Abstract: The idea of the establishment of Malaysian Venture Capital Berhad (MAVCAP) was conceived when information and communications technology (ICT) were beginning to transform firms universally and it was obvious that the future lie in knowledge-driven economy. Particularly in the USA, such companies were being born on a daily basis with venture capital (VC) boosting their exponential development. In view of this, the Malaysian government dreamt to replicate some of the interesting successes in the domestic economy and pushed the progress of the country through to the next logical phase, one that is based on intellectual property (IP). Hence, they government identified Venture Capital as a veritable instrument essential to finance technology innovation by supporting research and development (R & D) activities in universities and other public research institutes. The objective of this study is to review the activities of MAVCAP from inception about twelve years ago and find out if the main purpose of establishing the organization has been achieved. The methodology adopted here is a single case study based on in-depth review of empirical literature, newspapers, secondary data, and document analysis about the activities of the case study organization. This study finds that up to date, MAVCAP has succeeded in collaboration with other active agents in the innovation ecosystems helped to build a thriving VC industry in Malaysia. MAVCAP has also contributed in no small measure in helping to groom pools of VC professionals among young Malaysian university graduates.

Key words: Commercialization; Equity Finance: High Tech Companies; Research and Development; Technology Innovation

1.0 Background of the Research:

Venture Capital was encouraged to commence in Malaysia as a result of the rapid build-up of the national innovation policies in the country around the year 1990 by the Malaysian government through the Ministry of Science, Technology, and Innovation (MOSTI., 2013; Janssen, M. and M.H.E. Moors, 2013; Khin, S., 2010). The encouragement and development of innovation has passed through four phases ever since. The first phase (from 1957-1970) has been characterized by concentrating the researches on cultivation. The second phase (1970-mid 1980s) was marked by starting to build up university research facilities. Although foreign direct investments (FDI) existed, there is less indication that large flows of FDI had significant impact on the development of local technological capabilities in Malaysia (Tidd, J. and M. Brocklehurst, 1999; Thiruchelvam, K., 2010). From mid 1980s to 1990s, the third phase, the Malaysian government concentrated its effort on technology transfer by appointing the first science advisor to the prime minister and activating research within government owned universities (MOSTI., 2009). However, the rapid expansion of the economy in some countries has lead to the competitive nature of technology business activities in many countries (Ferrary, M. and M. Granovetter, 2009; Bloch, C., 2007; Hisrich, R.D., 2008). Technology innovation plays a very vital role in developing economic growth through focusing on science and technology-based knowledge (Youtiea, J. and P. Shapiro, 2008) and has become an essential tonic for growth in both advanced and growing nations. Some of which are the root course of the slow pace of growth encountered in this sector, hence, the motivation of the researcher to carry out an in-depth study of this industry. In Malaysia and other part of the world, VC was acknowledged as being among the most important technology financing instruments supporting R & D activities, from boosting elementary scientific research to technology development and commercialization (Mason, C., 2010; Mason C.M.. 2008; Mason, M. and J. Zhou, 2009; Mason, C. and Y. Pierrakis, 2011; Mason, C. and R. Brown, 2011). Venture Capital which is described as independently managed, dedicated pools of capital that focus on equity and equity linked investments in privately held, high-growth firms, play an essential role in the emergence of new sectors by creating and supporting innovative firms which later dominate these industries (Lerner, J., 2011). The aim of this research is to conduct an in-depth study of the activities of the largest venture capital company in Malaysia and review empirical literature with the aim of seeing if the main reasons for establishing the organization have been achieved so far. This article shall discuss mainly the broad essentials of technology business financing and venture capital financing. The discussion will comprise of
definitions of main terms and the relationships among the broad elements as found in previous researches and conceptual framework. The first section is the background of the study which will look at the areas of financing technology based firms, followed an overview of venture capital firms in other context, then the perception of venture capital financing in the eyes of MAVCAP shall be critically reviewed. Various efforts of Malaysian government to promote TBFs financing and commercialization shall be critically investigated through the eyes of MAVCAP as the case company. The next section will then present the methodology for this research after which we shall conclude by presenting the discussion, conclusion and implication for research.

