Tanaka (2002), in every nation government has played some role in the development of venture capital because it is a very sensitive institutional form, due to the high-risk nature of investments involved.

<sup>10</sup> For instance, according to Harding (2000), there are three key features for the U.K. government in the development of regional venture policy: i) a program of mentoring and investor readiness training to stimulate effective demand for venture capital, ii) a program of venture capital guarantee schemes to share or spread risks on riskier investments, and iii) the supply of greater information in the venture capital market.

<sup>11</sup> According to International Finance Group (1986), tax incentives specific to venture capital are as follows: i) up-front incentives (e.g. rebates, tax credits, deductions from taxes or taxable income) of amounts invested in venture capital institutions; ii) incentives to the venture capital institutions (e.g. tax reliefs, exemptions from corporate tax for a predetermined tenure) on income received from investee companies; and iii) post-investment incentives (e.g. tax breaks or exemptions for investors on income received from investment in a venture capital institution) [c.f. Sagari and Guidotti, 1992. pp. 33–34].

<sup>12</sup> For example, full tax exemption on income received for 10 years or according to the tenor of the funds, whichever the earlier; expansion of definition on early stage financing to include the growth and pre-IPO stages; expansion of definition of venture capital companies to include corporation and joint-venture schemes or funds that invest in venture capital companies; and tax exemption to apply to three layers, that is, the company, institutional shareholders, and individual shareholders.



Table D: Expectations of VCIs and ICTVBs to encourage growth of private sector financing.

1.	Promote early stage financing.
2.	Financial deregulation (e.g. insurance companies, pension funds, PDS instruments, revamp incubation concept).
3.	Attract professionals, entrepreneurship & VC financing education, and VC experts & technologists.
4.	Provide larger funds, pooling funds from abroad, regional or cross-border deals, access to long-term capital.
5.	Private sector participation, outsourcing & co-managed funds, master-plan formulation, represented in government advisory boards.
6.	Further tax incentives (broader to include all stages of development & all individuals/companies investment in venture capital).
7.	Improve infrastructures and linkages.
8.	Better supervision (preferably by Securities Commission).
9.	Encourage Islamic-based venture capital financing.
10.	Promote key high growth industries.

Source: Survey on Venture Capital Financing in Malaysia conducted in March - April 2003.

The VCIs and ICTVBs expect government to lift present restrictions on investing in private equity by insurance companies and pension funds so that these institutions can allocate more funds to VCIs. They also expect to be able to use other instruments (e.g. private debt securities) without approval of the Securities Commission. Better supervision is also needed so that investors' confidence (e.g. long-term and institutional investors) will be secured.<sup>13</sup> In addition, early-stage financing should also be promoted. As for encouraging private-sector financing to flourish, more co-managed venture capital funds between them and the public sector should be established and directed towards early-stage financing. The encouragement of more foreign VCIs to invest in Malaysia will expedite transfer of technology and expertise, increase inflows of funds, and diversification of risks.

Thirdly, measures pertaining to acquiring liquidity (i.e. sale of investment) for VCIs' investments need to be improved. The availability of channels for acquiring liquidity is a critical factor affecting the development of this industry as experienced in the developed countries. Black and Gilson (1998) contend that the growth of venture capital depends fundamentally on a vibrant public market that acts as an important means for new firms to raise capital and creates exit mechanisms for investors. The Malaysian Exchange of Securities Dealing and Automated Quotation Bhd. (MESDAQ) created in 1997, is an "over-the-counter" market specifically meant to cater to ICTVBs. However, MESDAQ failed to reach critical mass with only 20 venture businesses listed on it (against the original expectation of 100 venture businesses) due to the minimal presence of retail investors and foreign funds.<sup>14</sup> The rules for MESDAQ should be ensured to remain flexible (but not to affect investors' confidence and liquidity) to provide one of

<sup>13</sup> According to Ministry of Finance, Malaysia, currently there is no one-stop agency that supervises venture capital *per se* except that venture capital companies must register and submit annual reports to the central bank, Bank Negara Malaysia (BNM).

<sup>14</sup> This scenario is changing though because on March 18, 2002, MESDAQ merged with Kuala Lumpur Stock Exchange (KLSE). With KLSE's stronger international profile, it is hoped that MESDAQ will be able to address fierce competition coming from similar markets such as in Singapore and Hong Kong. For the near future, MESDAQ is expected to have a total of 50 listed companies, comprising of 20 listed and 30 waiting for approval for listing (as of June 27, 2003).

the crucial channels for raising capital for homegrown ICTVBs. Other liquidity-facilitating provisions (e.g. convertible loans, equity backed by put options and etc.) should also be encouraged in order to facilitate growth of venture capital.

Finally, enforcement of agreements and protection of technology should be assured to attract foreign VCIs. The security of ownership of intellectual property (IP) and a clear legal remedy for theft of IP or breach of contract are important to attract foreign funds, technologies, companies, and management expertise into the venture capital industry in Malaysia. Even though a few cyber laws have been enacted since 1997, their enforcement yet remains to be seen.

## **5. SUMMARY**

In brief, this appendix highlights the different settings of Malaysia's venture capital industry as compared to the other selected countries. Although the smallest, Malaysia's venture capital industry is catching up fast with others, particularly since 1999. This is reflected in the increase of the size and number of venture capital funds: US\$667 million with only 28 funds in 1999 has increased to US\$836 million with 44 funds in 2002. As mentioned in the situational analysis above, Malaysia has several common attributes for a vibrant venture capital industry. However, it is possible to attribute part of its 'Under Performer' label to the differences in its institutional environments as compared to the U.S., Taiwan and Singapore. Several differences that possibly contribute to the below-expectation performance of venture capital financing in Malaysia are as follows: minimal presence of private equity funds, minimal early-stage financing, and the differences in the technological and business environments as discussed above. These differences suggest some improvements may be needed, e.g. further financial deregulation etc. Several indirect supportive roles of the government were also discussed, i.e. towards the enhancement of a vibrant venture capital financing in MSC in particular and Malaysia in general.

## **APPENDIX ‘B’**

### **MULTIMEDIA SUPER CORRIDOR (MSC): PROGRESS, CHALLENGES AND FINANCING ENVIRONMENT<sup>1</sup>**

#### **1. INTRODUCTION**

This appendix presents background information about the Multimedia Super Corridor (MSC), Malaysia and its financial environment. The MSC remains a highly ambitious Malaysian project and one that has overcome its share of obstacles, e.g. the Asian financial crisis 1997-1998 and the technology bubble-burst of April 2000. Despite these obstacles, which have direct and indirect impacts in its development, this project remains resilient and promising. Judging from the milestones in its first phase of development (1996 – 2003) thus far, the signposts to a Malaysian ICT and multimedia future are considered as being in place. Having met targets in its first phase, which revolved around infrastructure, systems and applications development, MSC's challenges in the second phase of its development (2004 – 2010), are more demanding, such as human resources development and financing for ICTVBs, among others. This appendix is organized as follows. The following Section provides the background and progress of the first phase of MSC. Section 3 briefly reviews the challenges that MSC faces in its second phase of development. Section 4 presents the financial environment of MSC. Finally, Section 5 summarizes this appendix.

#### **2. THE MULTIMEDIA SUPER CORRIDOR (MSC)**

Malaysia has been committed to technology development since its independence in 1957. It was clearly stated in the Rukunegara that: “building a progressive society which shall be oriented to modern science and technology” is one of the main declarations in Malaysia's national philosophy.<sup>2</sup> Since then Malaysia has pursued technology development policy consistently over the past three decades.<sup>3</sup> Now Malaysia

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<sup>1</sup> Some parts of this Appendix are taken from papers by the same researcher, as follows; A Paper “Malaysia's National Information Infrastructure: Issues and Challenges of the Multimedia Super Corridor (MSC)” that was published in the GITI Research Bulletin 2001–2002, pp. 135–148; a Paper “The Malaysia's Multimedia Super Corridor (MSC): Progress and Prospects” in the book of “Islam & Information-Telecommunication Technology: Diversity & Possibility of the Islamic Science & Technology” that was published by Waseda University/United Nations Educational, Scientific & Cultural Organization 2004, pp. 91 - 102; and a Paper “Financing ICT Companies: The Experience of Multimedia Super Corridor (MSC), Malaysia”, that was published in the GITS/GITI Research Bulletin 2002-3003, pp. 140-148.

<sup>2</sup> Rukunegara is Malaysia's national philosophy that identifies five specific declarations for its citizen to dedicate their united efforts. These declarations are: “to achieving a greater unity of all her peoples; to maintaining a democratic way of life; to creating a just society in which the wealth of the nation shall be equitably shared; to ensuring a liberal approach to her rich and diverse cultural traditions; and to building a progressive society which shall be oriented to modern science and technology”.

<sup>3</sup> Kanapathy (2001, p. 141) states that the evolution of Malaysian industrialization can be categorized into three phases as follows: the export-oriented industrialization (EOI) based on export-processing zones (EPZs) in the early 1970s, a second round of import substituting industrialization based on heavy industries

needs to move into a higher technology plane to sustain its competitive advantage by relentlessly improving its industrial technology structure and development. In relation to this, the development of MSC as a technology park can be seen as a nucleus for technology development in Malaysia.<sup>4</sup>

## 2.1 The background of MSC

The Malaysian Cabinet agreed in 1996 that MSC be launched as a necessary strategy based on the following reasons: a) the recognition that the nation was being hollowed out as a result of its loss of comparative advantage in its traditional economic sectors (agriculture and manufacturing sectors), b) the need to drive the economy towards higher productivity through technology and high value-added economic activities, and c) the recognition of the fact that information-age and converging technologies presented the best opportunities for the nation's socio-economic transformation. Therefore, MSC is a long-term strategic initiative (1996 to 2020) which involves partnership between the government (i.e. as the chief architect of its vision) and the private sector (i.e. as the main drivers for its implementation).

MSC is a huge technology park, a dedicated corridor (15 km wide and 50 km long) which stretches from the Petronas Twin Towers at the Kuala Lumpur City Center (KLCC) in the north to the new Kuala Lumpur International Airport (KLIA) in the south. MSC aims to attract world's leading ICT companies to locate their businesses, undertake R&D, develop new products and technologies, and export from this corridor as their base. The development of MSC has been divided into three phases: Phase 1 (1996 – 2003), Phase 2 (2004 – 2010) and Phase 3 (2011 – 2020). Various policy measures have been introduced and implemented to support MSC. These measures are, for example, Bill of Guarantees, cyber laws, development of flagship applications, cyber cities – infrastructure and info structure, education policy and incentives and facilities for local ICT entrepreneurs.<sup>5</sup>

There is also an International Advisory Panel (IAP) for MSC, acting as the main input providers from the so-called experts of the information age to improve the package

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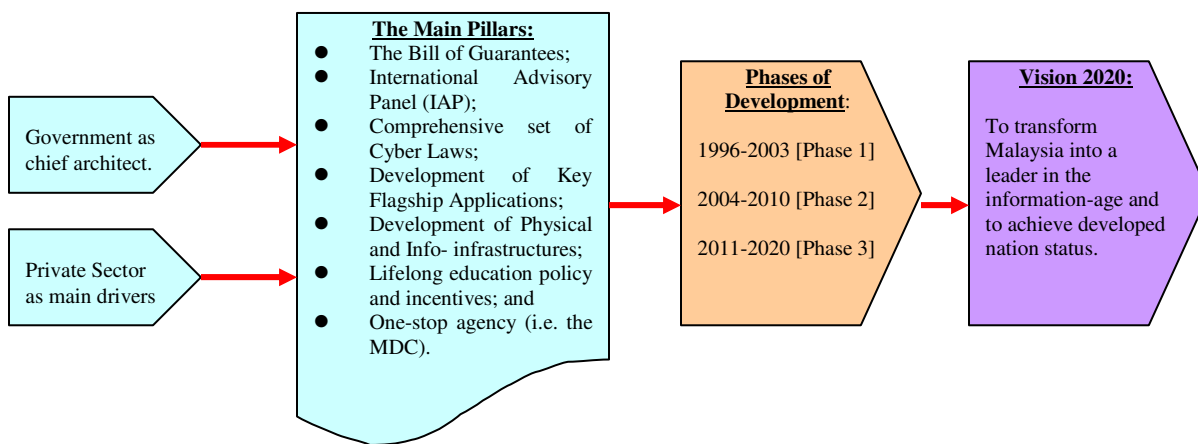
in the early 1980s, and the liberalization and second round of export pushing in the late 1990s and a sustained shift towards more market-oriented policies.

<sup>4</sup> A technology park is a development to accommodate high-technology firms with R&D, production and sales activities, and is distinguished from science and research parks because of a greater emphasis on production. A research park, on the other hand, focuses on research and production is normally precluded. An innovation center is a facility which promotes the setting-up of new businesses engaged in the development and marketing of new technological products with high market risks (Komninos, 1992; Gower and Harris, 1996; Ferguson, 1999).

<sup>5</sup> For instance, under the Bill of Guarantees, the Malaysian government commits to the following: a) provide a world-class physical and information infrastructures, b) allow restricted employment of local and foreign knowledge workers, c) ensure freedom of ownership by exempting MSC-status companies from local ownership requirements, d) ensure freedom to source capital globally for the MSC infrastructures, e) provide competitive financial incentives, f) become a regional leader in intellectual property protection and cyber laws, g) ensure no censorship of the Internet, h) provide competitive telecommunication tariffs, i) tender key MSC infrastructure contracts to leading companies willing to use MSC as their regional hub, and j) provide a one-stop agency (i.e. the MDC).

of conditions and services in MSC.<sup>6</sup> Besides this panel, there are eight well-focused investment strategies developed in the form of Flagship Applications in MSC.<sup>7</sup> The objectives of these flagships are to jumpstart this project by fast-tracking the development of infrastructures for electronic commerce, and assisting to overcome the digital divide problem. These flagship applications are the Electronic Government, Multi-Purpose Card; Smart Schools, Telehealth, R&D Clusters, Worldwide Manufacturing Web and Borderless Marketing (both are combined under the flagship of Electronic Business), and the Technopreneur Development. The development model of MSC can be illustrated in Figure A following.

Figure A: The development model of MSC



## 2.2 The progress of MSC

Since its inception date on August 1, 1996, the progress of MSC has been encouraging and is running ahead of schedule according to MDC. Currently, there are almost 7.0 million sf. net lettable area (NLA) of office space constructed in MSC that comprises enterprise, commercial, and incubation zones. Besides these, other facilities and amenities infrastructures have also been built. MSC is also supported by a high-capacity digital telecommunication infrastructure designed to meet international capacity, reliability and pricing needs. Currently, a total of 360 km of fiber optic network has been laid in MSC. This network includes high-capacity global telecommunications and logistics infrastructure built with 2.5 gigabits (Gbps), expandable to 10 Gbps Synchronous Digital Hierarchy (SDH) transport system. This network also has a 5 Gbps international gateway with direct links to the U.S, Europe, Japan and other nations in Southeast Asia for seamless connectivity. In addition, every building in the designated

<sup>6</sup> IAP has met annually since 1997 and is considered as a venue for the leaders in the IT industry to brainstorm ideas on how best to steer Malaysia into the information age through MSC project. As at August 2001, there are 47 members of IAP ( e.g. from Microsoft, Intel, Nokia, Softbank, Sony, Lucent, NTT, Stanford University, University of Cambridge, International University of Japan, etc. )

<sup>7</sup> According to MDC, the flagship applications of Electronic Government, Multi-Purpose Card, Smart Schools and Telehealth have shown great export potential with enquiries from the Middle East, Europe and ASEAN countries.

cyber cities is wired up with fiber optic cable to enable the availability of broadband applications.

The number of MSC-status ICTVBs in Table A clearly shows an increasing trend, which has exceeded the original targets.<sup>8</sup> The total number of approved MSC-status ICTVBs has now increased to 914 as of August 11, 2003. They are involved in various ICT businesses – 46 % in software and content development; 19% in Internet-based businesses; 15% in hardware/computer design and engineering; 9% in telecommunication and networking; 7% in education, training and consultancy; and 4% for others (e.g. life sciences, production, and animation).

Table A: MSC-status ICTVBs as of August 11, 2003

COMPANIES/YEAR	1997	1998	1999	2000	2001	2002	CURRENT
Malaysian Owned (>51%)	47	107	181	276	410	543	618
Foreign Owned (>51%)	44	84	112	144	198	248	272
Joint-Venture (50%-50%)	3	6	7	9	13	21	24
World-Class	13	31	34	38	50	54	59
Total Approved MSC-Status*	94	197	300	429	621	812	914

\*Note: Besides operational companies, these figures include cases of merged, unincorporated, dormant and revoked.

Source: Multimedia Development Corporation.

The MSC is also fast becoming a preferred location for multinational companies to establish shared services facilities such as data centers, contact centers, and data processing centers. There are 59 multinational companies currently operating in MSC, and some of them are listed in Table B following.

Table B: Example of multinational companies operating in MSC

Nokia (M) Sdn. Bhd. Siemens Multimedia Sdn. Bhd. Motorola Multimedia Sdn. Bhd. Lotus Development Services (M) Sdn. Bhd. Alcatel Networks MSC Sdn. Bhd. Lucent Technologies (M) Sdn. Bhd. Oracle MSC Sdn. Bhd. Ericson Support Center Malaysia Sdn. Bhd. Asia Pacific Information Service (DHL) Baan Education Asia Pacific Shell Information Technology International Sdn. Bhd. Rockwell Automation (M) Sdn. Bhd. Unisys MSC Sdn. Bhd. IBM (M) Sdn. Bhd. Huawei Technologies Sdn. Bhd. Satyam Computer Services Ltd. AVEVA Asia Pacific Sdn. Bhd. Schlumberger Technologies (M) Sdn. Bhd. HSBC Electronic Data Processing (M) Sdn. Bhd. WIPRO Limited	BMW Asia Technology Center Sdn. Bhd. Prudential Services Asia Sdn. Bhd. Bloomberg (M) Sdn. Bhd. Intel Malaysia Design Center (MSC) Sdn. Bhd. Reuters (M) Sdn. Bhd. Fujitsu Telecommunication Asia Sdn. Bhd. BT Multimedia Sdn. Bhd. Sun Microsystems (M) Sdn. Bhd. NTT (MSC) Sdn. Bhd. EDS (MSC) Sdn. Bhd. Compaq Multimedia Sdn. Bhd. Microsoft Knowledge Capital Center Sdn. Bhd. Comptel Communications Sdn. Bhd. Tecnomen (M) Sdn. Bhd. Castlewood Systems (M) Sdn. Bhd. Marconi 3G Sdn. Bhd. CISCO MSC Division Canal+ Technologies Sdn. Bhd. NEC Systems Integration Malaysia Sdn. Bhd. TATA Consultancy Services Malaysia Sdn. Bhd.
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(Note: Sdn. Bhd.= Private Limited) Source: Multimedia Development Corporation.

<sup>8</sup> ICTVBs with MSC-Status are entitled to the benefits and incentives provided by the Malaysian government's Bill of Guarantees. Generally, to qualify for this status, ICTVBs will need to engage significantly in value-adding activity and employ a substantial number of knowledge workers. They also need to locate their principal business within MSC designated cyber cities (i.e. Cyberjaya, Technology Park Malaysia, UPM-MTDC Technology Incubation Center, Petronas Twin Towers, KLCC and the E-Village) and establish a separate legal entity for it.

As for the development of Flagship Applications, out of seven launched in 1997, four were successfully rolled out in 2001. They are the Electronic Government (e.g. electronic procurement and electronic services), Government Multi-purpose Card (GMPC), Smart Schools and Telehealth. Table C below shows the main projects under the Electronic Government flagship that are currently showing remarkable progress and operation.

Table C: Main projects under the E-government flagship

PROJECTS	CHARACTERISTICS	CURRENT STATUS
Generic Office Environment (GOE)	*Provides a new paradigm of working in a collaborative environment where government agencies communicate, interact and share information.	*Live services, e.g. PM's Department, PSD etc. Currently developing the rollout plan for 14 identified government agencies.
Electronic Procurement (EP)	*Links the government and suppliers in online environment. Government agencies as buyers procure goods/services by browsing catalogues advertised by suppliers. Aimed at best value for money, timely and accurate payment.	*Central Contract, Suppliers Registration, Direct Purchase modules have been completed. Quotation & Tender module is ongoing. Nationwide rollout in phases to all 25 ministries.
Project Monitoring System (PMS)	*Provides a new mechanism for monitoring the implementation of development projects, incorporating operational and managerial functions, and knowledge repository.	*All 3 phases are completed. Post-implementation activities are ongoing and Handover Management is now being finalized.
Human Resources Management Information System (HRMIS)	*Provides a single interface for government employees to perform HRD functions effectively and efficiently in an integrated environment. Applications include automating both operational processes and information dissemination.	*15 modules have been rolled out to 10 government agencies. Two modules are going through the Provisional Acceptance Test and another one waiting for PAT.
Electronic Delivery Services (E-Services++)	*Enables direct, online transactions and interactions between the public, the government and large service providers via electronic means.	*Live services e.g. JPJ, TNB, Telekom, PDRM etc.
Electronic Labor Exchange (ELX)	*A one-stop center for labor market information, accessible to government agencies, the private sector and the general public.	*Live services.
e-Syariah	*Introduces administrative reforms that upgrade the quality of services in Syariah courts. To enhance the Islamic Affairs Department's effectiveness - better monitoring and coordination of its agencies and 102 Syariah courts.	*Launched in April 2002.

Source: Multimedia Development Corporation.

A comprehensive set of cyber laws has been enacted since 1997 to support the diffusion of electronic commerce and the electronic government environment. These laws are the Digital Signature Act, 1997; The Telemedicine Act, 1997; The Copyright (Amendment) Act, 1997; The Computer Crimes Act, 1997; The Communications and Multimedia Act, 1998; and The Optical Discs Act, 2000. This legislation is meant to regulate the totally new multimedia and online environment in the information age, e.g. to facilitate ICT and multimedia applications, to enhance IPR, and to penalize certain activities connected with data and computer programs.

In general, the main target of MSC in its first phase (1996 – 2003) has been achieved, that is, to successfully create this corridor, which consists of infrastructure,

systems and applications development. Although MSC is a Malaysian project, input and advice from the members of the IAP have contributed to the remarkable development of MSC. Besides this, the members also have conveyed their continued commitment of their companies by expanding operations here. From the milestones in its first phase thus far, the signposts to a Malaysian ICT future are in place.

### 3. THE CHALLENGES OF MSC

As it was mentioned earlier, MSC is now entering the second phase of its development (2004 – 2010). The main objective in this second phase is to link MSC to other cyber cities in Malaysia and worldwide as stated in its vision. Although the progress in the first phase thus far seems to be encouraging, MSC faces more demanding challenges in its second phase, which may impede its fullest prospects.<sup>9</sup> In the context of achieving its objective, the main challenges of MSC in its second phase of development are briefly as follows.

- a) Engineering the development of the linkage infrastructures of MSC to other cyber cities requires tremendous effort and cost. The digital divide between states in Malaysia is still an issue, not to be discounted, in MSC's second phase.
- b) The development of human resource talents is critical to the success of MSC. In general, the knowledge-based and skill-based talent pools in Malaysia still have many shortcomings, such as the shortages of quantity and quality, brain drain and disparity of availability between areas. Table D following highlights the assessment of the current talent pool in Malaysia.

Table D: Assessment of current talent pool in Malaysia

ITEM	KNOWLEDGE-BASED TALENT	SKILL-BASED TALENT
Quantity	Shortage at post-graduate level and in software engineering.	Shortage in selected areas such as "C" programmers.
Quality	Shortage of experienced talent. Not yet world class.	Not yet world class.
Relevance	Poor linkage between university and industry.	Need to keep up with rapid changes in technology.
Accessibility	Generally affordable. Limited capacity and availability.	Generally affordable. Accessible in Klang Valley and bigger towns.
Talent Retention	Brain drain to more developed countries.	Some brain drain due to global shortage and better opportunities elsewhere.

Source: Multimedia Development Corporation.

<sup>9</sup> The challenges are interrelated with the inherent characteristics of the industrial technology structure of Malaysia itself. Based on the model of Michael Porter's competitive Advantage of Nations, Masuyama and Vandenbrink (2000, pp. 8 – 21) identify five peculiar characteristics of industrial structure of East Asian countries (including Malaysia) as follows: a) appearance of extreme high-tech orientation which does not really indicate their fundamental technological capabilities, b) dependence on external sources of innovation that caused a weaker home-grown technological capabilities, c) insufficient pool of knowledge workers to localize the innovation function, d) lack of local base of supporting industries and industrial clusters, and e) weakness of domestic sector due to the unbalanced treatment of the export and domestic sectors.



