

A CONCEPTUAL MALAYSIAN PRIVATE HEALTHCARE UNIVERSITY-OF-THE-FUTURE BUSINESS MODEL: STAYING RELEVANT IN THE DIGITAL AND POST-COVID ERA

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ABSTRACT: In today's increasingly interconnected and globalized world, global mega forces including geopolitical, economic, technological and environmental have caused the landscape of higher education to become volatile. Higher education institutes (HEIs) have been faced with increasing scrutiny, competition, regulation, financial and societal challenges. Moreover, along with the unexpected arrival of the COVID-19 pandemic and various disruptors driving for change including the evolution of digital technologies, democratization of knowledge, global mobility, demographic shifts, and the rise of online educational services, HEIs are in need of new alternate business models for agility, relevancy, and to continue to thrive and operate to offer value and reclaim their position as drivers of innovation, economic development and societal well-being. This paper develops and proposes through the adoption of the design thinking methodology an alternate conceptual business model for a Malaysian private healthcare University-of-the-Future (UotF) using the renowned Business Model Canvas (BMC) and Strategy Canvas (SC) frameworks. The results from the analysis and design of the BMC and SC indicate that the principal changes required to digitally transform the university to a UotF include: the adoption of an open learning system for flexible and lifelong learning; transitioning the campus to a more 'smart', eco-friendly and sustainable campus; incorporating the latest artificial intelligence, machine learning algorithms, and data analytics to improve the university's management systems and enhance delivery mechanisms for teaching and learning; and to improve community engagement relationships and partnerships to deliver value to the economic, health and safety of the society, as well as to leverage the open learning system to provide curated courses to niche categories of students locally and globally.

KEY WORDS: *Digital Transformation, Healthcare University, University-of-the-Future, Business Model Canvas, Strategy Canvas.*

1. INTRODUCTION

Over the past decades and especially throughout the last couple of years, HEIs and other educational institutions all over the world have been undertaking major changes and rethinking their strategic plans and business models. The

unprecedented arrival of Covid-19 has disrupted the business landscape and destabilized the economies of societies all over the world. HEIs have already been gradually going through transformations due to a variety of forces driving for change, such as the ever-growing evolution of digital technologies, the accessibility of information and data everywhere through the internet, global mobility, continuous changes in the job landscape, increasing competition locally and globally, the rise of lifelong learning (Dahlan et al., 2020; Ernst & Young, 2018; ADL, 2016) and the arrival of the fourth industrial revolution. However, with the arrival of the Covid-19 pandemic HEIs were forced to fast-track and make drastic and immediate digital transformations such as the implementation of online distance learning to continue operating during the lockdowns.

HEIs have throughout history acted as repositories and generators of knowledge, and have equipped and prepared students with the necessary skills to increase and enhance their abilities, passions and personal development in order to contribute to the social, economic and political landscape of their societies. Therefore, to stay relevant and continue operating, HEIs have to leverage, incorporate and institutionalize with the assistance of digital technologies innovative learning and teaching delivery mechanisms, enhance and introduce new market channels, implement sustainability methods, contribute to cotemporary matters, and manage the expectations of the stakeholders. As a result of the aforementioned issues, majority of the HEIs and other businesses are looking to set efficient and innovative strategic plans to enhance their business models to undergo the necessary transformations in order to remain relevant, continue operating, and continuously offer value and contributions to produce a cohesive prosperous and sustainable society.

2. PROBLEM STATEMENT

As stated and recognized in the Malaysian Education Blueprint for Higher Education (MEBHE) (2015), Malaysian HEIs have to transform their education business models such that the graduates are instilled with an entrepreneurial mindset and possesses a variety of skills enhancing their employability skills as well as the ability to create jobs, and to empower them to become lifelong learners who continuously take the task to upgrade or learn new skills throughout their lives. MEBHE encourages every individual of the society to embrace and promote lifelong learning regardless of their age, to take ownership of the development of their own skills and to pursue and continually learn when opportunities are available. However, the traditional physical face-to-face based models of higher education places constraints to the lifelong learning approach. Lifelong learners can easily learn through the information and data available on the internet and books. However, such methods are not accredited and an alternate approach would be for HEIs to provide open learning education accessible online through digital platforms. Open Learning through online digital platforms also facilitates collaboration and community engagement with specific communities locally and globally, where the university can develop courses that are curated for a specific endeavor such as digital entrepreneurial courses for the B40 youths, digital literacy courses, health literacy courses etc. In present times with the ever-growing innovations in digital technologies, post-covid era, and with the rise of online educational services, HEIs have to re-evaluate their existing strategies and business models for the three main

categories, namely, teaching and learning, research and innovation, and community engagement in order to remain relevant, offer value and reclaim their position as drivers of innovations, sustainability, economic development, and societal wellbeing.

