

**“SPECIAL INVITE PAPER”**

**ACADEMIA-INDUSTRY MOBILITY IN MALAYSIA:  
REALITIES AND IMPLICATIONS FOR LEADERSHIP  
DEVELOPMENT INTERNATIONALIZATION**

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**ABSTRACT**

This article presents the current academia-industry mobility (AIM) situation in Malaysia with emphasis on the progress in the AIM agenda, factors affecting AIM, drivers of AIM, and barriers and constraints faced by AIM in the country. Using qualitative methods, 29 research participants consisting of university top management members, leaders of university-industry relations office, key industry players, and lectures took part in the qualitative study. Main findings indicated that perceived unclear policy and guidelines related to AIM have further exacerbated what is already an unfavorable relationship between Malaysian public universities and industry players. Malaysian public universities were found to be slow in responding to the needs of industry players, whilst at the same time, the latter remained skeptical regarding the capabilities of the former. This article concludes by proposing a leadership development program framework that addresses AIM issues.

**Keywords:** academia-industry mobility; leadership development program; professional development program; Triple Helix; Malaysia

## **Introduction**

Academia-industry mobility (AIM) is an important dimension that facilitates academia-industry collaboration/partnership or the more comprehensive concepts of ‘Triple Helix’ (academia-industry-government) and ‘Quadruple Helix’ (academia-industry-government-society). The scope of work in AIM involves particular activities, tasks, and interfaces related to the respective academia-industry placement schemes, which are mutually inclusive and beneficial to the participating sectors such as; training, consultancy, and advisory work, as well as research, development, innovation, and commercialization. Academic mobility and placement in the industry are as fashionable as it is valuable, insofar as it facilitates not only knowledge creation, sharing and transfer, but also promotes cross-sectoral fertilization of knowledge, skills, practice, application, expertise, and know-how, notably between higher education institutions and the industry. Similarly, AIM provides the opportunity for the transfer of practical knowledge and real-world experience as well as the latest trends from the industry to the university, which not only enriches student learning experience but equally, facilitates the exchange of expertise and experiences between academics and their industry counterparts. Briefly, AIM is useful to the participating sectors and the economy as it contributes both directly and indirectly to human capital development, research and innovation advancement, and turning brain drain into other possibilities such as “brain gain” and “brain circulation” (Robertson, 2009).

However, despite the introduction of policies and mechanisms to promote AIM in the Malaysian context, the related outcomes remain much to be desired. From a World Bank-Talent Corporation study, industrial collaboration with universities remains relatively limited. For example, 50% of companies have no structured internship internationalization, while 53% have never worked with university career centers, and less than 10% have experience in developing curricula or academic internationalization with universities. The same report also presents some realities that may be related to AIM in Malaysia: 90% of the companies feel more practical training should be provided for graduates, while 80% think the university curricula is not reflective of the current realities, and 81% rate communication skills as the major skill deficit in Malaysian graduates (Bank Negara Malaysia, 2017). Therefore, this paper addresses the apparent lack of progress in the AIM agenda, which is still in its infancy. This is done by ascertaining and comprehending the factors affecting AIM as well as its drivers in the Malaysian context, followed by an explication of the correlated barriers and constraints that hinder the progress of AIM. The “lack of progress” of AIM in the Malaysian context is inexorably linked to the barriers and constraints faced by the stakeholders in the “Triple/Quadruple Helix”. Meanwhile, ascertaining both the generic and sui generis factors and drivers of AIM helps shed light on these barriers and constraints that hinder the progress of AIM in Malaysia. Consequently, this paper proposes a framework for professional development internationalization to enhance AIM in Malaysia

## **AIM in the Malaysian context**

The definitions, concepts, attributes, and nature of AIM in the Malaysian context are relatively similar and reflective of the global trend. In a concerted effort to enhance academia-industry collaboration, the Ministry of Higher Education (MoHE) Malaysia has come up with the Enhancement Plan of Strategic University-Industry/Community Collaboration in 2010, which stresses on universities to strategically engage with the industry via the re-alignment and (re-)focusing of its direction, as well as in terms of implementation, growth, and sustainability of strategic collaborative activities (MoHE, 2013). A ministerial guideline on academia-industry placement for academic staff in public higher education institutions was subsequently launched to support the implementation of the said academia-industry collaboration enhancement plan. The guideline defines placement in the industry, non-governmental organizations, and government agencies as a capacity-building scheme for academic staff, which is meant to provide a platform for staff to fulfill specific professional needs in their respective fields; furnish opportunities for knowledge and technology transfer and/or exchange; and increase and expand their experience to produce more effective teaching and research that meets the requirements of the industry (MoHE, 2012a). The guideline stipulates four categories of placement schemes, namely: placement for professional recognition; placement for research/consultancy/work experience in the industry/ non-governmental organizations/government agencies; placement for community/society work/service; and placement as volunteers in humanitarian assistance and disaster relief operations/internationalization.

