POSITION PAPER

UAEU ROADMAP TO THE UNIVERSITY OF THE FUTURE

August 2017

EXECUTIVE SUMMARY

UAE University (UAEU) aspires to be the University of the Future in the UAE and the Middle East. It seeks to be the *university of choice* for undergraduate and graduate education, and research, training and lifelong learning. By 2030, the university aims to rank among the top 20 academic institutions in Asia and the top 200 in the world.

The University intends to attain regional and global eminence in areas of strategic significance to the nation/region by conducting cutting-edge research in these areas and inculcating the spirit of discovery and entrepreneurship. Further, as the lead national higher education institution of UAE, the University plans to be the national hub in these areas and become the primary destination for collaboration for governmental and non-governmental agencies, organizations, industry, and international agencies.

While UAEU will strive to produce indigenous leaders of the highest caliber in these areas, it also aims to attract international scholars to create a vibrant interactive research and learning environment that advances the region technologically, strengthen its heritage, culture and tradition, and benefits humanity. The university also aims to adopt and constantly revise learning approaches by embracing/devising technology that facilitates delivery and assimilation of knowledge and promotes curiosity and critical thinking among its graduates. UAEU will maintain its core values and heritage while redefining the mission. It will reposition itself as per market and student needs, and evolve into an institution that prepares future leaders in diverse fields.

An endeavor and shift of this magnitude will require UAEU to embrace transformational changes across the spectrum of the university structure and functioning. Below we summarize suggested changes in key areas that will help strategize the 2030 vision specific goals and implementation.

1. **GOVERNANCE**
   - Implement shared governance, transparency, autonomy and flexibility in decision making at various management levels - all tied to accountability.
   - Dedicated, highly skilled and world-class visionary leaders with teamwork spirit, ample experience and due understanding of university administration to lead various units.
   - Have a diverse and highly competent advisory board that comprises of national and international experts, to guide UAEU to vision 2030 goals and ensure progress.
2. **FACULTY**
   - Recruit, retain and cultivate outstanding faculty/researchers and provide an enabling environment for their optimal performance and success.
   - Reward success through recognition; however, set the bar high through international level expectations and add accountability. Remove salary stagnation through yearly increments (morale booster), and have mechanisms for star performers to rise.
   - Two tier faculty employment with due value to each tier: Faculty dedicated 100% to teaching and faculty dedicated largely to research with 30% teaching role; both tier of faculty must demonstrate excellence, must be high-achievers and must fulfill 2030 goals.
3. **STUDENTS**
   - While maintaining qualified UAE national students, increase international talented students to be 30% of the student population.
   - Enrich overall environment by creating a "vibrant learning campus" where students proactively spend most of their time and become educated, skilled, highly informed, interactive, engaged and socially responsible, global citizens (not mere degree holders).
   - Prepare students for future jobs and future society using emerging pedagogic approaches. Constantly align education with market and societal needs.

- Establish an outstanding recruitment and marketing unit dedicated to attracting students; incentivize deserving students; become competitive and recruit the best.
- Holistic development of students: university of the future creating citizens of the future.

4. ACADEMIC PROGRAMS

- More focus should be on STEM.
- Strategically select academic programs that are sustainable and relevant to region; Develop a portfolio of programs that reflects regional need but has a global reach/impact.
- Constant revision of academic programs while considering market/student needs/trends.
- Highly organized, specialized and non-redundant course-listing system across university that reduces faculty burden and streamlines course delivery at student desk.
- Institute research informed, curiosity driven, interactive learning that challenges students and allows them to develop limitlessly at their pace, and based on their ability; offer a platter of possibilities and combinations of academic programs to suit their needs.
- Research and internships/externships must be an integral part of academic programs.
- Academic programs must reflect global excellence and must gain international eminence.
- Substantially expand/strengthen graduate education (MSc & PhD) in all programs.

5. CURRICULA & PEDAGOGY

- Introduce, across curriculum, aspects and skills required for the fourth revolution.
- Adopt new technologies, aspects, and skills necessary for the 21st century.
- Introduce innovation and entrepreneurship as integral parts of the curriculum.
- Plan to offer most of the Gen Ed & introductory courses through blended/online learning.

6. INDUSTRY & INTERNATIONALIZATION

- Engage industry for University research, training and intern/externships. Dedicated cell for fostering this relationship. Must be aligned with focus/priority areas of the university.
- Have industry as sustained research partner for colleges, interdisciplinary centers, and Science Park to stimulate creativity and discovery among all constituents.
- Establish strategic alliances with key institutions of international standing for Joint Research Centers in areas of mutual interest; promote research, training and learning.

7. RESEARCH

- Must be discovery and entrepreneurship driven; create indigenous expertise. Through research become a reputable higher education institution. Emphasize quality over quantity.
- Strong interdisciplinary programs in strategically selected priority areas managed by centers of excellence; be strategically selective and consolidate resources/funds.
- Most (80%) research focus/investment in strategically selected areas; other 20% investment in high-risk emerging areas. Primary goal: create international eminence.
- Become the 'go-to' place for research and guidance in these areas in UAE and region.
- Graduate programs aligned and specifically developed around these areas.
- Emphasis on applied research; basic research primarily to strengthen applied research.
- High profile collaboration with national agencies, industry and international institutions.
- Have research as the backbone for UG & graduate education, training and lifelong learning.
- Assign substantial funds and attract endowments for massive research investment.

