ISSN 2348-1196 (print)
International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
Vol. 7, Issue 1, pp: (1-12), Month: January - March 2019, Available at: www.researchpublish.com

Reshaping University of the Future: Designing Business Models that are Relevant through Humanising Education and 4IR

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***Abstract*: The varied societal pressure placed on the university have generated discussion about the need to redefine the role of universities to better serve the needs of contemporary society. Some argue that the universities are still the only institution in society. On the other hand, universities have some experience problems with fees and graduation which make the universities' value have to be questioned. Universities have to learn how to survive and thrive by having a strategy canvas with business modeling tools such as Business Model Canvas, Value Proposition Design Canvas and Environmental Map that used to evaluate, analyze, formulate and design the business models for the University of the Future. In addition, Universities have to adapt to the digital transformation where the voice of the customer is more prevalent than ever. It turns a customer into advocates for the university that become the most powerful marketing tools. Humanizing education should be implemented within the university to keep in sustainability and stay relevant with the future objective of universities. This paper provides the business models, strategies and plans to transform the university from faceless organization into a vibrant institution with human values such as morality and integrity.**

***Keywords*: University of the Future; BMC; VPD; EM; SC; Digital Transformation; Humanizing Education.**

1. INTRODUCTION

In an increasingly competitive of higher education, university must be able to survive to be the best ranking in the world. The universities have to spread its benefits – not only to universities itself, but - to many fields, such as economic, social and humanities. In the future, the world works will be radically change and different. Driven largely by the machine economy where robotics and machine learning take over repetitive and programmable human tasks and artificial intelligence augments human roles. The industry boundaries will be blurred with the university where technology is driving in almost every industry. Therefore, universities will go work more closely with industry to develop curriculum that mirror the requirements of the professional world and to gain research and innovation. The digital behaviour will impact to consumers of educational services. Every consumer activity shift to the digital realms of web, mobile, social, mixed and virtual reality, digital natives are developing new different learning expectations. The international competition will be dramatically increased. In this regard, the landscape of higher education is changing on rankings, students and academic. Along with it, the continuous learning is rising where the need for workforce agility are increasing the demand for continuous development, requiring learning that is self-directed, affordable, accessible and time critical. Hence, University of the Future (UotF) has a big engagement with the technology. It is shown from literature that technology already embedded in every field.

The transformation digital age gives an opportunity to university to redefine their roles. Every university has its own roles, strategy, business model and values that are offered to its customers. Business models such as Business Model Canvas (BMC), Environmental Map (EM), Value Proposition Design Canvas (VPD) are used to analyze, formulate, design and evaluate complex problems related to universities (Dahlan, et al, 2018). BMC or Business Model Canvas is a relatively new paradigm to business modeling. It was popularised by Alexander Osterwalder and Yves Pigneur. The nine

blocks of BMC capture the business big picture and its logic, and divided into four important keys driven: 1. Value and customer driven strategy focusing on the Value Proposition and Customer Segment block. 2. Finance driven strategy focusing on the Revenue Streans and Cost Structure block. 3. Resource and activities driven strategy focusing on Key resources and Key Activities block. 4. Partnership driven strategy focusing on key partners and channel block. Whereas EM or Environmental Map is the business canvas that describes four factors: 1. Industry Forces: Other businesses who offer similar value propositions to similar customers. These could be existing competitors, new entrants or substitutes. 2. Key Trends: The evolving parameters of the law, culture and technology, which may change whether an idea is possible or acceptable. 3. Market Forces: Our constantly changing customer segment and their expectations. 4. Macro-Economic Forces: The financial health of society and each person in it. This affects our customers' willingness and ability to pay for different things.

The development of universities depends on the value offered. It will drive the universities to attract an appropriate customer and give big impact after graduation. An VPD or Value Proposition Design Canvas is an approach to product development. This design is the new works that has included Eric Rie's Lean Startup Principles which was based on Steve Blank's Customer Development Process. Therefore, we will not only design new business model that creates value for the business, but also embedded the design of value proposition that creates value for the customer. In the future, the university will become a national asset where the government will contribute to making the university able to compete globally. In this paper, we will explore the ability of business model and strategy canvas of university to stay relevant, growth and sustain in this digital age, particulary its relation with the university of the future.

Problem statement

The highly varied and at times conflicting societal pressures placed on the university have generated discussion about the need to redefine the role of this institution to better serve the needs of contemporary society (H, Rifca & H. Jacov, 2006). An offered values from universities should be re-configure before it delivers to customers. On the other hand, the cost of providing higher education continues to increase, while funding sources including government funding have been eroded (Ernst & Young, 2012; Barber et al. 2013; Frost & Sullivan, 2016) and students with difficulties for getting job after graduation are another issue comes from university. The relationship between higher education communities and wider society have problem in case of notion of holistic student development encompasses not only learning academic knowledge and skills, such as problem-solving and analysis, but also other aspects of students as people who are growing and maturing affectively (emotionally) and morally (M Quinlann, Dr Kathleen., 2011). Thus, University has to build new commercial capabilities and become more responsive to industry to improve university finance. In addition, as stated in *National Higher Education Strategic Plan and Vision 2020 by MoHE Malaysia*, government need to produce an adequate human resource with knowledge, skill, and high moral values from higher education. By these complex and dynamic problem, universities have to evaluate their value offered, design the business model and put values of shari'ah islam within the business model for make a better institution in the future.

