Critical Success Factors of Technopreneurship in the Creative Industries: A Study of Animation Ventures

Review of Integrative Business & Economics Research

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ABSTRACT

The creative industries are fast becoming an important income generator for a nation's economy. This is evidenced in a report by the United Nations Conference on Trade and Development (UNCTAD), confirming that the creative industries generate income and job opportunities. The UNCTAD has encouraged developing countries to diversify their economies by way of developing their creative industries which have proven to be one of the most dynamic sectors of the world economy. However Malaysia still lagged behind developed countries such as the USA and the UK in developing its creative industries.

One of the sectors of the creative industries is animation. The government is promoting the growth of the local animation industry by encouraging entrepreneurship in animation. Various initiatives have been provided by the government, however only a small number of animation companies have been successful. This paper looks at the barriers to the success of animation technopreneurship and possible factors that may well contribute to the success of this field of enterprise.

This is an exploratory study as there seems to be a lack on an intensive research on the animation sector of the creative industries. 31 companies have been identified as actively producing animated TV series or feature films in Malaysia. Using quantitative method, data was collected using questionnaires sent to all these companies. 29 companies responded, while the other 2 declined to participate.

The available data analysed indicated the followings are the barriers to the success of animation technopreneurship: limited access to financial resources; financial management; lack of skilled talents; limitation of local market; and bureaucratic procedures. And the followings are possible factors that may well contribute to the success of such a technopreneurship: access to financial resources, talent pool, government's initiatives; promotion and marketing; networks and collaboration; IP; content quality; technology; diversification of products; entrepreneurial skills; and business location.

Keywords: Entrepreneurship, Creative Industries, Animation, Critical Success Factors.

1. Introduction

Developing countries are advised to develop their creative industries in efforts to boost and diversify their economies. The creative industries are fast becoming an important income generator for the nation, and are proven to be resilient despite the economic downturn. In the latest report by the UN Conference on Trade and Development (UNCTAD), global exports of creative products and services- which includes arts and crafts, audiovisuals, books, design work, films, music, new media, printed media, visual and performing arts account to US$592 billion in 2008 (UNCTAD, 2010). Apart from generating incomes, the creative industries also contribute to jobs creation. Countries like the USA and UK are big players in the global creative industries. A report carried out by the Financial Times of the UK highlighted that the country's creative industries have been found to be more important to the economy than the financial services due to the number of jobs created (Chan & Loh, 2011). Additionally, the creative industries spur more innovation than other sectors, and businesses that purchase more creative products are said to have product innovation (Bakhshi & McVittie, 2009).

Malaysia is also developing its creative industries due to the great potential it will contribute to the nation's economy. In 2010, the industries have generated revenue of RM3.57 billion and export sales of RM169.41 million. The number of workforce grew from 45,301 in 2008 to 65.630 in 2011 (Chan & Loh, 2011). So far, the industries have contributed RM9.4 billion to the Gross Domestic Product (GDP) and it is expected to grow to RM33 billion in 2020 (Bernama, 2012).

However, despite the government's effort and assistance, Malaysia still lagged behind

other countries in developing its creative industries. This may be due to the fact that there is no clear policy in the initial development of the creative industries (Siti Salwa, Siti Suriawati, & Abu, 2011). This study looks into technopreneurship in the creative industries, specifically the animation industry. Animation is a sector in the creative industries. Countries like USA and UK are the biggest player in the animation industry. Malaysia too, is developing its animation industry and encouraging animation technopreneurship. The government has provided various assistances in the form of financial and non financial support mainly through the Multimedia Development Corporation (MDeC). However, only a few animation companies have been successful, while others are still struggling. These companies find it difficult to sustain their business and produce their animated products.

This study aims to:

1. identify the barriers to the success of the animation technopreneurship;
2. identify the possible indicators to overcome the success barriers of the animation technopreneurship; and
3. identify the Critical Success Factors of animation technopreneurship.

2. Literature review

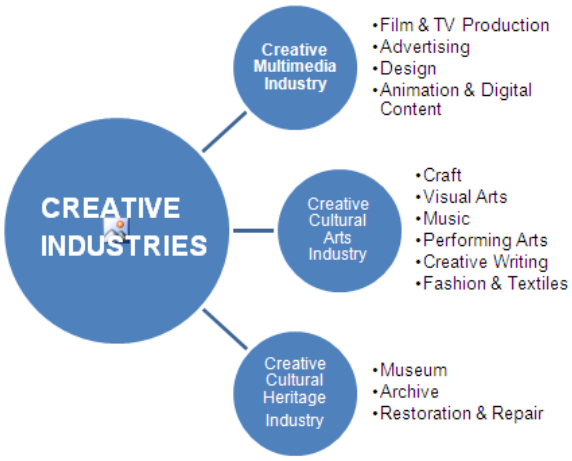
2.1. The creative industries

There are many definitions of the term “creative industries”. The term is believed to have first appeared in “Creative Nation”, an Australian report made in 1994. It became better known when the UK’s Department of Culture, Media and Sport’s (UK DCMS) policymakers set up the Creative Industries Task Force in 1997. The UK DCMS defined the creative industries as “those industries that are based on individual creativity, skill and talent with the potential to create wealth and jobs through developing intellectual property” (BritishCouncil, 2011). The concept is still evolving. The scope of the creative industries is diverse as it deals with interaction of various sectors, which range from traditional knowledge and cultural heritage to modern technology and services. UNCTAD has identified the UK DCMS model as one of four models that are commonly used to classify the creative industries. Some countries are known to use the UK DCMS model as a basis of their own model to define their creative industries. The sectors of creative industries included in the UK DCMS model are advertising, architecture, art and antiques market, crafts, design, fashion, film and video, music, performing arts, publishing, software, television and

radio, video and computer games (UNCTAD, 2010).

Malaysia's definition of the creative industries is "mobilisation and production of individual expertise and talents or groups based on creativity, innovation and technology towards economic production and high income attainment to the nation by emphasizing on works and intellectual property in line with good culture and values of various ethnic groups in Malaysia" (DIKN, 2010). As shown in figure 1, the local creative industries are divided into three sectors, which are the creative multimedia industry, creative cultural arts industry and creative cultural heritage industry.

Figure 1 Classifications of the Malaysian creative industries



Source: (DIKN, 2010)

This study looks into the animation industry, which falls under the creative multimedia industry category and is also known as the creative content industry. The development of the local industry concentrates on technology, multimedia and innovation (Siti Salwa, Siti Suriawati, & Abu, 2011). The areas in this industry range from advertising, animation to computer games, publishing and also interactive media (MSC).

2.2. The global animation industry

Animation plays one of the major parts in the creative industries (Chen, Wei, & Huang, 2010). Animation is Animation is increasingly used in entertainment, games and education as well as in scientific and medical works (Thomas & Rayadurgam, 2005). The animation market is divided into 3 segments, which are e-education, web designing and entertainment (MarketsandMarkets, 2011).