8. FINANCIAL & MATERIAL RESOURCES

- Change the process of financial resource allocation to support strategic initiatives.
  Diversify revenues, such that, in addition to the Government funds, a huge amount will be added through graduate program fees, industry, and endowments.
- Outsource operational functions that are not central to the core business of the University. In addition, outsource components of the educational program - such as General Education, common introductory and developmental courses.

Introduction

Higher education is at a critical strategic crossroads where changing market forces offer both threats and opportunities. Over the next 10-15 years, the current public university model will prove unviable in all but a few cases.

Rapid changes require us to prepare future generations with new tools and knowledge and different skills that enable them to succeed in a world that will be very different from the one we live in today. These unprecedented changes will create a landscape rather unlike that of the past, will turn colleges and universities inside out, and upside down and inevitably will prove fatal to some institutions.

Conditions today are such that if the University intend to remain relevant—and solvent—it needs to change some of its behaviors and to accelerate the pace of that evolution in order to thrive - or perhaps even to survive - in the days ahead. It will be compelled to create new business model as competition increases for students, faculty, funding, and partners.

Part of the planning for the University's future means giving serious consideration to deep changes in its core business model, including its offerings, the mode of delivery, and its priorities. Long-held assumptions and traditional practices may need to be re-envisioned. New practices may need to be invented and implemented.

In order to fulfill its mission in preparing students for life, to be good citizens, and for the job market, a range of initiatives and new ideas that shed light on how the UAE University might meet the challenges it faces - and will increasingly face in the future - is discussed.

The purpose of this paper is to stir discussions among the University stakeholders about the directions the University intends to take in order to be a world class, university for the future. The paper presents a draft document of some ideas that need to be debated among the University Leadership, faculty, and other beneficiaries in order to ensure its ownership and effective implementation, which depends on the readiness of individuals, departments, and faculties to implement the plan, as well as the practical issue of resources.

The paper develops a vision of what a future model for UAEU might look like in terms of the ideal role of the University within the education and research arena, the services the university customer will need, and optimal channels to achieve them. The paper considers the kinds of changes in the University practice that are needed to meet the challenges it faces and how the University should act on them.

The paper refers to discussions that took place during three brainstorming retreats conducted by UAE University during February, March, and May 2017. University Council members, international experts, industry partners, other stakeholders, and faculty and administrators shared their views on the viability of the current business model, and the possible business models for the future of UAEU.

University Vision (2030)

The United Arab Emirates University aspires to be the first world-class university in the country; among the first 20 in Asia; and among the first 200 globally.

Context

In pursuit of achieving this status, UAEU is required to create a new "knowledge environment" that promotes, among other things, scholarship, innovation, and creativity. This constitutes a high concentration of talents; both faculty, students and staff; focusing on current areas of strength; sustainable diversified financial and material resources; a favorable governance system to encourage autonomy, excellence, strategic vision, efficient resource management, and flexibility; and finally yet importantly sound academic programs that foster competitiveness, unrestrained scientific inquiry, internationalization, critical thinking, innovation, creativity, and lifelong learning.

UAEU needs to think about the following fundamental questions through the appropriate forums for discussion:

1. Is this vision statement sufficiently clear and compelling to establish a pathway to international distinction as a teaching and research institution?
2. What parts of our current mission no longer serve our goals for the future?
3. What would be the future mission to convey a sense of the University's niche and aspirations and to convincingly realize broad support for the University?
4. How can we better use technology to help us succeed in the future?
5. Do we effectively prepare students for tomorrows jobs?
6. How can we secure the resources that will carry us forward?
7. How can we cultivate a lifelong learning culture?
8. Where can we excel?
9. What are the current academic programs that are no longer needed by the market, and what is the long-term plan of establishing new academic programs in emerging discipline areas?

How these questions are answered can determine everything from developing goals, choosing strategies, achieving and maintaining momentum, setting benchmarks, gauging performance, defining identity and distinction, and building an international community of faculty, staff, administrative leadership, and students.

University Commitments

First and foremost, the University affirms a commitment to the future. Continuous improvement is another central commitment to all of the University business. Other commitments include:

- Achieving excellence as a teaching-centered, research-engaged, student-focused, service-oriented institution.
- Providing access for the growing and more diverse population of the UAE who seek higher education.
- Demonstrating effectiveness to the people of the UAE, the nation's political leadership, and other stakeholders in the accomplishment of its Mission and the wise stewardship of its resources.
- Developing responsive undergraduate programs to meet the needs and aspirations of the region and the nation.

Emerging Trends Shaping UAE Higher Education

Higher education landscape is rapidly transforming in such a way that, university students in 2020, will participate in new types of learning experiences, access new kinds of learning resources, and deal with a broader range of "knowledge" providers than ever before. Meanwhile, providers themselves will deal with new technologies and will be forced to operate in an increasingly seamless global marketplace for higher education. These conditions constitute a new ecology for higher education that poses challenges to the system itself.

According to a foresight study conducted for UAEU, the following are the main important drivers influencing the higher education system in UAE:

1) **Technology Developments**
   Technology developments already has had, and is expected to continue having, a significant impact on higher education, characterized by the massive growth in connectivity and capabilities of hardware and software. The technology has accelerated the way universities have been operating through new teaching paradigms, distance learning, e-books, learning management systems, access to educational resources, and the opportunity to collaborate with research partners around the globe.