1.1 Financing High Technology Companies:
There are different types of financing possibilities available to TBFs. These categories of firms often depend on family financing, loan from friends, overdrafts or personal loan from commercial banks (otherwise known as Financial Bootstrapping). However, there are two methods to adopt in FB; (1) adopting strategies that reduce cash requirement by securing resources at little or no cost. TBF managers may for instance depend on their personal relationship to secure free access to certain financial resources. They may adopt strategy to secure resources without making use of commercial bank funding or external equity funding. They may also obtain capital through subsidy financing or personal sources of finance (Helleboogh, D., 2010; Vanacker, T., 2011). (2) However, for other projects with high growth potentials, a TBF owner can access funds from private investors known as VCs and or BAs. Several authors have reported that more than 90% of technology entrepreneurs finance their ventures through informal sources and about 60% source their early capital as contribution from the venture founders (McNally, K., 1995; Lam, W., 2010). Although many publications have been focused on the formal sources of finance, mainly in the area of equity (Li, Y., 2008) and further in the area of debt finance (Fabowale, L., 1995). Lam (2010) posited that FB is actually the most informal source of financing TBFs and that both equity and debt sources are formal in nature because of the official and strict screening criteria; due diligence, business proposal screening, they adopt before funding is allocated to TBFs. Although many entrepreneurs are found to adopt a combination of debt and equity sources of financing, still, a vast number of studies reports that equity financing remain the best form of development capital for technology based firms. Figure 1 shows the different types of financing sources for TBFs that is potentially available to finance emerging companies.

![Financing Sources for Technology Based Firms](image)

**Fig. 1:** Financing Sources for Technology Based Firms.
**Source:** Researcher’s Construct.

1.2 Who are the Venture Capitalists?
Venture Capitalists are specialized intermediaries that direct capital to firms and professional services to companies that might otherwise be excluded from the corporate debt market and other sources of private finance (Lerner, J. and A. Leamon, 2011). Kirihata (2010) in her study of VCs evaluation in Japan refer to VCs as
individuals directly involved in the VC investment process from scouting and screening activities to post-investment and exit, and excluding employees of the VC firms who are engaged in general duties that are unrelated to investment process for example general personnel affairs. VC financing is used to invest mainly in technology SMEs with good growth and exit potential (Groh, A.P., 2010; Wonglimpiyarat, J., 2011), while private equity finances changes of ownership in established businesses, often supported by debt capital. Further definition of VC (Ahlstrom, D., 2007) views it as early stages of equity investments including later stage mezzanine, turnaround and buyout investments typically associated with private equity investments in the West. Cumming and Dai (2010) posits that VCs operate across countries and time zones, providing capital and skills to entrepreneurial firms competing in global markets. This is particularly in the early staged VC where technology transcends geographic boundaries (Lockett, A., 2008). Typically VCFs concentrate on industries with a great deal of uncertainty, where information asymmetry (gaps) among entrepreneurs and VCs are commonplace. These ventures are identified as financially constrained. TBFs rely on VC as one of their main sources of funding. Recent empirical research found that the effects of VC on the success of these ventures are considerable. The value of venture capital investment is borne out by figures which show that VC backed firms grow on average twice as fast as those not backed by VCFs (EVCA., 2011). This category of equity investors focuses on particular region, or single country when searching for corporations that deserve financial backing.

2.0 Methodology of the Study:
This particular research is a single case study mainly based on reviews of empirical studies on technology based firms financing and venture capital. Furthermore, the authors’ reviews available information on the website of Malaysian Venture Capital Berhad coupled with some hard copy document and newspapers analysis we could lay our hands on. The authors shall compare this information with the aim of discussing the findings and finally conclude the paper with implications for future research.