- c) The innovation networks need to be developed further, be it horizontal or vertical linkages. Opportunities and facilities are needed for the ICTVBs in MSC to develop their ability to take technology and transfer that into a business setting.
- d) The development of collaboration between universities and ICT industry is also important. Harnessing effectively university and industry collaboration by identifying technology-based researches and potential businesses based on real industry demands is crucial for MSC.
- e) The continuing effort to develop ICTVBs in MSC is another important aspect. Matters pertaining to mentoring, training, and financing of these ICTVBs are critically important.
- f) The government as the chief architect of this project could certainly contribute by introducing further deregulation in various ICT policies and regulations. Areas of concerns are the protection of intellectual property rights (IPRs), regulations on the use of government funds for R&D, among others. In addition, deregulation brings to MSC's transparency and consistency so that ICTVBs here can compete openly with each other, not only within national borders, but also regionally and globally.

#### **4. THE FINANCIAL ENVIRONMENT IN MSC**

Technological development contributes positively to economic development by increasing productivity in numerous ways; for instance, by increasing production from existing scarce resources, by expanding the economy resources base, and by providing new products, the composition of the economy is positively developed (Rosenberg, 1986; Higgins and Savoie (eds.), 1998). ICTVBs and VCIs are involved in this economic process. In the Malaysian context, the success of ICTVBs has been considered crucial in having a positive economic future prospect. The MSC is deeply related to this policy consideration and one of the main objectives of MSC is to create a successful cluster of ICTVBs. However, ICTVBs are strongly influenced by external factors, especially the financial environment because in many cases, it determines their destiny.

##### **4.1 The demand of funds**

On the demand side, the requirement for funds by ICTVBs is growing. Potentially, there is a very broad range of ICTVBs involved in various technological focuses, of different sizes and at different stages of growth. Financing requirements vary considerably because their needs and barriers are different when seeking external financing. The proliferation of ICTVBs in MSC (as discussed above) indicates the demand of funds will also increase.

The variety of needs and barriers regarding their financing requirements can be derived as follows. Based on MSC Impact Survey 2002, for MSC-Status ICT ICTVBs, a profile of their paid-up capital is as follows: 50% (230 ICTVBs) have paid-up capital of less than RM500 thousand, 16% (75 ICTVBs) have RM500 thousand to RM1.0 million,

21% (96 ICTVBs) have RM1.0 million to RM5.0 million, and 13% (60 ICTVBs) have more than RM5.0 million (RM stands for Ringgit Malaysia, i.e. the local currency). Although 66% of these ICTVBs are small (less than a million paid-up capital), they are at important stage of their growth and require financing from various sources to grow larger. A profile of their growth stages is as follows: 4% (18 ICTVBs) are at seed stage, 29% (133 ICTVBs) are at start-up stage, 59% (270 ICTVBs) are at growth stage, 7% (34 ICTVBs) are at Pre-IPO stage, and 1% (6 ICTVBs) are at Post-IPO stage. The majority of them (92%) are at growth stage and below, that is, in the critical stage of building their track records and proven products or services. Thus, they require adequate funds for these purposes. According to the same survey, these ICTVBs require RM700 million of venture funds for the period of 2002 to 2005. Judging from their technology focus, these ICTVBs are involved in new technology-based production, which normally has many intangible assets (e.g. trade secrets and applied knowledge) and are also considered as high-risk new businesses. Thus, their readiness to disclose important information and dilution of ownership are barriers when seeking financing. According to BNM (1999), investment activity has been held back due to reasons such as reluctance to dilute ownership and lack of awareness on venture capital financing. In brief, the above demand overview implies that financing of ICTVBs is increasingly important for MSC.

## 4.2 The supply of funds

On the supply side, the financing options for ICTVBs can be categorized into three sources: i) private equity financing, ii) debt financing, and iii) developmental grants financing. Each of these sources will be briefly discussed below. (Discussion on self-financing and commercial project financing is excluded, as there is no reliable data available).

**Private equity financing** usually conveys a dilution of ownership in a company (as borrower) to an equity investor. Basically, an equity investor gives up the right to a predetermined repayment schedule and a preferential claim on borrower's assets in exchange of a share of future profits. This source can be obtained from informal and formal VCIs. High net worth individuals or business angels are examples of informal VCIs. In Malaysia, most business angels are from property and construction sectors and generally do not invest in ICTVBs at an early-stage. The venture capital industry is relatively new and is currently a government-funded kind of financial segment (Ariff and Lim, 2001; Mani and Bartzokas, 2002). Based on the survey of this research, 65% of the VCIs in the sample were incorporated less than 7 years and 67% of them employed fewer than 7 venture capital executives, reflecting its emerging nature in Malaysia. At this stage, these VCIs are risk averse and focusing on building profitable track records thus would minimize their investment's exposure in high-risk ICTVBs. In addition, the costs associated with the initial evaluation and monitoring are high, thus stringent financing covenants are imposed by the VCIs in order to counter adverse selection and moral hazard problems. Hence, ICTVBs may have some difficulties in getting financing from them.

According to the BNM Annual Report 2001, there was RM2.00 billion of venture funds in the capital market (of which RM1.13 billion resided with ICT focused funds) at the end of 2001. The VCIs increased in number to 36 in 2001 which invested in 180 ICTVBs, as compared to 31 in 2000 which invested in 159 ICTVBs. According to MDC there are 19 active VCIs currently in ICT industry of which 9 are government initiated and managing government agencies' funds of more than RM950 million.<sup>10</sup> For venture funds, government allocated RM220 million for 1996 to 2000 and another RM778 million for 2001 to 2005.

**Debt financing** can be obtained from informal sources (i.e. loans from partners, family members, friends, and trade creditors) and also formal sources (i.e. government's schemes through special development finance institutions, commercial banks and finance companies). Besides government's allocation of almost RM500 million, funding from bilateral sources (e.g. OECF and the Japanese government) are also allocated to these schemes. This source of financing requires some collateral and repayments of principal and interest over a specified tenure of the loan. Specific obligations are created for ICTVBs to repay the loan on a predetermined repayment schedule. If there is failure of repayment on the loan, the financiers can recover the outstanding debt (i.e. principal plus interest and other penalties) even if the ICTVBs are forced into bankruptcy. Besides the above features, application is based on market-driven criteria (e.g. specific sector, eligibility, limitation of loan amount, and commercial term and condition). Certain schemes require ICTVBs to have a good track record, which makes this condition not achievable for some of them. Currently, there are seven schemes available for ICTVBs and these schemes are managed by specific institutions.<sup>11</sup> Due to the market-driven application criteria it can be inferred that ICTVBs may have some difficulties in getting financing from these sources. In addition, commercial banks and finance companies involved may also lack necessary skills to evaluate the technicalities of ICTVBs for funding purposes.

**Developmental grants financing** is another financing option for ICTVBs in MSC. In order to provide equality in financing technological and business developments of ICTVBs, the government has introduced specialized grant schemes for them. Total

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<sup>10</sup> These companies are Amanah Ventures Sdn. Bhd.; BPMB-NIF Modal Teroka Sdn. Bhd.; BI Walden Management Sdn. Bhd.; CAV Private Equity Management Sdn. Bhd.; DTA Ventures Management Sdn. Bhd.; FirstFloor Capital Sdn. Bhd.; Intelligent Capital Sdn. Bhd.; iSpring Venture Management Sdn. Bhd.; Malaysia Venture Capital Management Bhd.; Mayban Ventures Sdn. Bhd.; MCM Technologies Bhd.; MSC Venture Corporation Sdn. Bhd.; Netval Ventures Sdn. Bhd.; OptixLab Sdn. Bhd.; OSK Venture Equities Sdn. Bhd.; Photonics Venture Capital Sdn. Bhd.; PNB Nomura Jafco Management Sdn. Bhd.; Perbadanan Usahawan Nasional Bhd.; and Technology Asia Ventures Sdn. Bhd. [Sdn. Bhd. Stands for private limited].

<sup>11</sup> These schemes are as follows: a) New Entrepreneurs Fund 2 – managed by Bank Negara Malaysia (BNM) through participating financial institutions; b) Fund For Small And Medium Industries 2 – managed by BNM through participating financial institutions; c) Graduate Entrepreneurs Fund – managed by Ministry of Entrepreneur Development; d) JBIC Fund (SMI – OECF) – managed by Bank Pembangunan & Infrastruktur Malaysia Berhad (BPIMB), Bank Industri & Teknologi Malaysia Berhad (BITMB), and Malaysia Industrial Development Finance Berhad (MIDFB); e) Fund For Medium And Large Industries – managed by BPIMB; f) Direct Access Guarantee Scheme (Conventional only) – managed by the Credit Guarantee Corporation (CGC) Malaysia Berhad; and g) MAVCAP Debt Ventures.

funds allocated were RM1.10 billion from 1996 to 2000 and another RM1.90 billion from 2001 to 2005. These schemes cover a wide spectrum of activities (e.g. R&D, marketing, and acquisition of intellectual property). Basically, no equity dilutions or collaterals are needed to obtain these grants, and also no principal and interest repayments are involved. Currently, there are ten grant schemes offered to these ICTVBs.<sup>12</sup> There are a few problems related to this financing source (e.g. the difficulty in obtaining information about the availability of the grants, the stringent and market-driven application criteria, and the lack of clarity regarding level of funds and their associated terms). The approval process may also take longer time because there are many different agencies to contact. Usually, ICTVBs funded by grants are assumed to have minimal private-sector links and commercial value.

In brief, the differences between the above mentioned financing options available to the ICTVBs in MSC are summarized in Table E following.

Table E: Summary of differences of the financing sources.

Matters/Types	Venture Capital Financing	Debt Financing	Grant Schemes Financing
Objective	Capital gains	Interest and principal	Development
Holding Period	Mid-to-long term	Short-to-mid term	—
Collateral	No	Yes	—
Criteria	Potential returns on investment	Interest spread and security	—
Impact on Balance Sheet	Reduce leverage	Increase leverage	—
Impact on Cash Flow	Dividend pay out	Interest/principal repayment	—
Monitoring	Seat on Board of Directors, monthly/quarterly operational reports	Loan servicing	—
Value Add	Management assistance, strategic alliance through contact etc.	None	—
Exit Mechanism	IPO, trade sale, buy back	Principal repayment	—

Source: MDC, (2002), "Funding Guide & Directory for ICT/Multimedia Industry", 1st. Edition, May 2002.

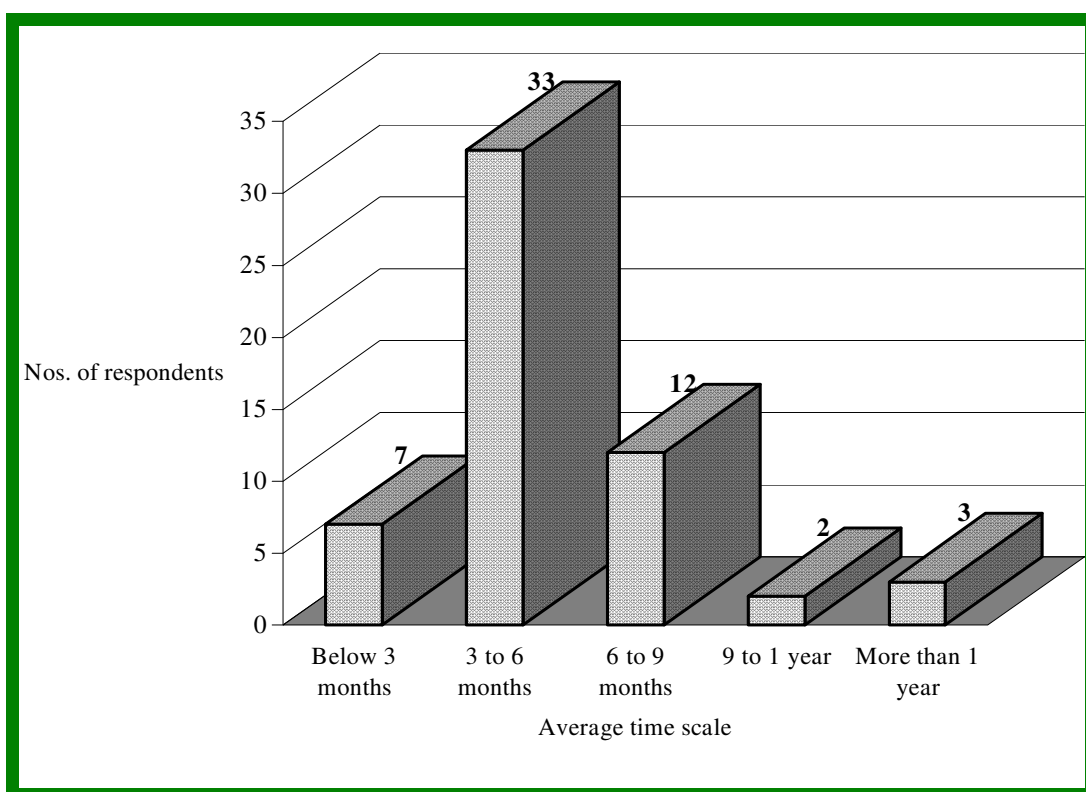
<sup>12</sup> These grants are as follows: a) Commercialization of R&D Fund (CRDF) – managed by Malaysian Technology Development Corporation (MTDC); b) Demonstrator Applications Grant Scheme (DAGS) – managed by MIMOS Bhd.; c) E- Commerce Grant For Small & Medium Scale Industries – managed by Small & Medium Industries Development Corporation (SMIDEC); d) The Industry R&D Grant Scheme (IGS) – managed by Ministry of Science, Technology, and the Environment (MOSTE); e) Intensification of Research in Priority Areas (IRPA) – managed by MOSTE; f) Market Development Grant (MDG – formerly known as ITAF 4) – managed by Malaysia External Trade Development Corporation (MATRADE); g) MSC R&D Grant Scheme (MGS) – managed by MDC; h) Rosettanet Grant (RNG) – managed by SMIDEC; i) Technology Acquisition Fund (TAF) – managed by MTDC; and j) Technology Acquisition Fund For Women (TAF – W) – managed by MTDC.

### 4.3 Characteristics

Based on discussion above, the financial environment in MSC can be characterized as follows.

Firstly, financial intermediation between financiers and ICTVBs is low. Judging from the sources and amounts of funds available, these companies should not be facing any problems, but they still seem to have difficulties in getting actual financing from these sources. On the part of ICTVBs, their business culture pertaining to exchange of information and dilution of ownership in their financial contracting should be changed as it can affect the availability of their financing sources. This is important in order to fulfill their financing needs and to remove barriers from these sources. On the part of financiers, the market-driven application criteria, lack of knowledge about technicalities of ICTVBs for funding purposes and risk aversion of equity investors could be among the main obstacles. Financing from business angels and VCIs are found to be selective and minimal. For instance, as for VCIs, 298 ICTVBs or 32% that were invested in 2003 are considered low in comparison to the total MSC-status ICTVBs of 914. The total amount invested also is far less than the amount of funds available (e.g. RM227 million or 11% in 2003 in comparison to RM2.1 billion worth of funds available in the industry). Figure B following shows a longer time taken for investment decisions to be made by the VCIs to invest in the venture businesses (i.e. 88% for 3 months to more than a year).

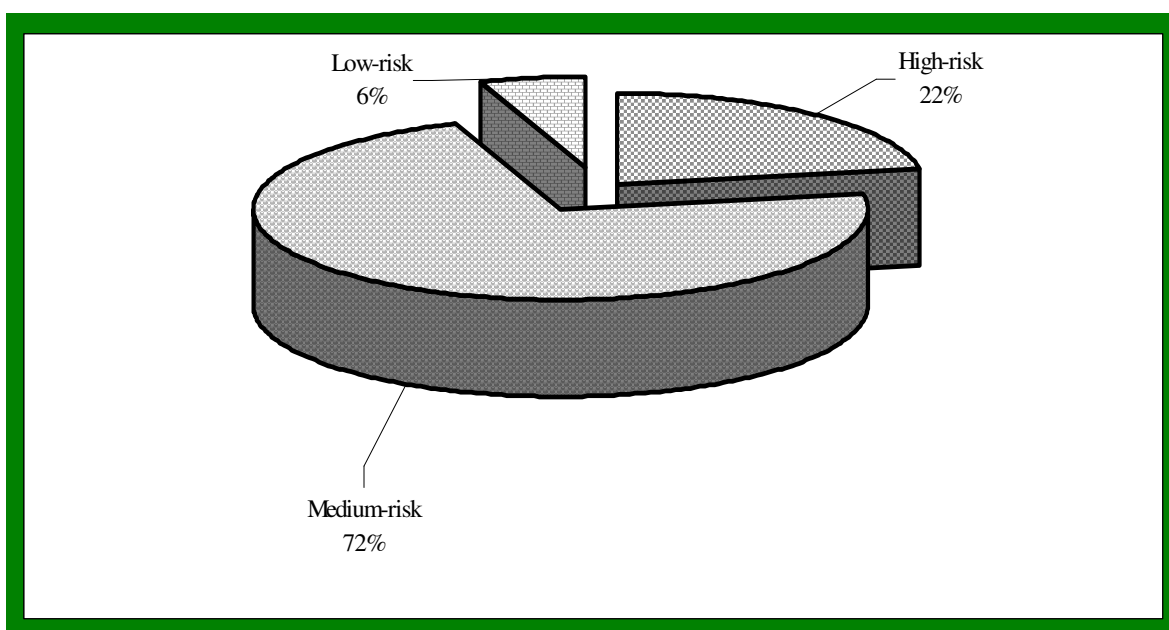
Figure B: Distribution of average time taken for investment decision (N=57)



Source: Survey on Venture Capital Financing in Malaysia conducted in March – April 2003.

In addition, 72% of the VCIs in the survey preferred medium-risk type of venture businesses (Figure C), and this is not compatible with high-risk ICTVBs. These facts imply that actual financial intermediation from the VCIs to ICTVBs was low in MSC.

Figure C: Distribution of type of business risk preferred (N=18)



Source: Survey on Venture Capital Financing in Malaysia conducted in March – April 2003.

Secondly, the supply of funds was substantial from the public sector. The government was directly involved by allocating a substantial amount of funds (as discussed above). Financing source from the public sector seemed to be in line with government's policy to develop ICT industry and to create a critical mass of ICTVBs in MSC. However, these sources have certain setbacks (discussed in the next two characteristics). The government's direct involvement can be clearly seen by the numbers of VCIs initiated (i.e. 9 active venture capital companies in ICT industry) and amount of funds allocated (i.e. RM950 million or 84% of total amount of RM1.13 billion specialized in this industry).

Thirdly, the number of private corporations financing ICTVBs is minimal. The involvement of private corporations to provide financing is important to expand sources of financing and to diversify the risk of investment.<sup>13</sup> For example, at present, there are only a few private VCIs associated with financial institutions (e.g. Mayban Ventures, Amanah Ventures etc.) but none with large private corporations. This is different from developed countries where large corporations are involved in providing financing to these

<sup>13</sup> According to industry sources, besides government initiated and funded VCIs, there is minimal involvement from private corporations in providing financing to ICTVBs.

ICTVBs through their corporate venture capital companies (Ehrlich et al, 1994; McNally, 1995; Abetti, Masaki, and Rice, 2000).<sup>14</sup>

Finally, the existence of government developmental grant schemes has unintentionally turned into a double-edged sword. These grant schemes provide more financing options to ICTVBs, but they indirectly encourage them to be more complacent, by targeting this source of financing because no repayments of principal and interest are needed. Also, these schemes have made the private sector see no urgency for them to provide similar schemes to foster the technological and business developments of ICTVBs.

In brief, improving financial intermediation between ICTVBs and financiers is necessary. On the part of ICTVBs, they need to improve their knowledge about financing options that are suitable to their technological and business developments. Their business culture (i.e. pertaining to ownership dilution and disclosure of information) should also be changed in view of their diversified financing needs. On the part of financiers, the market-driven application criteria and the lack of expertise about technicalities of ICTVBs for funding purposes could be among the reasons why financing is still an issue in MSC. Overall, the supply of funds largely came from the public sector. The financial environment and its characteristics in MSC (as discussed above) are illustrated in Figure D following.

Figure D: MSC's financial environment and its characteristics

<u>Quadrant</u>	<u>Characteristics</u>	<u>Magnitude</u>	<u>Direction</u>
Demand  ↓ ↑	Proliferation of ICTVBs; of various sizes and at various growth stages.	Demand for funds is increasing. Financing Needs: variety Financing barriers: variety	ICT industry is emerging. Improved financial intermediation between financiers and ICTVBs may be needed.
Supply	Equity financing Debt financing Development grants	Supply of funds has been dominated by public sector & private sector financing has been minimal.	Venture capital is new & unsuccessful at this stage. Further indirect support from government may be needed.

<sup>14</sup> According to McNally (1995), corporate venture companies (CVC) investment involves a corporate organization making minority equity investments in smaller unquoted companies and is often referred to as corporate venturing.

## **5. SUMMARY**

In this appendix, the background and progress of MSC were discussed based on the experiences in its first phase of development (1996 – 2003). From the indicators that were discussed, MSC continues to grow from strength to strength – from a merely palm oil estate in 1996, it has transformed into the technology park it is today. MSC may not be the Silicon Valley, but at least it is a technology park that Malaysians can be proud of. Besides spearheading Malaysia's industrialization, MSC is now a place where ICTVBs can work and develop their businesses, a platform that moreover is known globally. However, the challenges of MSC in its second phase of development (2004 – 2010) are more demanding and important that may impede MSC's prospects to become a successful technology park and to leapfrog the nation into a leader in the information-age. In brief, although MSC cannot provide a true blueprint for others to imitate and is no way without its obstacles and problems, there are aspects in its development that can be learned from. This appendix also highlighted that the endogenous development strategy of MSC (i.e. focuses on the generation of local technological and ICT entrepreneurial developments) can be smoothly implemented by improving its financial environment.



## **APPENDIX ‘C’**

### **REVIEW OF THE THEORY OF THE FIRM AND RELATED CONCEPTS<sup>1</sup>**

#### **1. INTRODUCTION**

This appendix provides a brief overview on the literature of the Theory of the Firm, particularly the management of investment at microeconomic firm level. This review will not be comprehensive; however, it can be considered as the general background theory for this research as it acts as the point of departure into the framework of venture capital financing. Studies on the separation of ownership and control, Stakeholder Theory, and ICTVBs will also be briefly reviewed.

Reasons that account for why the Theory of the Firm and its related concepts identified above are relevant for this research are as follows: i) to understand what a firm actually is in economic and strategic management terms because venture capital is very much related to a firm developing process; ii) to relate the central foundations in the Theory of the Firm (i.e. the institutional analysis of economic organization of the firm) with venture capital, especially on the contractual issues in the business relationship; and iii) to differentiate ICTVBs and their funding mechanisms from ordinary firms. These reasons imply that empirical study in venture capital may add robustness to the general Theory of the Firm, particularly when the setting consists of firms in developing countries.

This appendix is organized as follows. Section 2 reviews the literature, capital investment and corporate strategy of the firm. Section 3 and 4 discuss the concept of separation of ownership and control and the stakeholder theory respectively. Section 5 describes ICTVBs and their characteristics. Then, Section 6 synthesizes the Theory of the Firm and its related concepts in the context of VCIs and ICTVBs contracted into venture business. Section 7 and 8 discuss the agency theory and principal-agent analysis which form the focal theory of this research. Finally, Section 9 summarizes this appendix.

#### **2. THEORY OF THE FIRM**

The basic Theory of the Firm is normative, which relates to the firm's behaviour in the market place. The main tenets of this theory are: i) the entrepreneur-owner is an economic man who decides in a perfectly rational way; ii) the uncertainty about the business environment is none; iii) the market place has perfect information; and iv) the profit maximization is the sole objective of the firm. However, this basic theory has been the subject of debates by economists (Marris, 1964; Cyert and March, 1963; Machlup, 1967; Simon, 1979). For instance, many of them strongly contend that this basic theory

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<sup>1</sup> Some parts of this Appendix are taken from a paper by the same researcher, entitled “Venture capital financing: Stakeholders’ characteristics and agency conflict in ICT industry, Malaysia” submitted to the Journal of Developing Economies, IDE-JETRO (under review).

should only be evaluated strictly on its predictive power and not on the realism of its assumptions.

Most organizational theorists argue for the need of a managerial and behavioural Theory of the Firm. For instance, Marris (1964) suggests a managerial theory that recognizes the existence of multiple objectives of the firm. According to Simon (1960) who examines the human decision-making behaviour in the context of problem-solving, there are three phases involved: i) intelligence activity, screening the environment for decisions to be made; ii) design activity, analyzing courses of action; and iii) choice activity, choosing a specific action. Simon further contends that decision-makers normally adopt the principle of bounded-rationality as opposed to perfect rationality in the decision-making process. Another observation about the firm is by Cyert and March (1963) whereby they view the firm as a coalition of stakeholders from within and outside itself and thus the firm actually does not operate in a vacuum. In other words, the firm does not have an objective of its own, but the various objectives of these stakeholders are negotiated through a bargaining process.

The above literature implies that the managerial and behavioural theories of the firm emphasize the internal processes and behavioural factors that affect the management and decision-making of the firm. This argument is supported by the fact that in reality, management decisions of the firm are very much dependent on the actual or expected business environment, for example, market growth rates and risks, technical opportunities and risks, competitors' presence and reactions, barriers of entry and others (Williams and Scott, 1965; Mintzberg, 1983; Porter, 1985; Bromiley, 1986).