   Technology has made the learning environment more dynamic, flexible, and accessible to a larger number of students through utilizing different pedagogical models such as online/blended learning, flipped classroom, and MOOCs. The use of other technological developments such as learning analytics and blockchain facilitates academic activities, including R&D and technology transfer.

   Important technology developments that are utilized and expected to flourish more in the future include 3D printing, Internet of Things (IoT), Artificial Intelligence (AI), Robotics, Virtual Reality, and Gamification.

2) **Changing Landscape**

The landscape of higher education is changing rapidly and disruptively. The considerable expansion in student enrollment; the new emerging models of education; the growing influence of quality assurance, accreditation and ranking; the diversity of institutions and offerings; and the increasing cost of education pose unprecedented challenges to UAE higher education system.

The last decade saw the emergence of several new models for higher education institutions that challenge the conventional model of undergraduate education such as the online distance-learning model, competency-based model, and stackable credential model, among others. These models require any university to critically assess the future viability of its current business model in sustaining its performance and competitiveness in the long-term.

Disruptive models, such as prior learning and other forms of learning that occur largely outside the traditional academic setting poses a challenge for quality assurance agencies and accreditors. There is a need to develop flexible processes for quality assurance for such alternatives, while at the same time not over-burden institutions with multiple accreditation processes.

The expanding numbers of practitioners of alternative ways of credentialing higher education are building both a base of evidence that such alternatives work and a body of students who are convinced that an alternative path is the right path for them - two significant trends that will likely impact traditional higher education in the days ahead.

The growing influence of university ranking agencies and their impact on decision making, future strategies, funding, and collaboration opportunities is another factor that emerged in the last decade.

3) **Economical & Political Dynamics**

Higher education faces financial challenges, including unchanging public financial support, limitations on tuition levels that reached its ceiling, and the need to control operating expenses.

With the performance-based budget, it is expected that the government funding for higher education in UAE will remain the same, if not decreased in the future. As it constitutes a challenge, the possibility of losing part of its budget will also pose an opportunity for the UAE University to diversify its financial resources.

Student employability and future job market pose another challenge, where it is estimated that five million jobs will be lost within the next ten years as a result of the effect of technology on the labor market. Currently, six out of ten of the most required jobs in the UAE market are linked to technology. The fourth industrial revolution represents another challenge, not only because its breakthroughs but because of its impact on the labor market as well.

On the other hand, higher education drives and is driven by globalization, which constitutes economic, cultural and social changes. The growing movement of students and faculty around the world and the increased cross-border scientific collaboration create global marketplace for

higher education and, at the same time, implies "brain race" competition between countries and institutions on a global scale.

It is worthy to note that the stability of the UAE Government and its strong commitment to future thinking are positive factors shaping its higher education.

4) Social and Cultural Shifts
Lifelong learning and training are core ingredients for success in the workplace. By 2020, the knowledge college students acquire will have an expected shelf life of less than five years. Therefore, lifelong learning, which represents a continued educational experience, is of critical importance that needs to be emphasized to the workforce. It is true to say that, the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn and relearn.

The population growth in UAE is among the highest in the world, creating a high demand for higher education.

UAE is considered one of the largest hubs for international branch campuses in the world, accommodating more than 30 branch campuses, with about 60,000 overseas students studying in UAE, with more than 90% studying in private institutions. As for faculty, there are more than 7,000 international faculty in UAE, which form more than 90% of total faculty teaching in UAE higher education institutions.

The past 15 years have been characterized by a remarkable growth in philanthropy across the UAE, and, in particular, there has been strong growth in philanthropy related to state-funded foundations in the country. In 2014, philanthropic giving in the United Arab Emirates accounted for the second largest share of all philanthropy in the Gulf Cooperation Council (GCC) countries, where donors, foundations, and corporations gave $337 million USD, which was approximately 38% of all philanthropic donations in the GCC that year. Currently, there are 11 state-funded philanthropy foundations at UAE, where the most common area of focus among which is education. It is not clear how much of the philanthropy goes for higher education.

Shaping the Future of the United Arab Emirates University

The key enablers that are necessary for UAEU in its endeavor to be a "*world class, University for the future*" are:

1. A number of research stars and world leaders in their fields;
2. A number of world-class departments;
3. An up-to-date curriculum;
4. Utilization of the latest technological and pedagogical models;
5. Generation of innovative ideas and publication of basic and applied research in abundance;
6. Identification of research strengths in "lead" subjects;
7. Attracting the most able students and graduating the best graduates;
8. Attracting and retaining the best faculty;
9. Recruiting faculty and students from an international market;
10. Attracting a high proportion of postgraduate students from overseas;
11. Having a sound financial base;
12. Receiving large endowment capital and income;
13. Having a diversified sources of income;
14. Having a first-class management team with strategic vision and implementation plans;
15. Having the library contributing to University life and student experience; and
16. Advancing the IT infrastructure and technology.

Challenges Facing UAEU Quest

The following sections present the challenges that may affect the UAEU future and the actions need to be taken.

University Governance

➢ The creation of a "*world class, university for the future*" implies a comprehensive transformation of university governance to a "shared governance." UAEU has already started this practice long time ago, where its academic community controls the essential academic decisions and the administrators and managers are responsible for resources, facilities, and other administrative matters. The role of students in shared governance, however, must also be included as key stakeholders in the academic community. UAEU can consider introducing student governance through having them representing the student body in the University Council, Academic Council and College Councils.