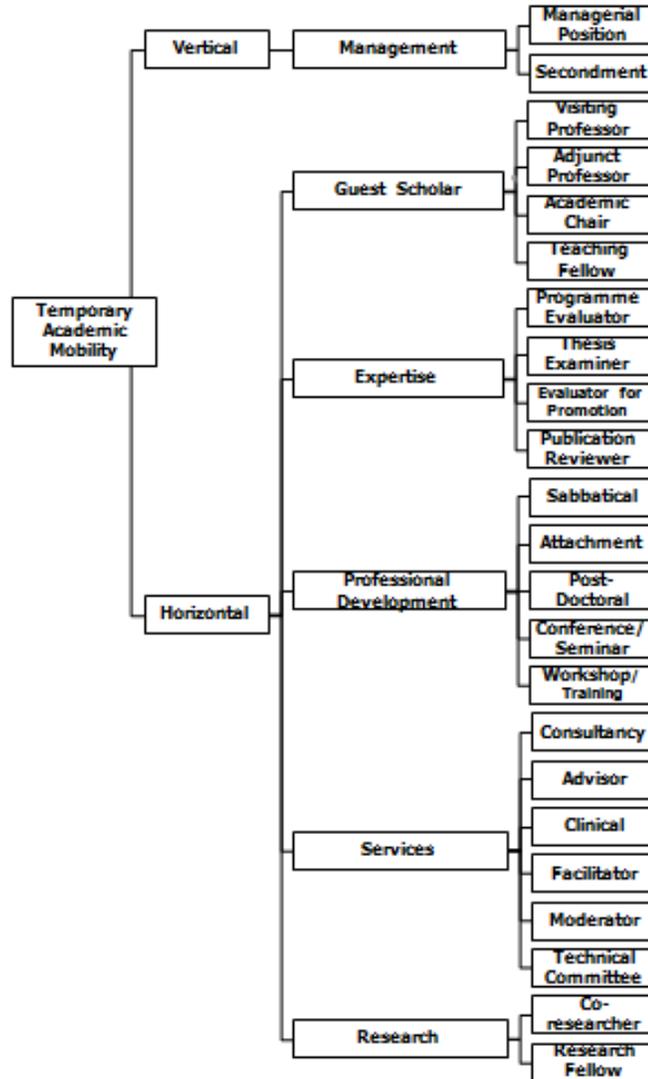
To further facilitate academia-industry collaboration, the MoHE has ascertained five areas of collaboration, namely graduate employability, research and development, commercialization, innovation, and consultancy, where mobility opportunities are available for both academic staff and industry personnel. A good example can be seen in the context of graduate employability, where reciprocal mobility opportunities for both short and long-term are available in the form of participation of either or both academia and industry personnel in a host of tailor-made internationalization, such as the Industry Centre of Excellence (ICoE), Industry Engagement Zone (Ind-E-Zone), industry-university corporate social responsibility (CSR), professional examination, Bridging-the-Gap, and Entrepreneurship internationalization, apart from appointment to the positions of adjunct lecturers/professors or associate fellows, and involvement in activities such as industry-led curriculum design and delivery, as well as talks, coaching and mentoring (MoHE, 2013).

Although the ministerial guideline on AIM focuses exclusively on the mobility of academics to the industry, the MoHE has equally implemented several strategies to facilitate mobility of industry personnel to the universities, which include those mentioned above. The *MyPhD Industri* program has likewise been introduced, which, unlike traditional doctoral research, is

specifically designed to encourage industry personnel to enroll as doctoral candidates in universities, where they are expected to pursue industry-focused projects relevant to the needs and activities of their respective organizations. Funding is provided to candidates for the *MyPhD Industri* program, where as many as 100 grants were allocated in 2013, as a means towards achieving the MoHE target of producing 500 industrial Ph.D. holders by 2015 (Azman, Sirat & Pang, 2016).

Additionally, AIM in Malaysia includes the concept of ‘secondment’, where academic staff may be placed, transferred, or go ‘on loan’ to the industry for a specific period, sometimes, with an option for a permanent transfer, usually to utilize and optimize their knowledge, skills, expertise, and experience to address both general and specific needs of the recipient organization. Indeed, it is not uncommon for academics from Malaysian public universities to be ‘seconded’ to ministries, government agencies, departments, and research institutes, as well as government-affiliated organizations, where their expertise is deemed necessary to meet the human resource requirement of these public entities, besides enhancing collaboration and knowledge/skill-sharing between academia and the government as part of the concept of ‘triple/quadruple helix’ relationship. AIM in the guise of secondment to government research institutes is especially beneficial towards enhancing academia-industry collaboration since they are essentially established to promote the development of specific industries that contribute to the national economy (MoHE, 2013).

AIM in Malaysia also involves the participation of academic staff/researchers in collaborative and/or contract research with their industrial counterparts, as well as in the aspects of the operation and/or management of Research, Development, Innovation (RDI), and Commercialization (RDI&C) start-ups. The platforms for such academia-industry interactions commonly include R&D centers of excellence (CoE), laboratories, and likewise, specifically designated and purpose-built sites, such as science and technology parks, and business incubators located either in academia or industry or at a neutral venue. The Putra Science Park and Sains@USM set up by Universiti Putra Malaysia (UPM) and Universiti Sains Malaysia (USM) are noteworthy examples that facilitate inter-sectoral mobility to enhance collaboration in RDI&C and RDI and Entrepreneurship, respectively (MoHE, 2013). Apart from collaborative/contract research work, AIM participants may also be engaged in other research-related positions, such as the appointment of academic staff as associate research fellows in both government-sponsored and private, non-profit research organizations/think-tanks. The nature of work and activities involved in AIM can be best summarized using the listing of the academic mobility activities by Komoo, Amir, and Harun (2015), which divides them into six categories of work, namely management, visiting scholar, expertise, professional development, services, and research (see Figure 1.).



