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University of the Future: Reshaping Malaysian Universities Relevance through Humanising Education and 4IR

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Abstract: **The purpose of this paper is to examine the literature on factors that influence and reshape the future Business Model of universities. It evaluated alternative business model and value proposition for Malaysian Universities of the Future (UotF). This paper adopted the design and system thinking approach. Different customer segments of University have been interviewed. The strategy canvas has been used with business modelling tools such as Business Model Canvas (BMC) and Value Proposition Design Canvas (VPC), these are the modelling tools, they were used to design and evaluate alternative business model and value proposition. It has supposed that the University of the future is linked to a range of business to ensure its sustainability, and to have multiple sources of funding. Therefore, it is recommended to offer a variety of values such as Learning/ Researching/Improve served in several channels, mostly linked to the digital world, and forms balanced future leaders. In our opinion, these generic prototype options will help university decision makers, planners, and relevant stakeholders to continuously enhance and customize the sustainable, agile, and competitive business models.**

Keywords: **University of the Future, higher education, Fourth Industrial Revolution (4IR), Business model, Humanising education.**

1. INTRODUCTION

The higher education is under radical transformation, as the globalization forces, models of new business, and the fourth industrial revolution 4IR they transformed other economic industries during the last twenty years. The higher education role in the economy and society is changing and it will have to change its delivering ways of services, to operate its institutions, and to administrate its educated assets to create high influencing values, stockholders' solutions, and virtues. Universities are contending on a general level of students, academics funding, the universities which can resist and well integrate the digital capabilities will benefit in the age of digital. Meanwhile, the higher education providing cost will continue increasing, while the refunding sources will be eroded, and Lack of balance of teaching, research and community service[10]. The present general University business model — a broad-based teaching and research institution, with a large base of assets and back office — will not be viable in all but a few cases [03]. The University of the future needs a dynamic and innovative business model. It is difficult to analyse complex problem without appropriate methodology and tools of modulating. The BMC (Business Model Canvas), EM (Environmental Map), and VPC (Proposition Design Canvas) are using to analyse, formulate, design, and estimate alternative business models and value propositions for the UotF. In this paper, we are going to explore the application of BMC to help analyse, design and construct practical business model options for the University of the future.

2. PROBLEM STATEMENT

The cost of providing higher education continues to rise, while the sources of funding including funding from the governments have eroded [13, 15, 17]. The cost of pursuing higher education and entering universities is regarded as expensive and most students are in debt after graduating. Students are paying thousands to enrol for a course and the quality is said to be lower than expected which resulted in higher unemployment as compared to school leavers. This situation has prompted the public to question the value of higher education. At the same time, the higher education industry is driven by a number of drivers of change such as globalization, new business models, and 4IR. Some of these drivers of change are disruptive, innovative, borderless and democratized, enabling anyone to have a global impact. For examples, Uber and Grab have disrupted the taxi industry; AirBnB has disrupted the hospitality industry; Eric Magicovsky could be anywhere raising USD10 million from 69,000 people on Kickstarter; and enhancing the well-being of rural communities [03]. As a good example of missed humanising education influenc on higher education is what happen lately in Kuala Lumpur, where a group of people including students, caught in raids of drug-fuelled parties in KL [27]. A number of key studies have argued universities are in need of new business models in order to stay relevant and sustainable. The higher education sector has no choice but to reinvent itself [13; 15, 17].

3. METHODOLOGY

This paper adopted the design and system thinking approach. Strategy canvas with business modelling tools such as the Environmental Map (EM), Business Model Canvas (BMC) and Value Proposition Design Canvas (VPC) are used in analysing, and subsequently to formulate and design business model alternatives for the University of the Future. Business modelling tools allow for different approaches of doing business to be modelled in sufficient details enabling us to formulate, design and validate the business before embarking on it. However, in this paper we have restricted the scope to analysing, designing, and generating alternative business models. The business models formulated will be validated by interviewing University leaders, Students, Alumni, Parents, Community, Government. In this paper, we focus our business model design space to those having the characteristics of Value Proposition, Customers and Partners, Key Resources and Activities, and Finance driven [10].