Recommendation (1): Ensure sufficient grass-root engagement of faculty and students in all governance structures of the University.

➢ UAEU can further evolve its governance framework by considering establishing an "International Advisory Board" consisting of internationally prestigious advisory and consultative bodies (groups of scientific, industrial, and administrative experts). The assistance of such bodies can support educational efforts to achieve quality enhancements and improvements of such credibility as to be worthy of international recognition. They are also able to provide substantive and effective support in the building of international status, recognition, and reputation.

Recommendation (2): Establish an "International Advisory Board."

- Another dimension concerns the governance is the degree of autonomy the University enjoys. Institutions that have substantial autonomy are also more flexible because they are not bound by cumbersome bureaucracies and externally imposed standards, notwithstanding the legitimate accountability approach that do bind them. As a result, they can manage their resources with agility and quickly respond to the demands of a rapidly changing global labor market. In that regard, it is essential for UAEU to think of updating its "University Law", since the current law is outdated and goes back to the 70s, when the University was established. Any amendments should target decentralization, relative independence, and empowerment to allow agility.

Recommendation (3): Update the "University Law."

Recommendation (4): Enable more autonomy for line managers to make professional judgments based on their experience, to step beyond the documented rules.

- Universities are labor-intensive institutions. UAEU is no exception, with substantive portion of its budget goes for salary and fringes. It should do what every private business does; learn how to run a good organization with fewer people, pay more attention to details, and expect more from everyone, without compromising the academic rigor that its reputation depends on.

Recommendation (5): Review the Human Resources utilization.

- Other crucial governance features are emphasized, such as inspiring and persistent leaders; a strong strategic vision of where the institution is going; a philosophy of success and excellence; and a culture of constant reflection, organizational learning, and change.

Recommendation (6): Enforce professional development programs to all administrators.

Faculty

- The first and perhaps foremost determinant of academic excellence is the presence of a critical mass of outstanding faculty and top students. The most recognized universities globally are able to select the best students and attract the most qualified professors and researchers, not only from the country where they are located but also internationally.
- To gain international reputation requires an enormous level of commitment and loyalty. Faculty loyalty can be realized through security; equality & work environment (workload & admin.) Currently, many UAEU faculty may not be sufficiently motivated; they need to feel secured, trusted and valued. Overall trust in the academic leadership and the administrative apparatus is a key.

Recommendation (7): Implement the following key initiatives:
1) Remain vigilant in retaining outstanding faculty, including relevant funding support and salary considerations.
2) Aggressively pursue target appointments of the highest-caliber talent throughout the world, within disciplines and in interdisciplinary domains.
3) Introduce a performance-based compensation system, where faculty salary is determined by a faculty member's accomplishments over the preceding three years in teaching, research, and public service, OR
Refine the salary system so that the Vice Chancellor could allocate incentives, according to six graded levels, to only two-thirds of eligible faculty in consideration of their annual contributions to the university, the industry, and the community.
4) Increase the level of research funding support.
5) Provide up-to-date research facilities and infrastructure.

6) Raise the threshold for promotion.
7) Increase the flexibility of faculty time allocation, including reducing the teaching load for faculty. Some options include:
   a) Limit the teaching load to a maximum of nine credit hours per semester for research active faculty.
   b) Allow M.Sc. and Ph.D. students to cover tutorial sections and teach General Education courses to reduce faculty workload.
   c) Consider online (non-live) teaching opportunities for General Education classes with high numbers of students. This might reduce the teaching load significantly.
   d) Consider the teaching, mixed, and research faculty model with proposed teaching: research load respectively as follows: 90:10, 70:30, and 80:20, respectively. Proportion of such faculty can be discussed as per growing needs of the university.
8) In addition to the current incentives, adopt additional incentives packages to acknowledge top performing faculty that includes a number of research prizes covering:
   a) Prize for publishing papers in "Nature" and "Science";
   b) Prize for publishing in International Scientific Indexing (ISI) ranked journals;
   c) Prize for best student researcher;
   d) Citation Prize;
   e) Prize for Winners of International Prizes; and
   f) Patent Prize
9) Create a formal network for mentorship to nurture and support junior faculty.
10) Tightly couple the development of professional and leadership skills with advancement opportunities for all faculty, with an intentional focus on junior faculty and women.
11) Explore how to create an environment of scholarship, innovation and creativity among faculty.
12) Introduce mandatory training programs for new recruits.
13) Promote intra-college outreach activities, to encourage collaborative work.
14) Introduce flexibility in policies and pay structure for consultancy services.

Students

➢ Students are the primary significant constituents of any university. They should be leaving the University with a positive view and with a specific UAEU-identity put on each one of them. Strong international universities are known to be highly selective, admitting the best and brightest students nationally and internationally, growing their graduate numbers compared with the undergraduate enrollment.

➢ UAEU will have to focus on elevating its performance in designing and implementing creative/effective student outreach programs to focus on recruiting and retaining the academically gifted and brightest students both at undergraduate and graduate level. Moreover, with the issuing of a new policy to admit international undergraduate students, UAEU has yet to implement proper recruitment strategies to reach out to international students in UAE or abroad, with scholarships offered to talented students.