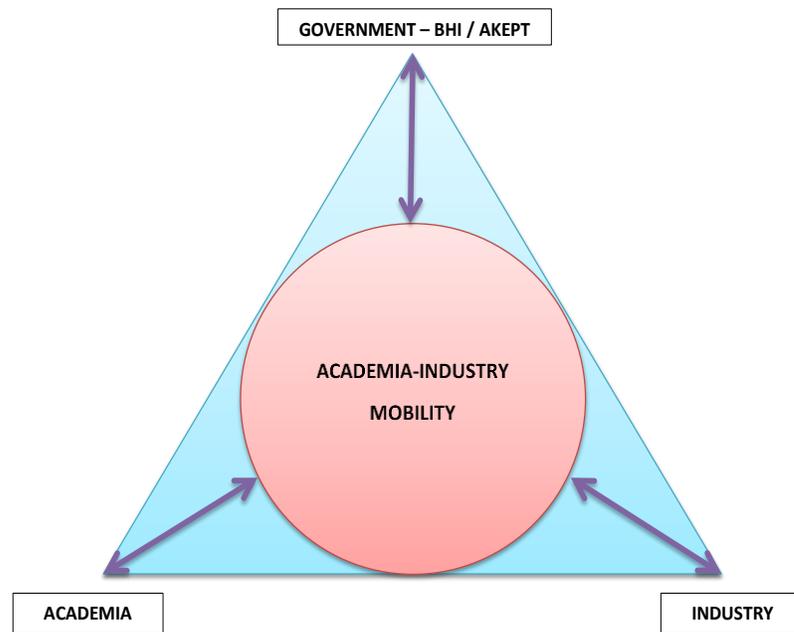
Source: Komoo, Amir & Harun (2015, p. 62)

**Figure 1. Mechanism and Activities of Academic Mobility**

### Conceptual framework and model of AIM in Malaysia

Given the importance of AIM, and the constraints and barriers hampering its progress in Malaysia, it is essential for the stakeholders of the so-called “triple-helix and quadruple helix” relationship to come up with more adequate policies and strategies to address the highlighted shortcomings. There is, indeed, a need to conceptualize an AIM framework, which not only caters to more substantive interactions and cooperation between stakeholders in government, industry, and academia. Furthermore, this framework could equally represent one that involves, and ties in, more potent strategies that could effectively translate the available policies on academia-industry collaboration and AIM into actions that could bring about the desired outcomes. More specifically, the framework has to be able to bridge the gap between academia

and industry through the creation of a fertile academia-industry ecosystem relationship, where inter-sectoral mobility becomes seamless and second nature. This includes the provision of governance, as well as incentive and reward systems, among others, that fosters an academia-industry environment conducive for mobility, and even training (i.e. internationalization and modules) that serve to facilitate the creation of a talent pool of ‘industry-friendly and knowledgeable’ academics amenable to the idea and practice of AIM.



**Figure 2: Conceptual framework of AIM in Malaysia.**

This study, therefore, introduces a modest AIM framework based on the “Triple Helix” model to conceptualize the respective roles of the various stakeholders in facilitating the agenda of academia-industry collaboration in general, and AIM, particularly. Figure 2 above outlines the framework, which provides the context of AIM in Malaysia. The model illustrates the synergistic relationship and interactions between the principal stakeholders of the ‘triple-helix’, namely academia, industry, and the government, and the roles they play in fostering an environment conducive for AIM. The government is represented in the model by two key actors, which are not only responsible for but have the capacity and capability to address the various barriers and constraints of AIM highlighted earlier. The Industrial Relations Division (*Bahagian Hubungan Industri - BHI*) of MoHE is the actor within the government entrusted to promote academia-industry collaboration, while the National Higher Education Leadership Academy (*Akademi Kepimpinan Pengajian Tinggi Malaysia – AKEPT*) generally serves as a training center for the advancement of higher education in Malaysia. On the other hand, the public (as well as private)

higher education institutions are the actors representing academia, while the various organizations as defined in the study constitute industry in the framework.

This framework specifically emphasizes the important and mutually reinforcing roles in which BHI and AKEPT can and should undertake to help ‘bridge the gap’ between the universities and industry as a means to facilitate AIM. The BHI’s role would be essential to provide the governance necessary to foster the all-important positive environment, such as introducing effective policies, strategies, and regulatory framework that not only serve to improve the linkage between academia and industry but equally encourage the participation of their workforce in inter-sectoral mobility. Furthermore, AKEPT, which traditionally conducts training courses and modules in areas like teaching and learning, research and innovation, publication, leadership, may find itself playing an important ‘new’ role in promoting the AIM agenda. More precisely, the framework calls for AKEPT to address the issue of how it can assist in creating a talent pool of industry-friendly and knowledgeable academics via the introduction of specific training modules, which befits the Academy’s very own vision, mission, and *raison d’etre*.