## **2.1 Capital investment of the firm**

Capital investment can be defined as both the decision and act of outlaying present costs or cash outflows in the expectation of future returns or cash inflows. In reality, capital investment decisions are ubiquitous in every aspect of our life. In a broad and customary sense, Clendenin (1960, pp. 2–4 ) defines an investment as “any asset or property right acquired or held at present for the purpose of conserving capital gain or earning an income in the future”. Clendenin further contends that “the moral of any investment is the way to get money is to work for it and the way to have money is to keep it by investing soundly”. According to Baumol (1977, pp. 597–599) investment can be referred to as “the production or acquisition of any real capital assets”. Baumol further states that capital budgeting refers to the investment decision-making procedures of firm which involve the selection of projects, the timing of investment, the determination of investment amount within any given time frame, and the financial means for the completion of the projects.

Basically, in the literature of economics, the studies on investment decisions are divided into two categories: i) the microeconomics model of the Theory of the Firm's investment or marginalism, which includes the managerial and behavioural theories, and ii) the macroeconomics model or aggregate investment level. However, this research

excludes the treatment of the macroeconomics since the interest here is in the microeconomics of the firm's investment level.

In terms of investment approach, the criterion of Net Present Value Rule (NPVR) has been relied upon by the neo-classical macroeconomic theory of investment. Basically, an investment project is accepted if the difference between the present value of the anticipated future cash inflows and profits of the project exceeds its present value of the cash outflows and costs.<sup>2</sup> However, NPVR has been criticized recently on the basis of the existence of capital market imperfections and as investment criterion it is not sufficient enough to be used for capital investment decision-making.

The notion of the existence of capital market imperfections has been supported by substantial theoretical and empirical models that imply the inter-dependency of investment and financing decisions of the firm. In reality, the financing mix of internal and external funds, the financial structure and availability in which the firm operates can affect its investment decision-making due to the uncertain prospects of the imperfect capital markets. The literature also suggests that various factors can affect the investment and financing decisions of the firm, such as, the risk environment, problems of asymmetric of information, bankruptcy and agency risks, access to sources of financing, government regulations and tax regimes, etc. (Greenwald, Stiglitz, and Weiss, 1984; Myers, 1984; Myers and Majluf, 1984; Bernanke and Gertler, 1989; Gertler, 1992).

There is variation in the impact of uncertainty between different firms and industries, which requires a more thorough criterion besides NPVR to be used in investment decision-making of the firm. In relation to this, Meyer and Glauber (1964, p. 247) state that “a need seemingly exists for an entirely new approach to the problem of constructing a theory of investment that is adequate to explain differences among business firms with different strategies and objectives”.

In one of the studies on this aspect, Dixit and Pindyck (1994, pp. 3–7) state that there are three important characteristics which interact to determine the optimal investment decisions as follows: i) there is the concept that investment is partially or completely irreversible, ii) there is uncertainty over the future returns from the investment, and iii) there is some leeway about the timing of the investment. In relation to these characteristics, they proposed a basic new theory of irreversible investment under uncertainty—“real options”—which emphasizes the option-like features of investment opportunities. Under the real-options approach, uncertainty (e.g. about the future interest rates, risks environment, profits, tax regimes, etc.) has more critical effects on the investment decision-making of the firm than the interest rate per se as proposed by the neo-classical investment theories. For instance, Kaplan and Zingales (1997) in their study which categorized firms according to their degree of financial constraint, found that

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<sup>2</sup> For instance, refer to the works of Modigliani and Miller (1958), Jorgenson (1963) and Tobin (1969). In the Modigliani–Miller theorem, a perfect capital market is assumed, which implies that the firm's cost of capital is independent from its financial structure. Hence, the investment decision could be treated separately from the finance decision, as the firm is not exposed to any financing constraints. In the Jorgenson model, the firm's desired capital stock is calculated by equating its marginal product with the user cost. While in the Tobin model, the present value of the expected future profits of an investment project is compared with its purchase price (the Tobin's Q).

investment decisions of the least financially constrained firms are the most sensitive to the availability of cash flow.

## **2.2 Corporate strategy of the firm**

From the perspective of corporate strategy framework, the management of the firm has direct implications on its competitive position in the environment in which it operates and hence is deemed to be strategic in nature, which requires serious considerations of many factors (Williams and Scott, 1965; Ansoff, 1965; Thomas, 1983; Bromiley, 1986). For instance, in the context of opportunities and threats provided by the business environment, a management decision to invest in new technologies will increase productivity and has an impact on the firm's performance and its market value. As for strategic decision-making, Robbins (1982) defines it as the art of making choices. According to Garvin and Roberto (2001, p. 110) decision-making is not an event but an inquiry approach which involves "a very open process designed to generate multiple alternatives, foster the exchange of ideas, and produce a well-tested solution".

The strategy formulation of the firm also is influenced by various factors, both internally and externally. Basically, these factors can be categorized into five main groupings as follows: i) the internal strengths and weaknesses of the firm, based on its resources; ii) the business environments of the firm; iii) the personal values (e.g. motivations, needs, and goals) of top management that are directly involved in the strategy formulation process; iv) the broader societal expectations, such as non-economic and other social responsibilities; and v) the corporate vision, mission and objectives of the firm (Andrews, 1971; Hofer and Schendel, 1978; Porter, 1980). This implies that these factors interact with each other to influence the choice of strategy made by the firm.<sup>3</sup> It also reflects that a firm has to take into account various factors in its strategic management so that the success of the firm is possibly secured.

## **3. THE SEPARATION OF OWNERSHIP AND CONTROL**

In the context of the theoretical framework of separation of ownership and control of the firm, Berle and Means (1967) first raised these subjects to explain the development of modern organizations in the U.S. They found that ownership of the firm is often widely dispersed over various stakeholders who caused the entrepreneur-owners to have difficulties in controlling the firm without incurring additional costs related to acquiring,

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<sup>3</sup> In terms of methods of strategy formulation, for instance, Mintzberg (1973) states that there are three modes of strategy-making, namely: i) the entrepreneurial mode whereby the entrepreneur-owner takes bold and risky decisions in search of new growth opportunities and is normally found in small or start-ups firms where the motivation is to make a market impact; ii) the adaptive mode whereby decision-making is negotiated among the stakeholders, involving serial steps based on the firm's responses to input on past decisions and is normally found in large, established firms, which do not require drastic strategy for market competitiveness; and iii) the planning mode whereby decisions are integrated and complement each other to form planned strategies and is normally found in very large firms with clear operational objectives and that can afford the costs of formal analysis. However, Mintzberg argues that these modes are not mutually exclusive because there is often a mixture in the strategy-making, depending on a particular firm and its circumstances.

analyzing and acting on certain information needed. Jensen and Meckling (1976) view the firm as a nexus of contracts and employed Agency Theory to describe the relationship between the entrepreneur-owner or shareholders (as principal) and the managers (as agent) with many circumstances for potential conflict.<sup>4</sup> Fama and Jensen (1983) extend the Agency Theory by asserting that separation of ownership and control is the efficient form of organization for most firms.

However, there is still no consensus on the issue of separation of ownership and control in relation to the economic Theory of the Firm. In the Neo-classical approach, effective control of the firm is exercised by all stakeholders through voting strength to elect and deselect the firm's directors and managers. The management of the firm too can be hired or fired depending on its performance and behaviour, which is acceptable or not to the controlling stakeholders. All stakeholders also have the right to dispose of their shareholdings if the firm is not pursuing and operating strategic management functions compatibly with their objectives. Mostly, the firm will be controlled by the ownership interest of its stakeholders and is unlikely ever to be fully controlled by the managers (Simon, 1960; Alchian and Demsetz, 1972; Francis, 1980).

On the contrary, the Managerialist approach proposes that the control of the firm is exercised by professional managers. Due to the wide dispersal of the ownership structure of the firm, the stakeholders apparently lose their power to exercise control and thus the managers are the people who really control the management of the firm. For instance, in the selection of goals and objectives of the firm, the managers will follow their personal inclination, prestige and other motives instead of the stakeholders' and the firm's priorities (Baumol, 1959; Cyert and March, 1963; Marris, 1964; Williamson, 1970).

In the Marxism approach, it is proposed that the non-owner managers exercise the actual functions of the capitalist themselves. Hence, this implies that if the managers are assumed to be in control, it is the capitalist system that ensures their strategic management functions are in tandem with the stakeholders' priorities. This approach also concurs with the idea of a managerial revolution but argued that this does not result in substantial qualitative changes of capitalism's nature (Miliband, 1973; Hilferding, 1981).

Nevertheless, these approaches briefly explained above can be considered as an 'ex post approach' since they originate from factual observation of the dispersed ownership structure of the firm. In relation to this, Pitelis (1987) stresses that these approaches started from the notion of dispersed shareholding and then attempted to devise implications on control by narrowing the fixed shareholding percentages held by the stakeholders or by examining the ability of managers to be independent of all or certain stakeholders. In addition, Demsetz (1988, p. 199) contends that there are strong

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<sup>4</sup> The nexus of contracts approach underlies a significant portion of the agency-cost literature and the monitoring school of transaction-cost economics. The implication of this approach is that the theory of the firm (with the firm taken as a separate institution or substantive entity) would be replaced with a theory of contract (with the firm taken as legal entity).

linkages between management and owner interests, which imply that ownership and control are not so separate after all.

Due to the unresolved issues of separation of ownership and control in the approaches above, it is felt appropriate to have some definitions on the concept of control. Litterer (1965, p. 233) defines “control is concerned not only with the events directly related to the accomplishment of the major purposes, but also with maintaining the organization in a condition in which it can function adequately to achieve these purposes”. Berle and Means (1967, p. 66) state that “control has generally been defined to refer to the actual power to select the board of directors, either by mobilizing the legal right to choose them, controlling a majority votes directly or through some legal device, or by exerting pressure which influences their choices”. They also stress that “control refers to the power of determining the broad policies guiding a corporation and not the actual influence on its day-to-day affairs”. Another definition of control is given by Beed (1972, p. 147) who suggests the possibility of external control on the directors, such as, a function of buyers or suppliers, sources of capital or equity ownership, etc., where new or existing directors can be influenced by these elements.

#### **4. THE STAKEHOLDER THEORY**

Another important concept of the firm, which is in line with the separation of the ownership and control issues as discussed above, is the stakeholder theory.<sup>5</sup> This theory proposes that because there are various groups that can be influenced by the performance of the firm, they should be accounted for in the setting of the firm’s objectives and also in the managing of the strategic management functions of the firm. In other words, besides the fundamental economic objectives, the firm also has other additional responsibilities in relation to its diverse stakeholders. Basically, shareholders, managers, employees, buyers, suppliers, financiers and society at large are included in the definition of stakeholder whereby their support is important to the firm’s existence.

According to Ansoff (1965) the objective of the firm should be derived from balancing the conflicting objectives of its diverse stakeholders (e.g. shareholders, investors, suppliers, buyers, vendors and employees). Ansoff further stresses that the reason for the emergence of the stakeholder theory is due to the complication in balancing the firm’s responsibilities and constraints in relation to these stakeholders. Along similar lines, Dill (1975) contends that stakeholders are one of the critical challenges faced by the firm because they seek to influence the strategic decision of the firm. Dill also states that these stakeholders are sophisticated and more concerned with their quality of life. This argument is also supported by Ackoff (1981, p. 30) who defines stakeholders as “all those inside or outside an organization who are directly affected by what it does”. Ackoff further contends that the objective of a firm is to serve all of its stakeholders by trying to improve their quality of life.

Freeman (1984) defines stakeholders in an organization as any group or individual who can affect, or is affected by, the achievement of the firm’s objectives.

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<sup>5</sup> This theory or approach was first developed by the Stanford Research Institute (RSI) in 1963.

Freeman also states that the stakeholder theory, together with other theories (e.g. system theory, corporate social responsibility and organizational theories), can be deployed to develop an approach to strategic planning. In relation to this, Chakravarthy and Lorange (1991, pp. 17–18) identify three steps in the stakeholder management as follows: i) to map a firm's stakeholders, ii) to understand the power and stake of each stakeholder, and iii) to ensure enough allocation of resources for stakeholder management activities.

## 5. THE ICTVBs AND THEIR CHARACTERISTICS

Since this research focuses on ICTVBs, a brief overview of their characteristics and their financial resource shortage is felt warranted. ICTVBs can be broadly defined as business start-ups with entrepreneurial activities in the high-technology economic sector.<sup>6</sup> The literature on growth Theory of the Firm suggests various factors affecting growth, such as, managerial resources (Penrose, 1959), market density (Porter, 1980; Hannan and Freeman, 1989), and strategy or culture and internal capabilities (Boeker, 1997; Garnsey, 1998). However, the growth process of ICTVBs often varies from a normal firm.

In terms of characteristics of ICTVBs, according to Pfirman, Wupperfield and Lerner (1997, p. 14) usually they undertake complex innovation projects with high innovation and business risks. ICTVBs also have a high demand for capital to maintain liquidity. The Bank of England (2001) states that the key features of ICTVBs are as follows: i) their successes are related to difficult-to-value growth potential; ii) their products and services are untested in the markets; and iii) their collateral for funding are normally intangible assets.<sup>7</sup> These characteristics imply that ICTVBs' growth involves uncertainty, risk, and lot of financing to support them. In relation to this, Alexander (2000, p. 31) contends that besides finding adequate financing, the other components required for a successful ICTVBs are as follows: i) a unique technology or business concept, ii) a visionary and experienced management, iii) a competent workforce, iv) a significant market opportunity, and v) a supportive business-technical environment and infrastructure.

The growing literature on ICTVBs also suggests that due to their inherent peculiar characteristics coupled with capital market imperfections, they face a financing resource shortage or 'equity gap' to support their financing needs.<sup>8</sup> Basically, the 'equity gap' is

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<sup>6</sup> The terminology of ICTVBs is used in this research. However, the terminology of New Technology-based Firms (NTBFs) is widely referred to in the literature. NTBFs were firstly defined by Arthur D. Little as "independently owned businesses established for not more than 25 years and based on the exploitation of an invention or technical innovation which implies substantial technological risks" ( cf. Mani and Bartzokas, 2002, p. 11 ).

<sup>7</sup> According to Houben and Kakes (2001, p. 4), the dominant characteristics of these businesses can be summarized as follows: i) their investments are subject to considerable uncertainty and have a 'high risk, high return' profile; ii) their fixed costs are large in comparison to variable costs making their cash flow significantly negative at the initial growth stages; iii) their products/services are subject to rapid obsolescence and their assets are intangible making them not suitable to serve as collateral; iv) their production relies heavily on human capital; and v) the information asymmetries between them and investors are relatively large. Therefore, these characteristics have implications on their capital structure.

<sup>8</sup> "Equity gap" is a prominent feature in most countries. In the U.S., this gap refers to venture business seeking less than US\$500,000. And in the U.K., this term is synonymous to the Macmillan Gap in the

not a new phenomenon since ICTVBs have always had to finance their business ideas, initially, for as long as possible with their own funds. However, when their own funds dry-up and they need external financing to make their business ideas into a reality, then they face this financial resource shortage.

In brief, 'equity gap' refers to the situation whereby ICTVBs encounter difficulty in raising their required external financing from the formal financial institutions such as commercial banks, finance companies, etc. For instance, Gompers and Lerner (1999, pp. 127–128) succinctly argue that there are four critical factors that may limit access to financing for ICTVBs as follows: i) the uncertainty which affects the willingness of investors to extend funds, ii) the problem of asymmetric of information, iii) the nature of assets for collateral, and iv) the conditions in the financial and product markets. These rationales imply that the cost of access to capital is higher for ICTVBs compared to normal firms and that they face a shortage of long-term capital—either in the form of share issues or bank loans. In other words, it is not easy for ICTVBs to get their business adequately financed by external equity or debt in the conventional capital market. However, the literature suggests that informal financial institutions such as family members and close friends, business angels, VCIs and corporate venture capitalists are the common sources of risk-financing for ICTVBs (Gompers and Lerner, 2001; Reid, 1989; Ehrlich et al., 1994).

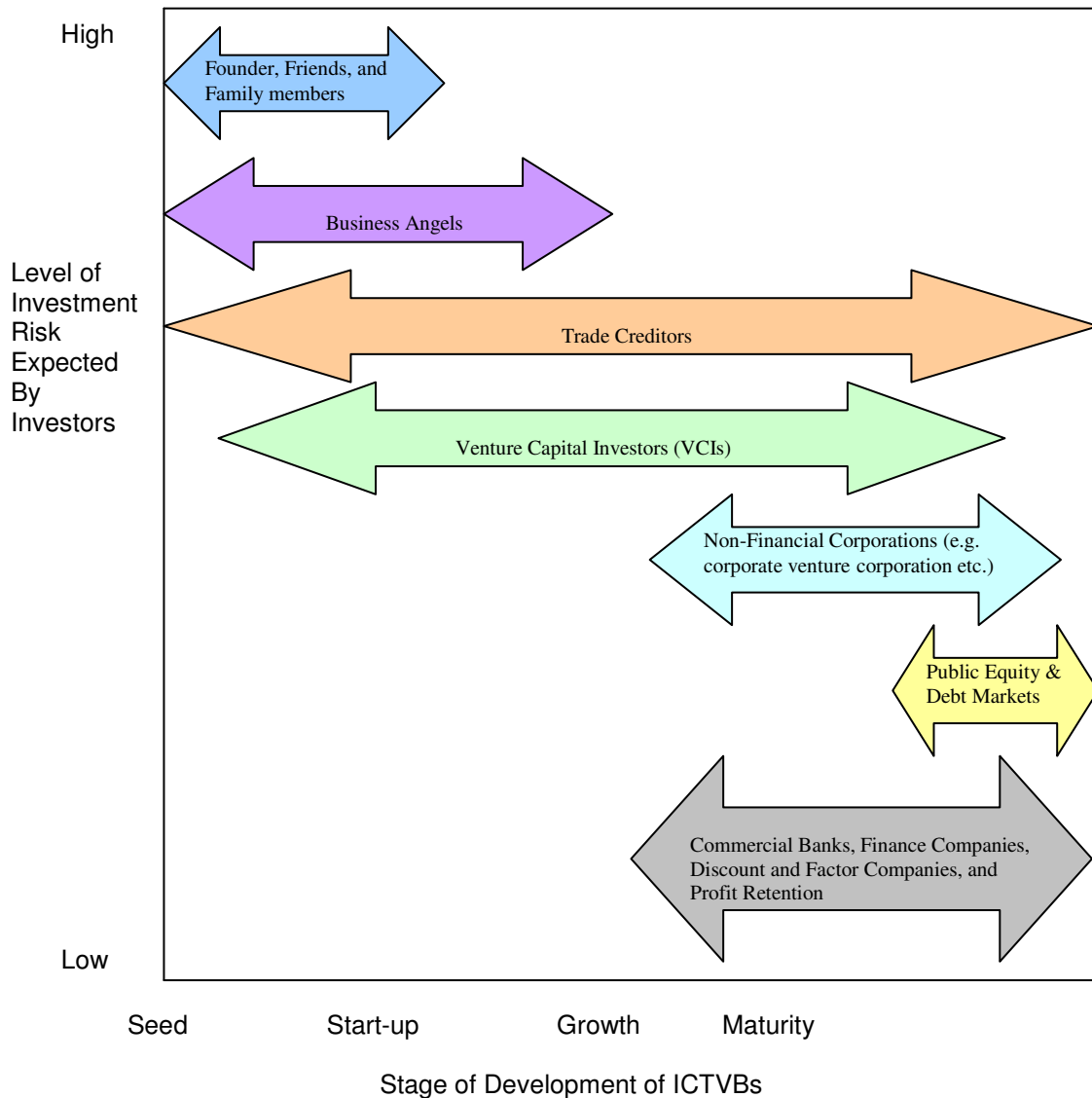
Generally, the financial sources for ICTVBs depends on many factors, such as, their risk profile, assets and projected cash inflows, proven track and market records, their business preferences, among others. Most studies typically suggest that their financial sources are largely dependent on their stage of development (Van Osnabrugge and Robinson, 2000; Bank of England, 2001; Houben and Kakes, 2001). There are four main stages in the ICTVBs' growth process as follows: i) seed stage (includes R&D), ii) start-up stage (includes market introduction), iii) growth stage, and iv) maturity stage.

Figure A below illustrates typical financial sources for ICTVBs. Usually, at the seed stage they are small in size and have no track record or collateral. Their business generally has a negative cash flow. At the start-up stage, they are still quite small but have limited track and market records. However, at this stage they are capable of demonstrating their growth potential to the prospective investors. Next is the growth stage whereby they grow from small to medium and have proven track and market records. At this stage also, they have collateral and positive cash flow to attract potential investors. Finally, at the maturity stage they are considered established and their size grows from medium to large. They are also capable of providing good track and market records to investors for financing purposes. Investors basically know the risk of investing in these venture businesses at this stage. In brief, the amount of external finances normally increases with each progressive stage of ICTVBs' development, indicating that the more mature and larger in size, their inherent riskiness decreases and the problems of securing external financing usually decrease.

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1930s which originated from Lord Macmillan's report in 1931. He was then the Chairman of the Committee on Finance and Industry. This gap refers to the funds below £250,000–£400,000 pounds level (cf. Van Osnabrugge and Robinson, 2000, pp. 38–39).



Figure A: The financial sources of ICTVBs

Source: Adapted from Van Osnabrugge and Robinson (2000, p. 37). Angel Investing: Matching Start-up Funds with Start-up Companies. Jossey-Bass Inc., Publishers.

## 6. SYNTHESIS OF THE THEORY OF THE FIRM

In the context of venture businesses that VCIs and ICTVBs have contracted into, several understandings that can be derived from the above literature on the Theory of the Firm and its related concepts are as follows:

- The decision for any capital investment by the VCIs and ICTVBs has direct implications on their competitiveness and hence is deemed to be strategic in nature.

- b) The venture businesses' operations are actually controlled by a mixture of controlling stakeholders (in this research, the entrepreneur-owners (ICTVBs) and the financiers (VCIs)).
- c) The complexity of managing venture businesses could be further complicated by the nature of differences in expectations, expertise and ROMFs between VCIs and ICTVBs as the key stakeholders.
- d) The separation of ownership and control in venture businesses can create a likely situation for management conflict between VCIs and ICTVBs as the key stakeholders.
- e) The success of venture businesses requires a set of strategic managerial factors that are coherent with both VCIs and ICTVBs as the key stakeholders.

These understandings are important in a business relationship because in essence both parties act as decision-maker and also act as manager of the venture business. Therefore, this implies that the strategic managerial factors of the VCIs and ICTVBs as the key stakeholders will affect the management of the venture business.

## 7. AGENCY THEORY

This research uses the framework of an applied principal-agent analysis, thus a brief discussion on Agency Theory as the focal theory is also felt warranted. In economics literature, on one side, ICTVBs are characterized in dynamic variants as, for instance, risk-takers, decision-makers, innovators, organizers, and managers of economic resources. However, ICTVBs seldom have adequate financing to see the success of their business ideas without relying on external financiers. On the other, VCIs are among the specialized financial institutions providing risk-financing to these ICTVBs. Both VCIs (as principal) and ICTVBs (as agent) are the key stakeholders in the venture business that they contracted into, thus, an agency relationship exists between them. The literature reviewed suggests several theories in explaining this agency relationship. Some of these theories are as follows: a) Agency Theory, b) Procedural Justice Theory, c) Transaction Cost Theory, and d) Social Embeddedness Theory.<sup>9</sup>

Basically, Agency Theory emphasises the possibility of different interests between the principal and agent and relies upon the assumption of market efficiency (Jensen and Meckling, 1976; Fama and Jensen, 1983; Eisenhardt, 1989). This theory suggests that the way to overcome any opportunistic tendencies of the financier (i.e. the principal) and borrower (i.e. the agent) is to monitor the borrower. As mentioned above, this theory assumes both the principal and the agent may have divergent self-interests; therefore, if the agent is to succeed in acquiring needed resources (e.g. capital), it has to

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<sup>9</sup> The debate on which theory is the most appropriate to be considered as the general theory is ongoing. In relation to this, Fiet (2000, pp. 21–22) argues that this “unfinished business” is related to the issue where “two requirements for building a general theory are that its assumptions be both internally consistent and valid”. This situation is not in line with the task at hand of this research. Hence, considering the purposes and the limitations of this research, the synthesis of these theories is felt more important than the creation of a new general theory.

provide the principal with incentives to compensate for their different interests. According to Barney et al. (1996) this theory also suggests that the agent can substitute monitoring for bonding if it lacks necessary capital, but it can substitute bonding for monitoring if it has enough capital. The theoretical assumption of this theory is summarized in Table A below.