3. OBJECTIVES

The main objective of this paper is to analyze and assess the current business model of a Malaysian Private Healthcare University in order to design, generate and validate an alternate agile and innovative business case solution. The alternate business case is developed with an emphasis in leveraging current digital technologies to digitally transform the university for relevancy and sustainability.

4. METHODOLOGY

The design thinking-process approach was used as the methodology for formulating and designing a new conceptual business model for a Malaysian Private Healthcare University of the Future. The design thinking process is a method that is used non-linearly and iteratively to design and validate new or alternate solutions using a forward-looking approach and centered around the customers and their needs (Diderich, 2020). The design thinking approach used for this research involves four stages: first to observe and understand the existing and potential situations; second to define the problem at hand through learning, identifying and classifying the information obtained; third to design through ideating and prototyping using both analytical thinking (deductive and inductive) and intuitive thinking; and fourth to further validate the proposed design. Testing the final proposed conceptual business case through implementation would be the fifth stage, however, such a task is beyond the scope of this paper, and this paper shall focus on generating and validating a business model using Osterwalder & Pigneur's (2010) Business Model Canvas (BMC) framework and highlighting the changes in the key value offerings by means of Kim & Mauborgne's (2017) Strategy Canvas (SC) framework.

5. LITERATURE REVIEW

5.1 COVID-19 and Drivers of change transforming higher education institutes.

The arrival of the COVID-19 pandemic has brought unprecedented effects and disruptions to the lives of everyone worldwide and destabilized the socio-economic landscape of societies. Throughout the COVID-19 pandemic HEIs were unable to provide a place for students to study face-to-face and live-in close proximity. Students and the academic staff had to cancel events, workshops, conferences, sports, etc. and transition from the physical face-to-face delivery mode to the online distance delivery mode (Ali, 2020). Hesse, Kobsda, & Leiser (2021) in their global learning report indicates the following key findings in digitally transforming teaching and learning, namely: (i) there is a profound amount of inequality in the access of technological infrastructure, conflicting learning experience from the expected experience, and challenging learning environments outside campus; (ii) the university teaching staff and faculties required assistance and support to transition to online delivery mechanisms which led to unsatisfactory standards of online teaching due to instructors having little or no experience using digital technologies

for teaching previously; (iii) the implementation of digital learning necessitates that the digital transformation occur at all levels of the HEI; (iv) a fundamental process which enables the transformation is the collaboration within and between HEIs; and (v) a decrease of international student enrollment indicates an increase in demand for new methods for student mobility.

Five key major disruptive forces which are continuously challenging HEIs and which stakeholders have limited or no control over are identified by Ernst & Young (2018) and ADL (2016) as follows: (i) the job landscapes are constantly in change due to the evolution of modern digital technologies, robotics, machine learning, artificial intelligence etc., all of which effects employment as requirements change or they are being replaced by more precise and reliable automated programming technologies; (ii) non-traditional educational services such as online educational services or specific industry related course workshops, etc. are beginning to appear at an increasing rate over the past decade due to the democratization of information and knowledge through the internet. This prompts HEIs to grow more relationships with the existing industries to develop new course curricula as the job landscape keeps changing; (iii) digital technologies are constantly evolving, and with the rise of the internet, social media and smart mobile applications, the new generation's youth are experiencing a completely different life in comparison to the previous generations. As a result, educators have to become empowered with digital technologies and incorporate them in their services; (iv) there is an increase in the number of new universities, which creates more competition; and (v) the rise of lifelong continuous learning as job criteria and requirements are continuously being changed as a result of the evolution of technologies and economic shifts. Individuals should no longer solely pursue a specific career, and should opt to become lifelong learners for more agility and stability.