➢ If UAEU is to seek a new international student marketing strategy it ought to consider more than a webpage and a "one-size-fits-all" recruitment strategy to reach out to potential students.

Recommendation (8): Implement a creative student recruitment program to get top students.

➢ Graduates Employability: With the national shift towards a diversified economy away from the dependence on energy exports, the talent market is expected to change severely which should be reflected on the type of program offerings and learning outcomes of higher education institutions. The significant misalignment between the labor market demands and the supply of university graduates by discipline is an issue yet to be tackled by public and private universities in UAE, with surplus of graduates from fields such as humanities and law; and a huge deficit in the number of graduates in areas like Medicine and STEM.

Recommendation (9): Keeping in mind alignment to current and future job market needs, the University should focus on STEM programs.

➢ The University should also have a policy to admit talented international undergraduate students with nominal fees while recruiting talented international graduate students with competitive scholarships.

Recommendation (10): Review the rules for tuition fees and scholarships for both undergraduate and graduate students.

➢ The University should develop the students' leadership skills and prepare them for tomorrow's jobs by offering them part-time jobs across campus, getting them involved in the university/college governance system and decision-making, and recognition of their participation in extra-curricular activities. Providing part-time opportunities will expose the students with a semi-real life job and make them more aware of their strengths and weaknesses in relation to the market needs.

Recommendation (11):Enrich the "Student Educational Experience" through providing diversified extra-curricular activities, co-curricular activities, and encouraging students to participate in national/international conferences/awards/exhibitions.

➢ As part of preparing them for future jobs, the University has to nurture "Social Responsibility and Global Citizenship" role of students by encouraging them to participate in volunteering activities to serve the community and facilitate their participation in humanitarian campaigns internationally.

Recommendation (12): Implement specific action to nurture "Social Responsibility and Global Citizenship" role of students.

➢ Marketing & Recruitment: To have a sustainable business model in the future, the University should start to have a mindset shift and think like a private university, where marketing for the University and student recruitment take a major part of the University strategy.

Recommendation (13): Ensure that a designated unit is held responsible to plan and implement creative and effective student outreach programs targeting academically gifted and brightest students both at undergraduate and graduate levels.

Recommendation (14): Utilize emerging digital marketing techniques (Web and social media) to reach out to various potential student segments across the country and abroad.

Academic Programs

➢ Many institutions have consciously decided to "grow smaller" and more specialized. The UAE University will need to consider whether it can continue to maintain a competitive position - domestically and internationally - across a broad range of programs, or whether to concentrate

resources on a smaller range of programs, keeping in mind that, for the oldest and largest university in the country, teaching should not be treated as a second-rate activity.

➤ If this kind of thinking is on the table, UAEU should reduce the number of majors or programs it offers in the context of focusing on a number of academic fields that it does very well and can become globally competitive in them. It is important to choose which fields carefully. This will create an excellent opportunity for re-envisioning and strengthening the institution through re-structuring of academic units and programs to be aligned with future job market and new advancements in higher education. If the aim is to become a world leader in these fields then a significant investment has to be made with clear goals and expected outcomes. If leaders in the fields are not available locally then they would have to be recruited internationally with a clear understanding of timescale and need to capacity build and groom potential local leaders.

Recommendation (15): Review the offered programs for future relevance and workplace employability.

➤ Of equal importance, UAEU has to mandate all its academic departments and programs to review their inter-department and inter-college offerings for repetitions and redundancies. This is crucial for resource adjustment.

Recommendation (16): Review the inter-department and inter-college offerings for repetitions and redundancies.

➤ While the precise nature of change in the future cannot be foreseen, it is likely that we are going to continue to see unprecedented challenges that will continue to create a pressing need for academic as well as institutional reform.

Recommendation (17): Consider the viability of the following reform models.
   a) Emphasis on interdisciplinary & exchange programs
   b) Merge of programs
   c) Having double majors
   d) Experiential learning

➤ In many respects, it makes good business sense to outsource operational functions that are not central to the core business of the organization. For the University, if we push that paradigm a bit, under the right circumstances, it might make sense to, in essence outsource components of the educational program - such as General Education, common introductory and developmental courses—and focus on building distinctive value in upper-level courses. This kind of outsourcing can be done in many ways, including online courses. Courses that blend online learning with classroom time have proved to be cost savings in instructional costs and facilities use, as well as improved student academic success.

➤ The implications for this business model are considerable where, as more courses migrate partially or fully online, allocation of classroom space can be rethought, leading to reallocation of faculty, to other activities, whether research, or teaching on upper-level courses. It is worth mentioning that, by 2025, experts predict that virtual reality and augmented reality will increase remote learning and, as a result, classrooms will start to disappear.

Recommendation (18): Perform a study to implement "course outsourcing" for Gen Ed & introductory courses across the University.

➢ Different forms of blended learning may also be considered. Students could spend an introductory year learning via a MOOC, followed by two years attending university and a final year starting part-time work while finishing their studies online. This sort of blended learning might prove more attractive than a four-year online or traditional in-house degree. Accelerated degree programs, where students spend few years in their home university, then move to another (U.S.) university to complete their undergraduate program and get a master's degree from the host university is another model.

Recommendation (19): Explore new modes of blended learning ((1+2+2), (3+1+1), etc.)

