CASE STUDY 1

EMBRACE THE FINEST MINDS FOR MALAYSIAN HIGHER EDUCATION

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1. Introduction

As Siti Fatanah Hassan walked along the calm Putrajaya lake in late evening of September 2010, she pondered the future human resource planning strategy for the higher education sector. How can people in higher education support Malaysia's dream to be a high income nation by 2020? Yesterday, she was in a meeting with the top management of her department. Her direct supervisor prompted a question which she was not sure of the answer: "Are we sure we have tackled all the critical growth areas we should venture after 2020 and beyond?"… "Do we really have enough lecturers in all those specific areas? Then, the Special Assistant to the Minister interluded: "If we don't have enough, how can we get them? Where do we get them?"

Siti was a 53 year- old senior administrator of Malaysia's higher education system as she grew from being a lecturer in the engineering faculty of a public university to now, one of the decision makers for the higher education sector. The government has identified higher education sector as the leading priority in releasing the country from the middle income trap. Siti was appointed to head up the strategic planning unit of the higher education ministry based on her series of achievement in implementing several key performing programs for higher education.

She gazed across the lake. Those questions raised in the meeting kept running through her mind as she jogged home. One week from that evening would be another heavy day for her. She would have a meeting again with the same committee. She needed to provide solutions to them, if not a full one, at least a three-quarter baked action plan.

2. Day 1: Reaching Out to Search

As she arrived at the office door, she quickly called her subordinates. "Please arrange for several focus group discussions from our critical stakeholders". She directed them. She felt the deep need to inquire and extract concerns, reflections, foresights and ideas of various experts on the way forward for her country. "I cannot just sit in my office and ponder alone on these long-term outlooks". She whispered to herself.

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3. Malaysia... What's the Missing Ingredient for Growth?

Malaysia's vision was to find the best ingredients to liberate it from the middle income traps and transforming it into a high income nation. Undoubtedly, Malaysia was one of the thirteen countries applauded to achieve average sustained growth of 7 percent since 1967 to 1997 (Commission of Growth & Development, IBRD, 2008). Yet, after 1997 it lagged behind six of the thirteen high-growth economies, namely Hong Kong (China), Japan, Korea, Malta, Singapore and Taiwan (China). Growth strategies employed during our track from lower to middle income economy may not be relevant anymore. What was missed? The formula applied within the span of those 25 years merit changes if it aimed to close all gaps that separate us from the rest of other high income, high growth nations. These sets of daunting questions and ambitions provoked the course of implementing strategy for talent management in Malaysian higher education.

Profiles of high income nations portrayed that half or more of holistic growth engendered from knowledge, innovation and a deeper stock of human capital (National Academes, 2010; Royal Society, 2010; Commission of Growth & Development, 2008). If the move from lower-income economies to middle-income economies centers on labour-intensive sectors, high income nations intensely focus its human capital towards advanced technology sectors and emerging industries. However, what glooms at the background was the fact that at the height of Malaysia being encountered by chasms of middle income traps, the number of Malaysian talent migration exceeded 700,000 since 2007.

Advancement in science and technological innovation translucently generate from a disproportionate number of human capital that resides in various organizational locations. History had proven that these locations were the higher education eco-system namely the institutions, high-tech industry clusters and entrepreneurial labs and incubators. Such locations were part of the higher education eco-system. The emerging trend in the 21st century demonstrates China, Australia, Singapore and comrades of emerging nations aggressively spend on innovation and implement actions for talent competitiveness via this specific eco-system, with predominant focus on higher education institutions (National Academes, 2010; Royal Society, 2010).

In high income nations, governments expanded higher education to upgrade skills. They developed strategies in enhancing the number of calibre talents who kept pursuing research and entrepreneurship agenda across a spectrum of key economic areas. Additionally, effective leadership ensued in all spheres of decision making process. Fashionably, governments of innovative societies created direct symbiosis between STEM (science, technology, and Mathematics) and HASS (Human, Arts, Social Sciences) talents. While STEM talents enabled innovation, Arts and Humanities translated science to a wider public via cultural awareness and communication. They became the 'ying' and 'yang' in prospering the rise of the Creative Industry. Likewise, Social Science talents in the area of Law as an illustration, underpinned the efficiency of Intellectual Property, incentivizing and rewarding innovation, while industry captains pathed ways to navigate hurdles of market regulatory and global market penetration. In other words, it takes an integrative appreciation and kaleidoscopic mindset to arrive at our final destination in becoming a sustainable high income society.

