

Business Model Options for the University of the Future in the Era of IR4.0: Humanising Entrepreneurship Education for the Sudanese Youths

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Abstract: Youths represents the future of each country. Building strategies that can help to enhance the societal well-being and reduce the unemployment rate in any society must involve youth. Entrepreneurship plays an important role in building a harmonious and caring society including enhancing the economic growth and jobs creation. This paper offers business model options for a Malaysian University of the Future (UotF) with the value proposition of humanising entrepreneurship education in nurturing balanced graduates students who have the knowledge, skills and human values. This paper adopted the design thinking and system thinking approach involving conducting literature review and interviews in understanding youth unemployment issues in Sudan; analysing, formulating and validation of conceptual solution options using business modelling tools such as BMC and VPCs. The initial BMC and VPC are formulated by conducting a literature review and interviews to identify the key issues and develop possible business model options. These business models have been validated by interviewing the officers of the Malaysian UotF and customer segments. The key contributions of the paper – a conceptual business model of the Malaysian UotF; conceptual community engagement programmes in Sudan in enhancing the societal well-being and enhancing job opportunities through humanising entrepreneurship education; other universities can adapt the business model in meeting their needs.

Keywords: Sudanese youth, Societal well-being, University of the Future, Unemployment, SDG8, Humanising entrepreneurship education, BMC, Sudan.

I. INTRODUCTION

Being a university graduate is not quite the top status as it was before. It is becoming increasingly difficult to stand out from the crowd, leaving many people looking for additional skills or expertise. Nowadays, as people are living in the age of technology revolution, universities in Sudan need to make enormous changes, particularly with regard to educational business model development. In the future, the traditional education process is no longer appropriate since people use a technology-based devices in their daily lives (Yahya and Dahlan, 2019). Hence, the University of the Future (UotF) has a big engagement with the technology. A number of drivers of change such as globalization drives the higher education industry. In order to remain competitive and sustainable, many studies have concluded that universities need a new business model. However, competition in the higher education sector is increasing, making it possible for universities to distinguish themselves by designing new and innovative models that deliver relevant and applicable knowledge in worldwide. In agreement with (Winasis and Dahlan, 2019) a new business-modeling paradigm emerged in recent years, which is the Business Model Canvas (BMC). Created by Alexander Osterwalder and Yves Pigneur, and it consists of nine blocks that capturing the picture of business and its logics. This BMC has been divided into four important keys driven: as following, a) Value and Customer strategy, [b] Revenue Stream and Cost Structure, [c] Key Resources and key Activities, [d] Key Partners and Channel. There is another tool to be used to analyse, and design the university-related issues and

how to address the problems which is Value Proposition Design Canvas (VPD). This paper seeks to propose a new business model – in the form of BMC and VPD, that would help to transform current universities into universities of the future with a focus on Humanising education, which involves going beyond the mere economic imperatives of producing a knowledgeable and skilled workforce for economic growth and higher income.

II. PROBLEM STATEMENT

Unemployment is one of the main challenges facing the Sudanese people particularly the younger generation. Sudan has a young population with 61% of total population under the age of 25. 20% of them are 15 to 24 years old, and 41% are under 15. Where the total population is estimated to be around 42 million (Word population review, 2019). This young generation of Sudanese who have the potential to build a better future for themselves and Sudan are finding their employment prospects is limited. Statista.com reported that the unemployment rate in Sudan is 12.88%, and the youth unemployment rate is 26.71% for the year 2018. The rate of unemployment among youth is one of the causes of social and economic problems in the Sudanese society.

The youths in Sudan face many challenges related to education, poverty and employment. The economy has been in a very bad situation after the secession of South Sudan and because of the conflict, as stated by (Elryah, 2015). To solve the unemployment issue and to help Sudanese youth overcoming their poverty a conceptual solution is proposed in this paper. This solution offers business model options for a Malaysian University of the Future that contributes to the societal well-being of Sudan.