➢ Higher education's traditional hold on the awarding of academic credentials is undergoing unprecedented challenges. The rise of competency-based education, for example, is based on the premise that "what you know is more important than where or how you learned it." Traditional higher education credentials are based on conventional thinking about credit hours and student seat time requirements that in turn drive strategic directions in campus infrastructure, staffing, and allocation of resources. Take away some of those conventions and wholly new thinking is possible about those resource allocations.

➢ Through partnership agreements with companies offering online courses, students can transfer credits directly as they work towards a degree. As these models expand in number and scope - and particularly as more students enroll in them and find that they meet their educational needs- they will continue to challenge the share of the student market historically commanded by traditional four-year institutions.

Recommendation (20): Introduce alternative ways of course credentialing through competency-based education.

Curricula and Pedagogy

➢ In addition to the academic contents, educational technology and new educational courses and programs are interacting to create new language and modes for education. Online learning, blended learning, hybrid learning, flexible learning, open learning and distance learning are all forms of education increasingly taking greater significance. It is worth mentioning that UAEU has one of the most sophisticated on-campus IT infrastructure, networks, and labs in the region; however, it has yet to make significant moves towards adopting the new technology developments in teaching and learning.

Recommendation (21): Aggressively adopt new technologies in teaching and learning.

➢ In revamping academic curriculum, emphasis should be put on new technological aspects and skills, including robotics, 3-d printing (UAE will be a regional hub), Internet of Things (IoT), Artificial Intelligence (AI), big data, Nano technology, space sciences, solar energy, nuclear technology. These important skills will lead the fourth industrial revolution.

Recommendation (22): Introduce – across curriculum – aspects and skills required for the fourth industrial revolution.

➢ Right now, research is introduced as an integral component of the undergraduate curriculum at a small scale. Role models must be identified at each college and opportunities must be created for participation of undergraduate students in their research for a semester or a year. Engagement of students in research should also be through extra curricula activities. Summer Undergraduate Research program (SURE) should be linked with the industry. Meanwhile, the

most research-talented among undergraduate students should be encouraged to pursue an academic career.

Recommendation (23): Introduce research as an integral component of the undergraduate curriculum.

➢ It is essential that all programs develop innovative and entrepreneurial capacity, and that sustainability is demonstrated as part of the student learning experience. These concepts should be infused in the curriculum within two years.

Recommendation (24): Introduce innovation, entrepreneurship, and sustainability as integral parts of the curriculum.

Industry and Internationalization

➢ For the United Arab Emirates University to survive and thrive, it will need to build significantly deeper relationships with industry in the decades ahead. Industry partners and stakeholders, including government and private sector, should give input on which programs to offer in light of job needs, market gaps, and future growth opportunities. They should also give their input on the balance of theoretical and application skills taught in programs. Employers and alumni must be surveyed and their feedback influence the programs, courses, and teaching & learning practices.

Recommendation (25): Include input from industry partners in the curriculum design and program reviews.

➢ It is suggested that industry advisory boards be formed for each academic department to review course contents and give their feedbacks to reflect on industry update. Their recommendations should be at least "considered" during the periodic program review.

Recommendation (26): Establish department advisory boards from industry partners.

➢ The best way to create a group of engaged, committed alumni is to begin with a group of engaged, committed students. So, to develop a successful alumni relations, one should aim for a successful student experience.

Recommendation (27): Activate the alumni department to encourage alumni loyalty to the University and have annual alumni reunion to share success stories and networking

➢ The University should foster a "Multi-Cultural Experience" through providing the students with international learning opportunities. This could be through diversifying the current student body, expanding opportunities for students to participate in exchange programs and summer study abroad programs, and soliciting more international internship opportunities. Having a higher percentage of our students with international experience will help in building a better brand for the University and its well-rounded students.

Recommendation (28): Establish "Office of International Relations" to develop and follow-up on all international relations and exchange programs.

➢ The University may think of initiating a "future fellows" Program for undergraduate students who think about the future. This could be a global exchange initiative that seeks to optimize mutual appreciation and provide a cross-cultural work experience to foster respect, appreciation, and friendship.

Recommendation (29): Initiate a "future fellows" program, with ten students from UAEU and ten from another international university, each to spend one week in the host country, with intensive educational, cultural program, based on future trends and studies.

Lifelong Learning

➢ There are two main reasons for learning throughout life: for personal development and for professional development. These reasons may not necessarily be distinct as personal development can improve employment opportunities and professional development can enable personal growth.

➢ It is proposed to establish a new institute (or academy) to advance adult education and professional development for the workforce to better meet future market needs.

➢ The new Institute of Professional and Continuing Education (IPCE) will develop programs for continuing professional education and development, to equip professionals, managers and executives with updated knowledge and skills to keep them up-to-date with the rapid changes rippling through today's increasingly competitive market and to ensure workforce remains globally competitive and can flourish in the fast-changing world.

➢ The Institute should provide an environment that support lifelong learning, including off hours and weekend services, part-time programs, onsite and online courses. The Institute may use local and international instructors for online courses.

➢ The IPCE may offer undergraduate-level courses for part-time study. These courses should be developed for technology-enhanced learning using the new flipped classroom pedagogy. Students access and study course material online before meeting classmates and their professors in face-to-face discussions and brainstorming sessions. The courses are for key growth sectors such as biomedical instrumentation, data analytics, digital electronics, nanomaterials fundamentals and applications, as well as advanced molecular genetics, sustainability, and enterprise & innovation. Academic credits can be accumulated to qualify for a specialist certificate or a degree when they are admitted into a full degree program.