Table A: Theoretical assumptions of Agency Theory

<u>Assumption</u>	<u>Description</u>
Primary Domain	Relationships in which principal and agent may have partially differing goals and risk preferences.
Key Ideas	Principal-agent relationship should reflect efficient organization of information and risk-bearing costs.
Unit of Analysis	Contract between principal and agent.
Level of Analysis	Usually individual but relationships can criss-cross the entire economy.
Human and/or Environmental Constraints	Self interest; Bounded rationality; Risk aversion

Source: Adapted from Fiet, (2000, p. 18). "The Theoretical Side of Teaching Entrepreneurship". *Journal of Business Venturing*. Vol. 16.

From the assumptions in the above table, it can be inferred that besides being capable of explaining how to best organize a business relationship, this theory also argues that due to the asymmetries of information and uncertainty, agency conflict may arise.<sup>10</sup> In fact, according to Jensen and Meckling (1976), the problem underlying this theory is information asymmetries, which originate from the complication when ICTVBs as the borrower (or the agent) has more information about its venture business than the outside investors such as VCIs (or the principal).

On the other hand, the Procedural Justice Theory suggests how the difference in interests between the principal and agent may be overcome. It suggests that preserving an effective ongoing relationship between the principal and agent requires them to be able to maintain the perception that their partners are acting fairly in compensating them for contributed work. The Transaction Cost Theory presumes that venture businesses actually come into existence when markets fail to be informationally or allocationally efficient. This theory also suggests that one way to overcome any opportunistic tendencies of both the principal and agent is to monitor the agent. According to Hart (1995, p. 23), this theory propagates that the principal and agent will write a contract that is incomplete due to three factors as follows: i) the difficulty in planning for all future

<sup>10</sup> According to Fiet (2000, p. 20), the key decision criteria under this theory are "Agents have separate and possibly divergent interests from those of the principals. Monitoring may be utilized to detect agent behaviour that is harmful to principals. It may be further reduced through incentive alignment, being careful to not shift excessive risk for loss of compensation for work performed to the agent. Risk of loss is more efficiently borne by principals who can diversify their risk of loss".

contingencies, ii) the difficulty in negotiating a contingencies plan, and iii) the difficulty in writing down a contingencies plan. Under the Social Embeddedness Theory, the agent acquires needed resources through exchange relationships with their principal and over time these relationships may socialize the exchangers so that they become trustworthy, which lowers the acquisition costs.

It is contended earlier (as discussed in Appendix 'A' and appendix 'B') that venture capital and ICT industries in Malaysia are just emerging and there is an information gap regarding their financial aspects. Thus, based on these circumstances and some basic assumptions of the theories as discussed above, the Agency Theory is considered appropriate because it is capable of addressing management conflict pertaining to expectation and information problems faced by the both VCIs and ICTVBs in the venture business that they contracted into. The Social Embeddedness Theory is not suitable because this theory assumes that once socialization between the parties takes place, the embedded relationships will serve as the mechanism to govern the management relationship against any opportunistic and shirking acts. The Transaction Cost Theory on the other hand, assumes market failure, and this approach promotes efficiency transactions as a basis for organizing the management relationship. This approach is also not suitable because it asserts more on the asset specificity and less on the behavioural aspect of the management relationship. The Procedural Justice Theory suggests the reward process in a wide variety of exchange relationships as the unit of analysis. This is not coherent with this research because the unit of analysis is the management relationship in the financial contracting between the VCIs and ICTVBs of the venture business.<sup>11</sup> However, it should be noted that other theories do have their advantages and disadvantages.

## 8. THE PRINCIPAL-AGENT ANALYSIS

For this research, to analyze the business relationship of the VCIs and ICTVBs, an applied principal-agent analysis has been selected as the framework. Basically, in an agency relationship (i.e. principal-agent relationship), one party acts on behalf of another party. In this research, the VCIs are treated as the principal and the ICTVBs as the agent. By virtue of their majority shareholding of the venture business, the ICTVBs are legally considered as the principal in the business context. However, this status changes into an agent in their financial contract when the VCIs invest additional equity which is badly

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<sup>11</sup> In the financial and organizational contracting literatures, basically there are two approaches to understanding the determinants of contractual provisions. According to Gompers and Lerner (1999, pp. 31-35) these approaches are the Costly Contracting Theory and the Supply and Demand Hypothesis, and they state that "both approaches assume that observed contracts are optimal given the contractual environment. The two hypotheses should be viewed as complements. Both effects may be at work simultaneously". They further state that "the Costly Contracting Theory predicts that contracting parties should balance the benefits of restricting activities with the cost of negotiating the provisions, writing the contractual clauses, and monitoring compliance. The Supply and Demand Hypothesis suggests that when the demand for venture capital services is high, relative to a fixed supply of venture capital providers, the number of restrictions should decline". However, this research is not an investigation into the determinants of the contractual provisions *per se* but an attempt to examine the broader differences of ROMFs of both, the VCIs and ICTVBs and the relationship between these ROMFs and management conflict experienced across the full venture capital process.

needed by the ICTVBs now and for future expansion although they still hold majority shareholding of the venture business (as explained in Chapter 1). Due to the asymmetries of information in this kind of relationship, many agency conflicts, pertaining to the managerial aspects of the venture business, between the parties are involved.

Under this framework the researcher approaches both the VCIs (as principal) and ICTVBs (as agent) in order to investigate their actual recognition of managerial factors in their business relationship. The justifications for using this framework are as follows:

- a) This framework is capable of viewing the actual complexity of managing the venture business and real world financial contracts of venture capital financing.
- b) This framework is capable of investigating both the views of VCIs and of ICTVBs simultaneously.
- c) This framework is appropriate to clearly expound the actual principal-agent relationship of the VCIs (as the financier and principal) and the ICTVBs (as the borrower and agent) in venture capital financing.

In conclusion, this framework seemed to be an established framework that could analyze well the business relationship of the VCIs and ICTVBs in venture capital financing (Sahlman, 1990; Amit et al., 1990; Sappington, 1991; Reid, 1998). For example, Reid (1998, p. xvii) succinctly argues that this framework “provides a powerful overarching framework for analyzing contractual relations between parties in which both risk and incomplete knowledge of actions are involved”.

## **9. SUMMARY**

This appendix provides the background theory of this research, that is, the Theory of the Firm and its related concepts. The literature reviewed covers several concepts that formed the main aspects of the understanding of the two central concepts of this research, that is, recognition of managerial factors (ROMFs) and management conflict in managing venture businesses. In other words, this appendix also highlights the governing factors that increase the complexity of managing venture business financially contracted into by the VCIs (as principal) and ICTVBs (as agent).

## **APPENDIX ‘D’**

### **THE DATA THEORY AND STATISTICAL ANALYSIS EMPLOYED**

#### **1. INTRODUCTION**

This appendix provides an overview on the data theory. It also explains the data collection instruments, the chronological events of the field study and the statistical analysis employed for this research. This appendix is organized as follows. Section 2 reviews the data theory in general and the justifications for using the triangulation approach for this research. Then, Section 3 justifies the usage of questionnaire surveys and interviews and shows the chronological events of the field study. Section 4 explains the operational aspect of the analysis on the data and information collected and the specific statistical tests employed in this research. Finally, Section 5 summarizes this appendix.

#### **2. QUALITATIVE AND QUANTITATIVE METHODOLOGIES**

In essence, qualitative methodology is featured by a strong intention by the researcher to investigate the social world from the viewpoint of the subjects and actors that are being studied. Proponents of this methodology contend that due to the main purpose of seeing through the eyes of research participants or inside view, techniques such as observation, case studies and interviews are appropriate to be used. Through these techniques, the managerial and behavioural aspects could be better understood in the perspective of actual practices and procedures used by a particular firm, group or society, organization and venture business (Smith, 1975; Miles, 1983; Van Maanen, 1983; Jick, 1979; Sekaran, 1992; Nachmias and Nachmias, 1996).

Through qualitative methodology, the researcher is capable of having a close proximity to the situation which could in turn allow greater sensitivity to the multiple sources of data. Jick (1979, pp. 145–146) stresses that, for an example, at one stage, qualitative methodology is employed as the critical counter-aspect of quantitative methodology and, at another stage, the analysis benefits from the perceptions gathered from the “personal touch”, real experiences, and first-hand observations of the qualitative methodology. This argument was supported by Miles (1983, pp. 117–118) who states that qualitative methodology has special qualities in contributing to minimize the researcher’s incapacity, narrowness, bias, and to produce clearer findings. Miles further stresses that at the end of the analysis, the findings have a quality that gives vigour to research reports. However, there are some critiques to qualitative methodology. For instance, according to Bryman (2001, pp. 282–283), some of the common critiques of qualitative methodology are that they are too subjective, difficult to replicate, generalization problems, and lack transparency.

On the other hand, quantitative methodology is always perceived as a more preferred and positive research approach to social research by applying the objectivity of a natural science. As the methodological literature proponents suggest that the distinctive

qualities of positivism on quantitative methodology are objectivism (showing more weight on objectivity through the distance between the researcher and the respondents), operationalization and generalization (through questionnaire survey concepts that are easily to be operationalized and generalized), reliability and consistency (through the usage of independent measurement for the similar phenomenon), replicability (through the usage of same research design and instruments in or for another perspective), and validity and causality (through the usage of statistical analysis) (Giddens, 1974; Smith, 1975; Bryman and Cramer, 1990; Sekaran, 1992; Nachmias and Nachmias, 1996; Burns, 2000).

Nevertheless, there are also critiques on quantitative methodology. Bryman (2001, pp. 77–78) highlights four criticisms on quantitative methodology as follows: i) quantitative researchers fail to distinguish people and social institutions from the ‘world of nature’; ii) the measurement process possesses an artificial and spurious sense of precision and accuracy; iii) the reliance on instruments and procedures hinders the connection between research and everyday life; and iv) the analysis of relationships between variables creates a static view of social life that is independent of people’s lives. Table A below illustrates the main contrasting features between qualitative and quantitative methodologies.

Table A: Some common contrasts between quantitative and qualitative research

<u>QUANTITATIVE</u>	<u>QUALITATIVE</u>
Numbers	Words
Point of view of researcher	Points of view of participants
Researcher distant	Researcher close
Theory testing	Theory emergent
Static	Process
Structured	Unstructured
Generalization	Contextual understanding
Hard, reliable data	Rich, deep data
Macro	Micro
Behavior	Meaning
Artificial settings	Natural settings

Source: Bryman (2001, p. 285). “Social research methods” .New York: Oxford University Press.

Considering the strengths and opportunities of both qualitative and quantitative methodologies highlighted above, it is in the opinion of the researcher that the best approach for this research is a combination of methodologies or the so-called triangulation approach.<sup>1</sup> According to Denzin (1970, pp. 310–340), triangulation refers to an approach that uses multiple observers, theoretical perspectives, sources of data, and methodologies, but the emphasis tends to be on methods of investigation and sources of

<sup>1</sup> Triangulation was originally conceptualized by Webb et al. (1966) as an approach to the development of measures of concepts, whereby multi-methods would be used in the development of measures, resulting in greater confidence in findings [cf. Bryman (2001, p. 274)].

data. Denzin further stresses that the greater the triangulation, the greater the confidence in the observed results and findings. Along similar understanding, Bryman (2001, p. 274) states that triangulation entails using more than one method or source of data in study of social phenomena. In the past, triangulation was widely used in navigation.

In the above context, Hughes (1976, pp. 276–277) also argues that multi-methods and references can strengthen and complement each other and encourage a more orderly connection of both theory and research. This implies that what research discovers and how it is discovered depend on how the researcher engages in the phenomena studied (Yin, 1989; Silverman, 1985; Jean Lee, 1992; Bryman, 2001). In reality, the choice of a research methodology also normally depends on various elements such as the nature and scope of the study being conducted, resources available, and limitations (for example, cost, timeframe and related restrictions). In relation to this, Phillips and Pugh (2000, p. 51) assert that “All research involves working within particular constraints, but those of a PhD are very stringent. They include clear limitations on finance, physical resources, administrative back-up and, above all, time”.

Paralleling the triangulation approach selected for this research (as discussed above) a case study is also employed.<sup>2</sup> Denscombe (1998, pp. 32–34) states that “case studies focus on one instance (or a few instances) of a particular phenomenon with a view to providing an in-depth account of events, relationships, experiences or processes occurring in that particular instance”. Case studies also can be employed for the purposes of theory testing as well as theory-building. Hence, the choices of a case study whereby MSC is the location and the case for this research is felt appropriate for the task at hand. Besides providing an avenue to investigate in-depth the business relationship between the VCIs and ICTVBs, this approach also gives the opportunity to enrich the knowledge in the real world of financial contracting and management of venture business between them.

### **3. DATA COLLECTION INSTRUMENTS AND THE FIELD STUDY**

According to Selltitz et al. (1962, p. 243), questionnaire surveys and interviews provide data and information on what a person knows, believes or expects, feels or wants, intends or does or has done, and his explanation or reasons for any of the preceding. This view is supported by Williamson, Karp and Dalphin (1977, pp 165–166) where they argue that standardized questionnaire and intensive interviewing are appropriate techniques for data collection because the researcher has opportunities to probe extensively for any sensitive data or information as well as to obtain comprehensive knowledge of the matters under investigation. In relation to this understanding, Sommer and Sommer (1980, p. 63) concur with the usage of both standardized questionnaires and interviews because according to them, on one side, the questionnaire is actually a written interview and on the other side, an interview can be considered as an oral questionnaire. From the above literature, it indicates that both interview and questionnaire surveys are

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<sup>2</sup> Case studies are appropriate for exploratory and descriptive or explanatory researches because this approach gives the researcher the opportunity to capture a greater depth and breadth of detail on the subject's activities (Yin, 1994; Denscombe, 1998; Burns, 2000).



appropriate instruments for data collection of this research.<sup>3</sup> Table B itemizes the chronology of events of the field study for this research.

Table B: The field study's chronology of events

(MARCH 2002 ~ APRIL 2003)	
<b><u>March/April 2002</u></b>	The data collection instrument (Survey Questionnaire) was pre-tested in the Pilot Study. Discussions with some of the main players in the local venture capital industry were also conducted.
<b><u>13 Nov 2002</u></b>	Contacted individually (through e-mail) the VCIs in Malaysia which are involved in ICT/Multimedia and Life Sciences alerting them about the proposed Field Study and requesting their cooperation, especially their list of investees' addresses and contact persons.
<b><u>21 Nov 2002</u></b>	Seek further assistance from the President of the Malaysian Venture Capital Association (MVCA) for the Field Study.
<b><u>9 Dec 2002</u></b>	MVCA circulated (through e-mail) to its members about this Field Study and reaffirmed about the genuineness of Researcher and this research as well as requesting its members cooperation accordingly.
<b><u>December 2002</u></b>	The directory of VCIs and Investees (i.e. addresses and contact persons) was prepared for mailing out the Survey Questionnaire.
<b><u>January 2003</u></b>	True copies of the Survey Questionnaire, both, for the VCIs and ICTVBs were prepared.
<b><u>3 Feb 2003</u></b>	The first Letter of Introduction from the Supervisor for this research was ready.
<b><u>9 Feb 2003</u></b>	The list of respondents to be sent the Survey Questionnaire was finalized.
<b><u>17 Feb 2003</u></b>	Discussion with the Head of the Venture Capital Unit, Ministry of Finance Malaysia about the research and requested his assistance on this Field Study.
<b><u>25 Feb 2003</u></b>	The second Letter of Introduction from the Deputy Minister of Finance, Malaysia was ready. Cover letter from the Ministry of Finance, Malaysia for the Survey Questionnaire was also ready.
<b><u>26 Feb 2003</u></b>	The Survey Questionnaire was coded and mailed to the respective respondents with a due date of March 31, 2003.
<b><u>15 Mar 2003</u></b>	Direct Interviews with selected respondents were conducted.
<b><u>21 Mar 2003</u></b>	Reminder letter to all respondents were sent. This was followed through by phone as well as e-mail, requesting their cooperation and reminding them about the due date.
<b><u>3 Apr 2003</u></b>	Direct Interviews were further conducted with selected respondents.

<sup>3</sup> However, for the advantages and disadvantages of these survey instruments, please refer for e.g. Oppenheim, 1966; Dillman, 1974; Nachmias and Nachmias, 1996; Sekaran, 1992; and Bryman, 2001.

#### 4. ANALYSIS OF DATA AND INFORMATION

As it was mentioned above, this research used the triangulation approach; therefore, both qualitative and quantitative analyses were employed in analyzing the data and information collected. The crucial steps taken were as follows:

- a) The completed survey questionnaires were coded and recorded into a databank in the Statistical Package for the Social Sciences (SPSS) Version 11 program.
- b) Responses for open-ended questions in the survey questionnaires were compiled accordingly before a clustering on the responses was done in order to obtain the most commonly grouped responses across the variables that are being investigated.
- c) Any irregularities (for example, data entry errors, non-response and unintelligible errors) were cleaned-up before computation. The reliability of indicators, especially those tapped by empirical measurement, need to be examined. Basically, reliability concerns the extent to which measuring procedures yield the same results on repeated trials. The data theory provides a number of methods to test the reliability of the measurement but this research employed Cronbach's alpha (i.e. the internal consistency method) to determine the reliability estimates of the variables.<sup>4</sup> This method requires minimum administration and also is a commonly used test to provide an estimate of internal reliability on the measurement.
- d) Before the statistical analyses were performed, a reliability test on all variables used in this research was conducted to examine their internal consistency. The Cronbach's alpha ranges in value from 0 to 1. The higher the alpha level, the more reliable is the data. Table C following shows the Cronbach's alphas of all variables that are to be investigated. From this table, although the alpha values are above 0.70 levels (i.e. the accepted level for social science research) the results suggest that inconsistency may exist in the responses by the respondents on certain variables as indicated by the relatively lower alpha values, e.g. variables for maintaining relationship (0.70), perception towards market and agency risks (0.70), sources of deal origination (0.71), etc. Among the highest alpha values that indicate high consistency of the responses by the respondents are variables such as valuation criteria (0.93), information required from ICTVBs (0.91), areas of expertise (0.86), etc.

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<sup>4</sup> Among the popular methods for reliability testing are retest method, split-half reliability method, Guttman method, Parallel and Strictly Parallel method, internal consistency method, and alternative form method (Sekaran, 1992; Bryman, 2001; Foster, 2001). For example, the Cronbach's alpha is based on the average correlation of items within a test if the items are standardized. If the items were not standardized, it is based on the average covariance among the items. Bryman (2001, p. 71) states that Cronbach's alpha "essentially calculates the average of all possible split-half reliability coefficients. A computed alpha coefficient will vary between 1 (denoting perfect internal reliability) and 0 (denoting no internal reliability). The figure 0.80 is typically employed as a rule of thumb to denote an acceptable level of internal reliability, though many writers accept a slightly lower figure, e.g. 0.60 or 0.70 for social science research.

Table C: Results of reliability test on all variables investigated (N=57)

VARIABLES	CRONBACH'S ALPHAS
<b>A)Dependent variables:</b>	
Affected management elements & extent of agency conflict experienced.	0.75
<b>B)Independent variables:</b>	
Sources of deal origination.	0.71
Screening criteria.	0.83
Sources of due diligence.	0.75
Valuation techniques.	0.73
Valuation criteria.	0.93
Investment instruments.	0.73
Contract agreement's provisions.	0.74
Maintaining relationship.	0.70
Advice required from VCIs.	0.72
Information required from ICTVBs.	0.91
Factors of an ideal relationship.	0.81
Liquidity methods.	0.72
<b>C)Risk management:</b>	
General risk management.	0.83
Perception towards Market/Agency risks.	0.70
Overall investment practices.	0.81
<b>D) Areas of expertise.</b>	0.86

- e) The data were then analyzed using several identified statistical tests as discussed below.

In order to support the results and findings of this research, statistical analysis was conducted to give empirical evidence and reliability. Since the measurement level of the variables in the survey questionnaires was a mixture of interval/ratio, ordinal and nominal scales, a combination of parametric and non-parametric statistical tests were used.<sup>5</sup> The data were analyzed using the combined total sample of 57 respondents (i.e. 18 VCIs and 39 ICTVBs). The descriptive statistics were employed to describe the aggregate view of the data and case studies. Specific statistical tests were then employed for testing the hypotheses in this research.

The t-Independent Samples test is used to determine if the means of two unrelated samples differ. It does this by comparing the differences between the two means with the standard error of the difference in the means of different samples.<sup>6</sup> Therefore, to test the differences in the ROMFs between the VCIs and ICTVBs (i.e. for hypotheses H1, H2 and H3), this test was employed because it is appropriate since the respondents of this research were divided in two groups (i.e. the VCIs and the ICTVBs). In other words, this test is selected to determine whether the difference between means for the scores of VCIs and ICTVBs is significant. For the purpose of this research, if more than half of the tested

<sup>5</sup> For close-ended questions with variables of interval-nominal scales, the use of contingency table analysis (cross-tabulation) in conjunction with chi-square (as a test of statistical significance) and Cramer's V (to quantify the strength of association) could be used. For variables with dichotomous scales, a multiple dichotomy analysis could be used for analysis. And for open-ended questions, a multiple response analysis is commonly used for the analysis (Norusis, 1983; Bryman, 2001; Coakes and Steed, 2001; Foster, 2001)

<sup>6</sup> According to Bryman and Kramer (2001, p. 140), the formulae for this test is as follows:

[t= sample one mean – sample two mean divided by standard error of the differences in means].

variables are found to be statistically significant (i.e. based on the t-values and level of significance), they will provide the basis for accepting or rejecting the hypotheses tested.

The Correlation analysis was used to measure the strength of association between the ROMFs and management conflict (i.e. for hypotheses H4, H5 and H6) in this research. Methods for assessing the level of correlation between variables under investigation are the Pearson Product-Moment correlation (i.e. Pearson's  $r$ ) and the Means test (and also the Spearman's Rank Order test, i.e. Spearman's  $\rho$ ). The procedure for this analysis was performed by correlating each of their ROMFs with the management conflict indicators. Again, for the purpose of this research, if more than half of the tested variables are found to be statistically significant (i.e. based on the correlation coefficients and the level of significance), they will provide the basis for accepting or rejecting the hypotheses tested. To investigate further the extent of the variance that could be accounted for by the ROMFs on management conflict, the Factor and multiple regression analyses were conducted.

Before hypotheses H4, H5 and H6 were tested, means tests were conducted to determine the general relationship between their ROMFs and management conflict indicators. Most of the variables tested were statistically significant (i.e. 27, 18, and 13 variables were found to be significant at the pre-investment and post-investment stages and for risk management respectively). Table D below shows the results of means test of these variables.

Table D: Results of means test for the general relationship between ROMFs and management conflict (N=57)

VARIABLES	F VALUES	SIGNIFICANCE VALUES
<b>a) Pre-Investment Stage</b>		
<b>i) Sources of Deal Origination:</b>		
Cold calls to VCs directly	7.843	0.007
Active search by VCs	21.122	0.000
Other mechanisms (e.g. trade exhibitions)	13.479	0.001
<b>ii) Screening Criteria:</b>		
Production technology involved	3.119	0.023
Management team and track records	3.066	0.024
Markets for products/services	5.592	0.001
ROI's rate	2.576	0.014
Acceptable investment duration	2.599	0.019
<b>iii) Sources of Due Diligence:</b>		
Reliance on personal references	3.615	0.011
<b>iv) Valuation Techniques:</b>		
Internal rate of return	2.712	0.040
Accounting rate of return	4.256	0.005
<b>v) Valuation Criteria:</b>		
Size of market	3.496	0.013
Growth potential of market	3.884	0.008
Technical skills	3.912	0.008
Uniqueness of products/services	3.780	0.016
Patentability of products/services	9.805	0.000
Management skills	3.672	0.032
Financial skills	3.739	0.016
References of investor/entrepreneur	3.263	0.018
Mergers and acquisitions potential	3.320	0.027
<b>vi) Deal Structuring:</b>		
Debt (short-term loans)	3.051	0.025
Debt (long-term loans)	2.953	0.028
<b>vii) Contract Agreement Provisions:</b>		

Registration rights	4.574	0.037
Go-along rights	5.792	0.019
Pre-emptive rights & rights of first refusal	4.159	0.046
<b>b) Post-Investment Stage</b>		
<u>i) Monitoring type preferred</u>	7.297	0.002
<u>ii) Maintaining Relationship:</u>		
Submit periodic reports	5.546	0.022
Limit to provision of capital funds only	8.385	0.005
<u>iii) Advice Required from VCI:</u>		
Business & Entrepreneurialship	2.900	0.031
Tax and legal matters	2.582	0.048
Personnel and recruitment policies	6.915	0.000
Current scientific/technological information	3.010	0.038
<u>iv) Information Required from ICTVBs:</u>		
Technology and markets	2.987	0.027
Capital structure and investments	3.839	0.008
Management and financial accounts	2.553	0.050
<u>v) Factors of an Ideal Relationship:</u>		
Appropriate capital structure	2.712	0.040
Efficient risk-sharing	3.289	0.018
Free-sharing of information	5.649	0.001
<u>vi) Acquiring Liquidity:</u>		
Mergers and acquisitions	3.161	0.021
Buy-back	4.484	0.007
Write-off	5.624	0.001
<b>c) Risk Management</b>		
<u>i) General Risk Management:</u>		
Management risk	3.974	0.007
Competitive risk	3.803	0.009
Viability risk	2.760	0.037
Cash-out risk	2.789	0.036
<u>ii) Perception Towards Market &amp; Agency Risks:</u>		
Small market	3.045	0.025
Many competitors	8.886	0.000
Technical obsolescence	5.957	0.001
Many substitute products/services	4.759	0.005
ICTVBs and VCIs having different cash flow objective	3.132	0.022
ICTVBs and VCIs having different profitability objective	4.334	0.004
Many ventures to be monitored	4.191	0.005
Contractual ambiguities	5.181	0.001
Manipulation of profitability	5.482	0.001
Short-term self-interest seeking	4.889	0.002
Potential dishonesty	6.438	0.000
<u>iii) Overall Investment Practices:</u>		
Deal origination and Screening	7.188	0.000
Evaluation	3.149	0.022
Contracting/Deal structuring	2.609	0.046

To examine H4, H5 and H6 further, factor and multiple regression analyses were conducted. Factor analysis is a data reduction technique used to reduce a large number of variables to a smaller set of underlying factors that represent sets of statistically related variables.<sup>7</sup> According to Coakes and Steed (2001, p. 155) when the researcher's goal is to construct a reliable test, this technique is an additional means of determining whether sub-variables are tapping into the same construct. This research uses R Factor Analysis

<sup>7</sup> According to Hair et al. (1998, p.90), factor analysis is a generic name given to a class of multivariate statistical methods whose primary purpose is to define the underlying structure in a data matrix. This analysis addresses the problem of analyzing the structure of the inter-relationships among a large number of variables by defining a set of common underlying dimensions, known as factors. They state that Q Factor Analysis forms groups of respondents or cases based on their similarity on a set of characteristics. The R Factor Analysis analyzes relationships among variables to identify groups of variables forming latent dimensions.

with the objective to reduce statistically the large variables that explain the independent variables (i.e. the ROMFs) and the dependent variable (i.e. the management conflict) and to confirm and finally rename the factors in a conceptually meaningful way.