## **Method**

The field data were collected from three focus group interviews and ten in-depth interviews with respondents who were purposefully sampled across universities and industries. A total of 29 respondents participated in the two categories of interview, representing a diversity of experience and perspectives from AIM key stakeholders – academia, industry, and government. Focus group interviews based on semi-structured questions involved seven top officials from the industry liaison office of public universities, a head of industry liaison office of a private university, seven academics from public universities, and three senior officers from the MoHE, who were involved in community engagement activities. Three focus group interviews were conducted at different locations to suit the convenience of the respondents. Each of these interviews was facilitated by a senior researcher and assisted by other team members. In-depth interviews with semi-structured questions were conducted with four top officials from the community and industrial engagement portfolios (one deputy vice-chancellor of a public university, three heads of industry liaison office of private universities), two members of the university board of directors, a director of a division in MoHE and, four industry representatives from professional bodies (Banking, Accounting, Engineering, and Business Management). The in-depth interviews were conducted in the respective offices of the respondents, except for that with the MoHE division director, which was conducted in an airport lounge based on his request.

The interviews, which took approximately one to two hours, comprised five sub-themes and were based on an eight-item protocol of factors that constrain or impede AIM. The first sub-theme consisted of general questions that were meant to encourage interview and focus group

respondents to openly share their views on the scope, definitions, issues, and current situation of AIM. This was followed by four other sub-themes comprising specific items that essentially focused on the factors (both internal and external), drivers, barriers, and constraints of AIM, as well as policy recommendations. Meanwhile, the eight-item protocol of factors included gender, age, academic rank, previous experience in AIM, peer motivation/pressure, the field of discipline, personal network, and location of an academic institution, all of which were deemed to have the propensity to affect AIM.

Before the interviews, the respondents were briefed on the research project and aims of the interview, asked for consent and the consent forms duly signed. The interviews were digitally recorded, transcribed, and analyzed based on content analysis. The source triangulation method was used to validate the findings. The data analysis focused on three areas: Factors affecting AIM, drivers of AIM, and barriers and constraints of AIM.

Whilst the research team tried its best to conduct this research in the best possible manner, two limitations were encountered in the process. One of which involved participation from the industrial sector. The team invited respondents from all major industries, but only four industries agreed to take part in the study. Secondly, as most of the research team members are quite involved with AIM policy and practices in Malaysia, their familiarity may influence how the findings were generated from the data. However, before the finalization of the research report, the research team received the endorsement from the funder of the project (AKEPT) after the presentation of the methodology and findings.

## **Findings and discussion**

The findings addressing the factors, drivers, barriers, and constraints of AIM in Malaysia are as follows:

### **(a) *Factors affecting AIM***

The data analysis results show that factors affecting AIM are interdependency in terms of resources in the context of AIM, organizational culture and AIM, organizational strategy and AIM, organizational structure and AIM, and organizational trust and AIM. These factors are elaborated in the following sub-sections.

#### **(i) *Interdependency in terms of resources in the context of AIM in Malaysia***

Generally, the respondents reiterated that the Malaysian public universities are not dependent on industry for resources, and similarly, the industry is not dependent on Malaysian universities to increase its productivity. In most cases, Malaysian universities do not have the urgency to

explore new sources of funding, as is the case with their counterparts in the West. This is mainly because Malaysian universities receive substantial annual financial allocations from the government to provide funding for research and infrastructure development. On the other hand, industry players in Malaysia felt generally that substantial investment in Malaysian universities is necessary to jointly develop products and services. However, this is considered a long way off as there is a perception that investment in Malaysian universities is a huge risk, or that the knowledge and technological know-how among academics is not at par with the expectations of global industry.

Developing the discussion on resource interdependency further, Malaysian public university academics felt generally that they are part of the Malaysian civil service and therefore by being a civil servant there is a limitation on how academics should cooperate with Malaysian industry players. Accordingly, their relationship with the industry has been generally limited to undertaking consultancy work, which was deemed sufficient for their benefit and academic promotions. Some even concluded that consultancy work represents AIM, which is a very narrow view of what AIM typically represents.

*(ii) Organizational culture and AIM*

Organizational culture plays an important part in the development of AIM in many countries. Interviews with industrial experts indicated that there is a perception among Malaysian industry players that the organizational culture in Malaysian public universities is very rigid, thus making it difficult for these universities to adapt to global change in the many forms that have taken place.

Conversely, academics contested this view and felt that the existing organizational culture in Malaysian universities can absorb and change according to the needs of globalization. Instead, they blamed the industry's organizational culture for the slow pace in the development of AIM in Malaysia. However, industry players argued that Malaysian universities are not ready to accept, operate and adapt to their organizational culture as they speak different languages, live and work in a different environment, and more importantly, have different goals. For example, a representative from the Malaysian banking industry noted during an interview that organizational culture is key to why the industry is not able to work with universities, and more importantly, the respondent argued that the mentality and work behavior in public universities are different from the banking industry environment.