➢ Besides the credit-bearing courses drawn from various undergraduate and graduate academic programs across a wide spectrum of disciplines, IPCE will also offer executive, personal development and enrichment non-credit courses. The new institute will thus offer multiple educational pathways to professional, intellectual, and creative development through its continuing education programs, such as in analytics, business finance, performance management and strategic thinking.

Recommendation (30): Establish the "Institute for Professional and Continuing Education."

➢ It is vital to enable graduates with lifelong learning skills. In a study by the World Economic Forum about the skills needed for future jobs, employers listed: complex problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, decision making, service orientation, negotiations, and cognitive flexibility as the top priorities.

Recommendation (31): Ensure the inclusion of required skills in lifelong learning programs and in the undergraduate curriculum, whenever possible.

➢ The library can be utilized to link to the wider community, including families, through developing spaces to accommodate exhibitions, performances, speakers; weekend and after hours opening, with the "Garden Library," providing relaxed community sharing, storytelling,

café, landscaping, water fountains under glass and garden roofing for sustainable climate control.

Recommendation (32) Establish the library as a community resource.

Research

➢ It is the goal of the UAE University to make significant contributions to the advancement of knowledge through research. Therefore, it must choose a strategy that benefit from its strengths and resources to identify niches for research & development.

➢ The University should promote exchange of knowledge through forming high-tech innovation clusters of knowledge-intensive activities; attracting investment from business and international sources; and exploiting the findings of research.

➢ As a research university, UAEU must be globally networked, globally recognized and effective in local, national and global world. Moreover, it must house a global research capability and outputs in several fields, and maintain staff capable of interpreting and applying findings. Furthermore, it needs to have a viable local doctoral program in some fields.

➢ In order to become internationally visible as an institution, the University must excel in certain areas so that its research output and quality is noticed. In that regard, UAEU research centers must assume a major role in advancing the research mission of the University. The centers must encourage research groups and interdisciplinary projects, and must increase engagement with industries and local organizations. On the other hand, "research faculty", if applied, should have a remarkable impact on the research productivity of the University.

➢ The University must also have its faculty and students publish their research in refereed journals, and other researchers should cite those articles. Furthermore, its research outputs generate economic and social impacts through excellent, leading research; tackle global challenges through promoting and facilitating multidisciplinary research; and provide leadership, advising governments, business, and media and accessing the latest breakthroughs in research.

➢ The University should play a critical role within the tertiary education system in training the professionals, scientists and researchers needed for the economic development and generating new knowledge in support of the national system.

Recommendation (33): Implement the following actions:
1- Define current research strengths and priorities based on an informative assessment, and select the most potential areas to compete at the regional and international levels considering the national priorities and other evolving/hot topics that would foster international collaboration.
2- Create research teams (multidisciplinary) around these areas of strength and allocate the majority of the research budget (e.g. 75%) to these areas.
3- Develop doctoral programs around these areas.
4- Allocate more resources during the coming five years to appoint highly qualified researchers.
5- Develop a critical mass in areas of research priorities.
6- Establish collaboration with other national and international research groups and centers.
7- Review the viability of the offered programs for cost savings and efficient operations so that more resources can be allocated for research.

8- Seek additional funds for research from governmental organizations and international agencies.
9- Establish an editorial office for professional editing of manuscripts.
10- Institute an effective performance management system for research centers.
11- Better promote the achievements and research activities of the University.
12- Consider the model of establishing joint research centers (max 3-4) with key globally leading institutions in areas of mutual research interest.
13- Increase industry participation in research through the Science & Innovation Park.
14- Lead University-wide effort to build a research-intensive culture, commensurate with the pursuit of a knowledge-based economy.
15- Appoint strong leaders in academic administration positions at the department and college levels with a proven track-record of research and education.
16- Recruit high caliber internationally recognized researchers who have proven themselves as group leaders in the past, and would be able to guide and lead research groups at UAEU.
17- Appoint qualified staff at the college level to follow up on administration activities (faculty are exhausted from administrative work.)
18- Implement "Research Faculty" policy.
19- Have a "*publish or perish*" policy and implement it.
20- Establish strong interdisciplinary programs.
21- Establish clusters of research.
22- Build the bibliometrics skills of library and research office staff with appropriate tools such as SciVal, PURE and SCOPUS.
23- Develop and promote Open Access and copyright policies.
24- Promote the use of the university's institutional repository, Scholarworks.

Financial & Material Resources

➢ Well-performing universities are characterized by abundance of resources, especially in the case of research-intensive universities that require sophisticated laboratories and equipment. These universities have four main sources of financing: government budget funding, research grants and contracts from public organizations and private firms, the financial returns generated by endowments and gifts, and tuition fees.

➢ Success in attracting external financial support hinges on three factors, in particular:
- The extent to which the University's house is "in order" both financially and administratively.
- The ability of the University to demonstrate a real and clear determination to allocate resources according to appropriate, well-considered, and articulated priorities.
- The ability of the University to demonstrate how these priorities will made the institution more outstanding than it now is in achieving its goals, serving its stakeholders, and strengthening its reputation as a vital force for higher education locally, regionally, and globally.

➢ For its financial stability and sustainability, UAEU should be run more as a business-like organization, not be complacent as a government university.