5.2 Malaysian Education Blueprint for Higher Education (2015-2025).

The Malaysian Education Blueprint for Higher Education (MEBHE) was developed to enhance previous efforts and prepare the Malaysian youths to be able to thrive in an era where disruptive technologies and global trends are rapidly changing economies globally. It proposes and highlights the changes that HEIs have to undergo in three waves from 2015 to 2025, namely to nurture balanced graduates with an entrepreneurial mindset with the skills to succeed in doing their jobs as well as the drive to create jobs; to ensure HEIs place an equal amount of focus to technical, vocational and traditional training; to focus on outcomes and incorporate innovations and technologies that improves the learning experience and addresses the needs of the new generation of students'; to transition from a centralized governance system to a more "earned autonomy" system; and to get stakeholders to contribute in order to reduce HEIs reliance on the resources provided by the government. The blueprint further outlines ten shifts to help HEIs to reach their objectives. The ten shifts are as follows: the first four are to produce balanced entrepreneurial graduates, excellent talent force, lifelong learning, and quality technical and vocational graduates and to focus primarily on the outcomes of the main stakeholders such as the students, academic professionals, lifelong learners etc.; and the next six shifts are to achieve financial sustainability, an empowered governance, an ecosystem that is innovative, global relevancy and prominence, online globalized learning and finally all of which will lead to a

transformation in the delivery of higher education to Malaysians. To achieve these outcomes set by MEBHE, both public and private HEIs in Malaysia have to develop robust strategic plans that are aligned with MEBHE's objectives.

5.3 Business models for future higher education institutes

The literature indicates that various researchers have attempted to propose and envision future business models for HEIs. After examining the different perspectives of the various models suggested in the literature, majority of them appears analogous to those presented by Barber, Donnelly, & Rizvi (2013). Barber, Donnelly, & Rizvi (2013) presented five emerging higher education business models of the future which are not necessary mutually exclusive and are as follows: (i) the elite university, (ii) the mass university, (iii) the niche university, (iv) the local university, and (v) the lifelong approach. The elite university refers to a small number of universities that are basically the elite and global brand among universities, with a rich history, renowned alumni, exceptionally outstanding record, and is able to continuously attract the most talented students and obtain the majority of the prestigious funding and grants available for research and innovations. They will focus on becoming exemplary to other universities and will be emphasized on nurturing future leaders through robust real-world experiences, personalized student development programs and extra-curricular activities. Additionally, they will incorporate the latest digital technologies in their teaching and learning processes and become the benchmarks for other universities. Their exemplary curriculum will become a primary source of content for other HEIs and they will establish remote campuses globally, expanding their business to deliver high quality education to the brightest prospective students. The mass universities are the typical HEIs for the growing middle class who are focused on obtaining a higher education degree for better employability and careers. The mass universities adapt and take advantage of the globally developed contents and ideas available to offer quality programs. They will offer prospective students the option of doing their degrees online or blended with face-to-face delivery mechanisms on campus. The niche universities offer high-quality learning and teaching for niche academic programs and are mainly private for-profit universities dedicated to provide curricula with a more personal learning experience to help students studying the niche programs to achieve their protentional academically, professionally and personally. The niche universities do not necessarily require a high number of students to thrive and is not totally dependent on modern digital technologies, however online learning is still offered as an option for students. The local universities are primarily focused on sustaining and maintaining the local or regional economy and therefore play an essential role for the society by producing students with skills that the existing workforce demands and that are required for applied research. Primary examples include medical schools, engineering schools, business schools, information technology schools etc. Physical teaching and learning mechanisms remain vital for direct experience, practice and training. The lifelong learning mechanism involves the use of various educational and vocational services to accomplish a degree recognized and equivalent to those provided by higher education services. These individuals can further be awarded equivalent higher educational degrees for exceptional contributions or performances in a specific or variety of fields over time. An example here would be successful business entrepreneurs.

Ibrahim & Dahlan (2016) proposed a blended strategy BMC of the niche and transformer models explored and anticipated by Ernst and Young (2012). Ernst and Young (2012) anticipated the evolution of three divergent future university models, namely streamlined status quo, niche dominators, and transformers. They later renamed the models and added another which are similar to those proposed by Barber, Donnelly, & Rizvi (2013), and are named as follows: the champion university, the commercial university, the disruptor university, and the virtual university (Ernst and Young, 2018).