In addition, high income nations viewed *talent formation as life-long learning processes*, rather than as training or education. They viewed investment in talent formation benefit economic

independence and prosperity as well as socio-cultural improvement. The idea of *life-long learning processes* equally balance on how these nations fuel two ends of the demographics spectrum: 1) the ageing societies: encouraging retirees to stay in the workforce longer by constantly equipping them with upgraded skill sets; and 2) childhood care: ensuring women in the workforce gain appropriate long leave in order to create smooth mindset transition and germination of future talent pipeline of the nations (OECD Policy Brief, 2007). Each demographic group were well taken care within the sphere of inclusivity.

4. Day 3: Analyzing the Trail

Right after dinner, Siti brewed her third cup of coffee for the day and take the stairs to the attic. She renovated that open space at the third floor of her home, a few years back by adding many large glass windows at all four corners of it. That attic had been a solitary corner for her to produce publications during her professorship day at the university. "Burning the midnight oil again?" Her husband hit a question as she left him with the little dirty dishes. "I thought you will have more cooling time in this administrative position?" He continued. Siti slowly uttered, "Hmmmm…not for now. Not until I get done with this talent planning thing. I need to understand what the data means". Her subordinates have provided her with some document archives that gathered statistics of students in Malaysian Higher Education before she drove home today. She thought of analysing those data. She had to understand what beneath those numbers. The focus groups which lasted the whole day also enlightened her with clearer views on what actually happened within the talents landscape of Malaysia. She was in need to make some sense of those voices (See Exhibit 8) and numbers before she faced the fourth day. She only had a couple days more before the next meeting.

5. Talent Planning for Malaysia Higher Education

Talent planning for Malaysia Higher Education aimed to identify the critical growth areas for the 2020 and beyond. Yet, more information was required to enlighten the eclipse for managing the finest minds at higher education institutions. As an implication of the global financial crisis (2008-2009), student enrolment in 2010 experienced a decline as parents found it more financially challenging to send their children for tertiary education in the private HEIs (See Exhibit 1). While the enrolment into public HEIs (that charge minimal study fees) increased by 4.6% from 2009 to 2010, private HEIs (that charge more expensive study fees) faced an alarming decline of 16% in enrolment from 2009 to 2010. Overall, however, total 2010 student enrolment in all Malaysian HEIs fell by 5% from 2009. In considering a stable economy throughout the projection period would entail the adoption of 11% annual increase in enrolment. This percentage rise (11%) corresponded with Taiwan's annual university student enrolment (10%) during its 15-year period of economic development that catapulted the nation into the high-income nation status before it continually fell to around 4% annual growth of today (Taiwan's Educational Statistics 2006-2007, Ministry of Education). This overarching objective also correlated with the 9th Malaysian Plan (2006–2010), which placed high priority on increasing accessibility to higher education in order to create a critical mass of trained, skilled and knowledgeable workforce who would sustain economic growth, increase competitiveness and support a knowledge-based economy (Docquier et.al, , 2007). The plan was aiming to enrol 1.6 million students or 40% of the 17–23 age cohort in tertiary education by the year 2010, but did not succeed as the 2010 number even decline from the year before, although maintained above the 1 million mark it achieved in 2009.

There are three large groups of students into consideration, namely Post-Graduate (Sarjana, PhD and Professional), Undergraduate (Sarjana Muda), and Diploma or below (include Diploma Lanjutan, Diploma lepasan ijazah, matrikulasi, and Sijil). Professional courses were classified under Post-Graduate as they often enabled the holder to command a salary scale comparative to a post-graduate degree holder. Achievement of an ideal student composition can be based on several developed nations' model as a high growth nation, In foreseeing the challenges ahead, Exhibit 2 depicts the projection based on the a developed nation's model as an option for Malaysia to chart its ways, and it was calculated based on the country's existing level of composition.

All groups of academicians can be taken into consideration when looking into the future of higher education. They are with various academic qualifications due to the inclusion of community colleges, polytechnics, and other specialized institutions in the Malaysian Higher Education Statistics 2009 and 2010 (See Exhibit 3).