III. OBJECTIVES

The primary objective of this study is to develop solutions using the conceptual design approach through a validated business model that empowers Sudanese youth with the knowledge, entrepreneurial skills and ethical principles, that enhance their employability and capability to make their own businesses. This solution is expected to reduce youth unemployment and poverty in Sudan, as well as trigger them into the entrepreneurial culture. Moreover, to propose a business model options for the Malaysian University of the Future that is relevant to the communities, and contributes to the well-being of the society. Such a business model can be adapted by other Malaysian universities in a way meeting their current and future needs.

IV. METHODOLOGY

This paper adopted the design and system thinking approach to develop a conceptual solution for the youth unemployment issues in Sudan. The solution is designed through understanding the youth needs by using business modeling tools such as Business model canvas (BMC), and Value proposition canvas (VPC). The approach involves carrying out a literature review to identify key issues, formulating and devising an initial business model, and value proposition that helps to solve these issues. The business model is validated by interviewing a Sudanese professor from electrical and computer engineering department, as well as Head of Academic & Social Entrepreneurship of a local Malaysian university. And the value proposition canvas is validated by interviewing 10 Sudanese undergraduate and postgraduate students in Malaysia and in Sudan, as well 10 unemployed youth in Sudan. Design thinking is a methodology that uses the intuition and techniques of the designer to match the needs of people with what is technologically workable and what a viable business plan can turn into value for the customer and opportunity in the market.

V. LITERATURE REVIEW

A. University of the Future

The current predominant business model for universities, is wide-based teaching and research institutions, with a large base of assets and back-offices will come to prove to be inapplicable in all but a few cases. There is a need for innovative and agile business model designs that could meet the changing requirements of the University of the Future (Ibrahim & Dahlan, 2016). Over the past few years, the University of the Future proposal has been explored. The rapid technological advancement is changing the structure of universities. The University of the Future seeks to establish higher learning institutions as a network that offers students, staff, university, and industry social interaction. It also builds relationships of a partnership between universities, students, and the community. In reality, the idea of the University of the Future also fostering organized learning that is not only for academic purposes but also to work jointly and enable greater involvement in the industry to complement the ecosystem as mentioned in (Mahyuddin and Dahlan, 2019).

In pursuant to (Ernst & Young, 2018) delivering the educational needs of students and employers for the near future has led them to come up with four variant scenarios to assist university leaders and government policymakers. These four scenarios as following [a] Champion university: most of students are enrolling teacher-centric approach undergraduate and graduate degree programs where lectures are the main source of knowledge transfer. Today, learner-centered pedagogies are better suited to preparing learners for technology-driven workspaces. [b] Commercial university: the government hands-offs in 2030 and requires that the university be financially independent, government have eased the legislation obligations for research and the university is free to landscape and play on their strengths, whether that be in particular research or by offering work-integrated degree programs. [c] Disruptor University: in 2030, technology will disrupt employment and the government will play a hands-off role to drive competition and efficiency. Private providers are allowed to enter the accreditation market for higher education. Universities to be highly competent by delivering knowledge and teaching using a digital platform, provide micro-certificates to their students, as well as entering new markets and services. [d] Virtual university: enable the universities to attract customers for lifetime values and satisfaction.

B. Megatrends

Megatrends embodying the future of global higher education and global mobility. Megatrends are international macroeconomic forces that have irreversible consequences on the economy, business, community, and individuals. These megatrends are longer term in nature and they includes labor market shifts which are driven by the escalating pace of automation and skills mismatch, thus will result in changing demands for societal and market-relevant skills and retraining of talent as reported by (Choudaha, Rahul and Van Rest, Edwin, 2018).

According to (Infosys limited, 2019) there are three megatrends in higher education that can be adapted by higher learning institutes. These three megatrends namely [a] adaptive learning: tools that facilitate modification of learning experiences based on students' understanding and ability by using elements of machine learning, [b] Makerspaces: facilitate a new generation of creators by bringing together experts and novices from a wide range of disciplines to develop, design and rethink different products, and [c] Open education resources (OER): everybody is entitled to an education, OER offers high-quality tutoring, learning and study materials that can be used and re-used by people everywhere. These megatrends will drive institutions to offer more relevant, and flexible academic programmes that influence the learning outcomes. The institute can feel the benefits of these trends by way of boosting retention rate in the education institution; as well, students successfully complete their courses.