4. LITERATURE REVIEW

4.1 Business Models of University of the Future:

The University of the Future in literature, in general, have recommended different strategic business models options for the Higher Education decision makers and stakeholders to choose [13, 15, 16, 17, 03, 18]. Cost and funding are major interests that affect the sustainability of whole recommended business models. Endowments and gifts from generous donors are the major strategies to guarantee University sustainability [01, 19]. The models proposed were generally based on static models which are not immediately amenable to dynamic scenarios of the University of the Future. These cannot fully consider the increasing complexity of university campus environments [20]. According to [13, 17] given the trends of customer demands, digital technologies, methods of delivery, the democratisation of knowledge and funding, the university has to choose a strategic business. university business models becoming more diverse and anticipated three broad lines of evolution for the University of the Future Models [13].

1. Simplifying the status quo - Some universities will keep operating as broad-based teaching and research institutions, conversely will gradually transform the way they deliver their services and administer their organisations — with major implications for the way they engage with students, government, industry stakeholders, Outsourcers [9], secondary schools, and the community [3], professional and working adults [10].

2. The niche dominators - Some established universities and new entrants will fundamentally reshape and refine the range of services and markets they operate in. These universities with the new entrants will focus on target 'customer' segments with "just-for-you" education, research and related services — with a concurrent shift in the business model, organization, and operations [3, 10].

3. Changes- Private providers and new entrants will carve out new positions in the 'traditional' sector and also create new market spaces that merge parts of the higher education sector with other sectors, such as media, technology, innovation, venture capital and the like. This will create new markets, new segments and new sources of economic value. Incumbent universities that partner with the right new entrants will create new lines of business that deliver much needed incremental revenue to invest in the core business — globally competitive teaching and research and community wellbeing [4, 10].

4.2 Factors of Change in the Higher Education sector:

When we use the business model of Australian University - a broad-based teaching and research organisations, with a big base of assets and back-office –. There are five megatrends in the higher education that will have influences in the next ten years [13, 15, 17]: 1) The democratization of knowledge and access [10, 6]. 2) Contestability of markets and funding [10, 9]. 3) Digital technologies [10]. 4) Global mobility [10] [21]. 5) Integration with industry. 6) Access and equity [2]. 7) University funding [21]. 8) Research and innovation [21]. 9) Global reputation [21].

4.3 The Fourth Industrial Revolution (4IR):

The exploding of the revolution of the 4IR (Fourth Industrial Revolution), has touched most kinds of industry around the world, where it transformed the whole ecosystems of services, production, management as well as governance [05]. The Malaysian Higher Education Ministry has themed the year 2018 by "Higher Education 4.0: Knowledge, Industry and Humanity". It calls for revamping the Malaysian higher education system and embracing the 4IR. This is to make certain that all higher education institutions will be relevant, creating values, and remain competitive in the dawning of 4IR [23]. Nowadays, the cell phone is as a human extension. The smartwatch is the extension of identifying the person and what is he doing. All things get linked, incorporated, customized and smart. For graduates have to be ingenious, entrepreneurial and have cognitive suppleness in dealing with complexity. The 4IR era needs to converge Man and Machine, so it is demanded students and lecturer to ern multi-disciplinary knowledge and skill-sets [22].

-Within the next ten years the VR/AR (Virtual Reality / Augmented Reality) is going to develop, the interplay and low cost, the administration of immersive experiences will become more practical by dealing with objects, concepts, or processes, like simple learning workflow in different stages of education, from the first levels of study to the highest [6].

-The innovation star to disturb the higher education institutions, and oblige them to think in renewing of their way of delivering services. Modern curriculum' types, and the changes in focusing on swishing from teaching to learn models [4].