According to a report by Markets and Markets, the global animation and gaming market is forecasted to grow from $122.20 billion in 2010 to $242.03 billion by 2016, representing a compound annual growth rate (CAGR) of 12.94% from 2011 to 2016. The animation and gaming market is divided into four segments according to geography. They are i) North America, which is the largest segment with about 42% of the overall share; ii) Europe; iii) Asia Pacific and Japan, which is growing fast with the CAGR expected to have an increase of 19.08% from 2011 to 2016; and iv) Rest of the World (ROW). Presently, the animation market is led by the USA which registers the most number of animation patents due to the government support and the presence of big animation companies like Disney Enterprises Inc and DreamWorks Studios (MarketsandMarkets, 2011). According to a research done by IHS Screen Digest in 2009, the USA is the biggest producer of TV animation, with a value worth $376 million in 2008. However, in terms of hours produced annually, the USA has fallen second behind Canada, which in 2008 has produced 382 hours worth of animation, compared to the USA which produced 330 hours worth (Westcott, 2010).

The huge demand of 3D animation has encouraged more Asian countries to develop their animation industry (MarketsandMarkets, 2011). China, India, Singapore and the Philippines are top choices for outsourcing works for western animation companies (Thomas & Rayadurgam, 2005), while Malaysia, Thailand, Indonesia and Vietnam are also linked to animation production (Rall, 2011). India’s animation sector is expected to grow to US$20 billion by the year 2020, making the country one of the key players in the animation industry (Tejaswi, 2013). The animation industry in the Philippines too is becoming one of the most promising sectors of the local IT-BPO industry, earning $142 million worth of revenues in 2011 (Fernando, 2012).

Although these countries are key players in carrying out outsourcing works, the real income generator lies in content creation, which the countries can capitalise through IPs. The animation industry can have an increased added value by developing local content (Tschang & Goldstein, 2010). Thus countries like China, India, the Philippines and Indonesia are concentrating on developing their own original contents (Chen, Wei, & Huang, 2010; Wu, 2010; Tejaswi, 2013; Fernando, 2012; Nur, 2011).

2.3. The Malaysian animation industry

Although Malaysia is relatively a newcomer in the animation industry, the country is fast becoming a key player. Unlike other countries in the region, Malaysia does not rely only on outsourcing and has produced many original contents that are successful

and generate big revenues through IPs. The country's first animated short film was called '*Hikayat Sang Kancil'* (The Tale of the Mousedeer), produced in 1978 by National Film Department of Malaysia (FNM). The show was well-received and led FNM to produce more animated features (Hassan, 2009). During the premiership of the fourth Prime Minister, Tun Dr. Mahathir Mohamad, the government pushed for the use of digital technology to encourage the development of local contents, due to the influx of foreign animation that were found to contain elements that are unsuitable for Malaysian lifestyle (Hassan, 2004; Azahar & Russlan, 2010). The use of digital technology made it easier to produce animation, which encouraged the development of more animated features. The first local animated TV series was called '*Usop Sontorian*', and was produced by Kharisma Pictures in 1995. The first full length animated feature film, '*Silat Lagenda*' was produced by Peninsula Pictures in 1998, followed by '*Puteh*' which was produced by Eurofine in 2001. However, these films did not do well at the box-office and lost money. At the time, the local audience perceived that Malaysian animators were not up to standard and the local animation productions are only for children. There was no market for animation locally (Hassan, 2004).

The local animation industry really took off with the success of the animated TV series '*Upin & Ipin*', produced by Les' Copaques Production. The series was first shown on local TV station in 2007 and features some characters from the upcoming full featured film in a bid to test the market and audience. The series was well received and gained popularity with both children and adults alike. It recorded a rating of 1.5 million viewers per episode (AXAPAC, 2010). The success of the series drove audiences to the cinemas to see the full length animated movie titled '*Geng: Pengembaraan Bermula*' when it was released in 2009. It became the most successful locally produced animated feature film, with box-office takings of RM6.2 million (Finas, 2011). To date, the series '*Upin & Ipin*' is shown in 9 countries through the Disney Channel Asia (Upin & Ipin).

Following the success of '*Upin & Ipin*', is the animated series 'Saladin', a co-production between Multimedia Development Corporation (MDeC) and Al-Jazeera Children's Channel, which has earned an Emmy nomination under the Children & Young People category (Zainuri, 2011). Another successful animated series are 'BoBoi Boy', produced by a relative newcomer Animonsta Studios and '*Bola Kampung*' by Animasia Studio. These series are also shown internationally through the Disney Channel Asia.

2.4 Critical success factors of technopreneurship in the animation industry.

Critical success factors (CSF) can be regarded as key factors that "an organization must pay particular attention to in order to achieve the level of performance essential to achieve desired goals" (Hackney & Dunn, 2000 as quoted by Sebora, Lee, & Sukasame, 2009). According to Bullen & Rockart (1981), businesses will grow and thrive when CSFs are met.

Aksoy (2010) carried out a research into the success factors of entrepreneuship in the creative industries in Rotterdam. The results showed the success factors in the order of importance, which are entrepreneurial skills, having a large network, the availability of physical infrastructure in the city, entrepeneurs having relevant education, flexibility of the local government, business location, visiting trade fairs, having access to external finance and proximity of other creative businesses.

Chen, Wei, & Huang (2010) carried out a study of animation companies in China, but focusses on innovation. They found that companies can be successful if they focus on the planning of work by having a multi-disciplinary planning team and the planner's expertise; focus on the pre-production stage by having a good talent pool and market development; production stage with good technical support and productivity; having good cooperation with distributors and copyright protection; and having good relation with investors and government.

This study adapts the factors identified in Aksoy (2010) and Sulaiman (2006). In the study into the development of technopreneurship in Malaysia, Sulaiman found that there are four factors that contribute to the success of an entrepreneurship, which are marketing, technology, entrepreneurship and management. Success factors identified in Aksoy (2010) and other studies into entrepreneurship and creative industries are categorised according to the four main factors as identified in Sulaiman (2006). Figure 2 shows the factors.