*(iii) Organizational strategy and AIM*

In the Malaysian context, the harmonization of organizational strategy between universities and industry is very much in the planning stage and to some extent, there is no clear exchange of ideas or deliberation and negotiation regarding the formation of a common organizational strategy. This has led both parties in academia and industry to apportion blame to each other for

the lack of progress made in developing AIM in Malaysia. However, in reality, both have entrenched positions on their respective organizational strategies, with just a few exceptions mainly in the transfer of ideas, technology application, and human resources management.

Interestingly, the interview data with industry players shows that none admitted that there is a clear organizational strategy within their companies towards the development of AIM in Malaysia. However, what these industries do provide is an attachment for academics to work in the industry. Moreover, in specific sectors, such as banking, mobility to universities seems to be impossible. If it does happen, it is undertaken purely on the individual's decision and not part of the Malaysian banking industry's organizational strategic plan.

*(iv) Organizational structure and AIM*

A clear organizational structure is essential for the development of AIM as it will enhance knowledge, and more importantly, increase productivity through effective resource management (Liao & Chuang, 2011). The respondents from the university reported that there is some form of organizational structure to facilitate, implement and transfer technology. However, the important question is whether they are effective and support the development of AIM in Malaysia. On the other hand, many Malaysian industries highlighted that they do not have a formal organizational structure to promote and manage AIM. In most cases, the decision to appoint academics is made by the firm's human resources department rather than as a higher-level strategic decision.

*(v) Organizational trust and AIM*

In the context of AIM, trust exists when universities and industries have the confidence to share ideas, feelings, and goals. In Malaysia's experience, there is a trust deficit among Malaysian academics and industry players, which is affecting the development of AIM in the country.

While public universities are intent on creating better cooperation with industries, when it comes to the issue of trust, Malaysian industries generally hold the opinion that universities cannot fulfill their requirement in terms of human resource development and advance technological skills, which is what industries crucially need. Importantly, from the various interviews with Malaysian industry players, they felt that Malaysian academics have been molded to work as part of the Malaysian civil service rather than being able to offer critical views on a variety of issues. Moreover, industry players are skeptical as to whether they can share their ideas, technology, or work ethics with academics for fear that the latter may break confidentiality. The trust deficit among industry players as perceived by Malaysian academics can be best summarized by the response from one of the focus group respondents who lamented that:

...the [academia-industry] mismatch I think comes from this element called distrust. The industries are skeptical about the universities' capability. The universities are on the other hand ok with all that.... So...at the end of the day, this

distrust, ... would lead to the inability to optimize the best from both sides...  
(Faculty member Y, focus group interview)

**(b) Drivers of AIM**

From the analysis of data, it was found that drivers of AIM can be broadly classified into individual and institutional levels. Institution level can further be categorized into university, industry, and government levels. These drivers are elaborated on below.

**(i) Individual level**

A handful of participants attributed the lack of mobility from university to industry to insufficient material rewards, such as honorariums and allowances for temporary mobility, and no salary increment for permanent mobility. However, more participants were motivated by intrinsic factors, like self-actualization, and deemed this as more important and sustainable. For instance, one focus group respondent concurred that: “You learned something new... These are the things because not every time it is the monetary [rewards] you know” (Faculty member P, focus group interview). On a similar note, a member of the senior management of a technical university, who has a track record of mobility to industry, shared that monetary reward was not what he looked for. Instead, he was driven by the satisfaction of learning and being able to serve and share:

“I just wanted to share the experience, ..., no hidden agenda ... You guys could not afford to pay me... I never ask for anything, if you want to give... give. If you don't want, fine. ... You like me, I stay, you don't like me, I can go... I want to share the experience, the knowledge that I do have ... so that they don't have to go through what I've gone through. (A senior university AIM administrator, focus group interview)

**(ii) Institutional – universities**

It is indeed obvious that universities have a major role to play in driving mobility. Yet, owing to the emphasis placed on responding to international institutional ranking exercises, universities do not generally possess reward policies relating to reward and recognition for AIM, which is not a criterion for ranking. Indeed, the lack of any reward system directed at AIM was raised in most of the interviews and focus group discussions:

... when you write a paper such as ISI, we will receive about 3,000 *ringgits*. So when you collaborate with the industry, do universities recognize you? (A senior MoHE AIM administrator, focus group interview).

What universities want is a publication not so much about human capital development. If I get an attachment with industries, that will open up a lot of opportunities for my students for training purposes. But all this is not [what] they look into. (Faculty member K, focus group interview)

All the knowledge and technology that you have developed is for what? How can I measure? At the moment, our performance measurement is just merely based on publication, is it sufficient? (A senior university AIM administrator, in-depth interview).