4.4 The megatrends:

The transformative megatrends are the global forces which shaped the world of future by their far-attending influences on people, nations, and business [17]. The higher education can be impacted by (a) new business model, (b) labour market shifts beyond BRIC, (c) skills mismatch, (d) rapid urbanisation, (e) innovation, connectivity, convergent and mobility, (f) economic shifts and she-economy, (g) capacity imbalance, and (h) budget pressures. These megatrends will compel institutions to offer more relevant, affordable, and flexible academic programmes [14]. Digital capabilities including 4IR have reshaped and transformed the way of how education is delivered, accessed and the way value is created in higher education [10].

4.5 Modern Entrants of Higher Education Providers:

Education is evolving. In future, there will be the new recruitment of students by big companies like Google that will provide better value for students, educators and other key stakeholders. Google has provided various innovative programs and resources to develop skills for the future [24]. Amongst the new entrance is Taobao University of Alibaba, it is potentially to become as a University of the future model. It consists of a faculty of senior management from the digital marketplace and it presents classes on developing digital businesses (Charles, 2017).

4.6 The Malaysian Higher Education Blueprint 2015-2025:

This blueprint elaborates the current situation of Malaysian higher education system and highlight where it will go in the future. The Malaysian Education Blueprint, or MEB (HE), outlines 10 Shifts that will spur continued excellence in the higher education system. All 10 Shifts address key performance issues, expected outcomes, and global trends that are disrupting the higher education landscape. The MEB (HE) also aims to unleash and empower both private and public HLIs to push the boundaries of innovation and strive for institutional excellence in all its forms [22]. Eight universities of Malaysia have been awarded by The Malaysia Digital Economy Corporation (MDEC). Continuously this effort will be improved on by the HLIs selection and by working with the industry based on requirements and demands. Moreover, the benchmarking with other countries to see how they produced digital innovation (HEA, n.d) [19].

4.7 University and society:

There is a powerful impact on a human being in social dealing to exchange knowledge. The impact cannot be neglected in models of management, particularly in highlighting of a progressive stakeholders' awareness on the importance of individual resources kept for the organizations' permanence in which they belong [27]. Because of the university is an actor endowed of a" long-term" perspective. So, it is able to influence the local dynamics towards models that are more efficient, effectiveness, and affordable model [25]. The local development economy which is the real contribution of knowledge that is related to the management of knowledge processing, and it is that can be Offred by the university [26]. However, there is still a big contrast of living like a suicide between a lot of countries that are considered as "successful" in education. This is when the education is not well-managed to cure different tensions as diffused. Obviously, this is caused by not attained individual balance. The goodness of balancing despite nation, religion, or race. This goodness includes honesty, sincerity, purity of heart, self-sacrifice, trustworthiness, ethical, humility, virtues, respectful, and such like [12]. Briefly it is Amanah, and in general, it holds all things that God has entrusted to us and instructed us to take care of [08]. The purpose is ambitious because it needs a revision in perspective of university's model of management and domestic factors but it presents several chances in economic form and social point of view [11].

5. THE PROPOSED (BMC) OF UOTF

The Business Model Canvas (BMC) in the context of future higher education is formulated and shown in Figure 1. Intuitively the Value-driven and Customer-driven strategy interest in on the Value Proposition block and Customer section block of BMC successively, ought to be one of the principal plans to be involved in guaranteeing the utilities of the future business models. Value-driven for the new UotF business model could involve Teaching & Learning, Broad range of HE disciplines - cooperating merging unprofitable areas, Reputation / Ranking, Certification, Diploma, and Finding jobs/ Skilled workers are excellence for modern and industry specialist students; R&D&I, Books in Islamic and industry excellence in providing high impact solutions to universal big challenges; Face to face specialist, Business Advice, freemium knowledge excellence for Donors, Community, Alumni, and Parents; Islamic content excellence for Islamic content wholesalers & consumers- co-creation and Community.

