IIUM at 25

The Path Travelled and The Way Forward

Edited by
Syed Arabi Idid

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CHAPTER 4

The IIUM: Towards a Research-Intensive University

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Introduction

This chapter gives an overview of the development of research at the International Islamic University Malaysia (IIUM). It chronicles key milestones that led to the evolution of the university's research activities and practices, and outlines the IIUM's areas of research focus, research trends and sources of research funding, with a particular emphasis on the experience of its Research Management Centre (RMC). Finally, the chapter presents several success stories along with prevailing issues and challenges confronting research and development at the IIUM.

Key Milestones of Research Development

Initially established as a teaching university, the IIUM in its vision statement avows to become a leading international centre of educational excellence. This avowal constitutes an aim that sits at the very core of its establishment, growth, values and expectations. Although it was originally set up as a university whose primary function was to impart integrated knowledge and skills in the true spirit of Islam espoused in the Qur'an and *ḥadīth*, the IIUM has come to realize that teaching alone is insufficient to achieve its aim for educational and comprehensive excellence. Today the IIUM fully recognizes that research and development (R&D) are not merely complementary to teaching, but they are also vital to its gradual progress towards comprehensive excellence. This recognition is reflected in its emphasis on rigorous formulation and continuous implementation of the policy and initiatives for R&D, which have been a dominant feature in the IIUM's

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blueprint for development since its establishment in 1983. In addition, the IIUM is technically owned by the Malaysian government, and as such, it has been actively engaged in the country's R&D activities and planning. By engaging in these research-oriented activities, the IIUM is gradually moving from a teaching-based university to a research-intensive institution of higher learning.

As the IIUM engages in more R&D activities, hence moving progressively towards becoming a research-intensive university, the meaning and function of R&D, instead of gradually becoming clear to its faculty and staff, are evolving rather dynamically, approaching fuzzy and, at times, confusing edges. To illustrate, in the recent past, faculty members were expected to conduct a little more than just basic research in order to contribute to the scientific and technological development of the nation. With the government's current demand for "Research-Innovation-Commercialization," the conditions for research at the IIUM have to take on a different emphasis. Now faculty members are strongly encouraged to not just carry out research, but to also transform their research findings into tangible applications and solutions that can be used to strengthen the socio-political and economic fabrics of the Malaysian society.

Paradoxically at the IIUM, while the university's contributions to the country's R&D continue to grow, a large majority of the IIUM staff remain unclear about the exact nature and requirements of scientific research, and the conditions upon which such research should be conducted. Many claim, incorrectly, that the situations and conditions pertaining to research at the university are not so clearly defined. While faculty members are encouraged to conduct good quality research and solicit funds for that purpose, they remain vague about what constitutes scientific research and a good quality one at that. Many find it difficult to understand why they should engage and train graduate students, seek external funding, submit formal proposals for consultancy projects, and work as just another team member in their own research undertakings. Some argue that they are overburdened or too busy with teaching, even though there are many cases where very active researchers can be found from among those who are heavily involved in administrative duties, working committees and community work. It may well be the case that a busy schedule is used as an excuse by this group to show their reluctance to compromise their pedagogical ideal that the primary role of IIUM lecturers should be, not to conduct research mainly, but to educate the minds and characters of young Muslims. The notion that lecturers also bear the responsibility to commercialize and market their intellectual property, and that this effort is part of a holistic education process, seem outlandish to them.

Scholarly Contributions

The scholarly contributions of faculty members through scientific research in various fields are the single most important factor in the creation of new knowledge and understanding. In its early days, basic research featuring the 4Rs of research-related tasks—reading, writing, reflection, and rustication[1]—dominated the R&D scene at the IIUM. Solitary archival research and writings by individual scholars characterized much of the early research. Often these research and writings were used to fuel intellectual discourse in seminars and conferences, leading up to insightful and constructive feedback from academic circles. In those days, engagement in scholarly writing meant conducting library searches of books and original documents, and subjecting them to bibliographic analysis, critical inquiry, scholarly critique or any other form of analytical technique drawn from the fields of humanities and economics. Of prime importance in these activities was the discovery of facts through the meticulous consideration, examination and evaluation of historical artifacts, particularly the primary sources documenting the Islamic heritage. The motivation for scholarship of this nature was the publication of books that represented the Islamic worldview. Hence, tasks such as seeking financial grants, employing graduate assistants, and engaging industrial collaborators never featured in the IIUM faculty's early understanding and endeavours of scholarly research.

Since its establishment, the IIUM has been using staff recruitment and promotion strategies to support and advocate scholarly research among its staff, for example, by employing renowned Muslim scholars and writers from different parts of the world. Within the first few years of its establishment, the university recruited the late Professor Ahmad Mohamed Ibrahim, the late Mahmud Saedon, Mohamed Akram Suhair, Syed Othman al Habsi and Ataul Haq Pramanik in order to boost and diversify its R&D activities. While the first three professors were international figures in law and *sharī'ah*, the rest were well-known scholars in Islamic economics. With the establishment of the International Institute of Islamic Thought and Civilization (ISTAC) in 1989, headed by Professor Syed Naquib al Attas, the IIUM moved one step further towards pooling international scholars of Islamic thought and civilization from many different parts of the world. Among the tangible outputs of the early research activities of these scholars were titles such as *The Position of Shari'ah in the Judgement System* by Ahmad Mohamed Ibrahim in 1988, *Principles of Islamic Jurisprudence* by Mohammad Hashim Kamali in 1989, *Education and Development: An Integrated Perspective* by Mohd Kamal Hassan in 1988, *The Nature of Man and Psychology of the Soul* by Syed Muhammad Naqib al Attas in 1990, and *Readings in Islamic Banking* by Ataul Haq Pramanik in 1987. In the '90s, the appointment of scholars that included names such as AbdulHamid AbuSulayman, Louay Safi, Ahmet Davutoglu,

1 See John Unsworth., "New methods for humanities research", www3.isrl.uiuc.edu/~unsworth lyman.htm

Sano Koutoub Moustapha, and Abdul Rashid Moten helped to galvanize the production of academic books on the Islamization of knowledge. In the wake of these events, the university set up the IIUM Press in 1991 to facilitate the publication of books.