Methodology

This paper adopted the design and system thinking approach (Lewrick et al., 2018). Strategy canvas with business modeling tools such as the BMC, EM and VPD are used in analyzing and subsequently to formulate and design business model alternatives for the University of the Future (Osterwalder et al., 2010 and 2014). The formulated University of the Future business models of a Malaysian-based University will be validated by the Chief of Information Officer and Head of Strategic Planning Unit of the university. The VPDs will be validated by the respective customer segments of the university. In this paper, we have chosen to use the "Epicenter of Business Model Innovation" to generate new business models (Osterwalder et al., 2010) for the choosen Malaysian-based university.

2. LITERATURE REVIEW

University of the Future

The university of the future will become known as hubs of social interaction, engagement, collaboration and recreation that interface with the surrounding communities. It will also enrich the theatre of learning, enabling greater engagement and attendance that can drive industry collaboration within the industry ecosystem (Greg Pringle, UoQ). Universities will play a critical role in the transition to an innovation led economy and will increasingly be embedded in integrated precincts that support industry-university collaborations and help drive innovation and knowledge transfer (Prof Deborah

T. AO, Curtin University). Ernst and Young developed four scenarios to assist university leaders and government policy makers in planning now and to deliver the educational needs of students and employers tomorrow. The government role, demand conditions, technology conditions, sector structure and rivalry are the drivers for every scenario. Each scenario introduces different opportunities and threats that challenge our thinking, question our assumptions and help us think more broadly about the future. And it drives the universities to have the opportunity to assess different opportunities and threats, and test which elements might be relevant for growth and sustainability over the next decade. *First*, champion university. Universities as trusted arbiters of knowledge prepare the youth population for employment in the emerging age of AI and mass automation, pursue both teaching and research from strong government financial support, shift from being passive teaching institutions to active to industry, embrace technology into both front-office and back-office operations, and contribute as global player and compete globally. *Second*, commercial university. Universities must take advantage of new revenue streams by industry linkage, increase differentiation to compete and attract funding, focus on quality of teaching, run dual degree such as on-campuss and digital degree, start up new business and commercial to build strong link to economies. *Third*, disruptive university. In this scenario, universities must digitally enable business models in two: business to consumer and business to business, compete to deliver the best content in the best way, create precinct in education – innovation and community with digital platforms. *Fourth*, virtual university. This scenario pushes universities to focus on learner acquisition, retention, satisfaction and lifetime value.

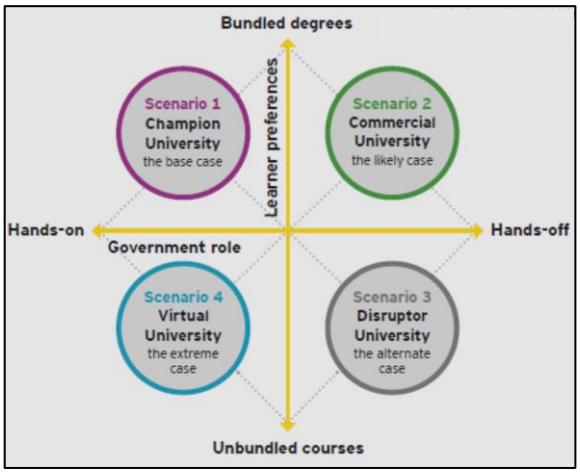

Figure 1. Four Scenario and Two Critical Uncertainties develop by Ernest & Young, 2018

Finally, university of the future will use a lot of technology, where it needs to be focused on the trans-diciplinary interface between technology and humanity, community organizations and social enterprise intermingling with the students, and there will be full integration with society and industry.

Megatrends

Future higher education shaped by megatrends (Choudaha, Rahul and Van Rest, Edwin, 2018). Megatrends are large, transformative global forces that define the future by having a far-reaching impact on business, economies, industries, societies and individuals (John Naisbitt, 1982). The megatrends process is one of the key ways in which insights are gained and inform the mission of building a better working world. It helps to better understand the challenges and opportunities faced, so that it can effectively respond to the shifting needs.

The world is getting older which will encourage institutions to find new ways to educating and employing the aging population throughout their career and beyond. Increasing pace of automation and skills mismatch will create new expectations for market relevant skills and retraining of talent. Rapid urbanization will result in more people moving towards cities which in turn will drive demand for accessible and flexible learning models. Despite demographic challenges, stricter immigration policies in high income countries may make it more difficult for finding migration pathways. Economic growth in emerging markets will drive demand for expanding access to higher education. It will also fuel aspirations and capacities to afford studying abroad. Imbalance in demand for higher education among youth population in emerging economies and large supply of institutions in high income economies will provide opportunities for engaging through international recruitment and transnational education. Public defunding of higher education will

continue with increasing expectations of self-funding through enrolment growth and academic innovation (Choudaha, Rahul and Van Rest, Edwin, 2018).

Fourth Industrial Revolution (4IR)

The fourth industrial revolution is distinguishable from the third because it is where humans meet the cyber world, where technology and people are connected. Everything gets connected, integrated, customized and intelligent. The 4IR automates complex tasks; integrating AI, Internet of Things and Cloud computing. 4IR leads to digitization and digital transformation, digital disruptions and it has its own consequences too. Fourth industrial revolution will push students and graduates to have upgraded digital knowledge and skills. Students across disciplines will need to develop and acquire digital knowledge and skills during their studies. Therefore, graduates must be innovative, entrepreneurial and have cognitive flexibility to deal with complexity; workers need to collaborate not only with Man, but also machines and robots. Graduates must acquire self-learning skills to remain relevant in the era of rapid changes (Dahlan, A.R.A., et al, 2018). Additionally, We expect that over time, the most desirable students will be attracted to those universities that embrace the digital age on their terms rather than being overwhelmed by it. This means that being aware of new trends in emerging technologies and having the ability to rapidly harness their potential to drive improved outcomes will become a key differentiator within Higher Education[14].