Figure 2 Success factors of animation technopreneurs

MARKETING	TECHNOLOGY
•Promotions & marketing •Networks & collaborations •Diversification	•Hardware & Software •Content quality •Intellectual Property (IP)
ENTREPRENEURSHIP	**MANAGEMENT**
•Entrepreneurship skills/ business know-how •Government assistance •Access to financial resources	•Business location •Talent pool

i) Promotion & marketing

One of the critical successes to any organisation is having good marketing (Kotler & Armstrong, 2010). Many animation companies do not place emphasis on the importance of marketing (Aksoy, 2010; Tang, 2010). Animation companies need to look beyond the local market, which is small and limited (Jieh, Hsueh-hua, & Hsiang-chun, 2005; Chan & Loh, 2011). One way for companies to promote animated products is to join local and international trade fairs, where they can make sales or find investors (Abu, Siti, & Siti Salwa, 2011; Prause, Feuerhake, & Hochheim, 2012).

ii) Networks & collaboration

Entrepreneurs should use their assets to create a social network that would be beneficial to their businesses (Byers T., 2010). By being a member of networks or associations technopreneurs can gain benefits like getting counsel from various bodies, accessibility to resources and a source of creativity (Ab. Aziz, Perumal, & Faizuniah, 2005; Hisrich, Peters, & Shepard, 2010; Noor, Hazliza, & Dr Siti, 2010). Some animation companies would have networks with academic institutes to create academic-industry relations (Wu, 2010; Jieh, Hsueh-hua, & Hsiang-chun, 2005). Animation companies would also collaborate with other companies to work on the same project, where they can share each other's resources. Others would also be involved in co-production with companies in other countries (Warren & Fuller, 2010; Thomas & Rayadurgam, 2005; Westcott, 2010).

iii) Diversification

The cost of producing an animated TV series or feature film is high, but TV stations buy at a low price. More often than not, payment from TV stations is not

enough to cover the cost. As a result, companies need to diversify their products or services to sustain their businesses. Most would generate income from selling merchandises (Rasul, 2011; Westcott, 2010). Revenues from DVD sales, merchandises etc are highly important for an animation company (Kenny & Broughton, 2011). There are companies that venture into cafes and theme parks like Disneyland (Markides, 1997).

iv) Hardware & software

Producing an animation requires good quality hardware and software. Animation studios are likely to be equipped with the latest technology (Thomas & Rayadurgam, 2005; Dolbier & Megler, 2005). However, these equipments are expensive and for smaller companies or start-up companies, it is not necessary to own the equipment. Instead they can rent, use facilities provided by the government or use cloud computing instead (Rajendran, 2012; MAC3, 2008).

v) Content quality

Technology only plays a supporting role in animation, content is king. The most important aspect of an animated product is the content (Chen, Wei, & Huang, 2010; Chan & Loh, 2011; Seton, 2008; KempJackson, 2011). To produce a good quality animated product, the focus is on developing a good content, a good storyline, and an original content for the international market (Chan & Loh, 2011; Siti Salwa, Siti Suriawati, & Abu, 2011; Hassan, 2004; Wu, 2010; Tang, 2010).

vi) IP

By having patents and a strong IP position, technology-based businesses are more likely to have a sustainable advantage and leverage (Preston, 2001; Byers, Dorf, & Nelson, 2011; Yapp, 2011). IP is an important factor that determines the survival of an animation industry and its competitiveness (Chen, Wei, & Huang, 2010; Wu, 2010).

vii) Entrepreneurship skills/ business know-how

Two skills that contribute to the success of technopreneurship are technical management skills and business management skills (Oakey, 2003). Most animation technopreneurs come from a creative background, and they lack business skills (Chan & Loh, 2011; Ojala & Heikkila, 2009). They need training in various disciplines such as arts, technology and management (Jieh, Hsueh-hua, & Hsiang-chun, 2005; Bettiol, Di Maria, & Finotto, 2011).

viii) Government assistance

Previous studies have found that government assistance could contribute to the success of entrepreneurship (Sebora, Lee, & Sukasame, 2009; Radiah, Mohd Rosli, & Ab. Azid, 2009; Lerner, 2010). However, it may not be the main success factor (Robson & Bennett, 2011; Sebora, Lee, & Sukasame, 2009). The creative industries & animation industry would benefit from government assistance (Zhang, Zhang, & Li, 2010; Chen, Wei, & Huang, 2010; Yoon, 2008; Thomas & Rayadurgam, 2005). Types of government assistance include loans and grants, policy implementation, infrastructure, business advisory and tax incentives (Mohamed & Syarisa, 2001; Lerner, 2010).

ix) Access to financial resources

Having access to financing as one of the factors contributing to the success of small businesses. (Radiah, Mohd Rosli, & Ab. Azid, 2009; Mohd Abdullah & Hazianti, 2006). Financial supports can be from the government, private investors, the entrepreneurs' own savings or from family and friends. Most animation companies rely on government's financial support to fund their projects (Tang, 2010; Wu, 2010; Zhang, Zhang, & Li, 2010).

x) Business location

Each creative business has its own reasons for their choice in location, and the relationship is a complex balance of factors (Comunian, Chapain, & Clifton, 2010). Creative companies are often more successful in urban areas that are diverse (Champion, 2010). Other factors in location choice are the availability of work spaces and cheap spaces (Aksoy, 2010; Champion, 2010; Heebels & van Aalst, 2010), the aesthetic appeal and utility of the built environment, proximity to the city centre and key transport nodes (Champion, 2010; Abu, Siti, & Siti Salwa, 2011). Companies would benefit from locating close to their rivals (Preston, 2001), where the common talent pool can simultaneously create cooperation and competition (Wu, 2005 as quoted by Champion, 2010). Companies can easily find employees and appropriate infrastructure by locating their business in the right cluster (Preston, 2001; Champion, 2010; Aksoy, 2010).

xi) Talent pool

Businesses in the creative industries need a deep pool of creative talents (Zhang, Zhang, & Li, 2010; Wright, Hmielski, Siegel, & Ensley, 2007). An animation company need employees with skills in various fields (Jieh, Hsueh-hua, & Hsiang-chun, 2005). Most often employees have skills that do not match with job

requirements (Bridgstock, 2011; Wu, 2010). Most graduates have technical skills but lack creative skills (Chen, Wei, & Huang, 2010; Wu, 2010). Companies would often encourage their employees to upgrade their skills (Wright, Hmielski, Siegel, & Ensley, 2007).

3. Methodology

This study uses the quantitative method. Data was collected from animation companies in Malaysia that are currently active and produce original content. This includes those that produce animated TV series or feature films. There are around 31 companies that fit this description.

There are two types of quantitative research, descriptive study and inferential study. Due to the small number of population (31 companies), this research is conducted using descriptive studies, which collects data from an entire population and reports basis statistics such as frequency, percentage, mean and standard deviation (Chua, 2012; Sekaran & Bougie, 2010). Descriptive study is usually conducted in order to be able to describe and understand the characteristics of organisations that follow certain common practices. The goal of this type of study is to describe certain phenomenon aspects from the perspectives of an individual, organisation or industry-oriented (Sekaran & Bougie, 2010).

Data was collected using questionnaires. Questionnaires are suitable for researchers who know exactly what is required and how to measure the variables. A questionnaire has a written set of questions for respondents to state their answers (Sekaran & Bougie, 2010). It can be printed on paper and delivered personally or mailed to the respondents or be sent by email. It can also be posted online (Sekaran & Bougie, 2010; Zikmund, Babin, Carr, & Griffin, 2010). In this study, the questionnaire was created using Google Docs, a web-based document maker by Google. It is free to use and does not require any software installation. A five point Likert scale was used, where 1 represented a low suitability level of the proposed item and 5 represented a high suitability level of the proposed item (Chua, 2012). Apart from Likert scale, other types of items include single-choice item, open-ended item and multiple-choice item.