C. Humanising Education

Humanising education depends on educators' pedagogy to impact, manage, and coexist within the context and activities of lecturers, students, administration, and members of the society. The learner's cultural and contextual realities and experiences focus on building beliefs and practices around a humanising education. Prior research has studied pedagogical theory and focused on humanising practices that highlight the student as a valued asset and an active member of the learning process (Law, 2015). Humanization is the process of becoming more fully human as social, thinking, communicating, transformative, creative persons who contribute to the world around him (Salazar, 2013).

An education system that focuses solely on sciences and does not pay attention to good ethics and spiritual education aspects will produce generations of science knowledge and skills but less value morality and faith in their career and life. Instead, the education system must aim to develop a holistic person that is intellectually, spiritually, emotionally and physically balanced and harmonious based on a firm belief in and devotion to God (Wan, Sirat, & Razak, 2018). With the rapid change of technology, universities need to adapt good strategies to provide a relevant knowledge aligned with the industrial revolution to ensure that their stakeholders are familiar with it. Since technology is used for making people live better and bring them positive outcomes, people can use technology for doing bad things as well such as stealing information, robbery, etcetera. Universities can play a significant role in overcoming the negative uses of technology by focusing on humanising education delivered for the students and produces graduates who fear God. (Abeid & Dahlan, 2018).

D. Sustainable Development Goals 1, 4 and 8 (SDGs)

The higher education priorities are to ensure equitable access to higher education for students from all backgrounds at the national level, develop and adhere to a broader globalization approach that involves technology and intellectual training (Winasis and Dahlan, 2019). Globalization is a systematic process of incorporating an international, intercultural and

global aspect into the purpose, roles and delivery of tertiary education with a view to improving the quality of education and research for all students and staff and making a positive contribution to society. (De Wit, et. al., 2015). That means a confirmation that a broader purpose is served by international education, one that is connected to both academic and higher education's social role and responsibilities. It also indicates how international education contributes to the creation of graduates who are international students and how it can foster social cohesion, create a more peaceful, less divided and non-violent society; human value and encourage international education in all domains beyond business and management, such as medicine, arts and human science. End poverty in all its forms everywhere is the first goal (SDG1) of the seventeen goals of the United Nations 'Sustainable Development Goals' (SDGs) agenda. SDG1 seeks to eradicate extreme poverty, and one of its targets is by 2030, reduce at least to the extent of half the proportion of people of all ages living in poverty in all its dimensions in the context of their country. As well as decent work & economic growth (SDG8) which seeks to promote sustained employment and decent work for all. By 2030, one of its targets is to achieve higher levels of economic productivity through technological advancement and innovation, as well as focus on high-value added and labour-intensive sectors.

E. MEB – Malaysian Education Blueprint [2015-2025]

Malaysia Education Blueprint 2015-2025 (Higher Education) paves the way for transformation in higher education. It has outlined ten transformational shifts that include holistic, entrepreneurial and balanced graduates; internationalization; and online learning and delivery. Globalization and technology have completely transformed many sectors such as telecommunications and finance; in fact, the higher education sector is already facing disruption from new models such like massive online open courses (MOOCs). The new technology innovations have end the fairness gap for disadvantaged communities, and create new opportunities for the students to access higher education. Ministry of Higher Education recognized the need for substantial change in order to meet the challenges and stay aligned with global trends and relevancy.

F. Social entrepreneurship education

Social entrepreneurship is an approach developed, financed and implemented by start-up enterprises and entrepreneurs to tackle social, cultural or environmental issues. Entrepreneurs looking for profit typically measure performance by using business metrics such as revenues and profit. However, social entrepreneurs are either combine aims for a profit with generating a positive impact on society or they are non-profits (Thompson, J. 2002). In order to improve business performance, entrepreneurship is used in Malaysia as one of the strategies for boosting the economy, driving innovation and productivity as mentioned by (B. H. Din, A. R. Anuar and M. Usman, 2016). The authors also highlighted that after graduation, most of the students seeking high salaries in the public or private sector, and think of entrepreneurship as is not suitable for them due to their lack of knowledge in this domain. The business plan course should cover topics like finance, marketing and so on. To counter one of the big challenges among youth in Malaysia, the government come up with many activities for the students in higher learning institutions who have the potential to be entrepreneurs.