Higher Education

Higher education's goals are to ensure quality of learning through teaching, to enable the students to get the latest knowledge through exploratory research and to sustain the development of societies by means of service (Bo Xing and T. Marwala, 2017). With its speed and breadth of industry revolution 4.0 (IR 4.0), it is important for countries to understand the impact of these changes on all areas of our lives including higher education. The fundamental functions of higher education in the fourth industrial revolution (Bo Xing and T. Marwala, 2017) that should be modified are: teaching, research and service.

1. Teaching (*include learning through teaching*). *First*, education establishments have to revolutionize the way of teaching and training students and how they learn as well. *Second*, massive open online courses (MOOCs) used to provide instruction online. MOOCs can eliminate physical proximity requirement and productivity limitation by working completely differently: off campus and online model. *Third*, Cultivate the innovative talent in high-level scientists and technologists, not just training knowledge-based skilled person. *Fourth*, Generalize blended learning (i.e., mixed e-learning and face-to-face learning methodology). It is well-known that virtual environments offer great educational value in the process of information transmission and interactive participation, either in real time (e.g., video conferences), or non-simultaneous participants involvement (e.g., forums and chats). Hence, a higher education system needs to look at whether it can be accepted and transform the teaching and learning environment to the benefit of both students and academics.

2. Research. *First*, Open innovation that refers to the combination of humans and computers to form distributed systems for the purpose of accomplishing innovative tasks that neither can be done alone. *Second*, Evolutionary & revolutionary innovations; innovations based on existing technologies are so-called evolutionary type; while revolutionary type of innovations focuses are inventions of new technologies. Resource allocation for funding research projects and financial support from institution and government levels should be made available. *Third*, New technological advancement driven research and development, that the advanced technologies can be leveraged across many domains to continue to deliver impact and can bring benefits to higher education R&D in at least four areas: cost and timeline reduction, operation transformation, R&D process enhancement and research direction innovation via the creation of new ideas and theories. *Fourth*, Shorten the innovation cycles because the strongest innovators and leading researchers draw on swiftness, well-pruned processes, and the exploitation of advanced technology to explore and capture research opportunities.

3. Service. *First*, University as a platform (UaaP) that gives the current higher education system an opportunity to steer their businesses towards platform businesses for a better service performance. In Service 4.0, the ongoing transformation to platform-based competition is led by many forces: educational activities, ubiquitous computing, Internet of things both within and outside campus and the demanding students in terms of customized learning. *Second*, Education as a Service (EaaS) as a guideline to discover newer and more advanced strategies to cope with ever-increasing societal complexity. *Third*, Internationally-linked programmes that offer more versatile degree programmes and professional qualifications. The following types stand out and are worth consideration: twinning programmes where a local education provider

collaborates with a foreign education provider, franchise programmes is a scenario where foreign education provider authorizes a local education provider to deliver their courses / programmes, double or joint degree is an arrangement where local and foreign education providers cooperate, and blended learning where local and foreign education providers deliver programmes to enrol students in various mixed forms. Hence, improving the quality of service in higher education can bring about a significant change in the society.

Ernst & Young, 2012., put five drives of change: democratization of knowledge and access, where the massive increase in the availability of knowledge online and the mass expansion of access to higher education in developed and developing markets; contestability of markets and funding, where competition for students is reaching new levels of intensity, at the same time as government globally face tight budgetary environments; digital technologies, where campusses will remain, but digital technologies will transform the way education is delivered and accessed, and the way value is created by HE providers, public and private; global mobility where opportunities created for much deeper global partnership and broader access to students and academics; and integration with industry where universities will build deep relationship with industry in order to support funding and application of research, and reinforce the role of university as key drivers of innovation and growth.

Humanizing Education

Higher education as a knowledge establishment center, is confronted with the challenging of educating student minds to meet the demands of an increasingly world globalization, preparing their students who can address local - national and global problems in order for them to function equally well in these environments. The issues are not local scale but on global which affect everyone regardless of race, age, gender or religion. Therefore, not only the higher education communities and environmentalists are responsible for sustaining the environment, but to protect the environment for sustainable living is everyone's duty.

Sustainable is a vital value in humanising education, where the main principles in building character and virtues of a balanced individual regardless of race, nation or religion. These virtues include honesty, sincerity, purity of heart, self-sacrifice, trustworthiness, ethical, humility, virtuous, and respectful. The assimilation of these values will enable one to distance himself from being arrogant despite having little knowledge for the sake of gaining position or material wealth (Dzulkifli, A.R., 2015). For instance, university and school students were arrested in raids of wild drug parties in Kuala Lumpur [20].

Sustainable Development Goals 4 (SDG4)

Of the 17 Sustainable Development Goals (SDGs), adopted in 2015, SDG4 is dedicated to education. Higher education is mentioned in target 4.3 of SDG4 which aims to "By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university". Higher education also forms an important part of other goals related to poverty (SDG1); health and well-being (SDG3); gender equality (SDG5) governance; decent work and economic growth (SDG8); responsible consumption and production (SDG12); climate change (SDG13); and peace, justice and strong institutions (SDG16) [18]. The SGD4, which has a purpose to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. It offers an opportunity for the global higher education community to evaluate how universities contribute, to step up and demonstrate that building a sustainable future depends on both knowledge creation and collaboration (Egron, Eva., and Polak, 2017).