3.0 Discussions and Findings:
3.1 How MAVCAP View Venture Capital:
Venture capital is a type of private equity capital provided to early-stage and high-potential, growth companies. The ultimate objective is to generate a return through a “liquidity” event such as an IPO or trade sale of the company. VC investments are usually made in the form of cash in exchange for preference shares in the invested company. A venture capitalist can be an individual or investment firm that makes venture investments. These venture capitalists are expected to provide their managerial and technical expertise along with capital to the invested companies. A VC fund refers to a pooled investment vehicle (often an LP or LLC) that primarily invests the financial capital of third-party investors in enterprises that are normally considered too risky for the typical financial institutions. Hence, new companies with limited operating history, which are too small to raise capital in the public markets and not sufficiently mature to secure a bank loan or complete a debt offering will find VC funding a highly appealing option. In exchange for the high risk that venture capitalists undertake when investing in smaller and less mature companies, venture capitalists have a significant influence on company decisions (MAVCAP., 2013).

3.2 The Knowledge Capital of MAVCAP to TBFs:
MAVCAP perception of VC is consistent with several past authors that Venture capitalists emphasize on creating value which they achieve by accelerating the performance of TBFs they invest in, help them develop their technologies further and build market expansion. This category of venture capitalists shares their wealth of experience and also provides corporate governance on important management decisions to improve the performance of investee companies. MAVCAP VCs are committed personnel who are determined to empower technopreneurs to build their young ventures. This commitment is the main reason they are able to harness the inherent capabilities of technology based firms.

3.3 Graduate Internship Program:
MAVCAP also try to build adequate pool of venture capitalists by offering opportunities to Malaysian graduates to under-go a one year intensive practical training and mentorship as venture capitalists. This is a strategy of keeping with their core mandate to nurture and groom more venture capitalists in the industry. Currently, dynamic and motivated university graduates are offered job placements as interns with postings to various outsource partners of MAVCAP. Among the training they lucky interns undergo are sourcing investment deals, deal evaluation, proposal approval and monitoring and management of portfolio. Since it has been acknowledged that among the problems encountered in areas of financing more deals in Malaysia is because of the inadequate number of qualified venture capitalists to evaluate and nurture investee companies (MAVCAP., 2013).
3.4 MAVCAP as a Venture Capital Company:

The ICT sector in Malaysia has been witnessing consistent growth for over twenty years. The emphasis of government is among the top reason for this strong performance which has ensured that the sector plays a strong role in supporting the country’s dream of becoming a knowledge-driven economy. Government has recognized the hardship small or budding ICT firms go through to compete for market penetration due to the little finances at their disposal. In view of this, Malaysia Venture Capital Management Berhad was set up in 2001. MAVCAP is currently perceived as the biggest VC firm in Malaysia with funds spread across the ICT sector and other technology based industries. This organization is a wholly owned subsidiary of the Ministry of Finance (MOF). Malaysian Venture Capital Berhad was established to help achieve the vision to assist ICT firms and building the VC culture in Malaysia (MAVCAP., 2013). MAVCAP goes to a great length to invest in TBFs that have potentials and to assist technopreneurs with great passion for success. This is also done by committing themselves to making available strong platform for technopreneurs to take their ventures to a greater level. MAVCAP was initially allocated the sum of RM970 million as its capital under management under the 8th and 9th Malaysia Plan (MAVCAP., 2013; Ramesh, M.R., 2013). The firm provides an alternative source of high-risk financing for start-ups, seed capital and early stage ventures in the ICT sector and high-growth industries. Initial investments of RM1 million – RM3 million are complemented with Mezzanine allocations valued at RM5 million – RM10 million to fund companies through to the pre-IPO stage. In later stage investments, MAVCAP typically invests between 3 - 5 years. MAVCAP is the most active investor in the ICT and high tech industry, through its direct and seed ventures and has invested in close to 90 companies. The core emphasis of MAVCAP is:

a) 70% direct investments in Malaysian incorporated companies.
b) 30% investments in foreign companies with business interests in Malaysia.