➢ World-class research university requires cutting-edge infrastructure (buildings, IT, equipment, location, etc.) UAEU has an outstanding reputation and capacity with regard to its physical

infrastructure, including the 'best teaching infrastructure in the region'. However to attract world class scholars the University must take additional measures.

Recommendation (34): Change the process of financial resources allocation to support strategic initiatives

Recommendation (35): Provide the following financial and material resources:

1) Secure outside additional funding through research grants, consultations, and endowments.
2) Provide dedicated up-to-date research laboratories.
3) Make available a common database of spaces and equipment.
4) Secure a research-dedicated HPC (High performance Computer).
5) Consider having joint R&D labs on campus, to be as an incubation ground for faculty and students.
6) Revive the concept of the library being the hub of the university and revitalize library services.
7) Use the library as a bridge to philanthropy for gifts and bequests as well as a way to give services back to the community.
8) Increase funding for library resources – e-resources and print and A/V materials.
9) Provide collaboration and co-working spaces at the library and services for the wider community including services for children and families.
10) Provide social infrastructure, including recreational facilities and sports teams to encourage identity and belonging.

Focusing on the Future

➢ As we trim our curricula, we should think about how we might distinguish ourselves in a crowded marketplace. Differentiation becomes of even more paramount importance when quite similar institutions, concentrated in a fairly small geographic region, compete aggressively for a shrinking pool of students, with limited financial resources. In a marketplace where many institutions look alike to students and parents, we need to make strategic decisions that will help us define and hone our unique characteristics.

Recommendation (36): Perform a study to identify UAEU unique characteristics and the brand we put on our students.

➢ A key campus resource in assessing institutional effectiveness, readiness and capacity is the University's Institutional Research Office. It needs to be a first-rate organization, current in the technology and methodology that ensure rapid and accurate information retrieval and informed analysis and that underscore effective planning and wise decision-making. The Office should be responsible for monitoring and predicting market trends and needs, in order to affect the offered programs and curricula.

Recommendation (37): Mandate the Institutional Research Office to regularly study and predict the market trends for the future.

Recommendation (38): Undertake a comprehensive SWOT analysis, that includes a thorough environmental scan of those factors affecting the University in the immediate and longer term future and which are relevant to the University's Mission, Values, and Goals.

Recommendation (39): Debate, among the University Community and leadership, some strategic choices, including:

- Research vs. teaching as central academic function
- Relative percentage of undergraduate to postgraduate students
- Comprehensive vs. specialized scope of curriculum
- Academic orientation vs. market-responsive orientation
- Disciplinary vs. interdisciplinary organization
- Cost-sharing vs. fully state supported university

Recommendation (40): Conduct a comprehensive future foresight study for the period of 20-30 years, to help building a strategic dialogue and bringing onboard insightful understanding about the future uncertainties impacting UAEU, challenge the present mindset about a stable future, and eventually increase the University future-readiness.

Recommendation (41): Implement an accelerator program, 10-YOU (10 Years ahead of Other Universities), to embrace disruptive innovation and find new, creative and truly disruptive approaches and technologies rather than incremental and minor improvements.

Recommendation (42): Form a 10-YOU Council, chaired by the Chancellor, rooted in the structure & mission of the university.
Members include stakeholders, students, industry, and faculty, with timeline, coordinated by the Office of Strategy & Future, with a dashboard to monitor and follow-up on the progress. The Council shall review and reconsider the traditional organizational structure and hierarchies of the University and find new structures that facilitate creative innovation and disruption. It shall also review policies to clear it up from any hindrances.

Recommendation (43): Create an innovation certificate program, designed to develop participants' future forecasting and planning skills, and to render organizations more future-ready.

Recommendation (44): Create an incubation lab that undertakes projects that will innovate, accelerate change, and address new areas.

Recommendation (45): Define a "motto" to communicate our motivation to the external world quickly in few words.

Recommendation (46): Establish a UAEU venue in Abu Dhabi for teaching, business partnerships and outreach activities.

Recommendation (47): Institutional strategies predicated on an explicit desire to see the University move up the rankings may no longer be a sustainable goal in itself.

Recommendation (48): Develop an action plan, with clear responsibilities, indicators and an evaluation process.

Recommendation (49): Benchmark with international counterparts as a good tool to assess current situation.

Measuring the Success of the Plan

The outcomes for UAEU of being a "*world class, University for the future*" include:

1. An international reputation for its research.
2. An international reputation for its teaching.
3. Recognition by other world-class universities.
4. Production of top notch research output recognized by peers and prizes.
5. Making a considerable contribution to society.

Close

The traditions that make higher education a cornerstone of society and that have built great colleges and universities over time have also helped create cultures that are naturally skeptical about new ideas and change. If we are genuinely interested in redesigning a new business model and practices, we must decide to do so aggressively, lest such efforts fall victim to natural pressures to uphold the status quo.

For this to happen, colleges have to realize that things are going to change much faster in the next 10 years than they have changed the last 10 years. Not knowing precisely every detail of the change coming, the only insurance we have is simply to have the nimbleness and agility to move and shift and find our course. With the support of the administration, the main elements of change in this process are college deans, department chairs, and faculty.

His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, said that shaping the future and making it is no longer a theoretical concept but a key factor for countries to achieve competitiveness in the global arena. "The future is not built on possibilities and numbers but on clarity of vision, planning, action and implementation," His Highness stated.

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