The following environment that priority for higher education (Egron, Eva., and Polak, 2017) are: Ensure more equitable access to higher education for students from all backgrounds at the national level; Develop and adhere to a broader approach to internationalization that includes of technology and intelectual training. Internationalization is the intentional process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff, and to make a meaningful contribution to society (De Wit, et. al., 2015). Which means an affirmation that international education serves a wider purpose, one that is linked both to the academic and the social role and responsibilities of higher education. It is also a call to demonstrate how international education contributes to creating graduates who are global citizens and how it can promote social cohesion, create a more peaceful, less divided, and less violent society; Value and promote international education in all disciplines beyond business and management, such as engineering, medicine, art and humanities.

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International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
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Designing the University of the Future Business Model

Based on the literature review, the design and system thinking approach using strategy canvas with business modeling tools – the Environmental Map (EM), Business Model Canvas (BMC) and Value Proposition Design Canvas (VPD) – are used to analyse, formulate and build an alternative business model for the university of the future (UotF).

I. Environmental Map (EM)

Business models are designed and executed in specific environments. Developing good understanding of your organization's environment helps conceive stronger, more competitive business models. There are key external forces that influence business models and it categorized using the four areas. *First*, Market forces, with five factors in it: market segments that identifies the major market segments, describe their attractiveness and seeks to spot new segments; market issues that identifies key issues driving and transforming the market from customer and offer perspectives; needs and demands that outlines market needs and analyzes how well they are served; switching costs that describes elements related to customers switching business to competitors; and revenue attractiveness that identifies elements related to revenue attractiveness and pricing power. The market forces focus on customer segments (CS), value proposition (VP), key activities (KA), key resources (KR) and revenue streams (RS) blocks. *Second*, Industry forces, with five factors influencing: suppliers and other value chain actors that describes the key value chain incumbents in your market and spots new, emerging players; competitors (incumbents) that identifies incumbent competitors and their relative strengths; new entrants (insurgents) that identifies new, insurgent players and determines whether they compete with a business model different from others; substitute products and services that describes potential substitutes for offers, including those from other markets and industries; and stakeholders that specifies which actors may influence the organization and business model. The industry forces focus on key partnership (KP), value proposition (VP), key resources (KR), and revenue streams (RS) blocks. *Three*, Key trends with four factors: regulatory trends that describes regulations and regulatory trends that influence your business model; societal and cultural trends that identifies major societal trends that may influence the business model; socioeconomic trends that outlines major socioeconomic trends relevant to the business model; and technology trends that identifies technology trends that could threaten the business model or enable it to evolve or improve. The key trends focus on value proposition (VP), customer segments (CS), key activities (KA), key partnership (KP), cost structure (C$) and revenue streams (R$) blocks. *Four*, Macro-Economic forces with four factors: Economic infrastructure that describes the economic infrastructure of the market in which the business operates; Commodities and other resources that highlights current prices and price trends for resources required for the business model; Capital markets that describes current capital market conditions as they related to your capital needs; and Global market conditions that outlines current overall conditions from a macroeconomic perspective. The macro-economic forces focus on cost structure (C$), channel (CH), key activities (KA) and key resources (KR) blocks (Osterwalder, Alexander and Pigneur, Yves., 2010)

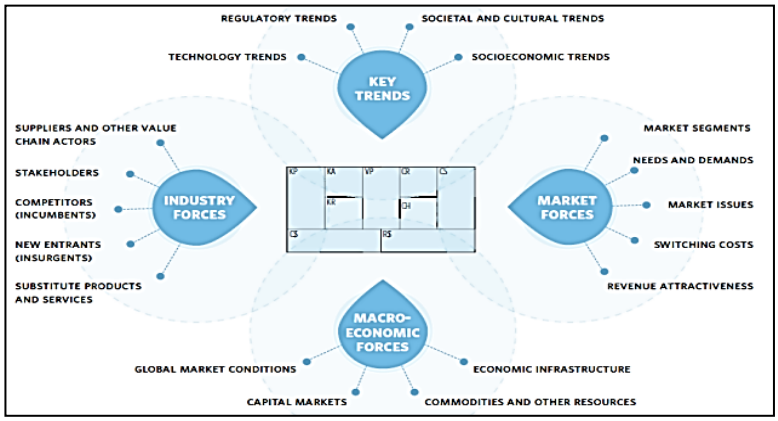

Figure 2. EM for UotF: key trends, market forces, macro-economic forces and industry forces [19]

II. Business Model Canvas

Business Model Canvas or BMC is a relatively new paradigm to business modeling. It was popularised by Alexander Osterwalder and Yves Pigneur. The nine blocks of BMC capture the business big picture and its logic, and divided into four important keys driven: 1. Value and customer driven strategy focusing on the Value Proposition and Customer

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Segment block. 2. Finance driven strategy focusing on the Revenue Streams and Cost Structure block. 3. Resource and activities driven strategy focusing on Key resources and Key Activities block. 4. Partnership driven strategy focusing on key partners and channel block.

i. How do universities create value ? ■ Potential area of disruption

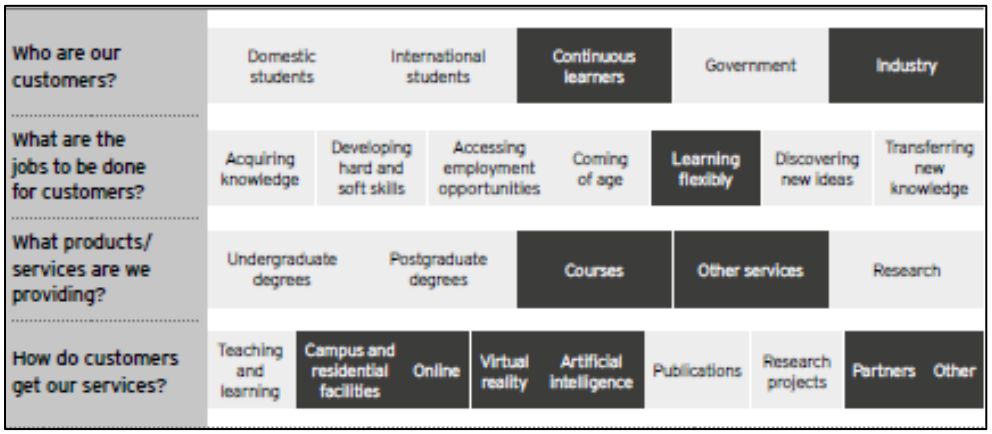

Figure 3. HE Business Model Canvas [7]

