

## **Transforming University's Mission and Vision Statement for Commercialization of University's Research in Malaysia**

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**Abstract:** One of the striking problems in commercialization university invention is facing long time to introduce it to the market industry. It is true that commercialisation university research are still new in Malaysia and little research been done by the academic researchers. This article will fills the gaps by looking to mission and vision of the research universities and analyse whether it in line with the commercialization purposes. Consistent with the previous research, we found that commercialization of the university research and technology transfer in Malaysia is still at infancy state. The goal of this paper is to clarify and identify the commercialization activity in Malaysian universities and finally to explore the impact of the collaboration of university-industry interactions. This study shows that the mission and vision statement of the university affect the technology transfer and commercialization activities and leads towards a better integration between the university and industry.

**Key words:** Mission Statement • Vision Statement • Commercialization Malaysian University • university-industry interactions • Entrepreneurial activity

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### **INTRODUCTION**

Mission statement has been used as the primary management tool [1] and this also been used to measure the organizational excellence on the industry. Mission statement will give a significant contribution to the survival and development of the business [2-4]. Policymakers increasingly view universities as engines of economic growth, via the commercialization of intellectual property through technology transfer [5]. Furthermore, many research universities have adopted formal mission statements regarding the role and importance of technology transfer [6].

It will reflect and been used by the organization as the strategic directions for the future development. Mission and Vision University will give big implications

of the staff that involved in that organization. This have been supported by Baetz and Bart [7] and Analoui and Karami [2] ranked "to establish a common purpose amongst employees" as the third most important rationale. This research show that the mission and vision statement as the important element for the survival of the organization. In the not-for-profit sector, mission statements act as a surrogate "bottom line". "Providing a common purpose" has been identified as the top driver in this sector [8]. Charitable organisations focus more on mission than strategy [9]. The commitment of the whole staff is needed for the mission statement to be effective [10]. Frumkin and Galaskiewicz [11] suggest that government action, or more generally state intervention, has consistently been conceived as playing a central function in initiating the structural transformation of

other organisations. According to Meyer and Rowan [12], political and legal constraints play an important role in speeding and spreading institutional myths: some organisational practices diffused through relational networks have legitimacy based on the supposition that they are rationally effective.

Proponents of the entrepreneurial university claim that universities are being transformed from ivory towers to engines of economic growth [13]. The description of “entrepreneurial universities” has increasingly been used in relation to the partnership of technology commercialization in academia [14-15]. Changes roles of the university are important to show that the university have been put “new mission” rather than teaching and research. In general, weak industrial RandD capabilities mean that much potentially useful research in universities would face difficulty being commercialized by firms outside universities [16-17]. The rise of the knowledge economy has understood the essential role technological innovation plays in economic development [18]. The perceived risks include a shift from basic research towards more applied topics and less academic freedom [19-20], lower levels of research productivity among academics [21] and a slowing-down of open knowledge diffusion [22-24]. Existing work investigating the features of the entrepreneurial university has primarily focused on academic researchers’ engagement in patenting, licensing and academic entrepreneurship [25-26]. There has also been a concomitant rise in university-industry partnerships resulting from efforts undertaken by national governments to overcome innovation market failures [27].

Based on the literature most of the successful commercialization university research only happened in developed world by far. Developing countries such as Malaysia still at infancy state and need time to develop for the commercialization purpose [28]. Looking on that comparative framework, this paper try to explores the question of how mission and vision statement played an important part to shape the scope and fruitfulness of university-industry interactions in Malaysia. The primary goal is to understand how the mission and vision statement of the Malaysian university underpinnings the commercialization academic research and national innovation system.

Most of the universities in Malaysia are yet need time to support the economic growth in Malaysia and help in the national research and development (RandD). There are many initiatives that have been providing by the Malaysia government to help in commercialization and

entrepreneurial activity. Malaysian hope that in 2020 that it will become a develop country and also promote high technology industry to the world. By using the mechanism, will help Malaysia to be a leader in technology and development, the potential to carve out international brand names and the scope for diversifying away from labor-intensive assembly operations [29].