5.4 Digital transformation and higher education

Companies can take advantage of new digital technologies and new markets given by digital platforms by undergoing digital transformations (Morakanyane, Grace, & O'Reilly, 2017). Digital transformation has an impact on many sectors of the society, and organizations now have the chance to make significant changes to their business models, such as employing big data, social networking, the internet of things, and regularly introducing new and improved technology. The COVID-19 pandemic has caused an unprecedented epidemic across the country, resulting in a surge in online learning and instruction. Malaysia is a remarkable case study for higher education's digital transition. It has gained international acclaim for its quick response to the Covid-19 outbreak, in which it innovated in real time to introduce new digital learning modes. Malaysia's higher education system has seen substantial changes over time and is currently undergoing a big transformation. Curriculum and teaching methods are being revamped to produce future-ready graduates, with new vital elements such as experiential learning, organic and adaptable curriculum, and a lifetime learning attitude. Graduates' skill sets are also broadened to enable them to take advantage of gig economy opportunities. The Malaysia Education Blueprint 2015-2025 (MOHE, 2015) emphasizes the importance of 21st-century learning skills such as digital literacy, critical thinking, and problem solving. Connectivity via multimedia mobile devices, and experiential learning via Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), and Artificial Intelligence (AI) have all contributed to the development of a new learning ecosystem. The higher education sector in Malaysia is rapidly nearing Industry 4.0. (IR4.0). According to the Malaysian Higher Education 4.0 Framework (MOHE, 2018), institutions must continue to strengthen their teaching and learning delivery systems in order to generate quality graduates who are ready for the future job landscape.

5.5 Megatrends in healthcare

Various megatrends are driving the healthcare industries supplies and demands. These megatrends include economic, environmental, technological and various other forces which converge to shape the future of healthcare in the world. They are disruptive in nature as they bring both challenges and opportunities to the current business models of healthcare industries. Deloitte (2016) highlights six key megatrends in healthcare, which are as follows: (i) Demographic shifts: these include global pandemics, urbanization, increased care for chronic long-term illnesses, climate change, and changes in the use of substances; (ii) Digitalized healthcare and innovation: these include the use of artificial intelligence, internet of things, cloud computing, new supply chain management systems, precision medicine, 5G connectivity and other innovative digital technologies. More technologies are leading to open health or peer to peer health, as they enable health

knowledge sharing and innovation; (iii) Globalized industries: current models of private enterprises and governments are disrupted by the emergence of the democratization of health, education, arts, and science; (iv) Universal or non-universal provisions: transition to privatized healthcare systems over universal healthcare systems which are financially unsustainable; (v) Politics: value based care makes traditional regulations and policies obsolete, and the accountability of both public and private parties as well as the providers must be taken up by policy makers; and (vi) Discontinuity: The various disruptive forces driving change in healthcare brings discontinuity and any continuity predictions of the past are no longer dependable. Additionally, to solve global healthcare issues, health care leaders should consider implementing new services and tools, explore beneficial ways through data interoperability, and use empathy and reliability to earn consumer trust to meet the consumers health care needs. The current COVID-19 pandemic is redefining the types of services healthcare industries are using, implementing virtual or automated care, and remote monitoring, digital diagnostics, decision support etc., and forcing healthcare industries to re-evaluate their current financial models to invest on emerging technologies to shift to value-based care. To accelerate digital transformation, healthcare industries must (i) transition to an IT infrastructure that is robust and consider new emerging technologies such as cloud-based solutions that include safe and secure data storage systems, reliable and low latency connectivity, sufficient storage, and data-sharing methods; (ii) invest in virtual health technology; (iii) standardize and build regulation for data interoperability; (iv) create a robust governance framework; and (v) focus on improving digital literacy to develop digital leadership skills for clinical staff, non-clinical staff, as well as the patients (Deloitte Insights, 2021).

6. THE PROPOSED BUSINESS MODEL

An initial BMC was first created using the literature review that was conducted. The literature review delineated and enabled the identification of the key forces that are currently influencing and driving current HEIs to improve their business models. The globally renowned BMC tool allows business organizations to easily model and design how the business creates, delivers and captures value through the analysis of their strategic management and visualization of the business's core elements such as its customer segments, value proposition, revenue streams, infrastructure, key partners, etc. The initial BMC for the Malaysian Healthcare University addressed the business's current core elements and was then updated to leverage current digital technologies to enrich their academic offerings and student services and the quality of the students experience in learning, to further develop the entrepreneurial skills and entrepreneurial culture among the students and the academic staff, and to sustain relationships, engagement and support the community by addressing their health, cultural, economic, and educational needs. The proposed conceptual BMC was then further validated through an online survey carried out among the undergraduate students of the university. The majority agreed that the implementation of digital technologies includes establishing an accredited open learning system, the adoption artificial intelligence and machine learning in their integrated management systems, improving data integrity and security, usage of cloud computing and other services to improve operational efficiency. Additionally, there was a unanimous agreement on the fact that the adoption of an open learning system would enable the university to access and

reach new niches of students from low-income communities internationally and locally to offer curated courses. The final validated conceptual BMC for the healthcare UotF is shown in Fig. 1. The nine sections of the validated BMC are briefly described next.