A common model amongst OECD countries in regard to achieving sustainable growth concerned prioritizing research and development in science and technology (S&T) by the public and private sectors. All academic areas offered at HEIs can be distinguished into two (2) categories: S&T and non-S&T. Eventually, classification areas that fall under each major category according to the NKEAs can be derived. Nevertheless, as certain NKEAs fell under a general group of educational areas, they could be regrouped into their appropriate classifications, with additional classes being introduced (such as Legal) as to fit the data available in the Malaysian Higher Education Statistics 2009. "Greater KL", one of the critical key economic areas highlighted in the 10th Malaysia Plan was replaced by "Construction-Related" (See Exhibit 4).

The forecast is also based on the ideal student-instructor ratio (S-I Ratio) of each area. There are variations around the world, across different types of educational institutions, as to the relative student-instructor ratio. However, as Malaysia has only begun its incremental emphasis on S&T programs as compared to the currently popular non-S&T programs at local HEIs, its S-I ratio would differ as compared to that of high-income nations. An ideal S-I ratio that basically reflect high income nations' practice is shown in Exhibit 5.

Exhibit 6 highlights the talent pool for the year 2009 according to both, NKEAs and levels of education, based on two student-instructor ratios. The range between 64,001 and 10,1800 as total number of academic staff represents a mixture within the S-I Ratio adopted. The actual number recorded in Malaysian Higher Education Statistics 2009 was 64882, which brought credence to the obtained figures.

Based on 11% average growth of total student population (2008-2009) obtained from MoHE Statistics 2009, the student population forecast used the latest weight of students in each respective area from total student population as depicted in Exhibit 7. In addition, the forecast also includes the shift in emphasis from a non-S&T orientation to a S&T orientation by 2020 and probably beyond, as evident in most high-income nations.

The percentage changes in student composition according to levels of education reflected the move towards achieving the targeted levels in 2020. Assuming all Diploma programs (and below) were only offered at community colleges and polytechnics, and not at universities, the postgraduate to undergraduate student ratio of 1:6 should be considered satisfactory. The ratio for a research

university, however, was much more demanding at 1:4 and as it progressed to a world-class research university status the ratio stood at a remarkable rate of 2:3.

6. Issues of Talent Gaps

A global workforce reality in the 21st century was that the war for talents increased due to critical talents shortage across all industries. Three reasons contributed to this phenomenon. First, world economic power has been shared and distributed not only among western, matured nations, but also Asian emerging economies. Second, the development of communication and computing technology leads to high mobility of talents as organizations could source talents located anywhere, as long as they offered competitive and attractive sets of reward packages. Third, there was a serious decrease of science and technology graduates worldwide, both in terms of quantity and quality when the world was in need for a knowledge-based, innovation led economy. Within these cracks and gaps at the macro level, Malaysia faces an even serious issue.

Despite facts that skilled and educated people were keys to Malaysia's distinct competitive advantage, some 350,000 Malaysians were working overseas, where more than half the number had tertiary education (Ministry of Human Resources, in 2008). The exodus of talented Malaysian was further composited by the fact that the education system, despite high capital outlays through several reform efforts, was still struggling to deliver sufficient numbers of talents with merit skills (NEAC Report, 2010). Undoubtedly, issues of talents were global, and Malaysia was blanketed within such eclipse. These were challenges in materializing the national key economic areas (NKEAs), established under the supervision of Economic Transformation Unit. The key economic areas were 1) Oil and Gas, 2) Palm oil and related products, 3) Financial services, 4) Wholesale and retail, 5) Tourism, 6) Information and Communications Technology (ICT), 7) Education services, 8) Electrical and electronics, 9) Business services, 10) Healthcare, and 11) Agriculture. Higher education institutions' (HEIs') role in Malaysia may need to develop strategies institutions to enhance their courses and programs in these areas. To align with global economic opportunities, higher education in Malaysia may also increase investment in performing research and innovation for growth industries such as green technology, aerospace, renewable energies and sustainable cities.

Active steps had been taken by involved parties in rationalizing the thrusts for Malaysia's Higher Education to transform into becoming an international hub of higher educational excellence. Such transformation fundamentally had begun with concerted efforts towards attaining glory and sustainability of higher education system by 2020 and beyond. Nonetheless, more activities could be implemented.