The Finance driven strategy, focusing on the Income Flow Frame and Cost Flow Frame of BMC respectively, also ought to be one more essential strategy to be engaged in making certain the viability of the future business models. Cost is a common large concern attention having an impact on all universities into the future. Optimum utilisation of resources, managing RoI, and cost efficiency have to be part of UotF business model. Income, in generally broad-based universities depended on various sources of income like endowments, waqf, donation, CSR funds, and other gifts. These various sources of income side, from fees and grants, must be engaged in guaranteeing the viability of UotF business model.

The Resource and Activities driven strategy focusing on Key Resources and Key Activities Frame of the BMC, ought to also be one more essential strategy to be engaged in making certain the viability of the future business models. within the digitalization and 4.0IR era, the digital ability in terms of a platform, talent, and lean management and silo-free ecosystem have to be engaged in guaranteeing the viability of UotF business model [10]. The strength collaboration of University with industry to co-create course content, cooperate on research, and offering work-inserted learning. Universities which perform this proficiently will win in the market, both with students and funding from industry [9].

The Partnership driven strategy focusing on Key Resources and Key Activities Frame of the BMC, ought to also be one more essential strategy to be engaged in making certain the viability of the future business models. within the digitalization era, the Digital ability in terms of platform for canal partners, physical and digital resources partnership, silo-free industry value-chain/ecosystem and lean administration have to be engaged in guaranteeing the viability of UotF business model [10].

6. VALUE PROPOSITION DESIGN CANVAS (VPC) OF UOTF

The Value Proposition Design Canvas (VPC) within the context of future higher education is designed and viewed in Figure 1 and Figure 2. They show more details about customer's segments. For local student their needs are about graduating and skills, but their pain are about education system and fees. International student their targeted values are knowledge, graduating, and skills, their pain were about education system and fees as well. Most students gain was about knowledge, access, time, and cost. Parents are looking for an important knowledge for their descendants, but society

needs to raise its huminasing and educational level. Government wants high qualitative knowledge. The university leaders ask for more active power hand. The figures are two illustrations of the customer parts mentioned in the BMC. More customer sections mentioned are objective customers, donors/sponsors, Public and "Special needs" groups. Figure 2 briefly highlighted the customer's key job-to-do, pains and gains, whereas the UotF is providing values to the Student in terms of Products & Services, Pain Relievers, and Gain Creators [10].

Result of analyse collected data in enhanced BMC and VPC

Participants

The participant students in the interview were from Malaysian universities. The student's segments were males and females, undergraduate (UG) and postgraduate (PG), local and international. They have been chosen in the way to be proportionally equal in each segment of participants as follow, the local UG student were 11 females and 9 males, the international UG students were 10 females and 10 males, the local PG students were 10 females and 10 males, and the international students were 10 females and 13 males. The alumni, parents and people were chosen randomly from the society. They were 22 Alumni students, 10 parents, 19 matured students. Two university leaders one was from the strategic planning department and the second from information technology department. The government participants were from embassies and local government. They were 2 people from 2 different embassies and one from local government.

The result of analyse

The undergraduate students were very interested to be graduated and earned professional skills in 90 per cent. 70 per cent of them sees the traditional education system is very old, the 80 per cent of international students add that the funding, tuition fees, and dept are also painful.

The postgraduate students' answers were more about earning research and innovating knowledge skills to get hired easily. They pretend also their pain against traditional education system and dept, but more than 75 per cent of international students have pain with tuition fees, traditional cost and system, as well as, department.

All participants students' gain answers were about the study programmes to be qualitative, low cost and time with a flexible schedule, and easy to access.

The alumni answers were about the need to continue studying. 70 per cent of them find themselves to be graduated from a university and do not have priority after being graduated in acceptance is not suitable. However, they would like to have a discount in cost and high quality of programmes to improve more their skills.