ii. How do universities deliver value

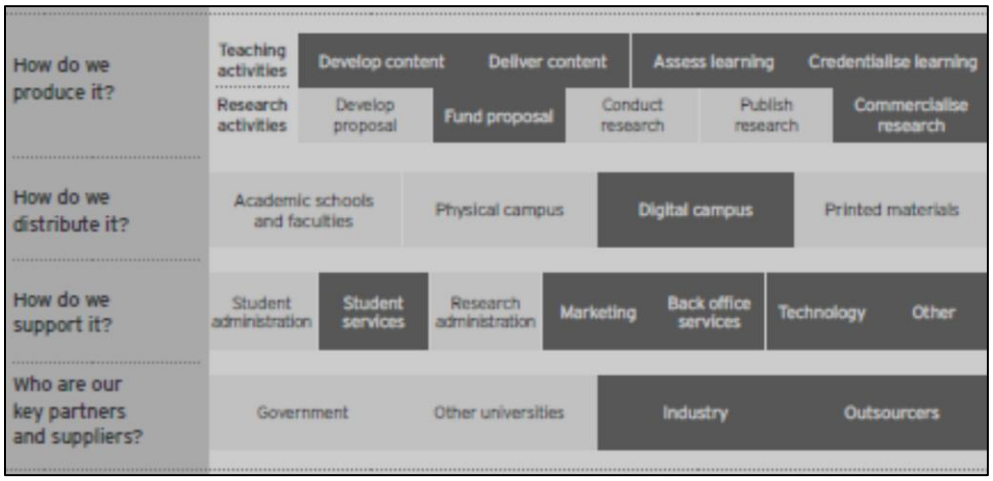

Figure 4. HE Business Model Canvas [7]

iii. How do universities capture value

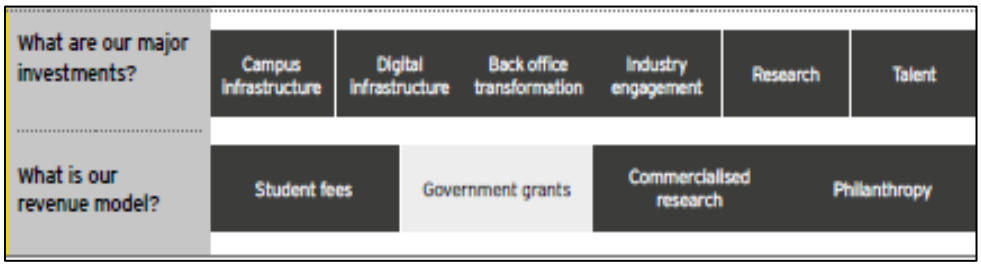

Figure 5. HE Business Model Canvas [7]

Three broad lines of evolution of the university of the future by Ernst & Young, 2012.

1. Streamlined status quo: Some established universitis will continue to operate as broad-based teaching and research institutions. At the same time, they will progressively transform the way they deliver their services and administer their institutions with major implications for the way they engage with stakeholders.

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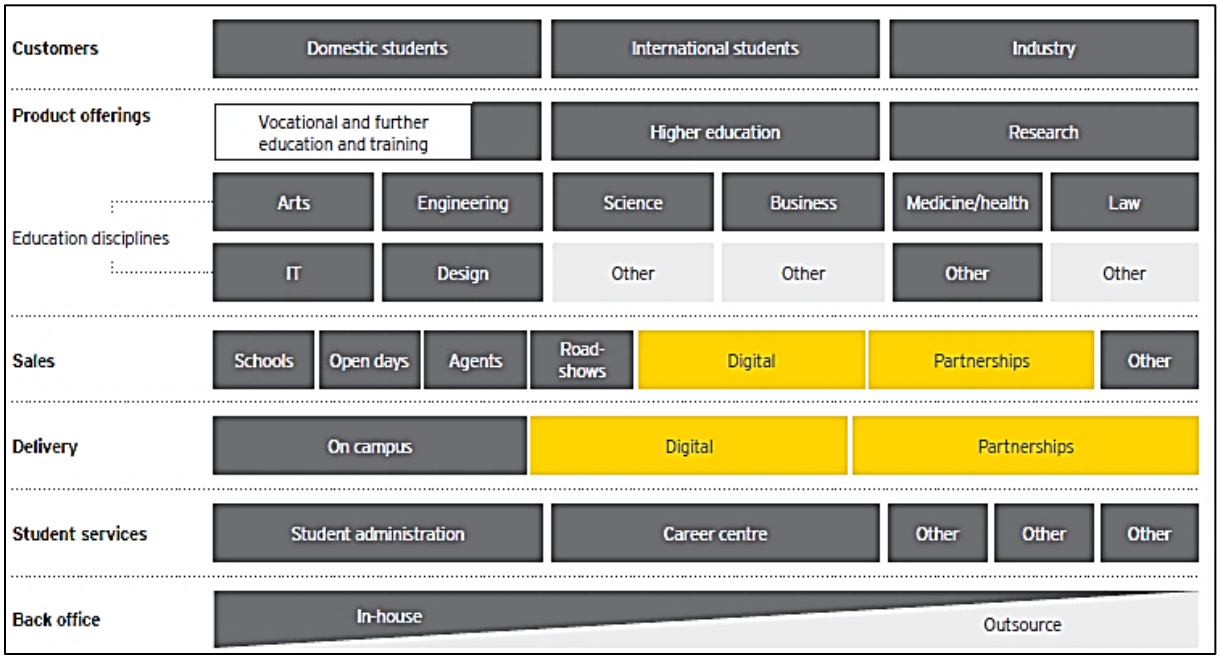

Figure 6.