The questionnaires were distributed to all 31 companies. The respondents were founders or managing directors of the animation ventures. At first, the respondents were sent emails with the link that took them to complete the questionnaire online.

However, the response was not encouraging, so the questionnaires were then printed and posted to the remaining respondents who have not completed them. Overall, 29 respondents completed the questionnaires, and the remaining two declined to participate.

4. Results and analysis

Data was analysed using the IBM SPSS Statistics 20 software. Descriptive statistics were used to analyse and summarise the data, which include frequency, percentage, mean, and standard deviation.

The first set of questions was on the respondents' background. Table 1 shows the companies' year of establishment.

Table 1 Year of establishment

Year	No. of respondents (29)	Percentage (100%)
2000	1	3.4
2002	3	10.3
2003	2	6.9
2005	5	17.2
2006	2	6.9
2008	3	10.3
2009	3	10.3
2010	7	24.1
2011	1	3.4
2012	2	6.9

A total of 13 companies were established between the year 2000 and 2006. The number rose to 16 between the year 2008 and 2012. 2010 saw the most number of animation companies created, with 7 companies established in that year. 28 out of 29 companies have been in operation for 10 years or less.

The next question asked about the companies' number of employees. A total of 14 or 48.3% of the companies have more than 20 employees. This includes two of the most prominent animation companies which have around 40 employees. The remaining 15

or 51.7% of the companies have less than 20 employees.

Question number 3 asked the respondents what type of animation products they provide. This is a multiple choice item, which means that the respondents are allowed to choose more than one answer. Table 2 shows the results in frequency and percentage. All respondents are involved in content creation by producing animated TV series, with 34.5% of them also producing feature films. 55.2% of the respondents are carrying out outsourcing works. 17.2% and 20.7% of the respondents are producing games and apps respectively.

Table 2 Types of animation products provided

Products	**No. of respondents (29)**	**Percentage (100%)**
Animated TV series	29	100
Animated feature films	10	34.5
Games	5	17.2
Educational courseware	10	34.5
Special effects	11	37.9
Apps	6	20.7
Outsourcing works	16	55.2

The next questions were in the form of 5-point Likert scale, which the respondents had to determine the importance of each factor, ranging from 1= not at all important to 5= very important. Table 3 shows the results.

The majority of the respondents indicated that networks & collaboration, promotion & marketing, government assistance, access to financial resources, entrepreneurial skills/ business know-how, IP, talent pool, content quality and diversification as very important. Business location was identified to be somewhat important and technology was identified as important. 93.1% of respondents thought that content quality is very important, while 3.4% thought it is important and another 3.4% thought it is somewhat important. This is followed by IP with 86.2%.

Table 3 Factors according to importance in percentage

Factors	Not at all important	Not important	Somewhat important	Important	Very important
Business location	0%	17.2%	**37.9%**	31%	13.8%
Networking & collaboration	0%	0%	6.9%	24.1%	**69%**
Promotion & marketing	0%	0%	3.4%	17.2%	**79.3%**
Government assistance	0%	3.4%	10.3%	37.9%	**48.3%**
Access to financial resources	0%	0%	6.9%	24.1%	**69%**
Entrepreneurial skills	0%	0%	0%	24.1%	**75.9%**
IP	0%	0%	0%	13.8%	**86.2%**
Talent pool	0%	0%	3.4%	20.7%	**75.9%**
Content quality	0%	0%	3.4%	3.4%	**93.1%**
Technology (hardware/ software)	0%	0%	17.2%	**58.6%**	24.1%
Diversification	0%	0%	17.2%	27.6%	**55.2%**

Figure 3 shows the results in mean and standard deviation. Table 4 shows the factors in order of importance according to the mean scores. The most important factor is content quality with a mean score of 4.90, followed by IP (4.86). Promotion and marketing has the same mean score as entrepreneurial skills (4.76), which puts them as the third most important factor. The fifth most important factor is talent pool (4.72). Networks and collaboration has the same mean score as access to financial resources (4.62). The eighth most important factor is diversification (4.38) followed by government assistance (4.31). The least important factor is technology with the mean score of 4.07.