The R factor analysis analyzes relationships among variables to identify groups of variables forming latent factors. For this analysis, Principal Component Analysis for extraction method and Varimax for rotation method were used. All of the variable sets were statistically significant with Kaiser-Meyer-Olkin measure of sampling adequacy range between 0.635 to 0.841 and the Bartlett's test of sphericity chi-square values range from 305.468 to 823.663.<sup>8</sup> The R factor analysis produced eight factors each for the differences in ROMFs (of both VCIs and ICTVBs) at pre-investment and post-investment stages, seven factors for risk management, and four factors for management conflict indicators. The factor loadings of these factors are shown in Table E below.<sup>9</sup>

Table E: Results of the R factor analysis for all variables (N=57)

FACTORS	FACTOR LOADINGS	EIGEN VALUES
<b>A) Pre-Investment Stage:</b>		
<u>1. Screening &amp; Due Diligence:</u>		5.357
Size and policy of investment	0.824	
Market for products/services	0.805	
Own market evaluation	0.794	
Independent accountant's reports	0.775	
Independent market reports	0.773	
Management team/track record	0.751	
2. Location of venture	0.761	2.098
3. Qualitative assessment	0.717	1.785
4. Time taken for investment decision to be made	0.908	1.211
[KMO=0.841 Bartlett's (chi-square)=470.829 Total variance=65.32%]		
<u>5. Market &amp; Product Criteria:</u>		5.123
Uniqueness of products/services	0.830	
Market needs for products/services	0.772	
Access to market	0.713	
Growth potential of market	0.706	
<u>6.Environment Threat Resistance Criteria:</u>		3.134
Protection against down-side risk	0.855	
Resistance to economic cycles	0.790	
<u>7. Managerial Capabilities Criteria:</u>		2.892
Management skills	0.853	
References of investor/entrepreneurs	0.790	
<u>8. Cash-out Potential:</u>		2.099
Merger/acquisition potential	0.847	
Opportunities for exit	0.714	
[KMO=0.832 Bartlett's (chi-square)=743.887 Total variance=73.60%]		

<sup>8</sup> The KMO measure is used to measure the sampling adequacy. According to Kaiser (1974), measures in the 0.90s are marvelous, in the 0.80s as meritorious, in the 0.70s as middling, in the 0.60s as mediocre, in the 0.50s as miserable, and below 0.50 as unacceptable. Therefore, the minimum acceptable level is 0.50. The Bartlett's test of sphericity is a test to assess the relationships among variables and to be statistically acceptable; the significance level should be 0.50 or lower.

<sup>9</sup> According to Comfrey (1973), any loading greater than 0.71 is excellent, 0.63 as very good, 0.55 as good, 0.45 as fair, and 0.32 as poor. In addition, Bryman and Cramer (1990) state that conventionally variables that correlate less than 0.30 with a factor should be excluded from consideration.

<b>B) Post-Investment Stage:</b>		
<u>1. Business, Managerial, Technical, and Financial Matters:</u>		4.991
Business strategy information	0.916	
Technology and market information	0.827	
Supply sources information	0.805	
Managerial and technical staff information	0.770	
Budgets information	0.768	
Management and financial account information	0.763	
Capital structure and investments information	0.741	
2. Scientific, Technological, and Entrepreneurialship Matters.	0.818	1.893
3. Public policies and institutions Matters.	0.879	1.593
[KMO=0.820 Bartlett's (chi-square)=350.893 Total variance=65.21%]		
<u>4. Factors of Ideal Relationship:</u>		3.116
Enhancement of reputation	0.829	
Efficient of risk-sharing	0.828	
Increasing of motivation	0.789	
<u>5. Acquiring Liquidity:</u>		2.527
Write-off	0.801	
Debt (long-term loans)	0.793	
6. Maximum return on investment.	0.710	1.333
7. Issues of common equity.	0.744	1.651
8. Initial public offering (IPO).	0.869	1.470
[KMO=0.635 Bartlett's (chi-square)=305.468 Total variance=69.63%]		
<b>C) Risk Management:</b>		
<u>1. Management Risk:</u>		3.063
Management risk	0.823	
Monitoring stage	0.776	
Inexperience risk	0.718	
<u>2. Cash-out Risk:</u>		2.886
Cash-out risk	0.838	
Evaluation stage	0.794	
Viability risk	0.759	
<u>3. Business Risk:</u>		1.690
Deal origination and screening	0.797	
Type of business venture	0.756	
[KMO=0.822 Bartlett's (chi-square)=301.955 Total variance=69.45%]		
<u>4. Market Risk:</u>		4.086
Many competitors	0.802	
Potential new competitors	0.802	
Small market	0.763	
Unattractiveness of industry	0.753	
Many substitute of products/services	0.735	
Weak demand	0.701	
<u>5. Agency Risk (Personal traits):</u>		3.585
Short-term self-interest seeking	0.939	
Manipulation of profitability	0.933	
Potential dishonesty	0.879	
Contractual ambiguities	0.744	
<u>6. Agency Risk:</u>		1.900
Different cash flow objectives	0.934	
Different profitability objectives	0.915	
7. Many ventures to be monitored.	0.804	1.282
[KMO=0.642 Bartlett's (chi-square)=654.642 Total variance=77.52%]		
<b>D). Management Conflict Indicators:</b>		
<u>1. Organization and Management System:</u>		4.028
Affected corporate strategy	0.915	
Affected organization structure	0.873	
Affected corporate mission and objectives	0.834	
Affected management system	0.824	
Affected incentive and reward system	0.724	
<u>2. Control and Decision-making:</u>		3.951
Affected information and control	0.802	
Affected decision-making process	0.797	
<u>3. Financial and Investment Matters:</u>		3.102

Financial account	0.849	2.158
Budgets	0.820	
Management account	0.819	
Capital structure and investments	0.802	
4. Technological and Market Matters:		
Technology	0.875	
Markets	0.860	
Technical staff	0.840	
[KMO=0.694 Bartlett's (chi-square)=823.663 Total variance=73.55%]		

N=57; KMO=Kaiser-Meyer-Olkin measure of sampling adequacy; Bartlett's Test of sphericity; Significance at 0.000 levels.

Based on the latent factors derived from the R Factor Analysis above, multiple regression analysis was used to assess further the relationships between the independent and dependent variables.<sup>10</sup> In this analysis, each independent variable was regressed against the dependent variable in order to identify which had the strongest relationship. This analysis also would provide the information on the coefficient of multiple determination ( $R^2$ ), which would indicate the strength of each of the independent variables in explaining the dependent variable. In order to identify the best model to explain the dependent variable, the Stepwise method and Backward elimination procedure was used. This procedure initially generates a regression equation which includes all the independent variables selected but sequentially removes variables from the regression model. Independent variables with the smallest insignificant partial F-test are then removed from the model. The remaining variables are then regressed against the dependent variable. Thus, this procedure will stop when all the independent variables remaining in the model are significant at the pre-specified alpha level. Then, this process will produce a model which consists of variables with a significant F-test at the pre-specified alpha level.

Based on factors derived above, the magnitudes of relationship were further tested with multiple regression analysis. The results of this analysis were illustrated in Figure A below.<sup>11</sup> The combined effect of all variables at pre-investment and post-investment stages and for risk management shows that 45%, 29%, and 26% respectively of the variance of management conflict experienced by them.<sup>12</sup> The association of management conflict is explained by the three independent variables of differences in ROMFs at the pre-investment and post-investment stages and risk management. Based on the beta

<sup>10</sup> The observations on Durbin-Watson D Statistics, tolerance values, F ratios and T Statistics and their significance levels are important in regression analysis. According to Norusis (1983, p. 165), the Durbin-Watson D Statistics is a measure of residual error autocorrelation and tolerance is a measure of multicollinearity among the independent variables tested. Small tolerance values (i.e. closer to 0) will create computational problems. Multicollinearity can also be measured based on  $R^2$  value. For the results to be acceptable, the Durbin-Watson D Statistics should be well within the range of 1.5 to 2.5. According to Maddala (1977), the Durbin-Watson D Statistics value is the most crucial as the results of a regression cannot be used if it fails to meet this statistics satisfactorily although all other tests, e.g. T,  $R^2$ , and F values are satisfactory.

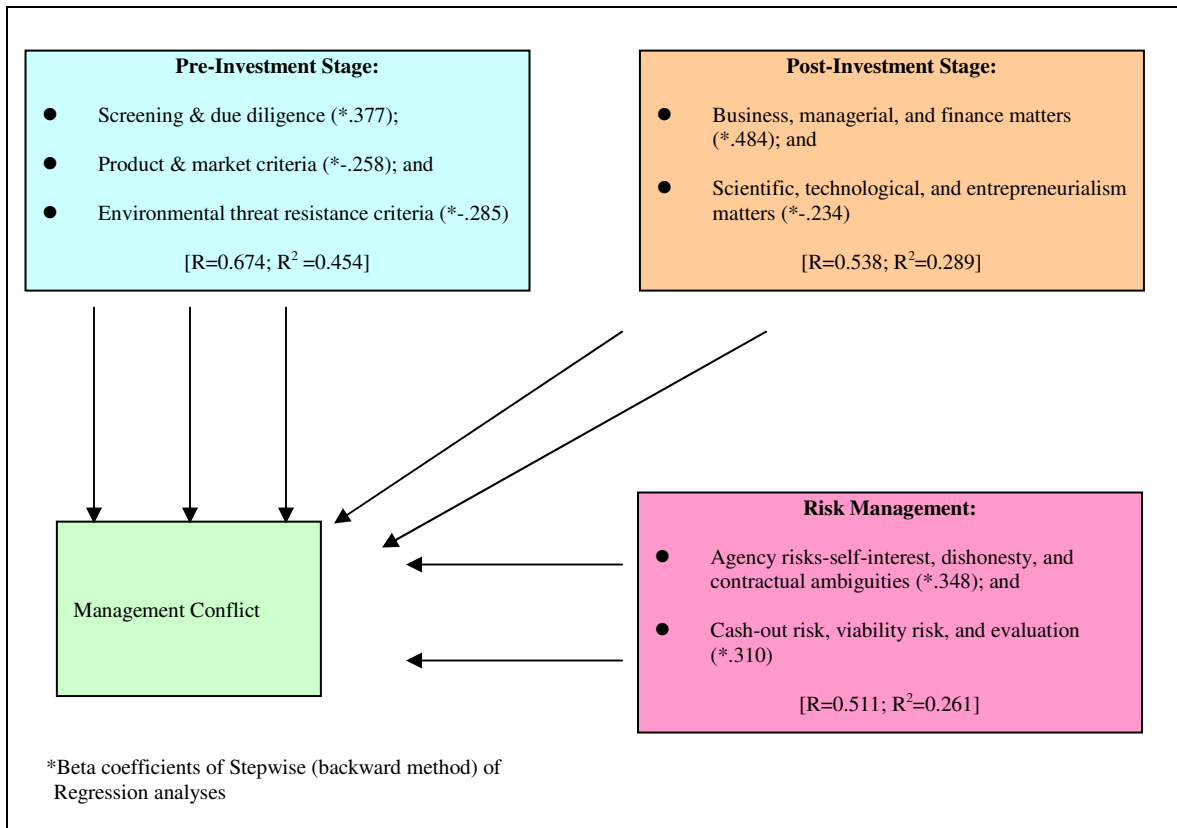
<sup>11</sup> Similar to the results of the correlation analysis, the multiple regression results are also not that strong statistically. However, these results indicate that the association between ROMFs and management conflict did exist. A specific causality test (e.g. Granger's, Sim's, SEM, Path analysis, etc.) was not conducted in this research.

<sup>12</sup> These are based on the  $R^2$  values. For a more conservative estimate, the adjusted  $R^2$  values are as follows: 39%, 26% and 23% respectively. Statistically, these adjusted  $R^2$  values take into account the number of subjects and the number of independent variables involved.



coefficients, Business, Managerial, and Finance matters at the post-investment stage have the greatest influence with a beta value of 0.484; followed by Screening and Due Diligence (beta value of 0.377) at the pre-investment stage; and Agency risks and Contractual Ambiguities (beta value of 0.348), and Cash-out risk, Viability risk and Evaluation (beta value of 0.310) for risk management. However, the general interpretation here is that the association of the differences in ROMFs on management conflict is affected by the interaction of these three sets of independent variables.

Figure A: Results of multiple regression analyses



Non-parametric tests were also used to supplement the parametric tests in this research. Basically, a non-parametric statistical test is a test whose model does not dictate conditions about parameters of the population from which the sample was drawn. This is due to most of non-parametric tests assuming the observations were independent and the variables under investigation have underlying continuity. Furthermore, these tests do not make restrictive assumptions about the shape of a population distribution (i.e. whether it is normal curve or other specific shapes) and were applicable to both ordinal and nominal data scales too. They also do not require any kind of laborious computation and thus it is much easier to do and understand. The tests that were used to identify any significant differences in the ROMFs of VCIs and ICTVBs are the Median test, the Kolmogorov-Smirnov test, the Kruskal-Wallis H test and Mann-Whitney U-test (Wilcoxon Rank Sum W test). To investigate the direction and the strength of the relationships between the

independent and dependent variables, the Means test and the Spearman Rank Order test were also conducted.

## **5. SUMMARY**

This appendix identifies the methodology approach and justifies the statistical tests for this research. It also shows the chronological events of the field study conducted for this research.

**APPENDIX 'E'**

February, 2003

TO WHOM IT MAY CONCERN

**RE: MR. SOHAIMI BIN MOHD SALLEH (I/C No: 590318-03-5047)  
FIELD STUDY (DATA COLLECTION AND RESEARCH SURVEY)**

I am happy to introduce Mr. Sohaimi bin Mohd Salleh. He is a senior officer in the Administrative and Diplomatic Service (ADS) Malaysia, who has been sent by the Malaysian Public Services Department to study for his PhD at the Waseda University, Japan. He joined the ADS since 1984 and has served the Treasury, Ministry of Finance until 2000 prior to his study leave. In the Treasury, he was a Principal Assistant Secretary and among his duties were the financial policy, capital market, management and supervision of MOF (Inc.) companies.

2. Mr. Sohaimi is currently undertaking and completing his PhD research on venture capital financing. I was made to understand that the objective of his research is to study the correlation between the investment practices/procedures and agency problems in the financial contracting relationship between venture capital firms ( as principals ) and Information & Communication Technology (ICT) companies ( as agents ) operating in Malaysia.

3. While this research is being undertaken in pursuit of an academic objective, the additional knowledge about venture capital financing in Malaysia could be useful to the Government and is a purposeful exercise. I hope you would be kind enough to give your assistance and to allow Mr. Sohaimi to gather the relevant information needed for his research. Your cooperation is highly appreciated. Thank you.

Yours sincerely,

(DATO' DR. HAJI SHAFIE BIN MOHD SALLEH)  
Deputy Minister of Finance, Malaysia.

February 3, 2003

TO WHOM IT MAY CONCERN

**Re: Mr. Sohaimi bin Mohd Salleh (T01A703-7)**  
**Field Study (Data Collection and Research Survey)**

I am writing this letter to confirm that Mr. Sohaimi bin Mohd Salleh is a registered PhD candidate working on major research project under our supervision at the Graduate School of Global Information and Telecommunication Studies (GITS), Waseda University, Japan. The objective of his research is to study the correlationship between the investment practices/procedures and agency problems in venture capital financing.

The framework of this study is the so-called an applied Principal-Agent Analysis. Among the areas to be covered are the managerial practices at each stage of the venture capital financing process, risks management and agency problems in the financial contracting relationship between the venture capital firms ( as principals ) and the Information & Communication Technology (ICT) companies ( as agents ) operating in Malaysia.

We do hope you would provide assistance to Mr. Sohaimi bin Mohd Salleh to carry out his research project in Malaysia.

Thank you very much for your cooperation.

Yours sincerely,

Toshiharu Kitamura  
Supervisor,  
Professor, Waseda University.



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## A STUDY OF THE INVESTMENT PRACTICES TO MITIGATE AGENCY PROBLEMS IN VENTURE CAPITAL FINANCING

# Survey Questionnaire

### **INSTRUCTIONS**

**This Questionnaire is designed to gather information and data about the investment practices or procedures to mitigate agency problems in venture capital financing.** An applied Principal-Agent framework is used for the study and focused on the managerial practices in the financial contracting relationship between venture capital firms (as principals) and ICT companies (as agents) operating in Malaysia. This will enable us to piece together the wonder of venture capital financing from both points of view.

**Complete confidentiality is assured with this survey. The information that you provide us will be used in an aggregate form only. Individual firm identity and profile will be completely anonymous. All information supplied in this Questionnaire will NOT be used for any other purposes except those of this research project.**

The Questionnaire is divided into five (5) parts as follows:

- Part 1 – Basic Information
- Part 2 – Investment Practices or Procedures
- Part 3 – Risk Management
- Part 4 – Information on Agency Relationship
- Part 5 – General Information

Most of the questions in this survey **simply require you to rank or rate by circling the appropriate number/answer. Some questions require a few words of explanation.** Please feel free to make any additional comments anywhere in the Questionnaire that you think it is necessary, as your candid personal opinion will greatly enhance the success of this study. In normal circumstances, the Questionnaire should take only 45 to 60 minutes of your valuable time to complete. **Please complete this Questionnaire as incomplete Questionnaire creates difficulties for data analysis.**

Please return the completed Questionnaire (by using the self addressed and stamped envelope provided) at your earliest convenience.

For your co-operation and assistance, thank you very much.

**SOHAIMI MOHD SALLEH**

February 2003.

E-mail add: [sohaimimy@yahoo.com](mailto:sohaimimy@yahoo.com)

FSQN.PRIN.: **PART 1: BASIC INFORMATION****[The following questions seek basic information about your firm.]**

1. Date of incorporation.\_\_\_\_\_.
2. Number of employees:
  - a. Total\_\_\_\_\_.
  - b. Venture capital executives\_\_\_\_\_.

**[For questions 3, 4, 5, and 6, please give a range or estimations.]**

3. Total value of venture capital funds: ( in RM million )
  - a. Managed \_\_\_\_\_
  - b. Invested \_\_\_\_\_
  - c. Available to invest \_\_\_\_\_
4. Number of proposals ( per year basis ):
  - a. Received \_\_\_\_\_
  - b. Reviewed \_\_\_\_\_
  - c. Invested \_\_\_\_\_
5. How many investees are currently included in your portfolio? \_\_\_\_\_ firms
6. Percentage of equity stake per investment made :
  - a. Minimum \_\_\_\_\_%
  - b. Maximum \_\_\_\_\_%

**PART 2: INVESTMENT PRACTICES**

**[The following questions seek information on managerial practices or procedures at Pre-Investment stages of the venture capital financing process namely Deal origination and Screening, Evaluating, Contracting; and Post-Investment stages namely Monitoring, and Acquiring Liquidity.]**

**SECTION A: Deal Origination and Screening**

7. How does the potential venture proposal brought to your attention? **[You may circle one or more].**
  - a. Active search for deals by your firm.
  - b. Cold calls from entrepreneurs.
  - c. Through a referral process (e.g. venture capital community, investees, banks etc.)
  - d. Other mechanisms (please specify) \_\_\_\_\_
8. When **screening a venture proposal**, how much importance do you consider the following criteria? **[Please rate each of them with a circle according to the scale provided below]:**

① Not important at all	④ Important
② Not important	⑤ Very important
③ Somewhat important	

Criteria	Rating				
a. The size of the investment and your investment policy.....	1	2	3	4	5
b. The production technology of the prospective investee.....	1	2	3	4	5
c. The location of the venture.....	1	2	3	4	5
d. The stage of financing required.....	1	2	3	4	5
e. The management team of the prospective investee.....	1	2	3	4	5
f. The markets for products/services of the prospective investee...	1	2	3	4	5
g. Other (please specify).....	1	2	3	4	5

### **SECTION B: Evaluating Venture Proposal**

9. How many years ahead do you plan your investment? \_\_\_\_\_ year(s)
10. What is the acceptable **investment duration** for you? \_\_\_\_\_ year(s).
11. In considering a venture proposal, what percentage of Return on Investment (ROI) do you regard as acceptable? \_\_\_\_\_%
12. If the venture proposal's ROI marginally lower than the above percentage (Question 11), can the proposal still be accepted if it offers long-term prospects? **[Please circle either one.]**
  - a. Yes
  - b. No

If the answer above is 'YES', then what happen to your ROI target? **[Please circle either one.]**

- a. The ROI target rate is temporarily adjusted to suit the proposal.
  - b. The ROI target rate is permanently adjusted to suit the proposal.
  - c. The ROI target rate is left unadjusted and the decision is an exception.
13. How long does it take on average, to prepare and investigate on a venture proposal before making the decision to invest? **[Please circle either one.]**
  - a. Less than three months.
  - b. From three to six months.
  - c. From six to nine months.
  - d. From nine months to one year.
  - e. More than one year.



14. What **sources of due diligence** information do you usually use? **[Please rank the following sources with a circle according to the scale provided below]:**

- |                      |                  |
|----------------------|------------------|
| ① Most irrelevant    | ④ Essential      |
| ② Irrelevant         | ⑤ Most essential |
| ③ Somewhat essential |                  |

<u>Sources</u>	<u>Ranking</u>				
a. Carry out own market evaluation.....	1	2	3	4	5
b. Always obtain independent market reports.....	1	2	3	4	5
c. Place great reliance on personal references.....	1	2	3	4	5
d. Always have independent accountant's report.....	1	2	3	4	5
e. Other (please specify).....	1	2	3	4	5

---

15. What **evaluation techniques** do you usually use to evaluate a venture proposal? **[Please rank each of the following with a circle according to the scale provided below]:**

- |                      |                  |
|----------------------|------------------|
| ① Most irrelevant    | ④ Essential      |
| ② Irrelevant         | ⑤ Most essential |
| ③ Somewhat essential |                  |

<u>Evaluation Techniques</u>	<u>Ranking</u>				
a. Pay-back.....	1	2	3	4	5
b. Internal Rate of Return.....	1	2	3	4	5
c. Net Present Value.....	1	2	3	4	5
d. Accounting rate of return.....	1	2	3	4	5
e. Qualitative assessment.....	1	2	3	4	5
f. Other (please specify).....	1	2	3	4	5

---

16. Listed below are **evaluation criteria** which are associated in evaluating a venture proposal. How important do you consider each of them? **[Please rate them with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not important at all | ④ Important      |
| ② Not important        | ⑤ Very important |
| ③ Somewhat important   |                  |

<u>Criteria</u>	<u>Rating</u>				
<u>Market Attractiveness:</u>					
a. Access to market.....	1	2	3	4	5

- b. Market need for products/services..... 1 2 3 4 5
- c. Size of market..... 1 2 3 4 5
- d. Growth potential of market..... 1 2 3 4 5

Product Differentiation:

- a. Technical skills..... 1 2 3 4 5
- b. Profit margins..... 1 2 3 4 5
- c. Uniqueness of products/services..... 1 2 3 4 5
- d. Patentability of products/services..... 1 2 3 4 5

Managerial Capabilities:

- a. Management skills..... 1 2 3 4 5
- b. Marketing skills..... 1 2 3 4 5
- c. Financial skills..... 1 2 3 4 5
- d. References of entrepreneur..... 1 2 3 4 5

Environmental Threat Resistance:

- a. Protection from competitive entry..... 1 2 3 4 5
- b. Resistance to economic cycles..... 1 2 3 4 5
- c. Protection from obsolescence..... 1 2 3 4 5
- d. Protection against down-side risk..... 1 2 3 4 5

Cash-out Potential:

- a. Opportunities for exit..... 1 2 3 4 5
- b. Merger/Acquisition potential..... 1 2 3 4 5

17. Please indicate other facts and information you collect about the prospective investees in making your decision to invest.