Source: Ernst & Young

2. 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.

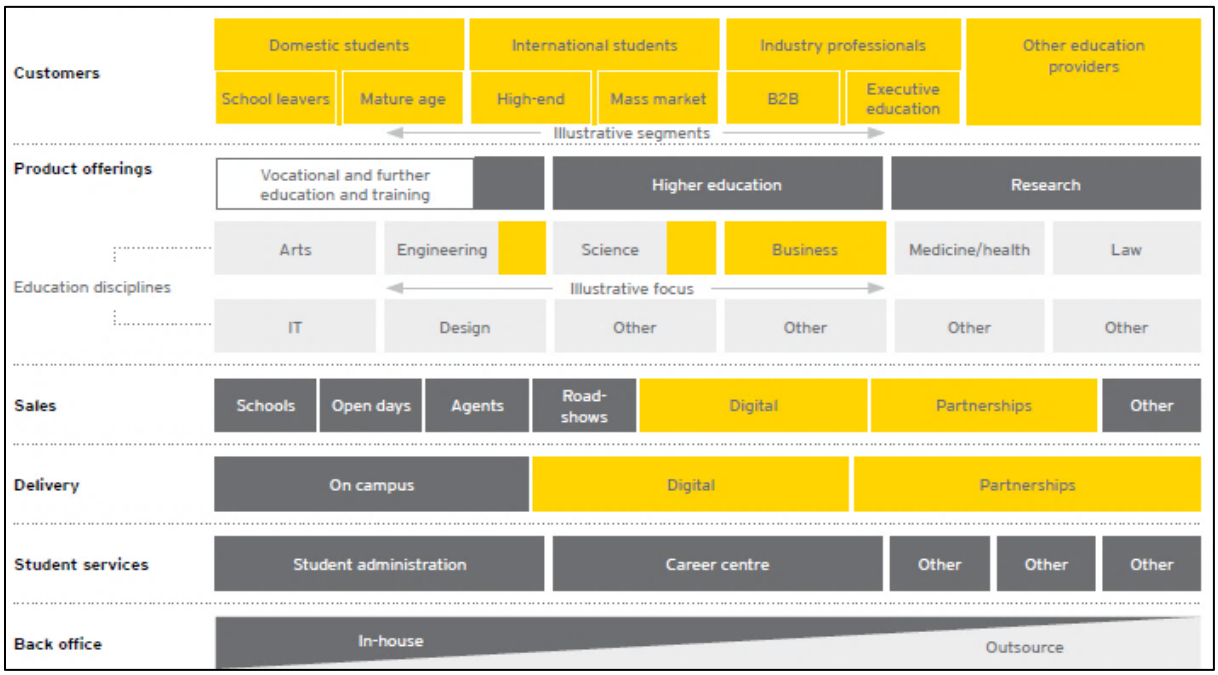

Figure 7.

Source: Ernst & Young

3. Transformer: Private providers and new entrants will carve out new positions in the traditional sector and create new market spaces that merge parts of the higher education sector with other sectors such as businesses, technology, innovation, and venture capital. Incumbent universities that partner with the right new entrants will create new lines of business that deliver much needed revenue to invest in the core business globally competitive teaching, research and community well being.

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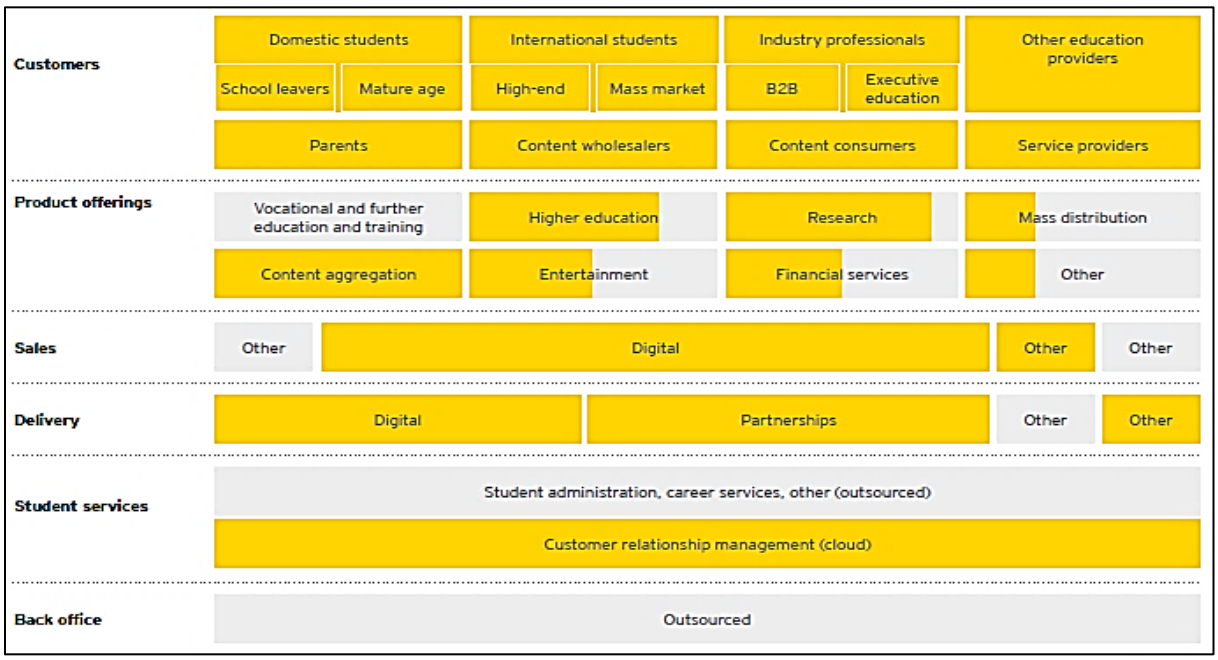