Figure 3 Factors according importance in mean and standard deviation

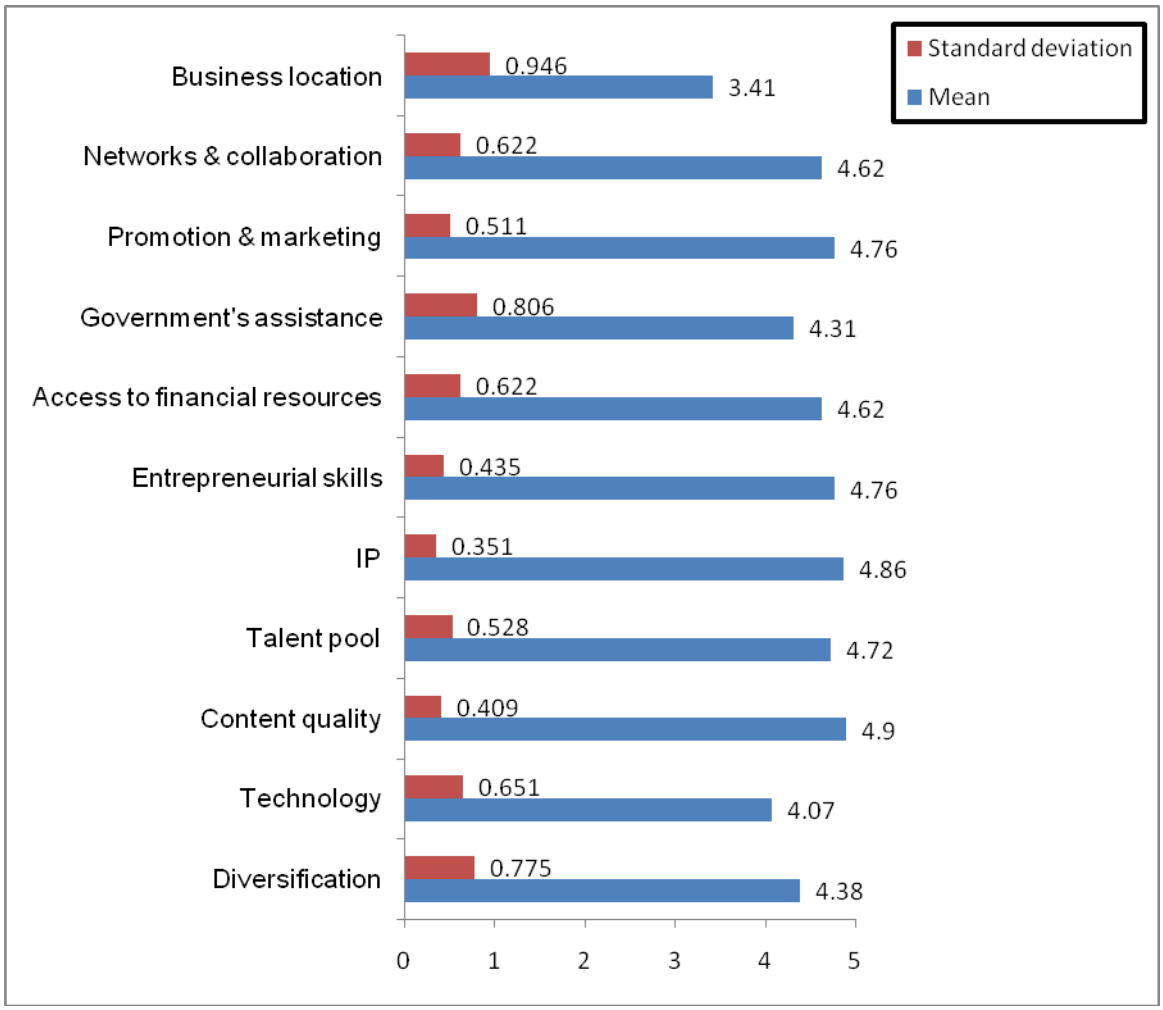


Table 4 Factors in order of importance

Factors	Mean scores
Content quality	4.90
IP	4.86
Promotion & Marketing	4.76
Entrepreneurial skills	4.76
Talent pool	4.72
Network & Collaboration	4.62
Access to financial resources	4.62
Diversification	4.38
Government's assistance	4.31
Technology	4.07
Business location	3.41

The next question was also in the form of a 5-point Likert scale. Using the same variables, respondents were asked about their level of satisfaction regarding each factor. Respondents were required to state their level of satisfaction ranging from 1= very dissatisfied to 5= very satisfied. Table 5 shows the results according to percentage and figure 4 shows the mean and standard deviation scores.

Table 5 Factors according to satisfaction in percentage

Factors	Very dissatisfied	Not satisfied	Neutral	Satisfied	Very satisfied
Business location	0%	13.8%	27.6%	**41.4%**	17.2%
Networking & collaboration	0%	20.7%	27.6%	**41.4%**	10.3%
Promotion & marketing	0%	37.9%	17.2%	**44.8%**	0%
Government assistance	3.4%	13.8%	10.3%	**51.7%**	10.3%
Access to financial resources	10.3%	10.3%	**37.9%**	**37.9%**	3.4%
Entrepreneurial skills	3.4%	13.8%	20.7%	**51.7%**	10.3%
IP	3.4%	6.9%	17.2%	**55.2%**	17.2%
Talent pool	3.4%	24.1%	27.6%	**34.5%**	10.3%
Content quality	3.4%	3.4%	17.2%	**58.6%**	17.2%
Technology (hardware/ software)	3.4%	3.4%	20.7%	**62.1%**	10.3%
Diversification	3.4%	24.1%	31%	**37.9%**	3.4%

Respondents are mostly satisfied with all of the factors regarding their businesses. All factors scored the highest percentage in ‘satisfied’. Only access to financial resources scored the highest percentage in both ‘neutral’ and ‘satisfied’.

Figure 3 shows the results in mean and standard deviation and table 6 shows the factors in order of satisfaction.

Figure 4 Factors according to satisfaction in mean and standard deviation

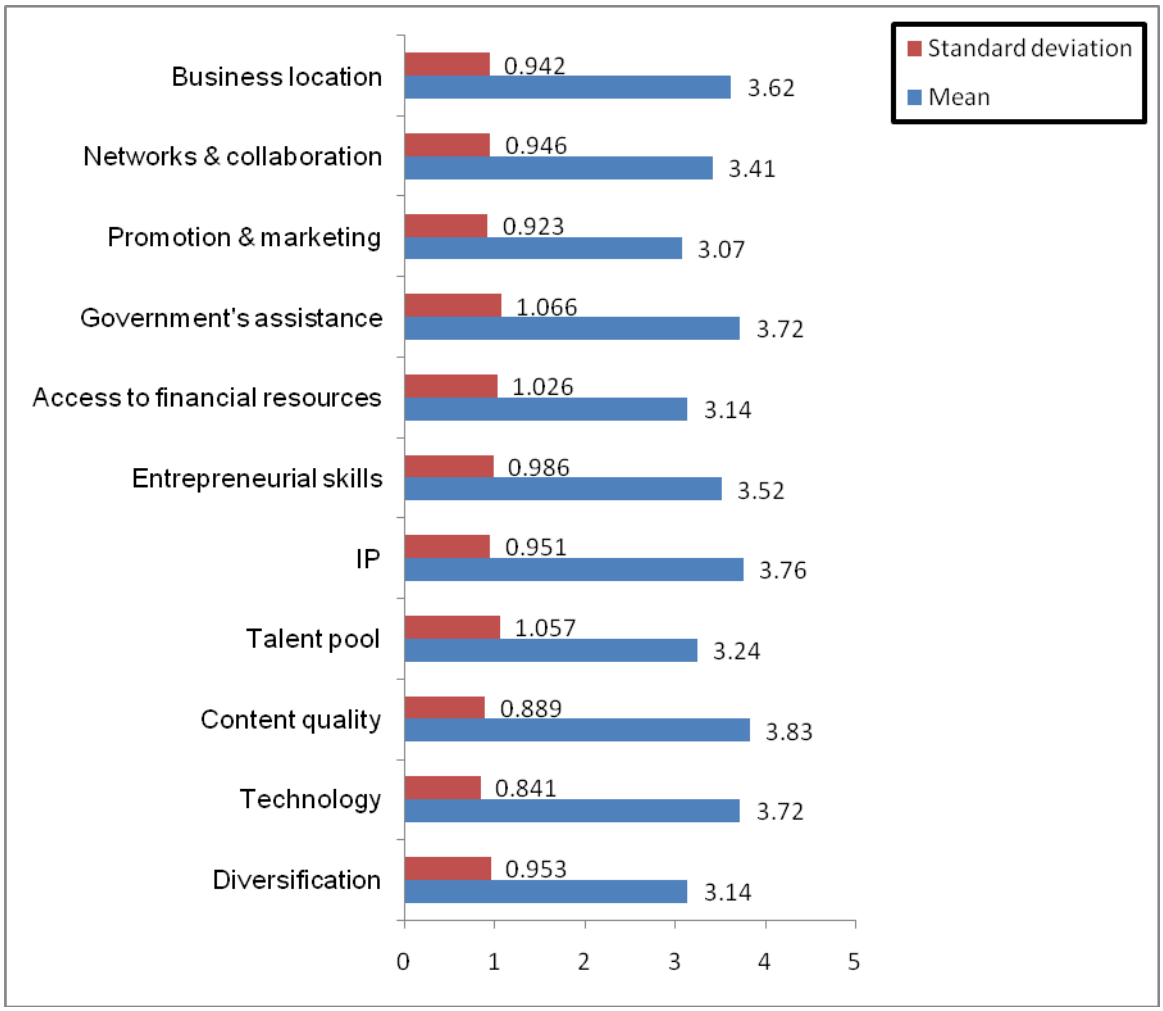


Table 6 Factors in order of satisfaction

Factors	Mean scores
Content quality	3.83
IP	3.76
Government's assistance	3.72
Technology	3.72
Business location	3.62
Entrepreneurial skills	3.52
Network & Collaboration	3.41
Talent pool	3.24
Access to financial resources	3.14
Diversification	3.14
Promotion & Marketing	3.07