If Malaysia were to be among the top ten nations for doing business by 2015, HEIs need to strategically detail their actions in utilizing, exploiting and inculcating the information and knowledge. The role of HEI to lay the foundation towards placing Malaysia as a competitive player in the global field via effective and relevant education systems should underline its determination for lifelong learning. The future workforce must always be ready to face challenges due to globalization, stiff competition and the advancement of new technology. In facing those challenges and taking heed of the national aspirations and existing policies, the National Higher Education Strategic Plan underlines and reassesses the role and function of HEIs in order to strengthen the nation's higher education system. The development of Malaysia's education system was tiered on two solid approaches of education and on-going comprehensive training. The first intent aimed towards knowledge-based learning and research conducted to give influence on the academic-

industry collaboration, while continuously serving the community. Secondly, HEIs could increase efforts to provide the route to higher and lifelong learning through existence of learning institutions such as open universities, polytechnics and community colleges. In the course of such practices, HEIs would be providing prospective edges and mobility to students to pursue higher level of education and training that lead to fulfilling the needs of talents in the industry and the nation's positive economic growth.

7. Day 7: Synthesizing the Lights

Siti took out her jogging shoes from the shelf. She had utilized her days along the week to synthesize all sources of information that she could reach to prepare for tomorrow's meeting with the Talent Planning Committee. Only her slides presentation was not fully done. But she knew how to structure her contents for tomorrow. She needed some fresh energy first, and she would come back and complete them.

The 'clues for success' for Malaysia to become a high income nation concerned a wide range of issues, ranging from research capacity to quality assurance. She viewed that all Malaysian HEIs must converge on three major points that emphasize the critical roles of their doctorate program. Firstly, the doctorate should be based on original research in which the structures were to be seen as tools for institutional responsibility. Institutions must provide a high-quality, inclusive research environment. Universities must be built on a critical mass of research to sustain doctoral education. She thought that the doctoral education and approach should be profoundly dependent on the current national growth areas, as well as the needs of beyond 2020. As she ran, she breath in the idea that the individual aspect of doctoral education has to be stressed. As researchers, doctoral candidates all have highly individual paths, because good research does not follow a straight and predictable course. The same applied to researchers' careers. Doctorate holders occupy very different positions, where their research mindsets were highly valuable. Doctoral education must give ample space for and support to this individual development. Malaysian HEIs has to be the main driver of the reforms and should thrive to be at the forefront of doctoral education globally. It is important to take note of the progress made by universities and give them the autonomy necessary to continue developing doctoral education.

While running, Siti continued thinking. For tomorrow's presentation, either she made or broke it, she knew that it would not end her assignment. This was just a preamble; a little light to go through the tunnel. How to gain those large numbers of talents was also her daunting task.

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APPENDICES

Exhibit 1: Student Enrolment in HEIs, TARC, Polytechnics and Community Colleges (2008, 2009 and 2010)

Public HEIs	Student Enrolment	2008	2009	2010	Average Growth (%)
	Public HEIs	419334	437420	462780	
	KTAR	26235	25179	23774	
	Polytechnics	85280	86471	87751	
	Community Colleges	17082	17279	18200	
	Subtotal	547931	566349	592505	
Growth rate (%)			3.4%	4.6%	4%
	Private HEIs	399897	484377	408034	
Growth rate (%)			21%	-16%	2.5%
TOTAL		947828	1050726	1000539	
Growth rate (%)			11%	-5%	3%

Source: Malaysian Higher Education Statistics (2010)

Exhibit 2: Student Group: Target Composition and Average Annual Growth / Decline (2008 - 2010)

Student Group	2008	%	2009	%	2010	%	Target Composition by 2020	10-year Growth/ Decline Rate	Average Annual Decli
Post-Graduate	59457	6%	77308	7%	96684	10%	20%	10%	1%
Under-graduate	421747	44%	470772	45%	439167	44%	35%	-9%	-0.9%
Diploma and below	466624	49%	502646	48%	464688	46%	45%	-1%	-0.1%

Source: Malaysian Higher Education Statistics 2010

Exhibit 3: Academicians Classified based on Qualifications (2008 - 2010)

Academicians	**2008**	**%**	**2009**	**%**	**2010**	**%**	**Target composition**
PhD	8746	15%	9455	15%	10052	16%	75%
Master	26184	46%	29401	45%	31157	49%	15%
Degree	17542	31%	19614	30%	19262	30%	
Diploma	3589	6%	2385	4%	2357	3.5%	10%
Others	1094	2%	4027	6%	1008	1.5%	
TOTAL	**57155**	100%	**64882**	100%	63836	100%	100%