Freeman and Soete [30] explain that science has emerged as an alternative engine of economic growth in addition to the classic triumvirate of land, labor and capital. Under the influence of a knowledge-based economy, academic research institutions are no longer simply the location of education, research and public services. Academic research institutions play a vital role in regional economic development and employment creation [31-32]. The Silicon Valley and Route 128 in the U.S. have frequently been mentioned as the most successful areas of high-tech venturing where the abundant academic research capacity contributes to the development of the industrial system [33-34]. A greater emphasis on exploiting research results can be seen in managerial changes among academics with respect to university-industry collaborative projects [35].

They are thought of as places where knowledge is generated and patented, where specialized research is housed and where scientist and industry work together on product commercialization [36-37]. However, much case, only focussed to the developing countries, until recently had attached little importance to the roles of university as the main source of knowledge and innovation for firms [38]. Understanding the individual motivational drivers for university-industry relations is important for judging the ultimate organizational and societal implications of the entrepreneurial university [39].

**Literature Review:** Several research gaps have been identified based from the literature. First, most of the research only focussed on the commercialization of university research that happened in United States, Europe and Japan and do not provided sufficient knowledge to the development in emerging countries [40-42]. This has been supported by Mohar Yusof [43] that there is still little research being done about the commercialization university research in Malaysia. Then, Wan Hussain *et al.* [44] also mentioned that commercialization process should use lawyer as the marketing agent to help in the commercialization activity. Second, most of the research only focussed on the spin-off company as the commercialization process but do not

fully stressed the licensing and patenting [45]. Third, most of the qualitative evidence only reflects on how the academic entrepreneurship gives contribution to the knowledge base [46]. In order to bridge this gap, this study only focused to the commercialization process that happened in Malaysia Research University in relationship using the mission and vision statement of the selected university. This article will look and analyse the mission and vision statement of the university and try to identify whether it support the commercialization process or not.

The majority of university inventions are so embryonic that successful commercialization depends on faculty participation in further development [47]. In commercialization process, TTOs play important roles managing the long process of knowledge transfer and their personnel skills and governance structure matter [48-50]. The commercialization process started at first place where the inventions disclose occurs and that invention have been identify have the commercial value. Then, the TTO will help assists the commercialization process by engaging with the venture capital, helping applying for Intellectual Property (IP's) and provide incubator space for the development of that invention [51]. However, in order to align all this process the university especially TTO must have resources and capabilities to do that. There are still debate that the TTO are lack of resources and competencies in helping commercialization university research [52]. Furthermore, this is not the only problem, TTO staff also pressure with the limited budget and marketing for the potential inventions, after all the money have been put on the patenting inventions they will have limited funding and resources for marketing the potential licensees and investor [53-54]. It is very important for the university to have a clear and proper guideline that can help in commercialization university research. This process can be done by looking to the mission and vision statement of the university.

The literature on diffusion of technology suggests a long list of characteristics of the firm that affect its decision to adopt external technology which includes firm size, RandD expenditure, market share, market structure, input prices, labour relations, firm ownership and other institutional factors and characteristics of technology [57].

This paper is divided into four sections. First, the theoretical foundation, that mission and vision statements serve as an important mechanism in management and commercialization process. This is followed by the

theoretical underpinnings and research questions to know the vision and mission statement of the research university in Malaysia. Then the employed methodology, using the previous literature review and also case study about the development in commercialization university invention based on Malaysia Research University. The findings and their implications, as well as the limitations of the study and further research issues are discussed in the final section of the paper.

**Methodology:** There are 5 research universities in Malaysia which is Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia, Universiti Malaya, Universiti Sains Malaysia (USM) and Universiti Teknologi Malaysia (UTM). USM have been recognized as the Apex University in the year 2008. The methodology adopted in this article using the analysis data that we gather from all this 5 research university. By looking to their current vision and mission statement will help us identify whether the commercialization activity happened or been supported on this organization. This is important because commercialization activity is a long process and required many agents such as venture capital, entrepreneur, policy makers, researcher and technology transfer officer. By knowing and looking at their vision and mission statement will help identify that university supported on the commercialization and entrepreneurial activity or not.