Respondents were most satisfied with their content quality, which scored 3.83. This is followed by IP with the mean score of 3.76. The third most satisfied factors are government assistance and technology, which have the same mean score of 3.72. The fifth most satisfied factor is business location (3.62), followed by entrepreneurial skills/ business know-how (3.52). Networks and collaboration came in seventh with the mean score of 3.41, followed by talent pool with 3.24. Access to financial resources and diversification both have the same mean score of 3.14, which puts them both as the ninth most satisfied factor. The least satisfied factor is promotion and marketing, which scored 3.07.

The next set of questions is on business location. Table 7 shows the respondents choices in a business location. The respondents are allowed to choose more than one answer.

Table 7 Important factors in a business location

Factors	**No. of respondents (29)**	**Percentage (100%)**
Close to demanding customers	5	17.2
Close to fiercest competitor	5	17.2
Governance	8	27.6
Infrastructure	21	72.4
Clusters	4	13.8
Urban areas/ cities	16	55.2

Out of 29 respondents, 72.4% chose infrastructure as the important factor in a business location, followed by urban areas or cities. 27.6% of the respondents chose governance. 17.2% chose close to fiercest competitors and close to demanding customers as the important factors in a business location. Only 13.8% chose clusters as important in locating their businesses.

The respondents were then asked if they had identified their competitors in their vicinity and 86.2% respondents had. Out of these, 84% have strategic alliances with their competitors. Table 8 shows the areas of the alliances.

Table 8 Areas of strategic alliances

Areas	No. of respondents (25)	Percentage (100%)
Sharing facilities	6	24
Sharing talent pool	15	60
Collaborating on a project	18	72
Other	0	0

72% of the respondents collaborate with their competitors on the same project. 60% share talent pool and 24% also share facilities with their competitors.

Next, the respondents were asked about network and collaborations. 22 out of 29 or 75.9% of the respondents are or were once members of an association. Table 9 shows the types of association they are members of.

Table 9 Types of association

Associations	No. of respondents (22)	Percentage (100%)
TeAM	4	18.2
ANIMAS	10	45.5
NEF	11	50
POSTAM	7	31.8
CCAM	4	18.2
GAFIM	1	4.5
MDeC	1	4.5
FINAS	1	4.5
MATRADE	1	4.5
CAW	1	4.5

50% of the respondents are members of Malaysian Association of Bumiputera ICT Industry & Entrepreneurs (NEF). 45.5% of the respondents are also members of Animation Society of Malaysia (ANIMAS). 31.8% are members of Post-Production, Animation,Visual Effects Creative Content Association of Malaysia (POSTAM). 18.2% are members of Technopreneurs Association of Malaysia (TeAM) and of

Customer Relationship Management & Contact Centre Information Malaysia (CCAM). Other associations that respondents are also member of include *Gabungan Persatuan Karyawan Filem Malaysia* (GAFIM), Multimedia Development Corporation (MDeC), National Film Development Corporation Malaysia (FINAS), Malaysia External Trade Development Corporation (MATRADE) and Konsortium Cartoonist at Work (CAW).

The respondents were then asked what benefits they experienced by joining the associations. Table 10 shows the results.

Table 10 Benefits of joining associations

Benefits	**No. of respondents (22)**	**Percentage (100%)**
Training	3	13.6
Networking	20	90.9
Ideas sharing	10	45.5
Knowledge exchange	17	77.3
Advice	4	18.2
Share resources	1	4.5
Collaborations	1	4.5
Talent pool	1	4.5
None	1	4.5

A majority of 90.9% of the respondents gained the benefit of networking, 77.3% experienced knowledge exchange, 45.5% experienced ideas sharing, 18.2% gained advice and13.6% gained the benefit of training. Other benefits experienced by the respondents are sharing resources, collaborations and sharing talent pool. Only one respondent answered gaining no benefit by being a member of an association.

The next set of questions is on promotion and marketing. The respondents were asked to identify which industries their clients or customers are in. 65.5% of the respondents have clients or customers that are in the entertainment industry, while the remaining 34.5% have clients or customers that are in both the entertainment and education industries. The respondents were then asked if they had ever participated in trade fairs or promotional events. 79.3% of the respondents had participated. Table 11 shows the types of trade fairs or promotional events they had participated in.

Table 11 Types of trade fairs or promotional events

Trade fairs/ promotional events	No. of respondents (23)	Percentage (100%)
MIPCOM	12	52.2
MIP Junior	6	26.1
MIPTV	5	21.7
Children's Media Conference, UK	2	8.7
Cannes Film Festival	4	17.4
TIFFCOM	4	17.4
ATF Singapore	7	30.4
Hong Kong FilmArt	5	21.7
BCCW Korea	2	8.7
Kidscreen, New York	3	13
Seoul Licensing Fair	2	8.7
SICAF	3	13

52.2% of the respondents visited the World Audio Visual Trade Exhibition (MIPCOM), 30.4% visited Asia Television Forum (ATF) Singapore and 26.1% visited The International Screening Showcase for Children's and Youth Programs (MIP Junior). 21.7% of the respondents visited Marché International des Programmes de Télévision (MIPTV) and Hong Kong FilmArt. Other trade fairs or promotional events respondents also visited are Children's Media Conference, UK, Cannes Film Festival, Tokyo International Film Festival (TIFFCOM), Broadcast Worldwide (BCCW) Korea, Kidscreen, New York, Seoul Licensing Fair and Seoul International Cartoon & Animation Festival (SICAF).

Next, the respondents were asked questions on government assistance. 82.8% respondents have received financial supports from the government. Table 12 shows the types of supports the respondents received.

37.5% of the respondents have received the Bumiputera Content Industry Initiative (BCi2) Grant, 29.2% received *Bank Simpanan Nasional* (BSN) Creative Industry Loan, 25% received e-Content Fund and Co-Production Fund. 20.8% of the respondents received Market Development Grant, and 8.3% received Film, Art & Multimedia Fund and Pre-Seed Fund from MDeC. Other financial supports received

are Encouragement of Online Educational Content (ICONEdu), *Dana Animasi Kenegaraan*, Intellectual Property Creators Challenge (IPCC) 2010 and Start-Up Fund from Cradle Investment Sdn Bhd.