G.3 Socio Economy of Sudan

Sudan is endowed with rich natural resources such as significant deposits of minerals (e.g. gold, copper, iron ore, and others), endowed with abundant arable land and the longest river in Africa. Even with the existence of these bountiful natural resources, Sudan is surrounded with many tough issues related to socio-economy such as poverty and some others related to the macroeconomic. The imbalance macroeconomic significantly contributed to the heavy debt and the high rate of unemployment in Sudan (M. Mohsin, 2002). To progress in achieving the goal of becoming a developed country, poverty is an urgent matter to be eliminated. The poverty rate in Sudan is 46.5% nationwide and varies considerably between rural and urban areas as mentioned by (A. Ammar and E.Ahmed, 2016). In addition, the lack of basic infrastructure in large areas and the dependency of a large part of the population on agriculture ensure that a large proportion of the population remains at or below the poverty line for years despite the rises in average per capita income (N. Ahmed, 2015).

VI. THE PROPOSED BUSINESS MODEL

A. The initial BMC and VPC

The initial business model of the Malaysian UotF– in the form of BMC and VPC, was developed based on literature reviews and design thinking. The authors has conducted an interview with the Head of Academic & Social entrepreneurship and a Sudanese professor of a local Malaysian university in order to validate the BMC. In addition, the value proposition canvas is validated by interviewing 10 Sudanese undergraduate and postgraduate students in Malaysia and in Sudan, as well 10 unemployed youth in Sudan.

B. Findings after Validating BMC and VPCs

The key finding after the interviews is that entrepreneurship education plays an essential role in overcoming unemployment problems in society. Bringing entrepreneurship education to the Sudanese society specially youths can boost up the country economy. By producing balanced and holistic graduates with entrepreneurial mind-set can enhance their job employment by the public and private sectors, or they themselves become self-employed and entrepreneurs. The Sudanese youths would like to learn innovation and enhance their innovative/creative thinking skills. Offering an entrepreneurship programme that equip learners with the knowledge and skills of realising their good ideas into business reality is considered as beneficial programme. To facilitate their learning process and experience, digital platforms such as e-learning and e-Marketplace tools will be used in this programme. Based on the feedback received from the interviews, the validated Business Model Canvas (BMC) is shown in Table I.

1. Validated Business Model Canvas (BMC)

TABLE I: VALIDATED BUSINESS MODEL CANVAS (BMC)

Key Partners	Key Activities	Value Proposition	Customer Relationship	Customer Segments
<ul style="list-style-type: none"> - Local/ International Universities - Research Centers & Institutions - Industry - Alumni - Community - Government - NGOs, Donors & Sponsors - UN, OIC 	<ul style="list-style-type: none"> - Entrepreneurship Education Programmes - Research & commercialization - Mentoring, coaching & Workshops - Community engagement & transformation - Job creation & innovation - Fundraising campaign 	<ul style="list-style-type: none"> - Balanced person - Empowered youth with social entrepreneurial knowledge, skills & human value - Responsible Research development & Innovation - Humanising and relevant education - Freemium education model - Enhance job opportunities 	<ul style="list-style-type: none"> - Online engagement Social media & forum - Free consultations - Research grants 	<ul style="list-style-type: none"> - Sudanese UG & PG University Students - Dropout/ Unemployed Sudanese Youth - Donors & Sponsors - Professional Volunteers - Govt. agencies, industry - NGOs, Community
Key Resources			Channels	
<ul style="list-style-type: none"> - Digital Platforms - eLearning & eMarketplace - Staff and students - International Alumni 			<ul style="list-style-type: none"> - Digital platforms - Events, Exhibitions, Conference/ Workshops - International alumni chapter office - Network of Mosques 	
Cost Structure		Revenue Streams		
<ul style="list-style-type: none"> - Salary for lecturers and staffs - Marketing and advertisements - Teaching, Researches & Community Engagement Costs - Digital platform maintenance - Trainings - Administration office utilities - Travelling, conferences, workshops & seminars 		<ul style="list-style-type: none"> - Freemium fees - Fundraising campaigns - Zakat/ Waqaf, Donation - Sponsorship - Government, NGOs & private grants - Research commercialization - Training & Workshops fees 		