*(iii) Institutional – industry*

AIM is viewed as important to universities and the MoHE. However, representatives from the industry had a different perspective on this matter. According to them, AIM lacks return of investment to the firm. The industry is expected to promote AIM via institutionally viable business models and profit-sharing with academics. Such was the opinion of a senior academic and university board member with a lot of experience in AIM:

Like the industry, I will give you or provide you with some grants, and infrastructure, but we need to discuss what is the best business model that we both agree on. 30 /70 percent? 40/60 percent? Whatever it is, there must be some sort of formula so that we can have a win-win situation between both parties. (A university board member, in-depth interview)

*(iv) Institutional – government*

Being a coordinating and partly regulatory agency, the government, through the mother's Industry Relations Division, has instituted guidelines for AIM. However, these guidelines provide only for the one-way attachment of academics from public higher education institutions (HEIs) to industries, non-governmental organizations (NGO), and government agencies. According to the policy makers, with the introduction of the Malaysian Education Blueprint 2013-2025 (Higher Education), more aggressive initiatives towards Shift 2 (Talent Excellence) and Shift 7 (Innovation Ecosystem) of the Blueprint have been designed and implemented. They include among others, the Industry Centres of Excellence Program (ICoE), the CEO Faculty Program (CFP), and the Public-Private Research Network (PPRN).

**(c) Barriers and constraints of AIM**

The results of data analysis show that AIM in Malaysia is constrained by secrecy management issues, intellectual property policy, infringement on an academic career, and opportunity costs of faculty members. These are elaborated in the following paragraphs.

*(i) Secrecy management*

Almost all the interview participants agreed that the existing AIM experience is uni-directional, namely from universities to industry. This one-sided policy is the result of policy planning and development involving mainly inputs from the institutions with none or minimal consultation with the industry. Industry representatives and university leaders share the opinion that the primary factor contributing to this one-sided policy is the existing constraints in information

sharing. The industry has secrets, which are not sharable with universities, and vice-versa. An industry respondent had this to say in an in-depth interview when she eluded on this constraint: “I think it’s time that we share but the problem is what we are allowed to share due to the secrecy act ... It’s an act under our Financial Services Act. I don’t know how much data we can share... so that.... academia can be part of this big transformation of the economy.”

The same sentiment was also voiced by a deputy vice-chancellor of a university when he said in another in-depth interview: “For us to get into the industry, we are not so welcome in the sense that they already have enough staff and they can’t or do not want to reveal their secrets. I think we are much more in need for their experience... their skill... knowledge about running a business.”

*(ii) Intellectual property (IP) policy*

Issues regarding intellectual property rights are manifested in the reported disputes regarding the handling of IP rights, confidentiality, front-end risks, and remuneration. University administrators claimed that universities are concerned about IP rights, and the cost and methods of disclosure while the industry players perceived that the university is not willing to take any of the front-end risks and asks for unreasonable remuneration. These disputes seemed to have made negotiations in partnership difficult and have created mistrust which both parties reported often brought the partnership to a premature end.

*(iii) Infringement on the academic career*

AIM infringes on academic career – especially that now public universities are shorthanded. This is especially true for those in professional internationalization such as medicine. These academics are dedicating more than their normal working hours to deliver curriculum, while simultaneously having to perform duties to fulfill professional membership requirements. There is also a concern that academics who are overly immersed in the industry via AIM may eventually leave academia for good. A senior public university administrator concurred on this by asserting that:

... public universities at the moment are shorthanded. Our manpower is not enough, especially for professional internationalization. Industry sucks up all the good engineers very easily simply because their carrots are much sweeter than those of the universities (Faculty member A, focus group interview)

*(iv) Opportunity costs*

The concern expressed by the academics is that they will lose seniority in the university when they are attached too long to the industry. The setback in seniority may result in lower remunerations compared to their peers who stay with the university all the time. The same situation may prevail in the case of industry staff participating in mobility internationalization in universities.

## **Synthesis of Findings towards Implications and Conclusions**

The respondents representing four different stakeholders have provided data on the factors, enablers, and barriers to AIM, yet the factors and enablers affecting AIM development have mostly been expressed in negative terms.

The findings have suggested that while there is a genuine attempt to promote AIM by various stakeholders such as the MoHE, public universities, industry players, and policy makers, a lack of clarity in terms of policy framework and guidelines for AIM has been a major stumbling block. Evidence from the interviews shows that Malaysian public universities are not in the position to change their culture, strategy, structure, or build up their trust with the industry player. Conversely, industry players are skeptical about the capability of Malaysian public universities, particularly on the issues of knowledge transfer. This means that the establishment of trust and a shared vision, as well as negotiation skills, are needed to lay the groundwork for AIM while good practice guidelines for effective management of AIM need to be developed and understood by all the stakeholders.

The interview findings are considered as essential parts of needs assessment, i.e. gathering of information for a suitable professional development program (PDP) for AIM. In this case, the gaps in the present state of AIM indicate the existence of fundamental differences in the understanding and interpretation of knowledge transfer and AIM activities, particularly about an understanding of policy and guidelines, knowledge on various mechanisms for AIM, and awareness of good practices for an organizational structure to facilitate collaborations. Conclusively, the findings from this study pave the way for the need to conduct a comprehensive program about AIM in Malaysia. The needs and suitable recommendations are taken into account in the planning of a PDP.