Key Partners  <ul style="list-style-type: none"> Universities (local and international) Industries (local and international) Donors/NGOs Alumni chapter (local and international) Project Contractors Ministry of Education 	Key Activities  <ul style="list-style-type: none"> Develop course content for the programmes offered. Responsible quality research, development and innovation Partnership/Donor Management. Develop online open learning system and its courses. Sponsored/Voluntary community engagement courses/workshops on digital literacy, health literacy, and other curated courses/seminars etc. Transition to a 'smart', eco-friendly and sustainable campus leveraging Internet of Things (IoTs) and 5G connectivity. Key Resources  <ul style="list-style-type: none"> Qualified and committed Teachers/Staff. Dedicated administrative staff. Teaching infrastructure and Facilities. Up-to-date quality course content and research contributions Robust digital platform technologies and security State-of-the-art healthcare technologies. 	Value Propositions  <ul style="list-style-type: none"> Produce balanced, knowledgeable, responsible and entrepreneurially minded graduates. Offers 20 academic programmes aligned with the current community and healthcare industries needs. Accredited and affordable Open Learning online courses. Lifelong learning and community engagement 	Customer Relationships  <ul style="list-style-type: none"> Face-to-face on campus Digital Platforms: online courses, online community Partnerships Alumni association Channels  <ul style="list-style-type: none"> Digital Platform Partnership Face-to-face Alumni 	Customer Segments  <ul style="list-style-type: none"> Students (Domestic and International) Industries Academic Staff Professional Community Donors Niche students from low-income communities (Local and Global)
Cost Structure  <ul style="list-style-type: none"> Costs for Key Resource Costs for Key Activities Maintenance costs 		Revenue Streams  <ul style="list-style-type: none"> Scholarships, Sponsorships and Grants Donations 		

Fig. 1. The validated conceptual Business Model Canvas (BMC)

- a. **Value Proposition:** this section of the canvas lists and describes the products, services and benefits that are delivered by the university that are valued by and satisfies the needs as well as the expectations of the various customer segments. For the Malaysian healthcare UotF, the value propositions are as follows: to produce balance, knowledgeable, responsible and entrepreneurially minded graduates with valued employability skills as well as the ability to become job creators; the university offers a variety of programs mainly related to medicine and healthcare that are aligned with the United Nation’s Sustainable Development Goals (SDGs), the current and future community and healthcare industries needs and expectations; an affordable and accredited open learning online system which enables lifelong learning and makes courses available to the public regardless of their qualifications; and community engagement using digital platforms and face-to-face channels to address and provide solutions to the health, educational, safety, cultural and economic needs of the community locally and globally.
- b. **Customer Segments:** this section of the canvas defines the different groups of individuals and business organizations that the university intends to serve and reach out to. For the Malaysian healthcare UotF, the customer segments are as follows: domestic and international students, industries for research collaboration and funds, academicians that contribute to research and innovation, the professional community pursuing lifelong learning, donors who donate to the university, and new niches of students from low-income communities locally and globally.