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**SECTION C: Contracting or Deal Structuring.**

18. What **types of investment instruments** do you usually employ when investing in your investee firms? **[Please rank the following items with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not preferred at all | ④ Preferred      |
| ② Not preferred        | ⑤ Most preferred |
| ③ Somewhat preferred   |                  |

<u>Types of Instruments</u>	<u>Ranking</u>				
a. Issues of common equity.....	1	2	3	4	5
b. Issues of preferred equity.....	1	2	3	4	5
c. Debt (short-term loans).....	1	2	3	4	5
d. Debt (long-term loans).....	1	2	3	4	5
e. Other (please specify).....	1	2	3	4	5

---

19. In your **financial contract agreement** with your investees, what are the provisions normally included? **[Please circle one or more of the following items, where applicable.]**

- a. Form and terms of investment.
- b. Puts and calls option.
- c. Registration rights.
- d. Go-along rights.
- e. Preemptive rights and right of first refusal.
- f. Information rights.
- g. Option pool, vesting schedules and buy-back provisions.
- h. Board structure and Employment contracts.
- i. Other (please specify)\_\_\_\_\_

#### **SECTION D: Monitoring and Post-investment Activities.**

20. Which of the following types of monitoring of your investees that you prefer the most?

**[Please circle either one.]**

- a. Specific contractual monitoring (e.g. legally defined).
- b. Non-contractual monitoring (e.g. trust or understanding).
- c. Both of the above.

21. How do you maintain your relationships with your investees? **[Please circle one or more of the following items, where applicable.]**

- a. Directors/management staff of our firm held executive position in the investee firms.
- b. We provide management consulting services.
- c. We provide marketing assistance services.
- d. Personal relationships with the investee firms.

- [illegible]

<u>Information/Advice/Contact</u>		<u>Rating</u>				
a. Business/entrepreneurialship advice and information.....	1	2	3	4	5	
b. Tax and legal matters.....	1	2	3	4	5	
c. Personnel and recruitment policy.....	1	2	3	4	5	
d. Public policies and institutions.....	1	2	3	4	5	
e. Current scientific/technological development information.....	1	2	3	4	5	
f. Other (please specify).....	1	2	3	4	5	

- ① Not applicable at all      ④ Applicable  
② Not applicable      ⑤ Most applicable  
③ Somewhat applicable

Category of Information	Ranking				
a. Technology and market.....	1	2	3	4	5
b. Managerial and technical staff.....	1	2	3	4	5
c. Budgets.....	1	2	3	4	5
d. Capital structure and investments.....	1	2	3	4	5
e. Business strategy.....	1	2	3	4	5
f. Management and financial accounts.....	1	2	3	4	5
g. Supply sources.....	1	2	3	4	5
h. Other (please specify).....	1	2	3	4	5

24. Listed below are **factors in determining the ideal relationship** with your investees.

**[Please rate each of them with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not important at all | ④ Important      |
| ② Not important        | ⑤ Very important |
| ③ Somewhat important   |                  |

<u>Factors</u>	<u>Rating</u>				
a. Maximum Return on investment rate.....	1	2	3	4	5
b. Appropriate capital structure.....	1	2	3	4	5
c. Efficient risk-sharing.....	1	2	3	4	5
d. Free sharing of information.....	1	2	3	4	5
e. Increasing of your motivation.....	1	2	3	4	5
f. Enhancement of your reputation.....	1	2	3	4	5
g. Other (please specify).....	1	2	3	4	5

---

### **SECTION E: Acquiring Liquidity**

25. The following is a list of **methods for acquiring liquidity** (i.e. sale of investment). **[Please rank each of them with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not preferred at all | ④ Preferred      |
| ② Not preferred        | ⑤ Most preferred |
| ③ Somewhat preferred   |                  |

<u>Methods</u>	<u>Ranking</u>				
a. Initial public offering.....	1	2	3	4	5
b. Mergers and acquisitions.....	1	2	3	4	5
c. Secondary sale.....	1	2	3	4	5
d. Buy-back.....	1	2	3	4	5
e. Write-off.....	1	2	3	4	5
f. Other (please specify).....	1	2	3	4	5

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### **PART 3: RISK MANAGEMENT**

**[The following questions seek information on risk management practices.]**

26. What type of business venture you prefer the most? **[Please circle either one.]**

- |              |                |             |
|--------------|----------------|-------------|
| a. High-risk | b. Medium-risk | c. Low-risk |
|--------------|----------------|-------------|

27. In terms of **overall risk management of a venture**, how do you rate the following risks listed below based on its strategic importance to you? **[Please rate each of them with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not important at all | ④ Important      |
| ② Not important        | ⑤ Very important |
| ③ Somewhat important   |                  |

<u>Types of Risk</u>	<u>Rating</u>				
a. Management risk (e.g. less effort, not articulate, unfamiliar ).....1	2	3	4	5	
b. Inexperience risk (e.g. poor leadership and track record).....1	2	3	4	5	
c. Competitive risk (e.g. low growth rate, return in.....1 longer time, unanticipated competition)	2	3	4	5	
d. Viability risk (e.g. no product protection, industry not .....1 familiar, no prototype developed)	2	3	4	5	
e. Cash-out risk.....1 (e.g. not highly liquid, product has no market acceptance)	2	3	4	5	

28. How do you view the following statement in terms of **Market risks** (i.e. could be caused to unforeseen competitive conditions) and **Agency risks** (i.e. could be caused by the divergent interests of investors and investees)? **“IF THIS MATTER IS NOT ADDRESS PROPERLY, IT COULD CAUSE MY INVESTMENT IN A VENTURE TO LOSE MONEY”.**  
**[Please rate each of the following items with a circle according to the scale provided below]:**

- ① Strongly disagree ( i.e. problem is completely manageable )
- ② Disagree ( i.e. problem is largely manageable )
- ③ No opinion ( i.e. neither agree nor disagree )
- ④ Agree ( i.e. problem will cause venture to lose money )
- ⑤ Strongly agree ( i.e. problem could result in bankruptcy )

<u>Market Risks:</u>	<u>Rating</u>				
a. Unattractiveness of the industry.....1	2	3	4	5	
b. Weak demand.....1	2	3	4	5	
c. Small market.....1	2	3	4	5	
d. Many competitors.....1	2	3	4	5	
e. Many potential new competitors.....1	2	3	4	5	
f. Technical obsolescence.....1	2	3	4	5	

- g. Many substitute products/services.....1 2 3 4 5  
 h. Other (please specify).....1 2 3 4 5
- 

**Agency Risks:**

- a. Investees and venture capitalists having.....1 2 3 4 5  
     different cash flow objective.  
 b. Investees and venture capitalists having.....1 2 3 4 5  
     different objectives for profitability.  
 c. Many ventures to be monitored.....1 2 3 4 5  
 d. Contractual ambiguities.....1 2 3 4 5  
 e. Manipulation of profitability.....1 2 3 4 5  
 f. Short-term self-interest seeking.....1 2 3 4 5  
 g. Potential dishonesty.....1 2 3 4 5  
 h. Other (please specify).....1 2 3 4 5
- 

**PART 4: INFORMATION ON AGENCY RELATIONSHIP**

**[The following questions seek information on agency problems ( i.e. problems related to the managing of your business ventures e.g. sorting problems, agency costs, operating-cost problems etc.) in your relationship with your investees.]**

29. Listed below is a list of **areas of expertise** required to the managing of your venture businesses. How would you rate your expertise (i.e. knowledgeable) in each area against your investees? **[Please rate each of them with a circle according to the scale provided below]:**

- |                         |             |
|-------------------------|-------------|
| ① Very poor             | ④ Good      |
| ② Poor                  | ⑤ Very good |
| ③ Neither good nor poor |             |

<u>Areas of Expertise</u>	<u>Rating</u>				
a. Technology.....	1	2	3	4	5
b. Markets.....	1	2	3	4	5
c. Managerial staff.....	1	2	3	4	5
d. Technical staff.....	1	2	3	4	5
e. Budgets.....	1	2	3	4	5

f. Capital structure and investments.....	1	2	3	4	5
g. Business strategy.....	1	2	3	4	5
h. Management account.....	1	2	3	4	5
i. Financial account.....	1	2	3	4	5
j. Supply sources.....	1	2	3	4	5
k. Other (please specify).....	1	2	3	4	5

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30. Listed below is a list of **management elements**. To what extent is your involvement affects these elements of your investee firms? **[Please rate each of them with a circle by using the scale provided below]:**

- |                            |                                  |
|----------------------------|----------------------------------|
| ① Little or no influence   | ④ A great deal of influence      |
| ② Some influence           | ⑤ A very great deal of influence |
| ③ Quite a bit of influence |                                  |

<u>Management Elements</u>	<u>Rating</u>				
a. Corporate mission and objectives.....	1	2	3	4	5
b. Corporate strategy.....	1	2	3	4	5
c. Organization structure.....	1	2	3	4	5
d. Management system.....	1	2	3	4	5
e. Decision-making process.....	1	2	3	4	5
f. Information and control.....	1	2	3	4	5
g. Incentive and reward system.....	1	2	3	4	5
h. Other (please specify).....	1	2	3	4	5

---

31. To what extent do you think that you have experienced agency problems with your investees? **[Please circle either one.]**

- Never
- Rarely
- Sometimes
- Often/constantly



32. Overall, how would you rate the **importance of your investment practices/procedures at each financing stages** to the agency problems' mitigation efforts (i.e. can limit or modify your exposure to agency problems with your investees)? **[Please rate each of the following with a circle according to the scale provided below]:**

- ① Not important at all
- ② Not important
- ③ Somewhat important
- ④ Important
- ⑤ Very important

<u>Practices/Procedures at:</u>	<u>Rating</u>				
a. Deal Origination & Screening stage.....	1	2	3	4	5
b. Evaluation stage.....	1	2	3	4	5
c. Contracting & Deal Structuring stage.....	1	2	3	4	5
d. Monitoring & Post-Investment stage.....	1	2	3	4	5
e. Overall Risk Management.....	1	2	3	4	5

#### **PART 5: GENERAL INFORMATION**

33. What are your expectations for the future of the venture capital industry in Malaysia?

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34. What should the Government do to encourage faster growth in private investment, particularly for venture capital industry?

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35. What should the Government do to further assist venture capital firms operating in Malaysia?

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As a token of our appreciation for your kind assistance, we would like to send you a copy of summary of the results of this research. Could you please provide us with your address:

Mail to :

**[THANK YOU VERY MUCH FOR YOUR KIND COOPERATION]**

**APPENDIX 'F'**

February, 2003

TO WHOM IT MAY CONCERN

**RE: MR. SOHAIMI BIN MOHD SALLEH (I/C No: 590318-03-5047)  
FIELD STUDY (DATA COLLECTION AND RESEARCH SURVEY)**

I am happy to introduce Mr. Sohaimi bin Mohd Salleh. He is a senior officer in the Administrative and Diplomatic Service (ADS) Malaysia, who has been sent by the Malaysian Public Services Department to study for his PhD at the Waseda University, Japan. He joined the ADS since 1984 and has served the Treasury, Ministry of Finance until 2000 prior to his study leave. In the Treasury, he was a Principal Assistant Secretary and among his duties were the financial policy, capital market, management and supervision of MOF (Inc.) companies.

2. Mr. Sohaimi is currently undertaking and completing his PhD research on venture capital financing. I was made to understand that the objective of his research is to study the correlation between the investment practices/procedures and agency problems in the financial contracting relationship between venture capital firms ( as principals ) and Information & Communication Technology (ICT) companies ( as agents ) operating in Malaysia.

3. While this research is being undertaken in pursuit of an academic objective, the additional knowledge about venture capital financing in Malaysia could be useful to the Government and is a purposeful exercise. I hope you would be kind enough to give your assistance and to allow Mr. Sohaimi to gather the relevant information needed for his research. Your cooperation is highly appreciated. Thank you.

Yours sincerely,

(DATO' DR. HAJI SHAFIE BIN MOHD SALLEH)  
Deputy Minister of Finance, Malaysia.

February 3, 2003

TO WHOM IT MAY CONCERN

**Re: Mr. Sohaimi bin Mohd Salleh (T01A703-7)**  
**Field Study (Data Collection and Research Survey)**

I am writing this letter to confirm that Mr. Sohaimi bin Mohd Salleh is a registered PhD candidate working on major research project under our supervision at the Graduate School of Global Information and Telecommunication Studies (GITS), Waseda University, Japan. The objective of his research is to study the correlationship between the investment practices/procedures and agency problems in venture capital financing.

The framework of this study is the so-called an applied Principal-Agent Analysis. Among the areas to be covered are the managerial practices at each stage of the venture capital financing process, risks management and agency problems in the financial contracting relationship between the venture capital firms ( as principals ) and the Information & Communication Technology (ICT) companies ( as agents ) operating in Malaysia.

We do hope you would provide assistance to Mr. Sohaimi bin Mohd Salleh to carry out his research project in Malaysia.

Thank you very much for your cooperation.

Yours sincerely,

Toshiharu Kitamura  
Supervisor,  
Professor, Waseda University.



MINISTRY OF FINANCE, MALAYSIA  
Loan Management & Finance Policy Division,  
Level 5, Center Block, Precinct 2,  
Fed. Government Administrative Center,  
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WASEDA UNIVERSITY, JAPAN  
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## A STUDY OF THE INVESTMENT PRACTICES TO MITIGATE AGENCY PROBLEMS IN VENTURE CAPITAL FINANCING

# Survey Questionnaire

### **INSTRUCTIONS**

**This Questionnaire is designed to gather information and data about the investment practices or procedures to mitigate agency problems in venture capital financing.** An applied Principal-Agent framework is used for the study and focused on the managerial practices in the financial contracting relationship between venture capital firms (as principals) and ICT companies (as agents) operating in Malaysia. This will enable us to piece together the wonder of venture capital financing from both points of view.

**Complete confidentiality is assured with this survey. The information that you provide us will be used in an aggregate form only. Individual firm identity and profile will be completely anonymous. All information supplied in this Questionnaire will NOT be used for any other purposes except those of this research project.**

The Questionnaire is divided into five (5) parts as follows:

- Part 1 – Basic Information
- Part 2 – Investment Practices or Procedures
- Part 3 – Risk Management
- Part 4 – Information on Agency Relationship
- Part 5 – General Information

Most of the questions in this survey **simply require you to rank or rate by circling the appropriate number/answer. Some questions require a few words of explanation.** Please feel free to make any additional comments anywhere in the Questionnaire that you think it is necessary, as your candid personal opinion will greatly enhance the success of this study. In normal circumstances, the Questionnaire should take only 45 to 60 minutes of your valuable time to complete. **Please complete this Questionnaire as incomplete Questionnaire creates difficulties for data analysis.**

Please return the completed Questionnaire (by using the self addressed and stamped envelope provided) at your earliest convenience.

For your co-operation and assistance, thank you very much.

**SOHAIMI MOHD SALLEH**

February 2003.

E-mail add: [sohaimimy@yahoo.com](mailto:sohaimimy@yahoo.com)

FSQN.AGEN.: 

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**PART 1: BASIC INFORMATION****[The following questions seek basic information about your firm.]**

1. Date of incorporation. \_\_\_\_\_.
2. Number of employees: a. Total \_\_\_\_\_. b. Technical staff \_\_\_\_\_.
3. Which is your main line of business? **[You may circle one or more.]**

<p>a. Computer/System Security.</p> <p>b. System Integration.</p> <p>c. Telecommunications/Networking.</p> <p>d. Data Centre/Support Centre/Heavy User.</p> <p>e. Software Development – Engineering &amp; Specialized Business Applications.</p>	<p>f. Internet-based Business – Application Service Providers; E-Commerce Solution Providers; Web Hosting &amp; Web On-line Publishing.</p> <p>g. Consultancy.</p> <p>h. Content Development.</p> <p>i. Education and Training.</p> <p>j. Hardware Design/Electronics.</p> <p>k. Life Sciences/Biotechnologies.</p> <p>l. Production/Post-Production/Animation.</p>
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**[For questions 4, 5, and 6 below, please give a range or estimations.]**

4. What is the size of your business (in RM million) in terms of:
  - a. Annual sales \_\_\_\_\_
  - b. Net assets (i.e. fixed assets + current assets – liabilities) \_\_\_\_\_
5. What is your current debt/equity ratio (i.e. your debt or loan capital divided by your equity or share capital)? \_\_\_\_\_
6. What is your current Rate of return (i.e. net profit after tax divided by total owners' capital employed including reserves and retained profits)? \_\_\_\_\_ %.

**PART 2: INVESTMENT PRACTICES**

**[The following questions seek information on managerial practices or procedures at Pre-Investment stages of the venture capital financing process namely Deal origination and Screening, Evaluating, Contracting; and Post-Investment stages namely Monitoring, and Acquiring Liquidity.]**

**SECTION A: Deal Origination and Screening**

7. How do you bring your venture proposal to the venture capital investors' attention? **[You may circle one or more].**
  - a. Cold calls to them directly.
  - b. Through a referral process (e.g. venture capital community, investees, banks etc.)
  - c. Other mechanisms (please specify) \_\_\_\_\_

8. When **preparing your venture proposal**, how much importance do you consider the following criteria? **[Please rate each of them with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not important at all | ④ Important      |
| ② Not important        | ⑤ Very important |
| ③ Somewhat important   |                  |

Criteria	Rating				
a. The size of the investment and your investment policy.....	1	2	3	4	5
b. The production technology involved.....	1	2	3	4	5
c. The location of the venture.....	1	2	3	4	5
d. The stage of financing required.....	1	2	3	4	5
e. Your management team and the track record.....	1	2	3	4	5
f. The markets for products/services.....	1	2	3	4	5
g. Other (please specify).....	1	2	3	4	5

### **SECTION B: Evaluating Venture Proposal**

**[For questions 9, 10, and 11, please give a range or estimations.]**

9. How many years ahead do you plan your venture proposal? \_\_\_\_\_ year(s)

10. In your venture proposal, what percentage of Return on Investment (ROI) do you usually forecast? \_\_\_\_\_ %

11. What is the acceptable **investment duration** for you? \_\_\_\_\_ year(s).

12. How long does it take on average, to prepare and negotiate on a venture proposal before the decision to invest was made by your venture capital investor? **[Please circle either one.]**

- |                              |                                  |
|------------------------------|----------------------------------|
| a. Less than three months.   | d. From nine months to one year. |
| b. From three to six months. | e. More than one year.           |
| c. From six to nine months.  |                                  |

13. What **sources of due diligence** information do you usually use in your venture proposal? **[Please rank each of the following with a circle according to the scale provided below]:**

- |                      |                  |
|----------------------|------------------|
| ① Most irrelevant    | ④ Essential      |
| ② Irrelevant         | ⑤ Most essential |
| ③ Somewhat essential |                  |

<u>Sources</u>	<u>Ranking</u>				
a. Carry out own market evaluation.....	1	2	3	4	5
b. Always obtain independent market reports.....	1	2	3	4	5
c. Place great reliance on personal references.....	1	2	3	4	5
d. Always have independent accountant's report.....	1	2	3	4	5
(Management accounting adviser)					
e. Other (please specify).....	1	2	3	4	5

---

14. What **evaluation techniques** do you usually use in your venture proposal? **[Please rank each of the following with a circle according to the scale provided below]:**

- |                      |                  |
|----------------------|------------------|
| ① Most irrelevant    | ④ Essential      |
| ② Irrelevant         | ⑤ Most essential |
| ③ Somewhat essential |                  |

<u>Evaluation Techniques</u>	<u>Ranking</u>				
a. Pay-back.....	1	2	3	4	5
b. Internal Rate of Return.....	1	2	3	4	5
c. Net Present Value.....	1	2	3	4	5
d. Accounting rate of return.....	1	2	3	4	5
e. Qualitative assessment.....	1	2	3	4	5
f. Other (please specify).....	1	2	3	4	5

---

15. Listed below are suggested **evaluation criteria** for a venture proposal. How important do you consider each of them? **[Please rate them with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not important at all | ④ Important      |
| ② Not important        | ⑤ Very important |
| ③ Somewhat important   |                  |

<u>Criteria</u>	<u>Rating</u>				
<u>Market Attractiveness:</u>					
a. Access to market.....	1	2	3	4	5
b. Market need for products/services.....	1	2	3	4	5
c. Size of market.....	1	2	3	4	5
d. Growth potential of market.....	1	2	3	4	5



Product Differentiation:

- a. Technical skills.....1 2 3 4 5
- b. Profit margins.....1 2 3 4 5
- c. Uniqueness of products/services.....1 2 3 4 5
- d. Patentability of products/services.....1 2 3 4 5

Managerial Capabilities:

- a. Management skills.....1 2 3 4 5
- b. Marketing skills.....1 2 3 4 5
- c. Financial skills.....1 2 3 4 5
- d. References of investor.....1 2 3 4 5

Environmental Threat Resistance:

- a. Protection from competitive entry.....1 2 3 4 5
- b. Resistance to economic cycles.....1 2 3 4 5
- c. Protection from obsolescence.....1 2 3 4 5
- d. Protection against down-side risk.....1 2 3 4 5

Cash-out Potential:

- a. Opportunities for exit.....1 2 3 4 5
- b. Merger/Acquisition potential.....1 2 3 4 5

16. Please indicate other facts and information you give to the venture capital investor in order to support your venture proposal.

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**SECTION C: Contracting or Deal Structuring.**

17. What **types of investment instruments** do you usually prefer for the venture capital investor to invest in your firm? **[Please rank the following items according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not preferred at all | ④ Preferred      |
| ② Not preferred        | ⑤ Most preferred |
| ③ Somewhat preferred   |                  |

Types of InstrumentsRating

- |                                    | 1 | 2 | 3 | 4 | 5 |
|------------------------------------|---|---|---|---|---|
| a. Issues of common equity.....    | 1 | 2 | 3 | 4 | 5 |
| b. Issues of preferred equity..... | 1 | 2 | 3 | 4 | 5 |
| c. Debt ( short-term loans ).....  | 1 | 2 | 3 | 4 | 5 |

- d. Debt ( long-term loans ).....1    2    3    4    5
- e. Other (please specify).....1    2    3    4    5
- \_\_\_\_\_

18. In your **financial contract agreement** with the venture capital investor, what are the provisions normally included? **[Please circle one or more of the following items, where applicable.]**

- a. Form and terms of investment.
- b. Puts and calls option.
- c. Registration rights.
- d. Go-along rights.
- e. Preemptive rights and right of first refusal.
- f. Information rights.
- g. Option pool, vesting schedules and buy-back provisions.
- h. Board structure and Employment contracts.
- i. Other (please specify) \_\_\_\_\_

**SECTION D: Monitoring and Post-investment Activities.**

19. Which of the following types of monitoring by your venture capital investor do you prefer the most? **[Please circle either one]:**

- a. Specific contractual monitoring (e.g. legally defined).
- b. Non-contractual monitoring (e.g. trust or understanding).
- c. Both of the above.