Figure 8.

Source: Ernst & Young

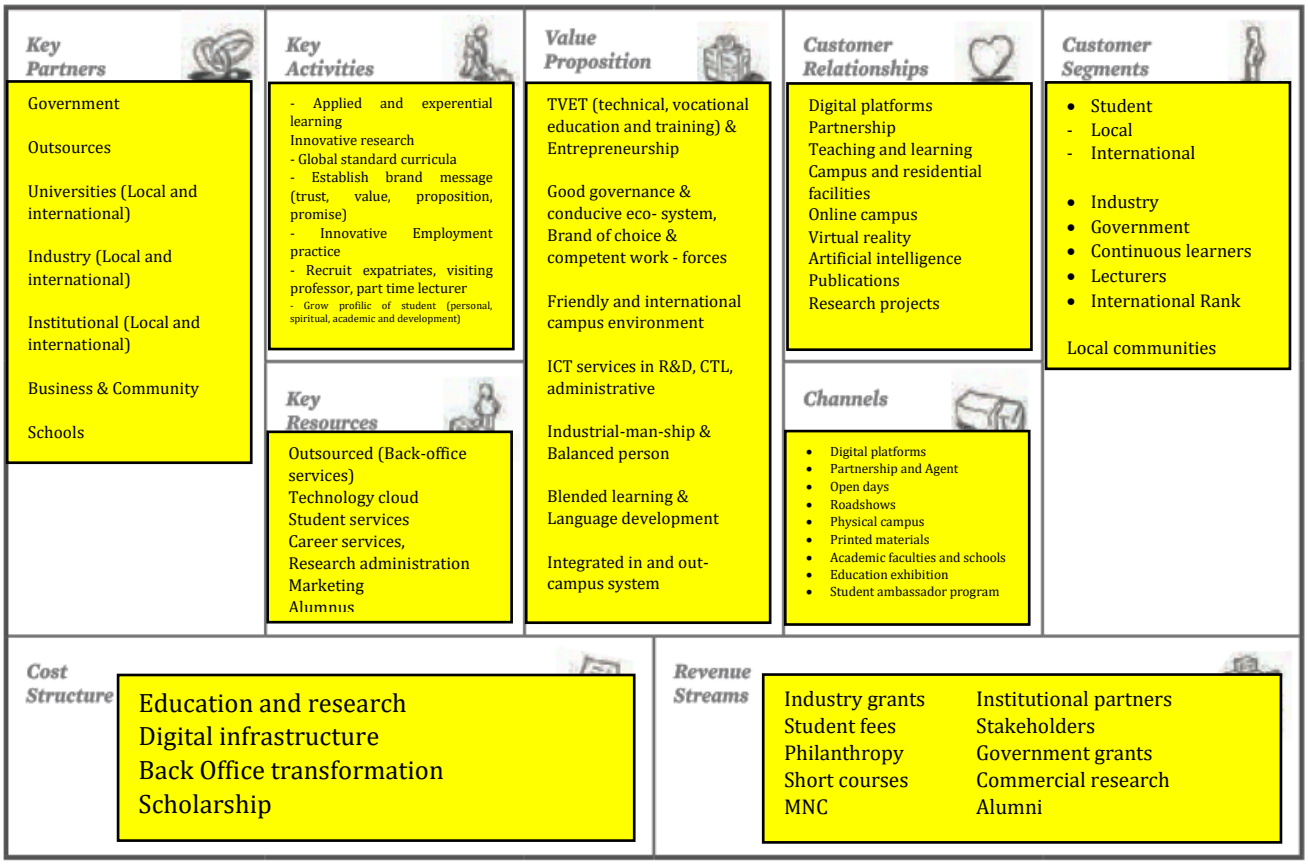

Figure 9. Proposed Concept of University of the Future

III. Value Proposition Design Canvas (VPD)

Value Proposition Design Canvas used to create values offered to university's customer segments. In this case, the customer segments are student: undergraduate and postgraduate, continuous learner, industry and government. These are two blocks from BMC: Value Proposition and Customer Segment in VPD. The Value (Proposition) Map describes the

features of a specific value proposition in the business model in a more structured and detailed way. It breaks the value proposition down into products and services; pain relievers that describes how the products and services alleviate customer pains; and gain creators that describes how the products and services create customer gains. Whereas the Customer (Segment) Profile describes a specific customer segment in the business model in a more structured and detailed way. It breaks the customer down into its jobs that describe what customers are trying to get done in their work and in their lives, as expressed in their own words; pains that describe bad outcomes, risks, and obstacles related to customer jobs; and gains that describe the outcomes customers want to achieve or the concrete benefits they are seeking (Osterwalder, Alexander., et., al., 2014).