- c. Channels: this section of the canvas lists the interface between the customers and the university, which are the primary platforms and methods the university utilizes to communicate and get through to the different customer segments to deliver its value propositions. For the Malaysian healthcare UotF, the channels are as follows: physical face-to-face situations, through partnerships with the key partners, through digital platforms, and through the university's alumni chapter.
- d. Customer Relationships: this section of the canvas defines the various types of relationships that are established between the university and its customer segments. To sustain relationships and maintain connections with the customer segments, the Malaysian healthcare UotF delivers physical on campus courses and events; open learning through digital platforms, website and mobile applications; through partnerships with the key partners and the community; and through the alumni association.
- e. Revenue Streams: this section of the canvas lists the sources from which the university generates its revenue from the various customer segments. For the Malaysian healthcare UotF, the revenue streams include the primary revenue streams are through the tuition fees from the students enrolled in the university; the grants, funds and scholarships provided from various industries and the government; through donations received from organizations locally and globally; and through the online accredited open learning system.
- f. Key Resource: this section of the canvas describes the primary assets the university needs in order to guarantee that their value propositions and benefits are delivered to the different customer segments. For the Malaysian healthcare UotF, the key resources include highly qualified and committed academic staff, dedicated administrative staff, the infrastructure and all its facilities, the university's up-to-date quality course contents and its research contributions, robust digital technologies and reliable security, as well as the state-of-the-art healthcare technologies.
- g. Key Activities: this section of the canvas lists the critical activities that the university needs to implement in order to accomplish and deliver its value propositions to the different customer segments and to continue operating. For the Malaysian healthcare UotF, the key activities include to develop course material and content that are relevant and aligned with the needs of the current and future industries and healthcare organizations; to undertake responsible and relevant research and innovation; to develop the online open learning system and its courses; to engage in voluntary or sponsored community engagement workshops or provide courses on digital literacy, health literacy and other curated courses etc.; and to transition the physical campus into a 'smart', eco-friendly and sustainable campus leveraging Internet of Things (IoTs) and 5G connectivity.
- h. Key Partners: this section of the canvas highlights the different network of partners and suppliers that the university sustains, partners and collaborates with in order to receive funds and assistance to successfully deliver its promised value propositions to the different customer segments and continue to operate. For the Malaysian healthcare UotF, the key partners

include partnerships with various industries (local and international) to generate new applied learning and research opportunities and to understand the needs of the current workforce, donors or non-governmental organizations, other local and international universities, alumni associations, the ministry of education and project contractors.

- i. **Cost Structure:** this section of the canvas describes the major costs that the university needs to spend in order to continue to operate, function and deliver its value proposition to the different customer segments. For the Malaysian healthcare UotF, the cost structures include the costs for implementing, maintaining and enhancing the key resources and key activities of the university.

7. STRATEGY CANVAS

The strategy canvas is an analytic framework that graphically displays a comparison of the current strategic landscape with the new alternate strategic plan for the future (Kim & Mauborgne, 2017). It is used by organizations to visualize their proposed strategies, making them easier to understand, communicate and engage them to individuals across the organization. Additionally, it allows organizations to re-evaluate and explore new alternatives in areas where they are currently not offering adequate services. The strategy canvas's horizontal line is used to list the factors that the organization competes and focuses their investments in, whereas the vertical axis lists the offering level that the customer segments of the organization's receives and benefits from each of the factors listed in the horizontal axis (Kim & Mauborgne, 2017). The line or value curve of the strategy canvas graphically depicts and captures the organizations performance relative to the factors listed in the horizontal axis.

The horizontal axis of the strategy canvas for this paper shall not make use of the competing factors or evaluation metrics used by the QS World University Rankings (such as the academic reputation, employer reputation, faculty/student ratio, citations per faculty, international faculty ratio, international student ratio (QS, 2021)), as such standards focuses mainly on capturing the performances of universities based on specific competing factors for worldwide competitive ranking. However, the primary focus of this paper is to provide an alternative business model to digitally transform a private healthcare university to remain relevant and continue to offer value, therefore, the main areas of the university's offerings that can be improved using digital platforms and technologies shall be highlighted and chosen instead. Additionally, the strategy canvas provided shall only depict the comparison between the current offerings of the university and the UotF's offerings. It shall not provide a comparison of the offerings in relation to other universities, mainly due to the fact that such depictions are not the focus of this paper and because majority of the healthcare universities in Malaysia are currently in a similar situation as the healthcare university chosen for this paper.

The formulated strategic canvas based on the university's current offerings and the proposed UotF's offerings are as shown in Fig. 2. The horizontal axis of the strategy canvas focuses on the following three categories: what the university offers to the students, external organizations and professions, and the community (primarily the regional community and then other local and international communities). Each of the categories are further elaborated next.