20. How do you maintain your relationship with your venture capital investor? **[Please circle one or more of the following items, where applicable.]**

- a. We allow their Directors/management staffs to hold executive position in our firm.
- b. We require management consulting services from them.
- c. We require marketing assistance services from them.
- d. We maintain personal relationships with them.
- e. We submit periodic reports to them.
- f. We limit our involvement to provision of capital funds only.
- g. Other (please specify) \_\_\_\_\_

21. Listed below are **types of information and advice/contact** usually offered by venture capital investors to their investees. **[Please rate each of them with a circle according to the**

**scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not important at all | ④ Important      |
| ② Not important        | ⑤ Very important |
| ③ Somewhat important   |                  |

<u>Information/Advice/Contact</u>	<u>Rating</u>				
a. Business/entrepreneurialship advice & information.....	1	2	3	4	5
b. Tax and legal matters.....	1	2	3	4	5
c. Personnel and recruitment policy.....	1	2	3	4	5
d. Public policies and institutions.....	1	2	3	4	5
e. Current scientific/technological development information.....	1	2	3	4	5
f. Other (please specify).....	1	2	3	4	5

---

22. Below is a list of categories of **information that may be required by your venture capital investor FROM YOU**. [Please rank each of them with a circle according to the scale provided below]:

- |                         |                   |
|-------------------------|-------------------|
| ① Not applicable at all | ④ Applicable      |
| ② Not applicable        | ⑤ Most applicable |
| ③ Somewhat applicable   |                   |

<u>Category of Information</u>	<u>Ranking</u>				
a. Technology and markets.....	1	2	3	4	5
b. Managerial and technical staff.....	1	2	3	4	5
c. Budgets.....	1	2	3	4	5
d. Capital structure and investments.....	1	2	3	4	5
e. Business strategy.....	1	2	3	4	5
f. Management and financial accounts.....	1	2	3	4	5
g. Supply sources.....	1	2	3	4	5
h. Other (please specify).....	1	2	3	4	5

---

23. Listed below are **factors in determining the ideal relationship** with your venture capital investor. [Please rate each of them with a circle according to the scale provided below]:

- |                        |                  |
|------------------------|------------------|
| ① Not important at all | ④ Important      |
| ② Not important        | ⑤ Very important |
| ③ Somewhat important   |                  |

<u>Factors</u>	<u>Rating</u>				
a. Maximum Return on investment.....	1	2	3	4	5
b. Appropriate capital structure.....	1	2	3	4	5
c. Efficient risk-sharing.....	1	2	3	4	5
d. Free sharing of information.....	1	2	3	4	5
e. Increasing of your motivation.....	1	2	3	4	5
f. Enhancement of your reputation.....	1	2	3	4	5
g. Other (please specify).....	1	2	3	4	5

---

### **SECTION E: Acquiring Liquidity.**

24. The following is a list of **methods for acquiring liquidity** (i.e. sale of investment). **[Please rank each of them with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not preferred at all | ④ Preferred      |
| ② Not preferred        | ⑤ Most preferred |
| ③ Somewhat preferred   |                  |

<u>Methods</u>	<u>Ranking</u>				
a. Initial public offering.....	1	2	3	4	5
b. Mergers and acquisitions.....	1	2	3	4	5
c. Secondary sale.....	1	2	3	4	5
d. Buy-back.....	1	2	3	4	5
e. Write-off.....	1	2	3	4	5
f. Other (please specify).....	1	2	3	4	5

---

### **PART 3: RISK MANAGEMENT**

**[The following questions seek information on risk management practices.]**

25. What type of business venture can your firm be considered as? **[Please circle either one.]**

- a. High-risk.                      b. Medium-risk.                      c. Low-risk.

26. In terms of **overall risk management of a venture**, how do you rate the following risks listed below based on its strategic importance to you? **[Please rate each of them with a circle according to the scale provided below]:**

- |                        |                  |
|------------------------|------------------|
| ① Not important at all | ④ Important      |
| ② Not important        | ⑤ Very important |
| ③ Somewhat important   |                  |

<u>Types of Risk</u>	<u>Rating</u>				
a. Management risk (e.g. reacts to risk badly,.....1 less effort, not articulate, unfamiliar)	2	3	4	5	
b. Inexperience risk (e.g. poor leadership & track record).....1	2	3	4	5	
c. Competitive risk (e.g. low growth rate, good return.....1 only in longer time, unanticipated competition)	2	3	4	5	
d. Viability risk (e.g. no product protection,.....1 industry not familiar, no prototype developed)	2	3	4	5	
e. Cash-out risk (e.g. not highly liquid, product.....1 has no market acceptance)	2	3	4	5	

27. How do you view the following statement in terms of **Market risks** (i.e. could be caused to unforeseen competitive conditions) and **Agency risks** (i.e. could be caused by the divergent interests of the venture capital investors and investees).

**“IF THIS MATTER IS NOT ADDRESSED PROPERLY, IT COULD CAUSE MY VENTURE TO LOSE MONEY”.**

**[Please rate each of the following items with a circle according to the scale provided below]:**

- ① Strongly disagree ( i.e. problem is completely manageable )
- ② Disagree ( i.e. problem is largely manageable )
- ③ No opinion ( i.e. neither agree nor disagree )
- ④ Agree ( i.e. problem will cause venture to lose money )
- ⑤ Strongly agree ( i.e. problem could result in bankruptcy )

<u>Type of Risk</u>	<u>Rating</u>				
<u>Market Risks:</u>					
a. Unattractiveness of the industry.....1	2	3	4	5	
b. Weak demand.....1	2	3	4	5	
c. Small market.....1	2	3	4	5	
d. Many competitors.....1	2	3	4	5	
e. Many potential new competitors.....1	2	3	4	5	
f. Technical obsolescence.....1	2	3	4	5	
g. Many substitute products/services.....1	2	3	4	5	
h. Other (please specify).....1	2	3	4	5	

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Agency Risks:

- a. Investees and venture capitalists having.....1 2 3 4 5  
different cash flow objective.
- b. Investees and venture capitalists having.....1 2 3 4 5  
different objectives for profitability.
- c. Many ventures to be monitored.....1 2 3 4 5
- d. Contractual ambiguities.....1 2 3 4 5
- e. Manipulation of profitability.....1 2 3 4 5
- f. Short-term self-interest seeking.....1 2 3 4 5
- g. Potential dishonesty.....1 2 3 4 5
- h. Other (please specify).....1 2 3 4 5
- 

**PART 4: INFORMATION ON AGENCY RELATIONSHIP**

**[The following questions seek information on agency problems (i.e. problems related to the managing of your venture e.g. sorting problems, agency costs, operating-cost problems etc.) in your agency relationship with your venture capital investor.]**

28. Listed below is a list of **areas of expertise** required to the managing of your venture business. How would you rate your expertise (i.e. knowledgeable) in each area against your venture capital investor? **[Please rate each of them with a circle according to the scale provided below]:**

- |                         |             |
|-------------------------|-------------|
| ① Very poor             | ④ Good      |
| ② Poor                  | ⑤ Very good |
| ③ Neither good nor poor |             |

<u>Areas of Expertise</u>	<u>Rating</u>				
a. Technology.....	1	2	3	4	5
b. Markets.....	1	2	3	4	5
c. Managerial staff.....	1	2	3	4	5
d. Technical staff.....	1	2	3	4	5
e. Budgets.....	1	2	3	4	5
f. Capital structure and investments.....	1	2	3	4	5
g. Business strategy.....	1	2	3	4	5
h. Management account.....	1	2	3	4	5
i. Financial account.....	1	2	3	4	5

- j. Supply sources.....1 2 3 4 5
- k. Other (please specify).....1 2 3 4 5
- 

29. Listed below is a list of **management elements**. To what extent is the involvement of your venture capital investor affects you in these elements? **[Please rate each of them with a circle by using the scale provided below]:**

- |                            |                                  |
|----------------------------|----------------------------------|
| ① Little or no influence   | ④ A great deal of influence      |
| ② Some influence           | ⑤ A very great deal of influence |
| ③ Quite a bit of influence |                                  |

<u>Management Elements</u>	<u>Rating</u>				
a. Corporate mission and objectives.....	1	2	3	4	5
b. Corporate strategy.....	1	2	3	4	5
c. Organization structure.....	1	2	3	4	5
d. Management system.....	1	2	3	4	5
e. Decision-making process.....	1	2	3	4	5
f. Information and control.....	1	2	3	4	5
g. Incentive and reward system.....	1	2	3	4	5
h. Other (please specify).....	1	2	3	4	5

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30. To what extent do you think that you have experienced agency problems with your venture capital investor? **[Please circle either one.]**

- |           |                     |
|-----------|---------------------|
| a. Never  | c. Sometimes        |
| b. Rarely | d. Often/constantly |

31. Overall, how would you rate the importance of your **investment practices/procedures at each financing stages** to the agency problems' mitigation efforts (i.e. can limit or modify your exposure to agency problems with your venture capital investor)? **[Please rate each of the following with a circle according to the scale provided below]:**

- ① Not important at all
- ② Not important
- ③ Somewhat important
- ④ Important
- ⑤ Very important

<u>Practices/Procedures at:</u>	<u>Rating</u>				
a. Deal Origination & Screening stage.....1	2	3	4	5	
b. Evaluation stage.....1	2	3	4	5	
c. Contracting & Deal Structuring stage.....1	2	3	4	5	
d. Monitoring & Post-Investment stage.....1	2	3	4	5	
e. Overall Risk Management.....1	2	3	4	5	

32. Generally, how would you rate the importance of the venture capital investor to the fortunes of your firm? **[Please circle either one.]**

- a. Not important at all.
- b. Not so important.
- c. Slightly important.
- d. Important.
- e. Very important.

#### **PART 5: GENERAL INFORMATION**

33. What are your expectations for the future of the venture capital industry in Malaysia?

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34. What should the Government do to encourage faster growth in private investment, particularly for venture capital industry?

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35. What should the Government do to further assist entrepreneurial ICT companies operating in Malaysia?

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As a token of our appreciation for your kind assistance, we would like to send you a copy of summary of the results of this research. Could you please provide us with your address:

Mail to :

**[THANK YOU VERY MUCH FOR YOUR KIND COOPERATION]**



## REFERENCES

- Abdulai, D.N. (2000). "Moving towards a knowledge-based economy: The road ahead for Malaysia" in D. N. Abdulai, (ed.), Malaysia and the K-economy. Kuala Lumpur: Pelanduk Publications.
- Abetti, P. A., Masaki, K., and Rice, M. P. (2000). "Emerging trends in the Japanese venture capital industry". Institutional Investor Journals: The Journal of Private Equity, Winter, Vol. 4, No. 1, pp. 39 – 49.
- Ackoff, R. L. (1981). Creating the corporate future: Plan or be planned for. New York: John Wiley & Sons.
- Admati, A.R. and Pfleiderer, P. (1994). "Robust financial contracting and the role of venture capitalists". The Journal of Finance, Vol. XLIX, No. 2, June, pp. 371 – 402.
- Akerlof, G. A. (1970). "The market for "lemons": Qualitative uncertainty and the market mechanism". Quarterly Journal of Economics, Vol. 84, pp. 488 – 500.
- Alchian, A. and Demsetz, H. (1972). "Production, information costs and economic organization". American Economic Review, Vol. 62, pp. 777 – 795.
- Alexander, J. G. (2000). "Finding capital for technology start-ups". The Industrial Physicist, American Institute of Physics, October, pp. 31 – 34.
- Amar, V. B. (2000). New businesses. New York: Oxford University Press.
- Amit, R., Glosten, L. and Muller, E. (1990). "Entrepreneurial ability, venture investments, and risk sharing". Management Science, Vol. 36, pp. 1232 – 1245.
- Andrews, K. R. (1971). The concept of corporate strategy. Homewood, Illinois: Dow Jones Irwin Inc.
- Ansoff, H. I. (1965). Corporate strategy. New York: McGraw Hill Book Company Inc.
- Ariff, M. and Lim C. C. (2001). "Mobilising domestic and external resources for economic development: Lessons from the Malaysian experience". Asia-Pacific Development Journal, Vol. 8, No. 1, June, pp. 41 – 68.
- Ayres, I. and Cramton, P. (1994). "Relational investing and agency theory". Cardozo Law Review, Vol. 15, p. 1033.
- Bank Negara Malaysia [BNM] (1999). The central bank and the financial system in Malaysia. Kuala Lumpur: BNM, pp. 540 – 544.
- \_\_\_\_\_. Annual reports. Kuala Lumpur: BNM.

- Barney, J. B., Busenitz, L. W., Fiet, J. O. and Moesel, D. (1989). "The structure of venture capital governance: An organizational economic analysis of relations between venture capital firms and new ventures". Academy of Management Proceedings, pp. 64 – 68.
- \_\_\_\_\_(1996). "The substitution of bonding for monitoring in venture capitalist relations with high technology enterprises". Journal of High Technology Management Research, Vol. 7, No. 1, pp. 91 – 105.
- Barry, C. B., Muscarella, C. J., Peavy III, J. W. and Vetsuypens, M. R. (1990). "The role of venture capital in the creation of public companies". Journal of Financial Economics, Vol. 27, pp. 447 – 471.
- Baumol, W. J. (1959). Business behaviour, value and growth. New York: MacMillan.
- \_\_\_\_\_(1977). Economic theory and operations analysis. London, Englewood Cliffs, New Jersey: Prentice/Hall International, Inc., Fourth Edition.
- Beed, C. S. (1972). "The separation of ownership and control" in M. Gilbert (ed.), The Modern Business Enterprise. Penguin Book.
- Berglof, E. (1994). "A control theory of venture capital finance". Journal of Law, Economics, and Organization, Vol. 10, pp. 247 – 267.
- Berle, A. J. and Means, G. C. (1967). The modern corporation and private property. New York: Hartcourt Brace and World.
- Bernanke, B. and Gertler, M. (1989). "Agency costs, net worth, and business fluctuations". American Economic Review, Vol. 79, pp. 14 – 31.
- Black, B. S. and Gilson, R. J. (1998). "Venture capital and the structure of capital markets: Banks versus stock markets". Journal of Financial Economics, Vol. 47, pp. 243 – 277.
- Boeker, W. (1997). "Strategic change: The influence of managerial characteristics and organizational growth". The Academy of Management Journal, Vol. 40, No. 1, pp. 152 – 170.
- Boocock, G. and Ismail, A. W. (1997). "The financing practices and problems of growth-oriented small firms in Malaysia". Journal of International Business & Entrepreneurship, Vol. 5, No. 2, pp. 1 – 28.
- Bromiley, P. (1986). Corporate capital investment: A behavioural approach. New York: Cambridge University Press.
- Bryman, A. (2001). Social research methods. New York: Oxford University Press.

- Bryman, A. and Cramer, D. (1990). Quantitative data analysis for social scientist, Routledge.
- \_\_\_\_\_(2001). Quantitative data analysis with SPSS Release 10 for Windows: A guide for social scientist. Routledge.
- Burns, R. B. (2000). Introduction to research methods. Sage Publications.
- Busenitz, L. W., Moesel, D. D. and Fiet, J. O. (1997). "The impact of post-funding involvement by venture capitalists on long-term performance outcomes". A Paper presented at the Babson College-Kauffman Foundation Research Conference. Babson College, Babson Park, Mass., April, pp. 16 – 19.
- Carleton, W. T. (1986). "Issues and questions involving venture capital" in G. Libecup, (ed.), Advances in the study of entrepreneurship, innovation, and economic growth: A research annual, Volume 1, pp. 59 – 70. JAI Press Inc.
- Chakravarthy, B. S. and Lorange, P. (1991). Managing the strategy process: A framework for a multibusiness firm. Prentice Hall International.
- Chan, H. W. (1999). Singapore – The preferred base for venture capital. An empirical study on the determinants of demand for venture capital funds. Unpublished Master Dissertation. U.K.: Manchester School of Management, University of Manchester.
- Chan, Y. S., Siegel, D. and Thakor, A. V. (1990). "Learning corporate control and performance requirements in venture capital contracts". International Economic Review, Vol. 31, No. 2, pp. 365-381.
- Chandler, A. (1982). Strategy and structure. Cambridge: The M.I.T. Press, (12<sup>th</sup>. Printing).
- Clendenin, J. C. (1960). Introduction to investments. New York, Toronto, London: McGraw-Hill Book Company, Inc., (Third Edition).
- Coakes, S. J. and Steed, L. G. (2001). SPSS: Analysis without anguish (Version 10.0 for Windows). John Wiley & Sons Australia, Ltd.
- Cohen, L. and Holliday, M. (1982). Statistics for social scientists. London: Harper & Row.
- Comfrey, A. L. (1973). A first course in factor analysis. London: Academic Press.
- Cumming, D. J. (2000). "Is the optimality of conventional venture capital financial contracts generalisable". Mimeo, University of Alberta.
- \_\_\_\_\_(2001). "The determinants of venture capital portfolio size: Empirical evidence". Working Paper, University of Alberta.

- Cumming, D. J. and MacIntosh, J. G. (2001). "Economic and institutional determinants of venture capital investment duration". Mimeo, University of Alberta.
- \_\_\_\_\_. (2000). "Venture capital exits in Canada and the United States". Working Paper, University of Alberta and University of Toronto.
- Cyert, R. and March, J. (1963). A behavioural theory of the firm. Englewood Cliffs, New Jersey: Prentice-Hall.
- Demsetz, H. (1988). "Ownership, control and the firms". The Organisation of Economic Activity, Vol. 1. Basil Blackwell.
- Denscombe, M. (1998). The good research guide – For small-scale social research projects. Buckingham, Philadelphia: Open University Press.
- Denzin, N. K. (1970). The research act: A theoretical introduction to sociological methods. Chicago: Aldine Publishing Co., 1<sup>st</sup>. Edition.
- Denzin, N. K. and Lincoln, Y.S. (1994). "Introduction: entering the field of qualitative research" in N.K. Denzin and Y. S. Lincoln (eds.), Handbook of qualitative research. Thousand Oaks, California: Sage Publications.
- Dill, W. (1975). "Public participation in corporate planning: Strategic management in Kibbitzer's world". Long Range Planning, Vol. 18, No. 1, pp. 57 – 63.
- Dillman, D. A. (1974). "Increasing mail questionnaire response: A four state comparison". American Sociological Review, October, pp. 744 – 756.
- Dixit, A. K. and Pindyck, R. S. (1994). Investment under uncertainty. Princeton, New Jersey: Princeton University Press.
- Ehrlich, S. B., De Noble, A. F., Moore, T. and Weaver, R. R. (1994). "After the cash arrives: A comparative study of venture capital and private investor involvement in entrepreneurial firms". Journal of Business Venturing, Vol. 9, pp. 67 – 82.
- Eisenhardt, K. M. (1989). "Agency theory: An assessment and review". Academy of Management Review, Vol. 14, No. 1, pp. 57 – 74.
- Fama, E. (1980). "Agency problems and the theory of the firm". Journal of Political Economy, Vol. 88, No. 21, pp. 288 – 307.
- Fama, E. and Jensen, M. C. (1983). "Separation of ownership and control". Journal of Law and Economics, Vol. 26, pp. 327 – 349.
- Ferguson, R. (1999). What's in a location? Science parks and the support of new technology-based firms. Unpublished Doctoral Dissertation, Ultuna: Swedish University of Agricultural Sciences.

- Fiet, J. O. (1995). "Risk avoidance strategies in venture capital markets". Journal of Management Studies, Vol. 32, No. 4, July, pp. 551 – 574.
- \_\_\_\_\_ (2000). "The theoretical side of teaching entrepreneurship". Journal of Business Venturing, Vol. 16, pp. 1 – 24.
- Francis, A. (1980). "Families, firms and finance capital: The development of UK industrial firms with particular reference to their ownership and control". Sociology, Vol. 14.
- Freeman, R. E. (1984). Strategic management: A stakeholder approach. Pitman Books.
- Fried, V. and Hisrich, R. (1994). "Toward a model of venture capital investment decision making". Financial Management, Vol. 23, No. 3, pp. 28 – 37.
- Foster, J. J. (2001). Data analysis using SPSS for Windows Version 8 to 10: A beginner's guide. Sage Publications.
- Garnsey, E. (1998). "A theory of the early growth of the firm". Industrial and Corporate Change, Vol. 7, No. 3, pp. 523 – 556.
- Garvin, D. A. and Roberto, M. A. (2001). "What you don't know about making decisions". Harvard Business Review, Vol. 79, No. 8, September, pp. 108 – 116.
- Gertler, M. (1992). "Financial capacity and output fluctuation in an economy with multi-period financial relationship". Review of Economic Studies, Vol. 59, pp. 455 – 472.
- Giddens, A. (1974). (ed.). Positivism and sociology. London: Heinemann Educational.
- Gilder, G. (1989). Microcosm. New York: Basic Books.
- Gladstone, D. (1988). Venture capital investing. New Jersey: Prentice Hall.
- Gompers, P. A. (1995). "Optimal investment, monitoring, and the staging of venture capital". The Journal of Finance, Vol. L, No. 5, December, pp. 1461 – 1489.
- Gompers, P. A. and Lerner, J. (1994). "An analysis of compensation in the U.S. venture capital partnership". Working paper No. 94-009, Harvard Business School.
- \_\_\_\_\_ (1999). The venture capital cycle. Cambridge: MIT Press.
- \_\_\_\_\_ (2001). "The venture capital revaluation". Journal of Economic Perspectives, Vol. 15, No. 2, 145 – 168.
- Gorman, M. and Sahlman, W. A. (1989). "What do venture capitalists do?". Journal of Business Venturing, Vol. 4, pp. 231 – 238.

- Gower, S. M. and Harris, F. C. (1994). "The funding of, and investment in, British science parks: A review". Journal of Property Finance, Vol. 05, No. 3, pp. 7 – 18.
- \_\_\_\_\_(1996). "Evaluating British science parks as property investment opportunities". Journal of Property Valuation and Investment, Vol. 14, No. 2, pp. 24 – 37.
- Greenwald, B., Stiglitz, J. and Weiss, A. (1984). "Information imperfections and macroeconomic fluctuations". American Economic Review, Vol. 74, pp. 194 – 199.
- Grosman, S. and Hart, O. (1983). "An analysis of the principal agent problem". Econometrica, Vol. 52, pp. 1 – 45.
- Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1998). Multivariate data analysis. Upper Saddle River, New Jersey: Prentice Hall (5<sup>th</sup>. Edition).
- Hannan, M. T. and Freeman, J. (1989). Organizational ecology. Cambridge: Harvard University Press.
- Harding, R. (2000). "Venture capital and regional development: Towards a venture capital 'System'". Venture Capital, Vol. 2, No. 4, pp. 287 – 311.
- Harrison, R. T. and Mason, C. M. (2000). "Editorial: The role of the public sector in the development of a regional venture capital industry". Venture Capital, Vol. 2, No. 4, pp. 243 – 253.
- Hart, O. (1995). Firms contracts and financial structure. New York: Oxford University Press.
- Hellmann, T. F. (1998). "The allocation of control rights in venture capital contracts". Rand Journal of Economics, Vol. 29, pp. 57 – 76.
- Higashide, H. and Birley, S. (2000). "The consequences of conflict between the venture capitalist and the entrepreneurial team in the United Kingdom from the perspective of the venture capitalist". Journal of Business Venturing, Vol. 17, pp. 59 – 81.
- Higgins, B. and Savoie, D. J. (1988). (eds.). Regional economic development. Great Britain: Unwin Hyman Ltd.
- Hilferding, R. (1981). Finance capital. Routledge and Kegan.
- Hillier, B. (1997). The economics of asymmetric information. London: Macmillan Press Ltd.
- Hofer, C. and Schendel, D. (1978). Strategy formulation: Analytical concepts. St. Paul, Minn: West Publishing Company.

- Houben, A. and Kakes, J. (2001). "Fostering the new economy: The role of financial intermediation". A Paper for the Monetary & Economic Policy Department, De Nederlandsche Bank.
- Hughes, J. A. (1976). Sociological analysis, methods and discovery. Thomas Nelson & Sons Ltd.
- Hurry, D., Miller, A. T. and Bowman, E. H. (1992). "Calls on high-technology: Japanese exploration of venture capital investments in the United States". Strategic Management Journal, Vol. 13, pp. 85 – 101.
- Jean Lee, S. K. (1992). "Quantitative versus qualitative research methods – Two approaches to organisation studies". Asia Pacific Journal of Management, Vol. 19, No. 1, April.
- Jeng, L. and Wells, P. (2000). "The determinants of venture capital funding: Evidence across countries". Journal of Corporate Finance, Vol. 6, pp. 241 – 289.
- Jensen, M. C. (1994). "Self-interest, altruism, and agency theory". Journal of Applied Corporate Finance, Vol. 7, No. 2, pp. 40 – 45.
- Jensen, M. C. and Meckling, W. H. (1976). "The theory of the firm: Managerial behaviour, agency costs and ownership structure". Journal of Financial Economics, Vol. 3, October, pp. 305 – 360.
- Jick, T. D. (1979). "Mixing qualitative and quantitative methods: Triangulation in action" in J. Van Maanen, (ed.). Qualitative methodology. Sage Publications.
- Jomo K. S. and Felker, G. (1999). (eds.). Technology, competitiveness and the state: Malaysia's industrial technology policies. London and New York: Routledge.
- Jorgenson, D. (1963). "Capital market theory and investment behaviour". American Economic Review, May.
- Kaiser, H. F. (1974). "An index of factorial simplicity". Psychometrika, Volume 35, pp. 401 – 415.
- Kanapathy, V. (2001). "Industrial restructuring in Malaysia: Policy shifts and the promotion of new sources of growth" in S. Masuyama, D. Vandenbrink and C. S. Yue, (eds.). Industrial restructuring in East Asia: Towards the 21<sup>st</sup> century. Nomura Research Institute (NRI), Tokyo and Institute of Southeast Asian Studies (ISEAS), Singapore, Tokyo Club Foundation for Global Studies.
- Kanter, R. M., Stein, B. A. and Jick, T. D. (1992). The challenge of organisational change: How companies experience it and leaders guide it. New York: The Free Press.