Until recently they succeeded in the registration of 6 portfolio firms in Bursa Malaysia, stocks market in Singapore and the UK. Ever since inception, they have funded more than 258 entrepreneurs and generated more than 1,200 jobs in the technology based firms sector in Malaysia. Through MAVCAP’s investee firms, they have as at December 31, 2007, generated over 100 TBFs’ products and services which have penetrated markets in China, Vietnam, Philippines, Indonesia and the United States. Figure 2 shows the impact of venture capital on technology based firms. This impact is reflected on the growth cycle of how VCFs invest over a specific period and amount invested per stage of growth.

Fig. 2: VCFs Growth curve.
Source: Adapted from MAVCAP (2013).

3.5 MAVCAP Financing Schemes:

As dedicated Government Backed Venture Company aimed at helping to build the VC culture in Malaysia and also growing the information technology sector. MAVCAP supports investment at the seed, start-up and early-stage firms and other TBFs with high growth possibilities. MAVCAP is committed to:

a) Strengthen technopreneurs to generate wealth
b) Build superior returns on investment (ROI)
c) Mentor a large pool of quality VC and PE managers in Malaysia

A typical length of period they invest their funds with TBFs is between 3 to 8 years in seed, start-ups and early-stage ventures. MAVCAP do not only put in their money in the ventures but also go further by holding equity positions in firms they finance and actively involved in strategic decision making. They are positioned as both strategic and professional partner who technopreneurs can turn to for sound judgment and advice. In support of earlier study of Lockett et al (2008), Malaysian Venture Capital Berhad is strongly guided by the willingness to nurture investee firms to greater performance standard. As a other venture capital firms, they are
eager to take risks that traditional commercial banks are not willing to get involved in (Groh, A.P., 2010). The ideal partners of MAVCAP are TBFs that usually find it difficult to secure funding probably as a result of the smallness in size or because they are too young in the venture and lack management experience.

3.6 Investment Decision of MAVCAP:

It is customary that before any investment decision is made, the venture capitalist will thoroughly evaluate the prospect and the expected rate of return of each business. They take great care to skin beneath the surface to evaluate the business prospects as well as the potential to fantastic ROI to shareholders. This is in support with Tybejee and Bruno (1984) who opined that VCs are very careful when investment decisions are to be made because they are managing funds that belong to shareholders and need to give proper account at the annual general meeting (MacMillan, I.C., 1987). Mentioned below are important factors that are considered in selecting TBFs to finance. These include:

a) Composition and competency of the founders and management team/management capability and integrity
b) Market opportunity and scalability/good growth prospects
c) Product or service strength
d) Potential exit strategy within the funding cycle
e) Proven business with strong market position or competitive advantage;
f) Ownership of significant intellectual properties with commercial values;
g) Identifiable divestment strategy.

MAVCAP financing will usually take the form of equity involvement in the potential technology based firms. The kind of funding tools suggested can either be by ordinary shares or convertible preference shares. However, they make investments through these following schemes:

i. Direct Investments:

They invest directly and involve actively in the management and operations of the TBFs by:

a) Hunt for partnership opportunities with TBFs and early-stage companies as well as expansion of TBFs.
b) Adopting their financial, intellectual capital and other capital to accelerate the growth and development of the TBFs.

The primary goal is to have a wide spread investment portfolio that lead them to having a matching and synergistic pool of TBFs as investees. MAVCAP consider the synergies between different firms they invest in will result into even better business prosperity. However, they also engage in co-investment opportunities with private venture capital firms and other financial investors. Table 1 shows the typical investment offering of Malaysia Venture Capital Management Berhad.