Table 1.. Value Proposition Design for each customer in UotF

NO	CUSTOMER SEGMENTS				VALUE MAP		
-	**Customer**	**Customer Jobs**	**Pains**	**Gains**	**Products & Services**	**Pain Relievers**	**Gain Creators**
1	Student Under-graduate	- Learning, research - Experience - Get good grades for continuing in the next study	- Registration requirements - Language - High-cost - Debt after graduation	- Cheaper cost, high quality learning - Well-integrated among staff and academic and students - Skill practices	- Unique materials - Organizations - MOOCs, eLibrary - Best ranked university - Industry linkage - Blended learning	- Integrated division & staffs - Language classes - Assistantship - Grants - Updated information	- Briefing by time - Field works - Internship - Digital platform - Scholarship
2	Student Post-graduate	- Learning, research - Got promotion, good salary in work place, employment - Tacit and implicit knowledge extension in and outside university	- Registration - Language - High-cost - Social environment - Debt after graduation	- Cheaper cost, high quality learning - Well-integrated among staff and academic and students - Skill practices	- Unique materials - New challenging programme - MOOCs, eLibrary - Best ranked university - Industry linkage - Blended learning	- Integrated division & staffs - Language classes - Assistantship - Grants - Updated information	- Briefing by time - Field works - Digital platform - Scholarship
3	Continuous Learner	- High place in the workplace	- Time sharing	- Gain some knowledge	- Certificate of graduation	- Evening class / Online class	- Blended learning
4	Industry	- Get fresh graduate	- Low salary	- Good Quality Employee - Research	- Matched position in industry	- Promotion	- Internship - Patent
5	Government	- Maintain coverage, improve quality of HE graduates, increase inclusiveness	- Disconnected between HE and industry	- Research - Competitiveness	- Quality of student/alumni/graduate student	- TVET	- Grant - Skilled student, staff and lecturer

IV. Strategy Canvas (SC)

Graphically depicts the universities' competitors and value proposition investment (value elements). Strategy canvas serves two purposes. *First*, to capture the current state of play in the known market space, which allows users to clearly see the factors that the industry competes on and where the competition currently invest. *Second*, to propel users to action by reorienting their focus from competitors to alternatives and from customers to non-customers of the industry. There is an action framework that facilitates for identifying the value elements: eliminating, enhancing, reducing and innovation (Universities in the Blue Ocean, 2017).

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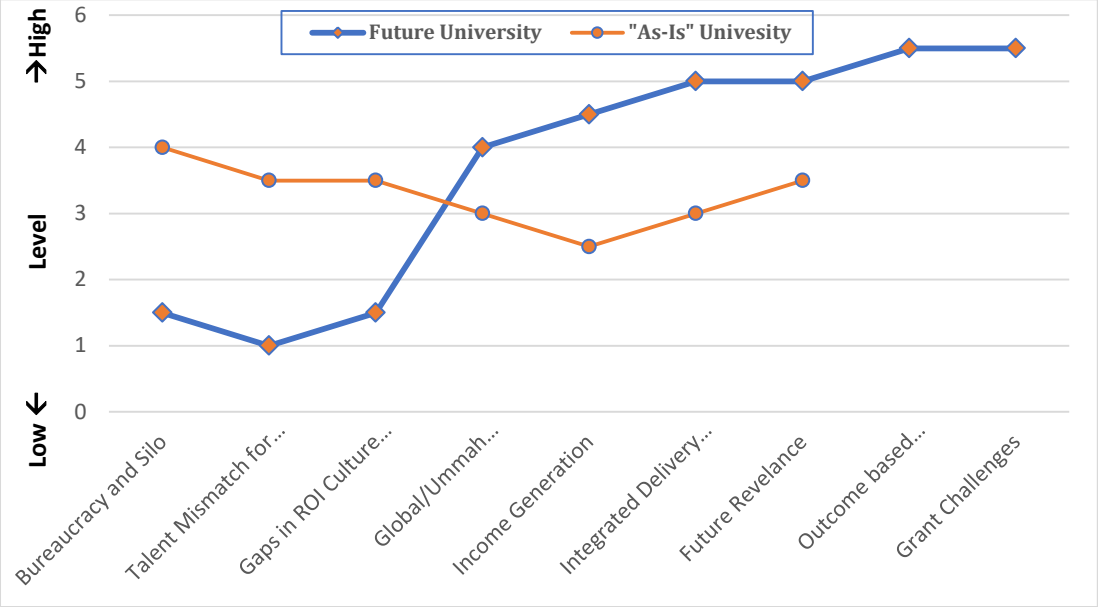

Figure 10. Strategy Canvas for UotF (*Adapted from Dahlan, A.R.A., et. al., 2018*)

3. CONCLUSION

Leading universities of the future in digital transformation is quite challenging and risky. Given the fourth industrial revolution, a new form of a university is emerging that does teach, research and service in a different manner. However, it is not degrading educational experience but augment it. The role of the university is in a fundamental value innovation, creating valuable renewal in the short-term by keeping an eye on the long-term and the deep perspective. The value allows universities to do what they do best: quality, integrity and excellence, linked closely with the surrounding society. Additionally, using business models – Business Model Canvas/BMC, Value Proposition Design Canvas/VPD, Environmental Map/ EM, Strategy Canvas/SC – for analyzing the dynamic and complex problem towards university of the future. Nurture the outcome of the university in a balanced person should be gained, because the concept of humanizing education will keep the sustainability of the university.

There was a difficulties in interviewing the relevant chief information officer and head of strategic planning of the targeted university. However, Future work is expected to conduct an interview of proposed business model canvas according to the criteria that have been evaluated in this work. In addition, it is also planned to conduct a validation of value proposition design canvas by interviewing each of customer segments.

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