- Kaplan, S. N. and Per Stromberg (2000a). "Financial contracting theory meets the real world: An empirical analysis of venture capital contracts". Working Paper, University of Chicago.
- \_\_\_\_\_(2000b). "How do venture capitalists choose and manage their investments?". Working Paper, University of Chicago.
- \_\_\_\_\_(2001). "Venture capitalists as principals: Contracting, screening and monitoring". American Economic Review, May.
- Kaplan, S. N. and Zingales, L. (1997). "Do financing constraints explain why investment is correlated with cash flow?". Quarterly Journal of Economics, Vol. 112, pp. 169 – 215.
- Kenney, M. (2001). "*Regional clusters, venture capital and entrepreneurship: What can the social sciences tell us about Silicon Valley?*". Retrieved on 19 November 2001 from <http://hcd.ucdavis.edu/Faculty/kenney/vita/Reg.html>.
- Kenney, M., Han, K., and Tanaka, S. (2002). "Scattering geese: The venture capital industries of East Asia". A Report to the World Bank, BRIE Working Paper 146.
- Kinefuchi, M. K. (1986). The role of venture capital in supporting innovative risk-taking in the United States and Japan: A comparative study. Centre for Japan-US Relations, International University of Japan, No. 6.
- Kitamura, T. (2001). "Financial systems and foreign exchange transactions in Central Asia". GITI Research Bulletin 2000 – 2001, Global Information and Telecommunication Institute, Waseda University, pp. 31 – 41.
- \_\_\_\_\_(2002). "Financial reform in Uzbekistan". GITI Research Bulletin 2001 – 2002, Global Information and Telecommunication Institute, Waseda University, pp. 55 – 61.
- Lerner, J. (1995). "Venture capitalists and the oversight of private firms". The Journal of Finance, Vol. L, No. 1, March, pp. 301 – 318.
- \_\_\_\_\_(1999). "The government as venture capitalist: The long-run impact of the SBIR program". Journal of Business, Vol. 72, No. 3, pp. 285 – 318.
- \_\_\_\_\_(2000). "Small business, innovation, and public policy in the information technology industry" in E. Brynjolfsson and B. Kahin, (eds.), Understanding the digital economy. Cambridge: The MIT Press.
- Libecup, G. D. (1986). "The dialogue on venture capital markets" in G. Libecup, (ed.), Advances in the study of entrepreneurship, innovation, and economic growth: A research annual, Volume 1, pp. 71 – 78. JAI Press Inc.
- Litterer, J. A. (1965). The analysis of organizations. John Wiley and Sons Inc.



- Machlup, F. (1967). "Theories of the firm: Marginalists, behavioural, managerial". American Economic Review, Vol. LVII, No. 1, March, pp. 1 – 33.
- MacMillan, I. C., Siegel, R. and Subbanarasimha, P. N. (1985). "Criteria used by venture capitalists to evaluate new venture proposals". Journal of Business Venturing, Vol. 1, No. 1, pp. 119 – 128.
- MacMillan, I. C., Zemann, L. and Subbanarasimha, P. N. (1987). "Criteria distinguishing successful from unsuccessful ventures in the venture screening process". Journal of Business Venturing, Vol. 2, pp. 123 – 137.
- MacMillan, I. C., Kulow, D. M. and Khoylian, R. (1988). "Venture capitalists' involvement in their investments: Extent and performance". Journal of Business Venturing, Vol. 4, pp. 27 – 47.
- Maddala, G. S. (1977). Econometrics. McGraw-Hill International Book Company.
- McNally, K. (1995). "Corporate venture capital: The financing of technology businesses". International Journal of Entrepreneurial Behaviour & Research, Vol. 01, No. 3, pp. 9 – 43.
- Mani, S. and Bartzokas, A. (2002). "Institutional support for investment in new technologies: The role of venture capital institutions in developing countries". The United Nations University, INTECH, Discussion Paper Series, No. 2002 – 4, May.
- Mansell, R. and Wehn, U. (1998). (eds.). Knowledge societies: Information technology for sustainable development. United Nations Commission on Science and Technology for Development. Oxford University Press.
- Marris, R. (1964). The economic theory of managerial capitalism. London: Macmillan.
- Massey, D., Quintas, P. and Wield, D. (1992). High-tech fantasies: Science parks in society, science and space. London and New York: Routledge.
- Masuyama, S. and Vandenbrink, D. (2001). "Industrial restructuring in East Asian economies for the twenty-first century" in S. Masuyama, D. Vandenbrink and C. S. Yue, (eds.), Industrial restructuring in East Asia: Towards the 21<sup>st</sup>.century. Nomura Research Institute (NRI), Tokyo and Institute of Southeast Asian Studies (ISEAS), Singapore, Tokyo Club Foundation for Global Studies.
- Megginson, W. C. and Weiss, K. A. (1991). "Venture capitalist certification in initial public offerings". Journal of Finance, Vol. XLVI, No. 3, July, pp. 879 - 903.
- Meyer, J. R. and Glauber, R. R. (1964). "Investment decisions, economic forecasting, and public policy". Graduate School of Business Administration, Division of Research. Boston: Harvard University.

- Miles, M. B. (1983). "Qualitative data as an attractive nuisance: The problem of analysis" in J. Van Maanen, (ed.), Qualitative methodology. Sage Publications.
- Miller, R. and Cote, M. (1987). Growing the next Silicon Valley: A guide for successful regional planning. Lexington Books.
- Milliband, R. (1973). The state in capitalist society. London: Quartet Books.
- Mintzberg, H. (1973). The nature of managerial work. New York: Harper and Row.
- \_\_\_\_\_ (1983). Power in and around organizations. Englewood Cliffs, New Jersey: Prentice-Hall.
- Mitchell, F., Reid, G. C. and Terry, N. G. (1995). "Post investment demand for accounting information by venture capitalists". Accounting and Business Research, Vol. 25, No. 99, pp. 186 – 196.
- Modigliani, F. and Miller, M. H. (1958). "The cost of capital, corporation finance, and the theory of investment". American Economic Review, Vol. 48, No. 3, June, pp. 261 – 297.
- Molnar, J. J. and Rogers, D. L. (1979). "A comparative model of interorganizational conflict". Administrative Science Quarterly, Vol. 24, pp. 405 – 424.
- Murray, G. (1994). "The second equity gap: Exit problems for seed and early stage venture capitalists and their investee companies". International Small Business Journal, Vol. 12, No. 4, pp. 59 – 76.
- Murray, G. C. (1995). "Evolution and change: An analysis of the first decade of the UK venture capital industry". Journal of Business Finance and Accounting, Vol. 22, No. 8, December, pp. 1077 – 1106.
- Myers, S. C. (1984). "The capital structure puzzle". Journal of Finance, Vol. 39, pp. 575 – 592.
- Myers, S. C. and Majluf, N. (1984). "Corporate financing and investment decisions when firms have information that investors do not have". Journal of Financial Economics, Vol. 13, pp. 187 – 221.
- Nachmias, C. F. and Nachmias, D. (1996). Research methods in the social sciences. St. Martin's Press Inc., Arnold. (5<sup>th</sup>. Edition).
- Norusis, M. J. (1983). SPSSx introductory statistics guide. SPSS Inc. McGraw-Hill Book Company.
- \_\_\_\_\_ (1988). SPSSx advanced statistics guide. SPSS Inc. McGraw-Hill Book Company.

- Olson, D. E. (1998). Agency theory extensions: The impacts of board demography in banks and independent colleges. Unpublished Doctoral Dissertation, the University of Arizona, Arizona.
- Oppenheim, A. N. (1966). Questionnaire design and attitude measurement. London: Heinemann.
- Paqvalen, K. K. (2001). "How does the venture capitalist - entrepreneur relationship translate to the performance of the venture?". Seminar Paper, Helsinki University of Technology, Institute of Strategy and International Business, Espoo, Finland.
- Penrose, E. T. (1959). The theory of the growth of the firm. New York: John Wiley.
- Pfirrmann, O., Wupperfeld, U. and Lerner, J. (1997). "Venture capital and new technology based firms: An US-German comparison". Series of the Fraunhofer Institute for Systems and Innovation Research (ISI). Germany: Physica-Verlag Heidelberg.
- Phillips, E. M. and Pugh, D. S. (2000). How to get a PhD: A handbook for students and their supervisors. Buckingham, Philadelphia: Open University Press, (Third Edition).
- Pitelis, C. N. (1987). Corporate capital: Control, ownership, saving and crisis. Cambridge: Cambridge University Press.
- Poindexter, E. A. (1976). The efficiency of financial markets: The venture capital case. Unpublished Doctoral Dissertation, New York: New York University.
- Porter, M. E. (1980). Competitive strategy: Techniques for analyzing industries and competitors. New York: The Free Press.
- \_\_\_\_\_. (1985). Competitive advantage: Creating and sustaining superior performance. New York: The Free Press.
- Plummer, J. L. (1987). "QED Report on Venture Capital Financial Analysis". Palo Alto, California: QED Research Inc.
- Reid, G. C. (1998). Venture capital investment: An agency analysis of practice. London and New York: Routledge.
- Robbins, S. P. (1982). Organization theory: The structure and design of organizations. Englewood Cliffs, New Jersey: Prentice-Hall.
- Roscoe, J. T. (1975). Fundamental research statistics for the behavioural sciences. New York: Holt, Rinehart and Winston. (2<sup>nd</sup>. Edition).

- Rosenberg, N. (1986). "Technological innovation and economic growth" in G. Libecup, (ed.), Advances in the study of entrepreneurship, innovation, and economic growth: A research annual. Volume 1, pp. 11 – 24. JAI Press Inc.
- Sagari, S. B. and Guidotti, G. (1992). "Venture capital: Lessons from the developed world for the developing markets". Discussion Paper No. 13, International Finance Corporation (IFC), The World Bank, Washington, D.C.
- Sahlman, W. A. (1990). "The structure and governance of venture-capital organisations". Journal of Financial Economics, Vol. 27, pp. 473 – 521.
- Sapienza, H. J. and Gupta, A. K. (1994). "The impact of agency risks and task uncertainty on venture capitalist-CEO interaction". Academy of Management Journal, Vol. 37, pp. 1618 – 1632.
- Sappington, D. E. M. (1991). "Incentives in principal-agent relationships". Journal of Economics Perspectives, Vol. 5, pp. 45 – 66.
- Schertler, A. (2000). "Venture capital contracts: A survey of the recent literature". Kiel Working Paper No. 1017, December.
- Securities Commission (2003). Annual report 2003. Kuala Lumpur: SC.
- Sekaran, U. (1992). Research methods for business: A skill-building approach. John Wiley & Sons, Inc. (2<sup>nd</sup>. Edition).
- Selltiz, C., Marie, J., Morton, D. and Stuart, C. (1962). Research methods in social relations. New York: Holt, Rinehart and Wilson Inc.
- Seta, F., Onishi, T. and Kidokoro, T. (2001). "Study about locational tendency of IT companies in city centres and suburbs – Case study of Malaysia". The University of Tokyo (or Korea Planners Association, Proceedings of International Symposium on Urban Planning 2001, pp. 257 – 266, Taejong, Korea).
- Silverman, D. (1985). Qualitative methodology and sociology. Gower Publishing Co.
- Simon, H. A. (1960). The new science of management decision. New York: Harper and Brothers.
- \_\_\_\_\_(1979). "Rational decision making in business organizations". American Economic Review, Vol. 69, No. 4, September, pp. 493 – 513.
- Smith, H. (1975). Strategies of social research: The methodological imagination. Englewood Cliffs, New Jersey: Prentice Hall.
- Snow, C. C. and Hrebiniak, L. G. (1980). "Strategy, distinctive competence, and organisational performance". Administrative Science Quarterly, Vol. 25, No. 2, June.

- Sohaimi M. S. (2002). "Malaysia's national information infrastructure: Issues and challenges of the Multimedia Super Corridor (MSC)". GITI Research Bulletin 2001 – 2002, Global Information and Telecommunication Institute, Waseda University, pp. 135 – 148.
- \_\_\_\_\_. (2003a). "Financing ICT companies: The experience of Multimedia Super Corridor (MSC), Malaysia". GITS/GITI Research Bulletin 2002 – 2003, Graduate School of Global Information and Telecommunication Studies & Global Information and Telecommunication Institute, Waseda University, pp. 140 – 148.
- \_\_\_\_\_. (2003b). "The Multimedia Super Corridor (MSC) and E-Government initiatives in Malaysia". A Paper presented at the 3<sup>rd</sup>. ITU-Waseda University International Workshop for Policy Makers and Regulators 2003 held at Waseda University, October 27, 2003.
- \_\_\_\_\_. (2004). "The Malaysia's Multimedia Super Corridor (MSC): Progress and prospects" in Islam & ICT: Diversity & possibility of the Islamic science & technology. Waseda University/United Nations Educational, Scientific & Cultural Organization (UNESCO), pp. 91 – 102.
- Sommer, R. and Sommer, B. B. (1980). A practical guide to behavioural research, tools and techniques. Oxford University Press.
- Sweeting, R. C. (1991). "UK venture capital funds and the funding of new technology-based businesses: Process and relationships". Journal of Management Studies, Vol. 28, No. 6, November, pp. 601 – 622.
- Sykes, H. B. (1990). "Corporate venture capital: Strategies for success". Journal of Business Venturing, Vol. 5, pp. 37 – 47.
- Tether, B. S. (1997). "Growth diversity amongst innovative and technology based new and small firms: An interpretation". New Technology Work and Employment, Vol. 12, No. 2, pp. 91 – 109.
- Tether, B. S. and Massini, S. (1998). "Employment creation in small technological and design innovators in the UK during the 1980s". Small Business Economics, Vol. 11, pp. 353 – 370.
- The Bank of England (2001). "*Financing of technology-based small firms*". Retrieved on 10 December 2001 from <http://www.bankofengland.co.uk/hightech2001.pdf>.
- The Eighth Malaysia Plan 2001 – 2005, (2001). Prime Minister's Department, Malaysia, pp. 413 – 427. Kuala Lumpur: Percetakan Nasional Malaysia Berhad.
- The First Industrial Master Plan, 1986 – 1995, (1986). Ministry of International Trade and Industry (MITI), Malaysia. Kuala Lumpur.

- The JBIC (2001). "Issues of sustainable development in Asian Countries: Focused on SMIs in Malaysia". JBIC Research Paper No. 8 -2, Research Institute for Development and Finance, Japan Bank for International Cooperation (JBIC).
- The Malaysian Venture Capital Association (MVCA), Retrieved on several dates from <http://www.mvca.org.my>.
- The Ministry of Education (MOE) and Multimedia Development Corporation (1999). The Information Technology (IT) & Human Resources (HR) Survey. Kuala Lumpur.
- The Ministry of Finance, Malaysia, Kuala Lumpur. Retrieved on several dates from <http://www.treasury.gov.my>.
- The Multimedia Development Corporation [MDC], Malaysia. Retrieved on several dates from <http://www.mdc.com.my>.
- \_\_\_\_\_ (2002). Funding guide & Directory for the ICT/Multimedia industry. Kuala Lumpur: MDC (1<sup>st</sup>. Edition).
- \_\_\_\_\_ (2003), MSC Impact Survey 2002. Kuala Lumpur: MDC.
- The Second Industrial Master Plan, 1996 – 2005, (1996). Ministry of International Trade and Industry (MITI), Malaysia. Kuala Lumpur.
- The Star Online (2002). "*Be more flexible, VCs rapped*". Retrieved on 16 July 2002 from <http://star-techcentral.com/tech/story.asp?file=/2002/7/15/technology/12mem>
- Thomas, R. E. (1983). Business policy. Oxford: Philip Allan Publishers Ltd. (Second Edition).
- Timmons, J. A. and Bygrave, W. D. (1986). "Venture capital's role in financing innovation for economic growth". Journal of Business Venturing, Vol. 1, pp. 161 – 176.
- Tobin, J. (1969). "A general equilibrium approach to monetary theory". Journal of Money, Credit and Banking, Vol. 1, February, pp. 15 – 29.
- Trester, J. J. (1993). "Venture capital contracting under asymmetric information". Working Paper, The Wharton Financial Institutions Center, University of Pennsylvania.
- Tyebjee, T. T. and Bruno, A.V. (1984). "A model of venture capitalists investment activity". Management Science, Vol. 30, No. 9, September, pp. 1051 – 1066.
- Van Maanen, J. (1983). (ed.). Qualitative methodology. Sage Publications.

- Van Osnabrugge, M. (2000). "A comparison of business angel and venture capitalist investment procedures: An agency theory-based analysis". Venture Capital, Vol. 2, No. 2, pp. 91 – 109.
- Van Osnabrugge, M. and Robinson, R. J. (2000). Angel investing: Matching start-up funds with start-up companies – The guide for entrepreneurs, individual investors, and venture capitalists. San Francisco: Jossey-Bass Inc. Publishers.
- Wells, W. A. (1974). Venture capital decision-making. Unpublished Doctoral Dissertation, Pittsburgh: Carnegie-Mellon University.
- Williams, B. R. and Scott, W. P. (1965). Investment proposals and decisions. George Allen and Unwin Ltd.
- Williamson, J. B., Karp, D. A. and Dalphin, J. R. (1977). The research craft: An introduction to social science methods. Toronto: Little, Brown and Company.
- Williamson, O. E. (1970). Corporate control and business behaviour. Englewood Cliffs, New Jersey: Prentice-Hall.
- \_\_\_\_\_(1979). "Transaction-cost economics: The governance of contractual relations". Journal of Law and Economics, Vol. 22, pp. 233 – 261.
- Wright, M., Robbie, K., Romanet, Y., Thompson, S., Joachimsson, R., Bruining, J. and Herst, A. (1993). "Harvesting and the longevity of management buy-outs and buy-ins: A four-country study". Entrepreneurship: Theory and Practice, Vol. 18, Winter, pp. 90 – 109.
- Wright, M. and Robbie, K. (1997). Venture capital. London: Dartmouth Publishing Company Limited.
- \_\_\_\_\_(1996). "Venture capitalists, unquoted equity investment appraisal and the role of accounting information". Accounting and Business Research, Vol. 26, No. 2, pp. 153 – 168.
- Yin, R. K. (1989). "Case study research: Design and methods". Applied Social Research Methods Series, Vol. 5. Sage Publications Inc. (Revised Edition).
- \_\_\_\_\_(1994). Case study research: Design and methods. Newbury Park, CA Sage Publications Inc. (2nd. Edition).

### LIST OF ACADEMIC ACHIEVEMENTS

Theses	<p>O <b><i>‘Venture Capital Financing for ICT Venture Businesses: A Case Study of Malaysia’</i></b> published in the Journal of International Business &amp; Entrepreneurship (JIBE) by the Malaysian Entrepreneurship Development Center (MEDEC), MARA University of Technology – (July 2004, Vol. 10, No. 2, pp. 37 - 70) [Publication number: ISSN 0128 – 7494].</p> <p>O <b><i>‘Venture Capital Financing: Managerial Factors and Management Conflict in the ICT Industry’</i></b> published in the Malaysian Management Review by the Malaysian Institute of Management, Kuala Lumpur, Malaysia (June 2004, Vol. 39, pp. 94 - 106) [Publication number: ISSN 0025 – 1348].</p> <p>O <b><i>‘Recognition of Managerial Factors and Agency Conflict in ICT Industry’</i></b> for the INTAN Management Journal by the National Institute of Public Administration (INTAN), Kuala Lumpur, Malaysia – (Forthcoming Vol. 7, 2004) [Publication number: ISSN 0128 – 3324]- due to be printed.</p> <p><b><i>‘A Situational Analysis of the Malaysia’s Venture Capital Industry’</i></b> for the Journal of Information Technology &amp; Multimedia by the National University of Malaysia, Kuala Lumpur, Malaysia – (reviewing) [Publication number: ISSN 1675 – 2031].</p> <p><b><i>‘Venture Capital Financing in a Technology Park: A Case Study of the Multimedia Super Corridor (MSC)’</i></b> for the Journal of Information Technology &amp; Multimedia by the National University of Malaysia, Kuala Lumpur, Malaysia – (reviewing) [Publication number: ISSN 1675 – 2031].</p> <p><b><i>‘Venture Capital Financing: Stakeholders’ Characteristics and Agency Conflict in ICT Industry, Malaysia’</i></b> for The Developing Economies Journal by the Institute of Developing Economies (IDE)-Japan External Trade Organization (JETRO) – (reviewing) [Publication number: ISSN 0012 – 1533].</p>
Lectures	<p>a. <b><i>“Venture Capital Financing: Managerial Factors and Management Conflict in ICT Industry”</i></b> on September 3, 2004 in the GITS’s public hearing for Doctoral Dissertation Presentation, Room #224 (2F), Building 29 - 7, Waseda University, Tokyo, Japan.</p> <p>b. <b><i>“Venture Capital Financing: Managerial Factors and Management Conflict in ICT Industry”</i></b> on June 10, 2004 in the GITS’s public hearing for Doctoral Dissertation Presentation, Room #509 (5F), Building 19, Waseda University, Tokyo, Japan.</p>



	<p>c. <b><i>“Venture Capital Financing: Managerial Factors and Management Conflict in ICT Industry”</i></b> on May 19, 2004 in the GITS’s Meeting for Doctoral Dissertation Presentation, Room N206, GITS, Honjou Campus, Japan.</p> <p>d. <b><i>“Venture Capital Financing in a Technology Park: A Case Study of the Multimedia Super Corridor (MSC)”</i></b> on March 3, 2004 in the jointly organized Waseda University-MMU International workshop held in the Malaysia Multimedia University (MMU), Cyberjaya, Malaysia.</p> <p>e. <b><i>“Venture Capital Financing in a Technology Park: A Case Study of the Multimedia Super Corridor (MSC)”</i></b> on February 27, 2004 in the GITS’s Meeting for Doctoral Dissertation Presentation, Room # 509 (5F), Building 19, Waseda University, Tokyo, Japan.</p> <p>f. <b><i>“The Malaysia’s Multimedia Super Corridor (MSC): Progress and Prospects”</i></b> on November 2, 2003 in the Third International Symposium of “Islam &amp; Information-Telecommunication Technology: Diversity &amp; Possibility of the Islamic Science &amp; Technology” hosted by GITI/Institute of Islamic Sciences (IIS), Waseda University held at the Waseda University, Tokyo, Japan.</p> <p>g. <b><i>“The Multimedia Super Corridor (MSC) and E-Government Initiatives in Malaysia”</i></b> on October 27, 2003 in the 3<sup>rd</sup>. ITU-Waseda University International Workshop for Policy Makers and Regulators 2003 held at the Waseda University, Tokyo, Japan.</p> <p>h. <b><i>“Venture Capital Financing: Managerial Factors and Management Conflict in ICT Industry”</i></b> on October 11, 2003 in the academic conference of the Japan Association for Social Informatics (JASI) held at the Tokyo University of Technology, Hachioji, Japan.</p> <p>i. <b><i>“Issues and Challenges of the Multimedia Super Corridor (MSC)”</i></b> in the GITS’s Meeting for Doctoral Dissertation Presentation on November 8, 2002 held at the Waseda University, Tokyo, Japan.</p> <p>j. <b><i>“Malaysia’s National Information Infrastructure (NII): Issues and Challenges of the Multimedia Super Corridor (MSC)”</i></b> in the Japan Section of the Regional Science Association International (JSRSAI) academic meeting on October 6, 2002 held at Sapporo, Hokkaido, Japan.</p>
Publications	<p>a. <b><i>“The Malaysia’s Multimedia Super Corridor (MSC): Progress and Prospects”</i></b> published in the book on “Islam &amp; ICT: Diversity &amp; Possibility of the Islamic Science &amp; Technology” by the Waseda University/United Nations Educational, Scientific &amp; Cultural Organization (UNESCO) 2004; pp. 91 - 102.</p>

Others	<p>b. <b><i>“Financing ICT Companies: The Experience of Multimedia Super Corridor (MSC), Malaysia”</i></b> published in the GITS/GITI Research Bulletin 2002 – 2003, Graduate School of Global Information and Telecommunication Institute, Waseda University; pp. 140 - 148.</p> <p>c. <b><i>“Malaysia’s National Information Infrastructure: Issues and Challenges of the Multimedia Super Corridor (MSC)”</i></b> published in the GITI Research Bulletin 2001 – 2002, Global Information and Telecommunication Institute, Waseda University; pp.135 - 148.</p> <p>d. <b><i>“Venture Capital Financing: Managerial Factors and Management Conflict in ICT Industry”</i></b> published in the proceedings text of the academic conference of the Japan Association for Social Informatics (JASI) held on October 10-11, 2003, at the Tokyo University of Technology, Hachioji, Japan; pp. 105 - 110.</p> <p>e. <b><i>“The Multimedia Super Corridor (MSC) and E-Government Initiatives in Malaysia”</i></b> for the 3<sup>rd</sup>. ITU-Waseda University International Workshop for Policy Makers and Regulators 2003 submitted to the GITS Research Bulletin 2004, [Forthcoming 2004] – due to be printed.</p> <p>Panelist in the Public Symposium on <b><i>“Large-scale National Project: the Case of Malaysia”</i></b> during the 3<sup>rd</sup>. International Symposium of Islam and Information-Telecommunication Technology: Diversity and Possibility of the Islamic Science and Technology held on November 2, 2003 at the International Conference Center, Waseda University.</p>
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