<table>
<thead>
<tr>
<th>MAVCAP 100 (51% Minimum Bumiputra Stake)</th>
<th>MAVCAP 110</th>
<th>MAVCAP 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical investment size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• RM1 million-RM10 million</td>
<td>• RM3 million-RM15 million</td>
<td>• RM5 million-RM20 million</td>
</tr>
<tr>
<td>• Seed and start-up deal stages</td>
<td>• early &amp; expansion deal stages</td>
<td>• Late deal stages</td>
</tr>
<tr>
<td>Target sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• General ICT-hardware/software</td>
<td>• New media</td>
<td>• Software application &amp; service</td>
</tr>
<tr>
<td>• Various domains</td>
<td>• Games</td>
<td>• Digital content (animation, games &amp; high definition)</td>
</tr>
<tr>
<td>• Multimedia service</td>
<td>• E-content</td>
<td></td>
</tr>
<tr>
<td>• Providers/application service</td>
<td>• Community &amp; networking</td>
<td></td>
</tr>
<tr>
<td>• Providers (MSPs/ASPs)</td>
<td>• Wireless &amp; mobile</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Typical Investment Offering of MAVCAP.

ii. Outsource Partners Program (OSP):

The OSP 1 and 2 were commissioned in 2001 and 2006 respectively with the aim of allocating a substantial volume of cash to venture capital firms management companies, who in turn re-invest in suitable technology based firms. This scheme was introduced to support the organization’s aim of building the venture capital concept in the country. The OSP allows MAVCAP to:

a) Build an extensive industry network
b) Establish and strengthen relationships within the industry
c) Maximize returns

The achievement of the scheme is visible through the positive response from several domestic and foreign institutional and individual financiers who have invested more than RM100 million in the MAVCAP-supported VCFs, and have since establishment trained, mentored and groomed many VC professionals to fill the shortage of VC professionals in Malaysia. Below are some of the outsource partners of Malaysian Venture Capital Management Berhad. Table 2 also shows some of the selected portfolios of MAVCAP, their area of technology and location of business.
iii. MAVCAP Outsource Partners:

a) Ethos Capital Sdn Bhd
b) QMA Capital Sdn Bhd
c) DTA Ventures Management Sdn Bhd
d) Astra Capital Sdn Bhd
e) Teak Capital Sdn Bhd
f) Expedient Equity Sdn Bhd
g) Musharaka Tech Venture Sdn Bhd
h) Photonics Venture Capital Sdn Bhd
i) iSpring Capital Sdn Bhd

Table 2: Some Portfolio of MAVCAP.

<table>
<thead>
<tr>
<th>No</th>
<th>Business Name</th>
<th>Area of Technology</th>
<th>Location of Business</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FIBON advance composites Sdn Bhd</td>
<td>Polymer matrix fiber</td>
<td>Malaysia</td>
</tr>
<tr>
<td>2</td>
<td>Boston web academy Sdn Bhd</td>
<td>IT Education &amp; Training</td>
<td>Malaysia</td>
</tr>
<tr>
<td>3</td>
<td>Aexio Software Sdn Bhd</td>
<td>Network optimization software</td>
<td>Malaysia</td>
</tr>
<tr>
<td>4</td>
<td>GS Productions Sdn Bhd</td>
<td>High definition documentaries</td>
<td>Malaysia</td>
</tr>
<tr>
<td>5</td>
<td>CPK Solutions</td>
<td>Software for logistics</td>
<td>Malaysia</td>
</tr>
<tr>
<td>7</td>
<td>CMTS</td>
<td>Software for online cinema ticketing</td>
<td>China</td>
</tr>
<tr>
<td>8</td>
<td>Element Ventures Sdn Bhd</td>
<td>Digital sound productions studio</td>
<td>Malaysia</td>
</tr>
<tr>
<td>9</td>
<td>Global Odyssey Corporation Sdn Bhd</td>
<td>KPI monitoring solutions</td>
<td>Malaysia</td>
</tr>
<tr>
<td>10</td>
<td>CYNGUS Technologies Sdn Bhd</td>
<td>Toll free network service software</td>
<td>Malaysia</td>
</tr>
</tbody>
</table>

iv) Cradle Investment Programme (CIP):