The majority of parents' needed job was a qualitative knowledge for the successful future of their descendants. However, they were in pain with tuition fees and poor courses' quality but they hope to have a cheap cost and high-quality programs for their descendants.

The society answers were more about the positive influence of the university on the society but do not like for the university be without real contribution, the people want a true contribution in the field of culture, economy, and social with great raise of knowledge.

The government talked about their need for high skills and knowledge. However, they argued against the wasting of money on unqualified programmes. They hope for universities to offer programmes contribute more in science and economy development.

The universities leaders revealed the need of universities to hire more students and lecturers and to be more productive also to maintain a good name. The scalability and fixed cost are the clearest pain for them. However, they see the prestige and access to syllabus are amongst the university gains.

The Validated BMC and VPC

After the data collection and analyse, the research finding was organised under BMC validated by the interview of CIO & Head of Strategic Planning and VPC validated by the interview of various customer segments. The following figures are the finding:

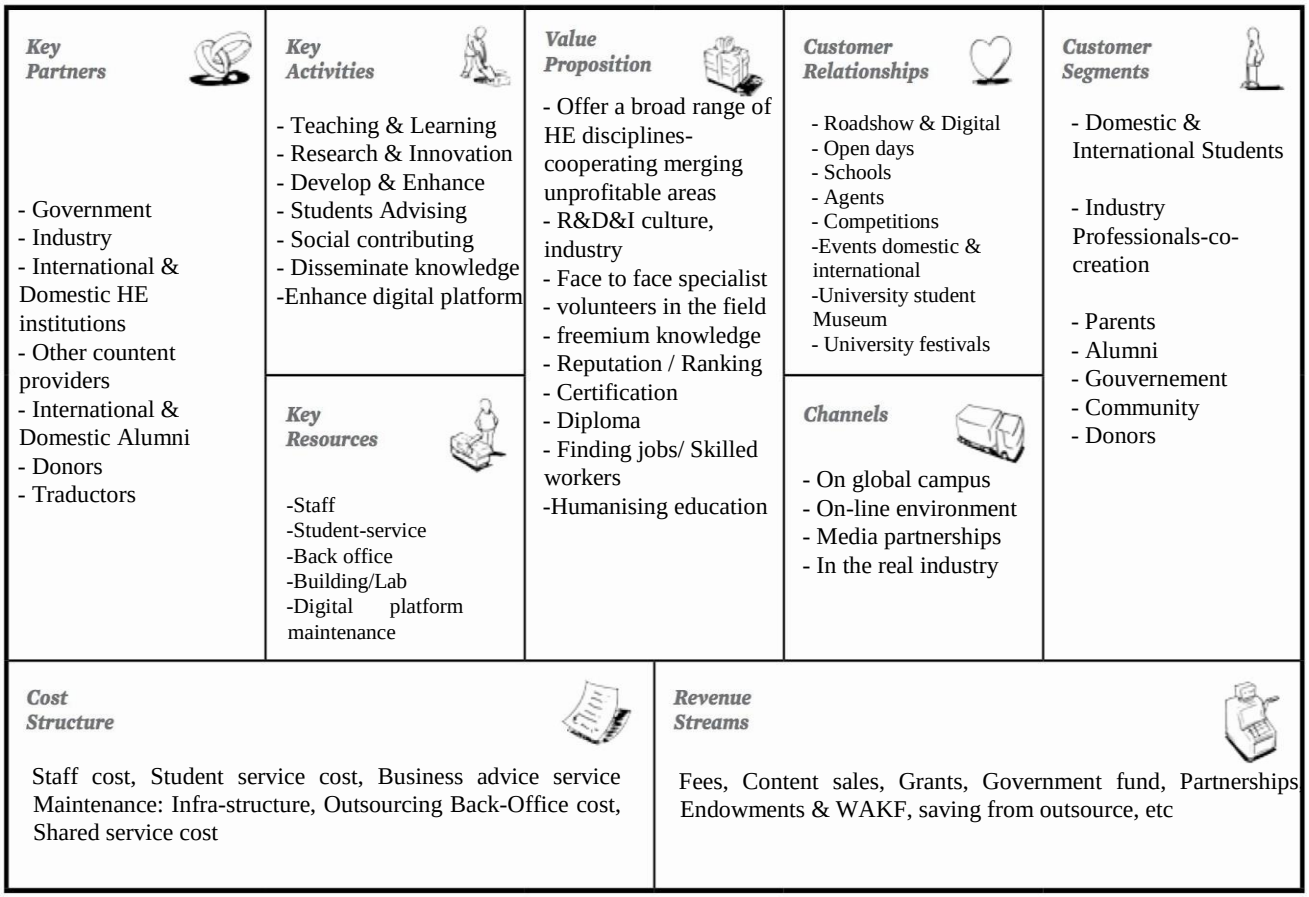

Figure 1: Evaluated BMC of the university of the future

Segment of Customers	Job to do	Pain	Gain	Value Proposition		
				PRODUCT & SERVICES	PAIN RELIVERS	GAIN CREATORS
Local UG	- Graduate & employment Expend skills	- Traditional education system	1- Cheap cost 2- Time saving 3- Flexible (Time/place) 4- Easy access 5- Create your own pace 6- Unique knowledge 7- Campus engagement	1- Contemporary books plus multimedia 2- Open access publication 3- Tailored to industry &Grand challenges 4- Unique programmes 5- leading academics & practitioners as mentors & coach 6- Accredited university	1- Student scholarship 2- Wakf funds 3- Outsource Admin division 4- Digital & iterative learning	1- Access to relevant & contemporary digital content / solution 2- well-equipped faculty
International UG		1- Tuition fees 2- Traditional education cost and system 3- Student debt				
Local PG	1- Learn /Research/Improve Graduate & employment Expend skills & knowledge	1- Traditional education system 2- Student debt				