## **Framework for a Professional Development Program (PDP)**

This paper proposes an intervention in the form of a PDP by the MoHE and *Akademi Kepimpinan Pengajian Tinggi* (Higher Education Leadership Academy /AKEPT) that involves a workshop followed by a two-day training session. We consider this PDP series as an important first step for academics, administrators, industry players, and government officers to acquire knowledge and skills to carry out mobility internationalization. Moreover, it provides an opportunity for the participants to develop their capacity for academia-industry collaboration.

The professional development series aims at developing a common understanding and awareness of AIM and advancing participants' skills and knowledge in their engagement and commitment to AIM projects and activities. The overall aim is for the participants (academics, industry

players, and government policy makers) to gain knowledge and understanding of knowledge transfer in the form of AIM as these were the main generic gaps identified in the study. The program's goal is to provide the participants with the platform for networking and building a relationship to gain a comprehensive understanding of AIM and its role in knowledge transfer, as well as develop the related AIM skills, which the study found lacking among all the stakeholders, to enable them to mainstream AIM internationalization.

To enhance the outcome, program participants ought to represent the diversity of stakeholders that exists in the triple helix activities (Figure 2), bearing in mind an overriding consideration, which is to achieve a balance along the three axes of diversity: academics (further divided by those with experience in the industry and those without experience, academics managers and administrators associated with mobility or knowledge transfer activities), industry players and government officers. The involvement of faculty management and administrators is crucial as they have the mandate to apply what they have learned in the program to the related policies and strategies of their respective universities. The academics will need to be supported by their institution to apply what they have learned upon their return from the program. The government officers or policy makers act as the source of contractual relations that guarantees a stable interaction and exchange of knowledge and skills. As such, their involvement as mediators is pertinent to the AIM activities.

The diversity of participants in the workshop and training will also permit the development and strengthening of relationships between key industry players, government policy makers, academic managers and administrators, and academic peers as mistrust was found to be one of the most substantial barriers to interaction among the stakeholders. While we acknowledge that trust takes considerable time to develop, the meeting of diverse participants should provide a platform for stakeholders to explore potential collaboration through awareness of opportunities, whilst at the same time, develop stronger ties, as well as mutual understanding, trust, and confidence with the identified partners. Participation in the training is also intended to provide an opportunity for individuals to develop as professionals, share tacit knowledge, and build new skills and a new community of practice.

### **The workshop and training program**

The findings of the study are used to guide the design and content of the workshop to provide the common platform needed to overcome or reduce the gaps identified between the collaborating allies, and to align strategies for mutual benefits and appropriate gains. It is proposed that this workshop uses the stakeholder collaboration methodology to help bring together a range of stakeholders--government policy makers, private sector, academics to develop a better understanding of the issues and challenges involved in achieving AIM goals and objectives at a variety of scales. Stakeholder collaboration is the art of respectfully turning differences into

progress. However, as with all arts, some skills need to be developed to succeed; to know when and how to use dialogue and when to take action. This workshop will create a platform for interactive dialogues between academics, industry players, and government policy makers in achieving consensus. Since the focus group interviews have highlighted an inherent mistrust of the stakeholders in university-industry collaborations, the workshop will provide a setting in which the participants can communicate values, preferences, perspectives, or even fears related to university-industry collaboration, particularly in AIM activities. The topics and contents of the workshop are presented in Table 1 below.

The workshop represents the interface between academia, industry, and the government to promote interaction and discussion to improve the culture of collaboration and build a mutual recognition that industry, academia, and the government are credible, equal partners. The topics are considered necessary since AIM was considered less successful due to the lack of a common understanding of national policy and guidelines on AIM. Thus, the participants would need a common understanding of the comprehensive concepts of the Triple Helix (academia-industry-government) relationship, the stipulated objectives and goals, and the nature and scope of work in AIM. It is implied from the study that the stakeholders stay engaged when there is mutual trust, appreciation of each other's culture and expertise, transparent communication, and acknowledgment of contributions.

**Table 1: Topics and Possible Contents for the Workshop.**

<b>Topics</b>	<b>Content</b>
Triple Helix and Roles of Stakeholders	<ul style="list-style-type: none"><li>• The concept of triple helix - the relationship between university-industry governments - concept to action.</li><li>• Hybridization elements of university and industry (roles).</li><li>• Role of intermediaries.</li><li>• New institutional and social format for production, transfer, and application of knowledge and skills.</li><li>• Stakeholder collaboration - the need for openness, beginning negotiations, identifying who should be involved, the distribution of rights between the parties.</li></ul>
Common Understanding and Visions of AIM	<ul style="list-style-type: none"><li>• Building trust and creation of synergies.</li><li>• Understanding diverse cultures, values, and orientations.</li><li>• Aligning interest with a win-win approach (proprietary benefits).</li><li>• Effective process moderation: 'boundary spanners' - managing potential conflicts and promoting collaboration.</li></ul>
Leveraging Networks and Expertise for AIM	<ul style="list-style-type: none"><li>• Building relations (between relevant actors among participants).</li><li>• Creating consensus (on objectives, priorities, activities).</li><li>• Developing broad areas (strategies) more likely to be implemented, reviewed, redesigned, and achieved.</li></ul>