Table 12 Types of government support received

Government support	**No. of respondents (24)**	**Percentage (100%)**
BCi2 Grant	9	37.5
E-Content Fund	6	25
ICONEdu	1	4.2
Co-Production Fund	6	25
BSN Creative Industry Loan	7	29.2
Market Development Grant	5	20.8
The Film, Art & Multimedia Fund	2	8.3
Dana Animasi Kenegaraan	1	4.2
IPCC 2010	1	4.2
Pre-Seed Fund from MDeC	2	8.3
Start-Up Fund from Cradle Investment Sdn. Bhd.	1	4.2

The respondents were then asked on how they finance their projects. Table 13 shows the results. 17.2% of the respondents use external sources like loans/ grants from the government, venture capitals, angel investors etc. 34.5% of the respondents finance their projects using internal sources like revenues from their own assets, products, merchandises etc. 48.3% use both external and internal sources to finance their projects.

Table 13 Sources of finance

Sources	**No. of respondents (29)**	**Percentage (100%)**
External sources	5	17.2
Internal sources	10	34.5
Both	14	48.3

The majority of the respondents think that the government's policies have benefited animation technopreneurs. Table 14 shows the respondents' opinions on other initiatives the government can do to boost the animation industry.

Table 14 Other initiatives the government could do

Government initiatives	**No. of respondents (29)**	**Percentage (100%)**
Assistance on promotion & marketing	19	65.5
Promote public awareness	5	17.2
IP as financial collateral	8	27.6
Tighten IP protection	7	24.1
Provide training programs	5	17.2
Less bureaucratic procedures	9	31
Collaboration related	4	13.8
Financial assistance related	7	24.1
Mentorship	2	6.9
Special channel	1	3.4
Provide content development fund	1	3.4
International trade markets	1	3.4

65.5% of the respondents wish for more assistance in promotion & marketing. 17.2% of the respondents want more public awareness on the animation industry and 27.6% want the government to encourage commercial banks to take IP as financial collateral. 24.1% want the government to tighten IP protection, 17.2% want more training programs, and 31% wish for less bureaucracy when dealing with the government. Other answers provided by the respondents include proving mentorship, setting up of a special channel for local animations, provide funds that focus on content development (e.g. idea/story development and scriptwriting) and initiatives for international trade market.

13.8% of the respondents gave an answer that is related to collaborations, which involves setting up collaborations between local and international producers as well as providing a platform where producers can sell their products to distributors and

broadcasters. 24.1% of the respondents gave an answer related to financial assistance, which include making sure the financial assistance is easily available and accessible. They also suggest increasing the amount and variety of grants.

The next set of questions asked the respondents from what background they started their businesses. Table 15 shows the results. 48.3% of the respondents have previously worked in the creative sector and 20.7% have education in the creative field. 10.3% of the respondents have education in the IT field and 3.4% has previously worked in the IT sector. 6.9% respondents have worked in the corporate sector and the other 6.9% have education in business. 3.4% respondent stated that they started this business for fun. The results indicate that most technopreneurs do not have experience in business or do not come from a business background.

Table 15 Technopreneurs' background

Background	**No. of respondents (29)**	**Percentage (100%)**
Education in creative field	6	20.7
Work experience in creative sector	14	48.3
Education in I.T. field	3	10.3
Work experience in I.T sector	1	3.4
Education in business	2	6.9
Work experience in corporate sector	2	6.9
For fun	1	3.4

14 out of 29 or 48.3% of the respondents stated that they have engaged the help of an external business coach or mentor. Table 16 shows the types of assistance gained from their external business coach or mentor.

Table 16 Types of assistance received from external business coach or mentor

Assistance	**No. of respondents (14)**	**Percentage (100%)**
Financial management	9	64.3
Marketing	6	42.9
Product development	9	64.3
Administration	3	21.4
Networking & advice	1	7.1

64.3% of the respondents received financial management assistance, and product development assistance. 42.9% received marketing assistance, 21.4% received administration assistance and 7.1% received networking and advice.

The other 51.7% of the respondents who did not have external business coach or mentor were asked whether they needed help in areas such as finance, marketing and administration. 66.7% of the respondents answered that they do need help, while the other 33.3% do not.

All the 29 respondents were then asked what the biggest obstacles they faced as technopreneurs were. Table 17 shows the results.

Table 17 Obstacles faced by technopreneurs

Obstacles/ problems	**No. of respondents (29)**	**Percentage (100%)**
Access to financial resources	16	55.2
Financial management	5	17.2
Marketing	8	27.6
Lack of skilled talents	15	51.7
Local market's limitations	7	24.1
Sustaining the business	9	31
Convincing top stations to buy product	1	3.4
Unclear government policies	2	6.9
Production management	1	3.4
Get government jobs	1	3.4
Talent development & retention	2	6.9
Constantly churning out IP	1	3.4

55.2% of the respondents stated that they faced problems accessing financial resources. 51.7% of the respondents faced problems with hiring skilled talents, 31% faced problem sustaining the business, 27.6% faced marketing problems, 24.1% respondents problems with the limitations of local market and 17.2% respondents faced problem with financial management. Other answers given by the respondents are convincing top stations to buy product, unclear government policies in regards to copyrights, promoting local products etc., managing the production, getting

government jobs, talent development & retention and constantly churning out IP for revenues. Two problems related to talent pool were lack of skilled talents and developing and retaining talents. Problems highlighted by the respondents on unclear government policies include copyrights issue, which has relation to IP protection, unclear guidelines on selling and promoting local products.

The next set of questions was on Intellectual Property (IP). 26 out of 29 or 89.7% of the respondents have IP rights of their work or products, while the other 10.3% do not. Out of the respondents who do have IP rights, 92.3% of them did not find it difficult to obtain the rights, while the other 7.7% did. The respondents who found difficulties on obtaining IP rights stated the reasons they found it hard were because the procedure is difficult, time consuming and expensive. None of the respondents stated that there is lack of information on obtaining the IP rights, which indicates that there are plenty of information on IP rights and the procedures in obtaining them.

Next, the respondents were asked if they have adequate creative talents in their companies. 51.7% of the respondents indicated that they do have adequate creative talents, while the other 48.3% of the respondents indicated that they do not. 86.2% of the respondents found it difficult to hire employees with skills that meet the job requirement, while the other 13.8% do not.

Then the respondents were asked on what the requirements are in producing good quality content. Table 18 shows the results. 96.6% of the respondents chose good storyline as the basic requirements for producing a good quality or well received animated products. 51.7% of the respondents chose content that appeal to international audience. 48.3% of the respondents chose quality rendering as a requirement for producing animated products. 44.8% chose having iconic and likable characters, and contents that meet the international standard.