1.1 Value Proposition

The value proposition defines the value of the programme, services and products that are offered by the Malaysian UoF in satisfying the expectation and needs of the customer segments. The values offered include: Graduate of balanced person; empower youth with social entrepreneurial knowledge; skills & human value; responsible research development & Innovation; Humanising and relevant education; freemium education model; enhance job opportunities; mentoring and coaching activities for community (NGOs / Associations / Local residents of Sudan); trusted and innovative institution. The values provided in this programme can reduce unemployment due to each participants will be equipped with the

knowledge and skills of entrepreneurship so that they are expected to get decent jobs. Furthermore, this programme aims to reduce poverty by providing knowledge and skills to youth and society, so that they be able to create their own business.

1.2 Customer Segments

The customer segments describe the different group of people, community and organizations that the Malaysian UotF aim to serve. The business model must be designed with deep understanding of the customer needs. This programme focus on customer segments that include: Sudanese UG and PG university students, unemployed Sudanese youth, donors and sponsors, professional volunteers, government/agencies, industry, NGOs, and Community.

1.3 Customer Relationship

The customer relationships describe the different types of platforms and offers that the Malaysian UotF aim to stay connected and sustain the relationship with the customer segments so as to be continuously relevant to them. The relationship for this programme can be through online engagement & forums, face-to-face, free consultations, and research grants.

1.4 Channels

This channel describes the platforms and programme to be used and leveraged by the Malaysian UotF in delivering the Value Propositions to its customer segments. These channels include digital platforms (such as Social Media, Emails, etc.), exhibitions, international Alumni offices, events, eLearning & eMarketplace platforms, and Network of Mosques.

1.5 Key Activities

This section describes the important programmes activities to be performed in order to deliver the value propositions offered by the Malaysian UotF to its customer segments. The key activities and programmes include humanising entrepreneurship education, research and commercialization, mentoring/coaching and Workshops, community engagement, job creation and innovation, fundraising campaigns.

1.6 Key Resources

Key resources are the important assets required to deliver the value propositions offered by the Malaysian UotF to its customer segments. The key resources include digital platforms e.g. eLearning & eMarketplace, staff and students, and international Alumni chapters.

1.7 Key Partners

This section describes the external partners with the strategic competencies and values - people or/and organizations, who can collaborate as partners to execute and deliver the value propositions offered by the Malaysian UotF to its customer segments. The key partners include local and international universities collaboration in generating the courses content, training and other academic activities. Research centres & institutions to support in the responsible research development and the research commercialization. Industry, Alumni chapters to support in coaching and training, and community to support engagement activities. Government to support in funding and job creation. NGOs, Donors and sponsors to support in fundraising campaigns.

1.8 Cost Structure

The Cost Structure defines all costs incurred in order to execute and deliver the value propositions offered by the Malaysian UotF to its customer segments. This includes the costs in executing the key activities by having the key resources in carrying out entrepreneurship programme, salary for lecturers and staffs, marketing and advertisements, teaching/researches and community engagement, e-learning platform maintenance and enhancements, training and workshops, and administration office utilities.

1.9 Revenue Streams

The revenue comes from the customer segments. This is to cover the cost of operations and to implement the programme. The revenue streams include the freemium fees, fundraising campaigns, Zakat/ Waqaf, donations, sponsorship, government, NGOs & private grants, research commercialization, and training & workshops.

C. Validated Value Proposition Canvas (VPC)

The Value proposition canvas is used to understand the customer pains, gains and shows the expected services that the customer needs from the business or programme. This VPC is validated by interviewing 10 Sudanese undergraduate and postgraduate students in Malaysia and Sudan, as well 10 unemployed youth in Sudan, and 3 volunteers. The VPC consist of two parts (see Table II), the first part customer profile is addressing the pains, gains, and services required by the customer. Second part value map is addressing the pain relievers, gain generators, and the expected services and products to be provided by the business or the programme.