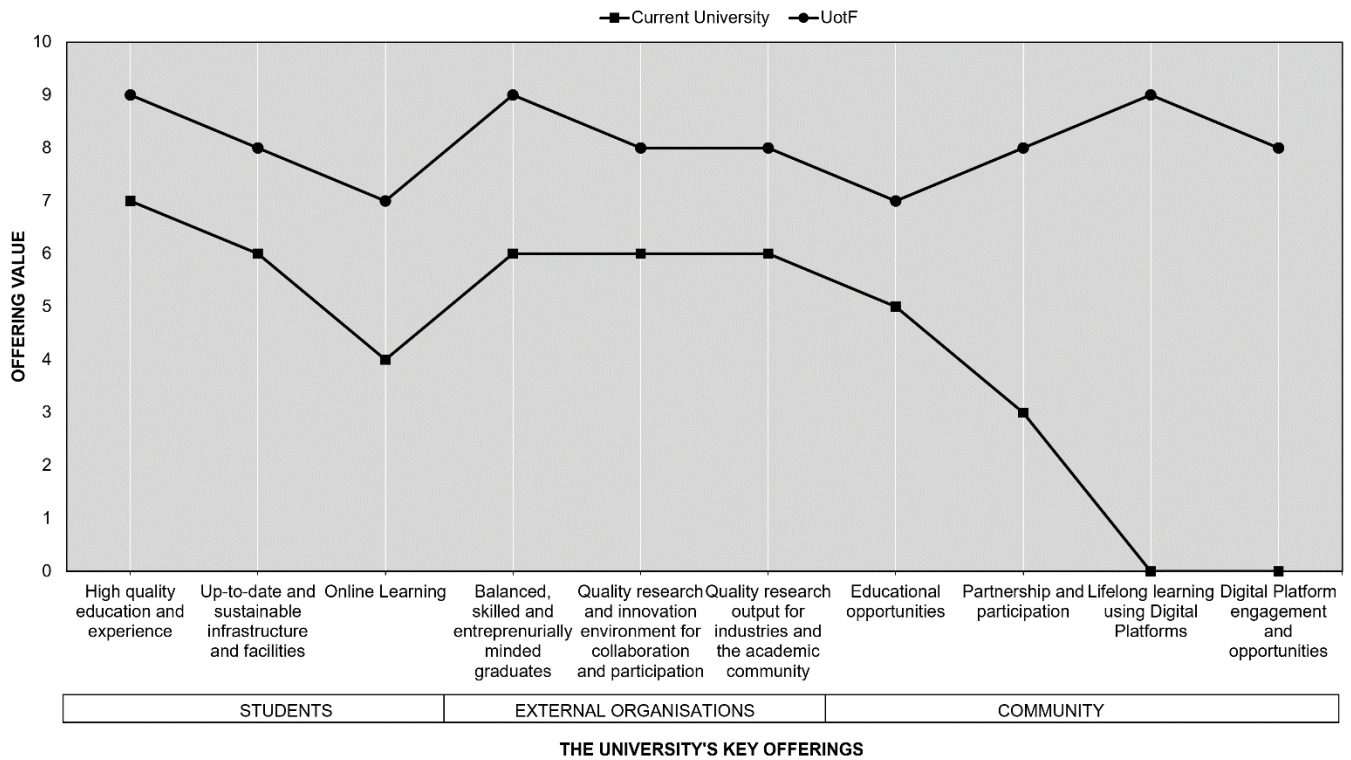


Fig. 2. The Strategy Canvas (SC)

- a. University students: this section of the strategy canvas focuses on what the university primarily offers to their students. They are as follows: to provide the students with a high-quality education and experience that is aligned with the current and future requirements of businesses, industries and the professions; to provide the students (and the academic staff) with an up-to-date sustainable campus infrastructure and facilities incorporated with the latest digital technologies and trends; and to provide a flexible online learning/open learning platform alternative.
- b. External organizations and professions: this section of the strategy canvas focuses on what the university offers to the external organizations which includes the industries, businesses, government and the professions that benefit from the university through employing the graduates from the university. Additionally, the university provides a responsible research environment and engages with the external organizations on research, development and innovative projects focusing on digital and creative research. Other partnerships with external organizations include collaborations with other HEIs to provide research work and papers beneficial to other HEIs and the academic community worldwide.
- c. The community: this section of the strategy canvas focuses on community engagement, partnership and participation with the regional community to provide educational opportunities and to support community associations to address the community’s health, safety, and economic needs. The current offerings of the university do not provide lifelong learning solutions nor do they engage with the community through digital platforms, whereas the UotF provides the community with a digital platform for lifelong and flexible online

open learning regardless of their qualifications and educational background. Furthermore, the open learning digital platform enables the UotF to reach out to niche categories of students locally and globally to provide curated courses (i.e., providing affordable priced digital entrepreneurial courses, digital literacy courses, health literacy courses etc., to low-income communities of developing and emerging countries).