International PG		1- Tuition fees 2- Traditional education cost and system 3- Student debt				
Alumni	- Continue studding	- No priority after graduating	1- Tuition discount 2- Hiring opportunity	- Programmes flexible in knowledge and schedule	- More flexibility online and at campus	- Special discount in tuition fees
Parent	- Good knowledge of success future for children	1- Tuition fees 2- lack of quality of course	1- Cheep cost 2- High quality of program	- Ensure modern programmes for their children	1- Tuition fees help 2- important programmes	- Meet jobs for students
Society	- Good influence on society	- No contribution	1- Contribution in field (Culture, economy, and social) 2- Raise awareness	- Programmes in society	- Programmes in public area like mosques	- Social Student volunteer groups
Government	- Perfect Skills & knowledge	- Waiting of money for unqualify programmes	- Programs contribute in science and economy development	- Modern programmes	- Ensure the quality of the programmes	- Tailored to industry &Grand challenges
University leaders	1- Productivity 2- recruiting students 3- Recruiting lecturers 4- Maintain good name	1- Scalability 2- Fixed cost	1- Prestige 2- Access to syllabus	1- Tailored content 2- Engaging partner ship	1- Joint venture/ collaboration 2- Audit	1- Learn faster 2- Internationalisation

Figure 1: Evaluated VPC of the university of the future

7. CONCLUSION

The validated BMC and VPC show the consumers segment's needs. They also give future vision about the University Values [3]. The success of the University of the future depends on its strategic plan power and the way of dealing with 4.0 IR, factors of changes, the megatrends, and the modern entrances. Moreover, the university's influences on society in term of humanity, economy, social, and its relation to the government also have a critical role. On the other hand, the University of the future should hold multiple partners and choice values for multiple customer segments. However, it still left needed research about providers segments, as well as, more research about funding. In addition, due to the importance of the topic, namely a few publications done on the University of the future. This field still needs more research to more clarify the challenges and the needs of the University of the future.

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