Source: Malaysian Higher Education Statistics 2010

Exhibit 4: Classification of Academic Areas based on NKEAs

Major Group	Classification	Educational Area
Science and Technology (S&T)	Healthcare	Medicine, Dentistry, Pharmacy, Health Sciences
	Science	Pure Sciences, Applied Sciences (Biology, Physics, Chemical, Biotech, Nanotech, etc.)
	Agriculture	Agriculture, Aquaculture
	ICT	Computer Science, Telecommunications Engineering, IT
	Engineering	Oil and Gas, Civil, Chemical, Aerospace/Aeronautics, Mechanical, Materials, Electrical & Electronic and other
	Construction-Related	Architecture and Quantity Surveying
Non- S&T	Business-Related	Accounting, Business Administration, Economics, Finance
	Tourism	Hotel/Hospitality/Tourism management & culinary arts (part of other Arts & Social Science)
	Education	Education, Language and Linguistic
	Legal	Laws (Civil and Shariah)
	Others	Islamic Studies, Arts & Design & Music, and other Arts and other areas of Social Sciences

Source: Malaysian Higher Education Statistics 2010

Exhibit 5: Ideal student-instructor ratio (S-I Ratio) of each NKEAs

Major Group	Classification	Student-Instructor Ratio	Student-Instructor Ratio (Targeted)
Science & Technology (S&T)	Healthcare	5:1	4:1
	Science & Technology	15:1	10:1
	Agriculture	20:1	15:1
	ICT	15:1	10:1
	Engineering	30:1	10:1
	Construction-	30:1	10:1
Non-S&T	Business-Related	30:1	15:1
	Tourism	15:1	10:1
	Education	15:1	15:1
	Legal	30:1	15:1
	Others	30:1	15:1

Source: Malaysian Higher Education Statistics 2010

Exhibit 6: The Current Talent Pool Based On NKEA, Education Level and Student-Instructor Ratios (2009)

Area of Specialization (2009)	Post-Graduate	Undergraduate	Diploma and Below	Subtotal	%	S-I Ratio (Current)	Current No. of Instructor	S-I Ratio (Targeted)	Targeted No. of Instructor
Healthcare	6758	28044	61008	*95810*	0.091	5:1	19162	4:1	23953
Science & Tech	10863	34807	18409	*64079*	0.061	15:1	4272	10:1	6408
Agriculture	217	3332	1628	*5177*	0.005	20:1	259	15:1	345
ICT	4918	40740	50096	*95754*	0.091	15:1	6384	10:1	9575
Business-Related	18120	130147	128120	*276387*	0.263	30:1	9213	15:1	18426
Tourism	482	6176	31253	*37911*	0.036	30:1	1264	10:1	3791
Education	12137	69020	31070	*112227*	0.107	30:1	3741	15:1	7482
Engineering	10802	75886	106477	*193165*	0.184	15:1	12878	10:1	19317
Construction-Related	1450	14977	18242	*34669*	0.033	15:1	2311	10:1	3467
Legal	1142	11326	5569	*18037*	0.017	30:1	601	15:1	1202
Others	10419	56317	50774	*117510*	0.112	30:1	3917	15:1	7834
SUBTOTAL	*77308*	*470772*	*502646*		1.000				
TOTAL / %	7%	45%	48%	1050726			64001		101800

Source: Statistic Malaysian Higher Education Statistics 2010

Exhibit 7: Student Population Forecast according to Specialization Area: 2012 – 2020

Major Group	Classification	2012	2014	2016	2018	2020
Science & Technology (S&T)	Healthcare	141976	184136	238217	307484	396071
	Science & Technology	95417	123937	160557	207498	267580
	Agriculture	7616	9738	12434	15858	20201
	ICT	141976	184136	238217	307484	396071
	Engineering	287257	372697	482324	622762	802408
	Construction-Related	51732	67280	87259	112887	145712
Non-S&T	Business-Related	349480	407223	472944	547235	630535
	Tourism	47852	55772	64790	74990	86434
	Education	142120	165545	192188	222281	255989
	Legal	22705	26558	30977	36016	41727
	Others	148874	173512	201568	233301	268905
	TOTAL	1437005	1770534	2181475	2687796	3311632

Source: Malaysian Higher Education Statistics 2010

Exhibit 8: Emerging Workforce and Industry Trends, Issues and Challenges in Malaysia