TABLE II: VALIDATED VALUE PROPOSITION CANVAS (VPC)

Customer Segment	Customer Profile			Value Map		
	Job to do	Pains	Gains	Products & Services	Pain Relievers	Gain Creators
Postgraduate (PG) University Students	- Learn entrepreneurial skills - Job & promotion opportunity - Business ideas & creativity	- Industry skills mismatch - Expensive tuition fees - lack of experience - Learn at own pace	- Free access to online education & materials. - Networks - New skills - Increase employability	- Open online courses - Professional tutors - Research skills & Innovation	- learning & industry linkages - Cheap tuition fees - Internship & work placement - Flexible schedule	- Job opportunities - Research grants - - Entrepreneurship training
Undergraduate (UG) University Students	- Free education - Learn new knowledge & skills - Learn creativity - Job opportunities	- Internet facility - Industry skills mismatch - Expensive tuition fees - lack of experience - Learn at own pace	- Free access to online education & materials. - Networks - New skills - Increase employability	- Accredited certification - Open online courses - Experienced tutors	- Available on mobile - learning & industry linkages - Cheap tuition fees - Internship - Flexible schedule	- Quality education - Learn Soft skills - - Entrepreneurship training
Unemployed Youth	- Learn a profession - Free education - Create job & opportunity - Course certificate	- Internet facility - Learn at own pace - Difficulties in using system & understand requirements - Language barrier - Backgrounds	- Networks - Learn new skills - Distance learning	- Accredited certification - Open online courses - Experienced tutors	- Available on mobile - Flexible schedule - User friendly platform - Simple Language & course subtitles - Beginner level course	- Quality education - Learn Soft skills - - Entrepreneurship training
Donors & Sponsors	- Increase Employability/ Self-employed - Promotions & Advertisements	- Poor digital education platform - Poor finance system - Poor Entrepreneurial skills	- Increase employability for youth - Promotion of organization	- Reduce unemployment - Skilled entrepreneurs - E-learning platform - Responsible research solve unemployment issues	- Quality digital platform - E-pay & online based system - Professional instructors & quality content	- Creating Job opportunities - Research & Innovation - - Entrepreneurship programmes - Humanising education

Professional Volunteer	<ul style="list-style-type: none"> - Sharing knowledge & increase youth opportunity for jobs & entrepreneurship - Experience letter 	<ul style="list-style-type: none"> - Allocated time - Youth competency & level of cognitive 	<ul style="list-style-type: none"> - Personal experience & networking - Increase employability for youth 	<ul style="list-style-type: none"> - Consultation support & smooth replacement - Quality digital platform & easy procedures - Statistics & student performance reports 	<ul style="list-style-type: none"> - Flexible appointment - Quality syllabus & teaching materials 	<ul style="list-style-type: none"> - Industry relevant skills - Humanising education - Research grants - Allowances
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VII. CONCLUSION AND FUTURE WORK

This paper is proposing the conceptual business model of the Malaysian UotF in providing possible solutions by offering humanising entrepreneurship education programme, targeting the Sudanese youths, to help them in overcoming poverty as well as the unemployment issue in Sudan. The purpose of this programme is to empower Sudanese youth with entrepreneurship knowledge, skills and ethical values that help them to become entrepreneurs who are capable to make their own business, while at the same creating jobs for others. This programme can be described as an innovative conceptual approach to nurture young Sudanese with entrepreneurial skills and produce more competent and creative entrepreneurs, who are holistic and balanced person. This programme helps to develop a holistic person that is intellectually, spiritually, emotionally and physically balanced and harmonious based on a firm belief in and devotion to God. These young entrepreneurs can help the society to find new avenues toward social improvement, and this shall boost up the country economy and well-being. Many strategies can be used to alleviate unemployment rate in Sudan, where creating jobs is considered as the one of best solutions. Each age group in society has its own role and young people are often seen as representing the future. This approach, which is BMC and VPC, is formulated to propose alternatives towards achieving the University of the Future that have engaged with communities and offer lifelong learning through e-learning and e-Market platforms. With this business model option, other universities can make use of it and adapt according to their context in making relevant contributions to the local and global communities.

For future work, is to translate the conceptual business model and solution proposed into actual project implementation. By developing a project and change management plan including the implementation process taking into consideration the budget, tools and techniques required to facilitate the youth training and learning.

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