**Table 2: Components, Modules, and Contents of Training**

Component	Module and Content
AIM and Knowledge Transfer	<p><b>Module 1:</b> Academic Mobility and Knowledge Transfer</p> <ul style="list-style-type: none"> <li>▪ Knowledge Transfer and Mechanisms Academic Mobility -Models and Types</li> <li>▪ Academia-Industry Mobility (AIM)</li> <li>▪ Policies and Strategies of AIM</li> </ul> <p><b>Module 2:</b> Getting the Most of AIM</p> <ul style="list-style-type: none"> <li>▪ Technology Transfer models</li> <li>▪ Types of Knowledge transfer Agreements and Mechanism (e.g. Innovation vouchers or R&amp;D tax credits).</li> <li>▪ Intellectual Property (the protection and licensing of IP rights)</li> <li>▪ Operational and Ethical Guidelines</li> </ul>
AIM in Action	<p><b>Module 3:</b> Best Practices in AIM</p> <ul style="list-style-type: none"> <li>▪ Examples of best practices from Academia to Industry</li> <li>▪ Examples of best practices from Industry to Academia</li> <li>▪ Specific results or outcome</li> <li>▪ Core pre-requisites for a successful implementation</li> <li>▪ Common features and challenges</li> <li>▪ Same problem – different solutions</li> </ul> <p><b>Module 4:</b> AIM Project Management &amp; Strategy</p> <ul style="list-style-type: none"> <li>▪ Project Management Methodology (PMM)-Formation, Operation, Evaluation, Monitoring, and Control</li> <li>▪ Project planning, Contract management, Ethical guidelines</li> <li>▪ The tangible outcome, Intangible outcome ( Follow-through on Deliverables)</li> <li>▪ Project Portfolio Management</li> <li>▪ Role of Boundary Spanning Project managers</li> </ul> <p><b>Module 5:</b> Development of AIM Proposal</p>
Framework Conditions for AIM	<p><b>Module 6:</b> Institutional/Industrial Strategy and Recognitions</p> <ul style="list-style-type: none"> <li>▪ The institutionalization of decision making</li> <li>▪ Resource allocation/Budgetary Provisions</li> <li>▪ Personnel &amp; Facilities</li> <li>▪ Regulated boundary spaces of information and knowledge ownership, transfer, and sharing.</li> <li>▪ Role of Boundary Spanning Project Managers</li> <li>▪ Incentives and compensation (Appraisal of AIM)</li> </ul> <p><b>Module 7:</b> Managing Collaboration and Conflicts</p> <ul style="list-style-type: none"> <li>▪ Managing conflict, enforcing underlying norms and rules</li> <li>▪ Managing fragmentation (functional mismatch), loss of synergies (resources), and lock-in effects (lack of interaction and open discussion)</li> </ul>

On the other hand, the two-day training program will provide the participants with a comprehensive understanding of AIM and the skills related to AIM project management. The training program is divided into three main components to create a comprehensive understanding among the stakeholders on AIM activities. The first component deals with knowledge transfer which is pivotal for creating an enabling environment for AIM. The second component will deal with the transfer of vital skills to facilitate good practices which are important for a successful practice of AIM. The final component focuses on the development of social competencies, relationships, and communication. The proposed components, modules, and contents of the training program are illustrated in Table 2 above.

The component of AIM and Knowledge Transfer has an important role in raising awareness about models and types of mobility advocated in the research (Figure 1) which will stress the importance of well-planned strategies and the benefits of AIM. Special emphasis is provided for agreements and mechanisms of IP which was considered as an unresolved issue among the stakeholders of AIM. The AIM in Action component can provide intervention for effective management and organizational issues highlighted in the study. The module will showcase best practices of AIM particularly on project planning, monitoring, and effective communication, and outcomes. Addressing the deficiency in those skills is crucial if the stakeholders desire to establish effective collaboration. Training on the techniques needed to initiate, integrate, arrange, execute, and organize AIM projects efficiently will also require participants to work on specific AIM proposals which obligate them to jointly design an AIM action plan, and receive expert advice. At the end of the program, participants are expected to be able to understand the empowering role of knowledge transfer and AIM, the strategies, mechanisms, and measures for AIM, demonstrate skills in writing a proposal for AIM, identify key social competencies required for collaboration, and finally identify desirable values and attitudes for successful AIM. Finally, the Framework Conditions for the AIM component aims to sensitize participants to the environment that nurtures knowledge transfer activities and supports the sharing of expertise. This component addresses structural, organizational, and cultural issues related to AIM and initiatives that can be performed to bridge the gap between academia and industry, and steps can be taken for effective mobility between academia and industry.

The training methods will utilize multiple approaches such as interactive lectures, guided discussion in groups, participant-led small group discussion, mini-presentation sessions, and storytelling. Moreover, each level of components will be evaluated carefully through formal feedbacks from the participants to ensure the effectiveness of the training program.

The proper implementation of this proposed professional development program will systematically reduce barriers affecting the development of AIM in Malaysia. It will also create mutual trust and awareness among various stakeholders to build a strong collaboration, eventually closing the real and perceptual gap between Malaysian public universities and industry players. In the long run, this mutual interaction between academia and industry will stimulate comprehensive leadership development, which is crucial for Malaysia to achieve the status of a developed nation.

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