The analysis that we have done is accomplished through the content analysis of the university document and also the data from the Ministry of Higher Education (MOHE), the universities and other official sources. The document includes the annual report of university, Policies University on intellectual property and report of the technology transfer office. The focus of analysis is the Universiti Kebangsaan Malaysia (UKM) which has been categorised as the Research University in Malaysia.

**Bayh Dole Act 1980:** The enactments of the Bayh Dole Act in 1980 have given a significant contribution to the development of the commercialization university research in United States. This Act help to transfer and give ownership to the university to own the invention generated from the federal funding. The United States is one country where the interactions of university-industry are closely related. This country has implemented many mechanism that help maintain and promote exchange knowledge since 1950s.

Even though, before the passage of the Bayh Dole Act 1980, United States already involved in the commercialization activity and had rules that addressed

Table 1: Mission and Vision Statement Malaysian Research University.

University	Mission	Vision
Universiti Kebangsaan Malaysia (UKM)	The chosen institution that safeguards the sovereignty of the Malay language and internationalizing knowledge molded on a strong sense of the national culture.	UKM is committed to be institution that moves ahead of society and its era in the development of a dynamic, learned and morally strong society
Universiti Sains Malaysia (USM)	USM is a pioneering, transdisciplinary research intensive university that empowers future talents and enables the bottom billions to transform their socio-economic well-being.	Transforming Higher Education for a Sustainable Tomorrow.
Universiti Putra Malaysia (UPM)	To be a leading centre of learning and research, contributing not only towards the creation of wealth and nation building but also towards universal human advancement and discovery of knowledge.	To become a university of international repute.
Universiti Malaya (UM)	To advance knowledge and learning through quality research and education for the nation and for the humanity.	To internationally renowned of institutions of higher learning in research, innovation, publication and teaching.
Universiti Teknologi Malaysia (UTM)	To be a leader in the development of human capital and innovative technologies that will contribute to the nation's wealth creations.	To be recognised as a world-class centre of academic and technological excellence.

(Sources: compilation of authors from university site)

that issues of promoting publicly funded research innovation. Even before the passage of the Bayh-dole Act, the United States had rules and policies. President John F. Kennedy, in 1960, had issued a policy covering patents that arose out of publicly funded [56].

After the Bayh Dole, the increase of the university patenting post in 1980 has made the United States implemented Bayh Dole Act into their legislation system. Since the introduction of the Bayh Dole Act 1980, U.S. university research has become more proprietary and commercialized in nature and has also experienced an erosion of the tradition of open science [57]. The main purpose of this act is to facilitate the commercialization process of the university and increased interaction between university and industry. However, there still no guarantee that this Act increased the revenue for the university and promote the economic growth of the university [58].

Table 1 show the mission and vision statement of the 5 top research universities in Malaysia. As for UKM, their mission is to become

“The chosen institution that safeguards the sovereignty of the Malay language and internationalizing knowledge molded on a strong sense of the national culture”

This university been developed in 1971 and one of the purpose is to develop and protect the national

language which is Malay language as the main language used in the world. The vision of the this institution is want shaping the society,

“UKM is committed to be institution that moves ahead of society and its era in the development of a dynamic, learned and morally strong society”

From their mission and vision statement shows that this university wants to become a leader in research institutions and give add value to the society and nation. Their vision and mission also supported the commercialization process and national innovation system.

Then, we looked at the mission Univesiti Sains Malaysia (USM), the mission of Universiti Sains Malaysia is

“USM is a pioneering, transdisciplinary research intensive university that empowers future talents and enables the bottom billions to transform their socio-economic well-being”

Their mission is focuses to develop the future talents and also give impact to the social economic development of the country. It is clear that this university also supported the commercialization purposes and entrepreneurial activity. Then it had been followed by the Universiti Putra Malaysia (UPM), their mission is very clear and straight forwards to promote the commercialization process activity:

“To be a leading centre of learning and research, contributing not only towards the creation of wealth and nation building but also towards universal human advancement and discovery of knowledge.”