8. CONCLUSION

The principal aim of this paper is to analyze and design an alternative conceptual business model for a Malaysian private healthcare university to digitally transform them into a University-of-the-Future (UotF) that is relevant, agile and offers value to the rapidly-evolving communities and workforce needs regionally and globally. The proposed business model was guided by a design thinking approach and presented using the Business Model Canvas (BMC) framework. Furthermore, the primary changes of the university's key offerings were highlighted and graphically presented using the Strategy Canvas (SC) framework. The results indicate that to digitally transform, the university should integrate state-of-the-art digital technologies in all areas of its business; develop an online open learning system to deliver a wide range of healthcare programs; employ artificial intelligence, machine learning algorithms and data analytics to advance its management systems and further enhance its teaching and learning methods; and transition to a more 'smart', eco-friendly and sustainable campus. Furthermore, an open learning system accessible through digital platforms enables lifelong learners to easily access an accredited and affordable way of learning, and opens new opportunities for the university to reach out to niches of students from low-middle income communities locally and globally to provide curated courses at affordable prices.

Future work includes the development of a comprehensive strategic plan with the projects that are to be implemented based on the presented business model and to engage and empower the students, academic staff and faculties before and during the transition. Furthermore, executing the strategic plans will allow the UotF to discover any potential challenges and obstacles of the proposed business model.

REFERENCES

- ADL (2016). The future of higher education, Transforming the students of tomorrow. The Arthur D. Little Research Institute.
- Ali, W. (2020). Online and remote learning in higher education institutes: A necessity in light of covid-19 pandemic. *Higher Education Studies*, 10(3), 16. <https://doi.org/10.5539/hes.v10n3p16>
- Barber, M., Donnelly, K., & Rizvi, S. (2013). *An avalanche is coming*, Institute for Public Policy Research, London, UK.
- Dahlan, A.R.A., Ibrahim, J., Jalaldeen, M.R.M. and El Mohajir, M. (2020). Redesign "University of the Future" Conceptual Business Model: Sustainability and Staying Relevant in the Digital Age, *Journal of Information Systems and Digital Technologies*.
- Deloitte Insights. (2021). *global healthcare outlook: Accelerating industry change*. Deloitte Development LLC.
- Deloitte. (2016). *Health Care Foresight: Identifying megatrends*. Deloitte & Touche Enerprise Risk Services Pte Ltd.

- Diderich, C. (2020). *Design thinking for strategy: Innovating towards competitive advantage*. Springer.
- Ernst & Young (2012). *Universities of the future*. Ernst & Young Australia.
- Ernst & Young (2018). *Can the universities of today lead learning for tomorrow? The University of the Future*. EYGM Limited. Australia
- Hesse, F. W., Kobsda, C., & Leiser, A. (2021). *Digital Transformation of Higher Education - Global Learning Report 2021*. SSOAR - GESIS Leibniz Institute for the Social Sciences. <https://doi.org/10.21241/SSOAR.73580>
- Ibrahim, I and Dahlan, A. R. A (2016). *Designing Business Models Options for University-of-the-Future*. 4th IEEE International Colloquium on Information Science and Technology (CiSt), 600-603.
- Kim, W. C., & Mauborgne R. (2017). *The W. Chan Kim & Renee Mauborgne Blue Ocean strategy reader*. Harvard Business Review Press.
- Ministry of Education Malaysia. (2015). *Executive Summary, Malaysia Education Blueprint 2015-2025 (Higher Education)*. Ministry of Education Malaysia.
- MOHE (2018). *FRAMING MALAYSIAN HIGHER EDUCATION 4.0: Future-Proof Talents*. Ministry of Higher Education Malaysia.
- Morakanyane, R., Grace, A., & O'Reilly, P. (2017). *Conceptualizing digital transformation in business organizations: A systematic review of literature*. *Digital Transformation – From Connecting Things to Transforming Our Lives*. <https://doi.org/10.18690/978-961-286-043-1.30>
- Osterwalder, A., Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and Challengers*. Wiley.
- QS (2021). *QS Asia University Rankings: Methodology*. Top Universities. Retrieved December 14, 2021, from <https://www.topuniversities.com/asia-rankings/methodology>.