Further to MAVCAP ambition to help nurture technology ideas in Malaysia, they perceived opportunities to help fund entrepreneurs in strategic industries who would ordinarily have been incapable to attract other financial financiers into their businesses. This motive is among the ambition of serving as a government backed agency aimed at accelerating the VC concept and boosting the innovation ecosystem in Malaysia. This ambition led to the establishments of the Cradle Investment Programme just about 3 years after MAVCAP’s conception with an initial pre-seed financing of RM100 million to the unit (MAVCAP, 2011). The very aggressive nature of the management team of Cradle resulted to the targeting of 500 qualified ideas applicants. The author’s observation shows that if not for the creation of the CIP numerous ideas would not have been brought to life. However, just in four years of its establishment, Cradle Fund Sdn Bhd took full possession of the management of Cradle Investment Programme.

3.7 Achievements of the OSP:

As part of the redirected focus of MAVCAP to operate more like a VCF, by taking up high risk investments in young firms with the successes it has achieved with the initial RM970 million it commenced business with under the 8th and 9th Malaysian Plan. However, in the third year of the 10th Malaysian Plan, the agency still has about RM100 million left over from its 9th Malaysian Plan allocation (Jamaludin, B., 2012). Though, additional fund is needed under the 10th Malaysian Plan to further expand into the next phase of the OSP3. MAVCAP is requesting for another RM300 million from the MOF (Jamaludin, B., 2012). However, Ramesh (2013) elaborated that they have invested up to RM509M from funds worth almost RM1B managed by the agency that was attributed to 87 companies in Malaysia. She highlighted that typical investment size is of MAVCAP ranges from RM5M to RM15M, but they had done RM20m investment on a company in the past. It was mentioned that only 5% of the TBFs MAVCAP had invested were from women entrepreneurs, meaning that 5 out of 87 firms that they have invested in so far were established by women, translating to RM42M worth of capital. Ramesh posit that the company target to invest in 6-8 companies in the current year with capital worth RM300-120M in investment (Ramesh, M.R., 2013). The agency’s future strategy is to operate more like a VC firm by involving in higher risks like the private VC firms so that they can pay back public capital after cashing out from investee companies. However, MAVCAP has helped so far in building industry capabilities and ensuring there are adequate private VCs that they can syndicate with in startups and thinks they can continue to achieve more in times to come. They hope to keep helping to develop the VC ecosystem in the country and to hopefully encourage more private VCFs to sprout. The challenging experience from the OSP 2 will guide in commissioning the next phase of OSP 3 by re-awakening the numerous in active private VCs that have seized to exist after investing their main fund under management however making TBFs to suffer from lack of further funding.
4.0 Conclusions:

This research study makes use of the past publications in reputable database, websites of Case Study Company, newspapers and hard copy document analysis to draw conclusion on this research. While there are several research on technology based firms and venture capital financing in Malaysia and other countries, no such study have since the inception of MAVCAP done a review of this company. The outcome of this study will contribute immensely to the body of theoretical knowledge on VC in Malaysia by throwing up the challenge on the activities of MAVCAP to the research community both in Malaysia and globally with an aim to encourage other researchers to adopt other approach to evaluate and investigate the activities of venture capital in Malaysia with particular emphasis on government back VCs. This research to the best of our knowledge is the only study that have reviewed the activities of MAVCAP since inception 12 years ago by exposing the relationship between the investees companies and MAVCAP and the impact such relation has on the funding ecosystems in Malaysia. The findings from this study however, provide a theoretical basis to understand the relationship and interaction between VCFs and TBFs in Malaysia. Finally, this research will add to the many archive of study in this area because until now, search through academic databases have returned little information as regards this subject of investigation in Malaysia. Future researchers are advised to adopt other longitudinal approach to evaluate the performance of government backed VCFs with a view to coming out with more reliable findings for the academic community and other interest parties in the VC industry.

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REFERENCES