This university wishes to help in developing wealth and nation building and also discovery new knowledge that supported the commercialization activity. The mission statement of Universiti Technology Malaysia (UTM) is also similar to the UPM by contributing to the wealth nation building and their vision:

“To be recognised as a world-class centre of academic and technological excellence”

Because of this university more focussed on the research and technology it is important that this university become a leader in promoting technology centre to the world.

Universiti Malaya (UM) also is one of the recognized top research universities in Malaysia. Their mission is

“To advance knowledge and learning through quality research and education for the nation and for the humanity.”

This university mission also gives overview information about the commercialization activity by giving impact to the nation and humanity.

Academic research institutions are acting as the main knowledge generators in contemporary society. The social structure of science provides norms and values to guide faculty members in conducting academic routines [59-60]. Prior research argues that the primary motive of university scientists is recognition within the scientific community, which emanates from publications in top-tier journals, presentations at prestigious conferences and governmental research grants [61].

Sociologists identify that the social functions of faculty members have shifted from scholarly training and theoretical development, endless knowledge frontier and application relevance, to wealth creation [62]. The increased interactions between universities and industry in the national innovation system change the internal culture and norms of universities [63].

From our result, it shows that most of the research university in Malaysia are aware of the commercialization activity and develop many mechanisms to help the process. The governments of Malaysia also provide support through financial and policy that can assist the university in technology transfer activity and commercialization purpose.

**Case Study:** In this we provide the case study to give more understanding about the research topics. This is align with the research suggested by [64-65] that by providing case study will give a more understanding about the research topic.

**UKM (University Kebangsaan Malaysia):** UKM was founded on 18<sup>th</sup> May 1970 and now have 12 faculties including Graduate School of Business and also have 14 research Institutes. UKM also have set-up UKM Holdings as the private division to give benefit from the expertise that they have and also to generate income for the university. From the mission statement, UKM establish as the main place to protect the sovereignty of the Malay Language. For commercialization, this university have set-up UKM Technology that will find and identify product that have commercial value to the industry. UKM also have partner themselves with the Steven Institute of Technology (SIT) one of the top universities for the commercialization process in United States to help them. UKM Vice Chancellor, Prof. Tan Sri Dato’ Dr. Sharifah Hapsah Syed Hasan Shahabudin have looking forward for the commercialization process in the UKM. UKM have set-up Centre for Innovative and Collaborative known as PIK for this purpose. This centre will help the inventor to filling the IP’s for the invention and also help the negotiation between the inventor and practitioners. This university has start-ups 15 company in 2010 and invests more than 2 millions to establish the UKM Technology that will assists in the commercialization process at this university.

Overall the development of the commercialization activity in UKM are still new and need further research to learn about this process on this research institution. Further empirical analysis will need to be done help the policy makers, entrepreneur and also government to develop a best strategy to help the commercialization activity.

This study makes several contributions to theory, but three deserve special attention: First we incorporate the commercialization university technology transfer activity that happened in United States and make a comparison with the Research University in Malaysia. Our investigation suggests that commercialization activity is still new and can be used an enabler of opportunity recognition, as a mechanism to support and promote opportunity discovery, through technology transfer, through national innovation system. Second, we try

analyses the mission and vision of that university and integrate both exogenous and endogenous influences that can enhance the commercialization activity at Malaysian university. This will allow and help researchers to take a holistic approach to opportunity recognition, providing greater credence to both opportunity discovery and opportunity creation in commercialization and technology transfer process [66-69]. Third, we provide a platform for empirical research which integrates case study in UKM and this offers many fruitful avenues for future research, including broad approaches at the other commercialization activity on other university

**Conclusion and Future Research:** The question that rises here is are the mission and vision statement that selected university align and promoted the commercialization activity. It is still on debate that formal regulations played an important role in transforming and helping in commercialization propose. We feel that by analyzing all the research institution will give a complete understanding about the commercialization activity happened in Malaysia. This is because most of the commercialization focused and developed in developed country and there is still little about the development in developing country especially in Malaysia. It is also a fruitful discussion if the research can be done to the other university such as private university and polytechnics in Malaysia to know about their commercialization activity and university-industry interactions.

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