Other requirements are contents that showcase local culture, within budget, appeal to target audience, simple yet entertaining, versatile content for multiple platform and unique concept. No respondent chose using the latest technology like 3D or motion capture as a basic requirement.

Figure 18 Requirements in producing good quality contents

Requirements	No. of respondents (29)	Percentage (100%)
Good storyline	28	96.6
Likeable/ iconic characters	13	44.8
Using latest technology	0	0
Quality rendering	14	48.3
Meet international standard	13	44.8
Appeal to international audience	15	51.7
Showcasing local culture	4	13.8
Within budget	1	3.4
Appeal to target audience	2	6.9
Simple yet entertaining	1	3.4
Versatile content for multiple platform	1	3.4
Unique & original concept	1	3.4

The next questions asked the respondents on technology (hardware/ software). Table 19 shows the results. 48.3% of the respondents have their studios equipped with high-end technology. 34.5% of the respondents have medium-end technology and 17.2% have low-end technology. They were then asked if they think there is really a need for studios to be equipped with the latest technology. Latest technology means up to date hardware and software. 51.7% of the respondents think that there is a need, while the other 48.3% think there is not. Those who think that there is a need were then asked how they intend to have the latest hardware/ software. All of them chose to purchase or upgrade their hardware and software when they need to.

Table 19 Type of technology

Requirements	No. of respondents (29)	Percentage (100%)
High end	14	48.3%
Medium end	10	34.5
Low end	5	17.2

Next, the respondents were asked if they plan to diversify their businesses or products. A total of 22 or 75.9% of the respondents plan to diversify, while the other 24.1% respondents do not. The respondents who wish to diversify were then asked how they plan to do so. Table 20 shows the results.

Table 20 Types of diversification

Types	**No. of respondents (22)**	**Percentage (100%)**
Sell DVDs	15	68.2
Sell merchandises	22	100
Do outsourcing works	9	40.9
Open a café/ restaurant	5	22.7
Open a theme park	6	27.3
Web channel	1	4.5

100% respondents chose to sell merchandises while 68.2% of the respondents chose to sell DVDs of their TV series or feature films. 40.9% of the respondents chose to do outsourcing works to sustain their business, apart from producing their own contents. 27.3% of the respondents chose to open a theme park, and 22.7% chose to open a cafe or restaurant. 4.5% chose to open a web channel.

5. Conclusion

This study sets out to identify the barriers to the success of animation technopreneurship and the possible indicators that could overcome those barriers. It also aims to identify the Critical Success Factors of animation technopreneurship.

A total of 29 animation companies that produce original animated products were selected in this study. 28 out of 29 companies have been established for 10 years or less. 16 out of the 28 companies were created between the year 2008 and 2012, which could be associated with the success of Les' Copaque's animated feature film '*Geng: Pengembaraan Bermula*'. The animation industry is made up of SMEs, with most companies having less than 20 employees. The two most prominent animation companies have around 40 employees. All companies create their own original

content by producing animated TV series, and some also producing animated feature films. Apart from producing IPs, there are some companies that carry out outsourcing works, which is a way of diversification to sustain the business.

The results show that content quality is identified by the respondents as the critical factor that could contribute to the success of animation technopreneurship. The notion of 'content is king' when it comes to animation is true. Animation companies should focus on the R&D stage, to develop a good content. Most respondents chose good storyline as the basic requirement when producing good quality or well received animated TV series or feature films. It should also have likeable and iconic characters. Audiences tend to recognise and remember the characters more than the TV series or feature film itself. Having iconic characters can help with merchandising. Visually, the animated products should also have good quality rendering. Contents should meet international standard and appeal to international audience. By making animated TV series or feature films with universal appeal, the products can go beyond the local market, and can be distributed to other countries, as the local market is small and could not yield sufficient returns. Using the latest technology was not regarded as a basic requirement to produce well-received TV series or products. One respondent mentioned that contents should be versatile for multiple platform. This suggestion should be considered as the variety of medias now mean that it should not be confined to traditional medium like TVs and cinemas. The emergent of tablets and smartphones have risen the number of downloaded apps. Many short animation, ranging from 8-10 minutes are now available to buy as apps.

The next factor the respondents think could contribute to the success of animation technopreneurship is IP. 26 out of 29 respondents hold the IP rights to their works or products, and only 3 do not. The majority of the respondents who do hold IP rights find it not difficult to obtain them. This shows that animation technopreneurs know the importance of IP in generating income. IP awareness is prevalent among animation technopreneurs.

Interestingly, both these factors also scored the highest in technopreneurs' satisfaction. This indicates that animation technopreneurs have focussed on content quality and IP as they regard these factors could contribute to the success of their technopreneurship.

The third most important factor that could contribute to the success of technopreneruship is promotion and marketing. Animation technopreneurs usually showcase their products to attract clients or distributors through visiting trade fairs and promotional events. The most popular trade fair visited by the respondents is

MIPTV and its affiliates MIPCOM and MIP Junior. During the recent MIPCOM, Malaysian delegated have secured a deal worth US$30 million (Faridul, 2012). These deals include distribution rights, co-production and sales. Although technopreneurs viewed promotion and marketing as a success factor, they are not satisfied with their own promotion and marketing aspect. Marketing in particular is regarded as one of the biggest problems they had faced. Most respondents feel that the government could give more assistance with this. More emphasis is needed with promotion and marketing and government need to focus on this aspect.

The next factor is entrepreneurship skills and it also has the same mean score as promotion and marketing. Most of the respondents come from creative background. It can be assumed that they lack the business know-how. Thus some technopreneurs had opt for assistance from mentors or external business coaches. They look for help in areas like financial management, marketing and administration. They also sought for advice and networking. Those who do not have a coach or mentor had expressed the need for assistance in areas like finance, marketing and administration. They also had encountered barriers in sustaining the business, financial management and getting accessing financial resources. Entrepreneurial skills scored sixth in technopreneur's satisfaction which shows that technopreneurs do not regard they have enough knowledge and skills.

The fifth success factor is talent pool, which is also the fourth least satisfied factor. This problem is highlighted as the one of the biggest obstacles the technopreneurs had faced. Lack of skilled talents as well as talent development and retention were cited. The majority of the respondents found that it is difficult to hire employees with skills that match with job requirements. Some technopreneurs had to retrain their employees when they are hired. This could be due to graduates not possessing the right skills for the industry. Other than skills, finding employees with the right attitude and passion is also difficult (Haris, 2011).

Although the technopreneurs are satisfied with government assistance, it is not among the top success factors. This is similar to studies by Robson & Bennett (2011) and Sebora, Lee, & Sukasame (2009) which found that government assistance could be the factor that contribute to the success of an entrepreneurship, it may not be the main success factor.

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