Emergence of Systematic Scientific Research

In the early 1990s, several events took place that eventually forced the IIUM to redefine its meanings and scope of research and development. The government was implementing its Sixth Malaysia Plan (1991-1995), an event that marked the start of a research-intensification phase in Malaysia in which all public universities (HEIs) in the country were expected to play a more eminent role in science and technology fields and in manpower development. The government avowed to provide local universities with the resources to enhance teaching standards as well as research and training capabilities in its effort to help them acquire and upgrade their competence in new technologies and to generate innovations. It became clear then that the government expected the universities to conduct intensive scientific research, which would put them in the position to contribute significantly to the country's overall industrial development through the means of product development and commercialization of new ideas.

The government's expectations for research had generated explicit formulations of directives and targets for the HEIs to achieve. The first of these targets was that all public universities were required to strengthen their human resource capabilities in research, for example, by ensuring that at least 80% of their academic staff obtain a PhD, or its equivalent, by the year 2010. Second, the universities must intensify research in the basic sciences, particularly in molecular biology and genetics, apart from expanding chemistry, physics and mathematics education. Among others, they were encouraged to (i) research on the so-called enabling or key technologies, which included automated manufacturing technology, advanced materials, electronics, information technology, and biotechnology, (ii) establish R&D linkages with national and multinational industrial players, and (iii) commercialize their research products that entailed the acquisition of intellectual property rights. To get this research agenda under way, Malaysian public universities in totality were given RM 50.7 million in 1992 and RM 150.9 million in 1994 to spend on research-related activities by the then Ministry of Science, Technology and Environment (MOSTE).

The early 1990s was a period when the IIUM was experiencing substantive capacity building in R&D. Under the leadership of a new rector, the Honourable Professor Dato' Dr. AbdulHamid AbuSulayman, the university's top management began to address the need to impose on its

academic staff the requirements for research-based qualifications. Thereafter in addressing this need for research-capable and research-oriented staff, the IIUM aggressively implemented a new policy on the appointment of academic staff; new lecturers were to be appointed based on their ability and agreement to undertake a doctoral programme within two years of their recruitment. Henceforth the IIUM became the first public university in Malaysia to require that an academic staff secure a PhD, or its equivalent, before he or she can be confirmed in service. This policy took effect almost immediately, and continues until the present day. Between the years 1990 and 2000, 235 non-PhD lecturers were awarded a 3-year full-pay study leave, 60% of whom enrolled in various universities abroad. These figures show how serious and persistent the IIUM was, and still is, about fulfilling the nation's and its own R&D agenda, given the understanding that the number of PhD holders within a university is an important indicator of its research intensiveness.

The IIUM, too, had made concerted efforts to help its academic staff engage in systematic scientific research, while maintaining the publication of scholarly works at the core of its research activity. In 1991, it established the Research Centre (later known as the Research Management Centre or RMC), and appointed an economist, Professor Dr. Abulhasan M. Sadiq, as the first dean of the centre. The appointment of Professor Dr. Abulhasan was a specific effort aimed at promoting the conduct of quality Islamic-based research by the IIUM's academic staff. The centre's first Research Board Meeting was chaired by the then Rector, Dr. AbdulHamid AbuSulayman, who emphasized that the areas to be given research priority would include

> "the basic Islamic research and applied research, especially the classification of the Qur'an and Sunnah according to different disciplines, as the basis for Islamization of knowledge...using appropriate methodology and being able to relate the Islamic norms to human behaviours and to social sciences."[2]

June 1994 saw the birth of the IIUM's Kulliyyah of Engineering, whose establishment was considered a quantum leap in the development of R&D at the IIUM. The Kulliyyah was the first science-based faculty established at the IIUM, and a few years after its establishment, the Ministry of Education approved the setting up of other science-based faculties, namely, the Kulliyyah of Medicine, the Kulliyyah of Architecture and Environmental Design, and the Kulliyyah of Information and Communication Technology. Ever since the establishment of the Kulliyyah of Engineering, the IIUM began making its presence felt in R&D activities, both locally and internationally. Driven by its mission to deliver indigenous research products that include, among others, publications, patents, intellectual properties and product commercialization, the kulliyyah has become a powerhouse of applied research at the IIUM. It

2 Research Board Meeting, IIUM 1/1991, Minute 1.1.

has taken a leading role in securing internal and external research grants, publishing in high-impact journals, receiving prestigious awards in local and international innovation competitions, applying for patents, employing graduate research assistants, and initiating an extensive research culture among its students and faculty members.

However, these giant leaps towards instituting scientific research at the IIUM took its faculty members by surprise. While some appreciated the university's initiatives, many were either nonchalant or clearly uncomfortable with the idea of systematic scientific research. A substantial number of faculty displayed a lackadaisical attitude, particularly those in the areas of Islamic Revealed Knowledge, the humanities, and even those in the social sciences. Adding to this situation of unease was the somewhat forceful and drastic manner with which the "new" research agenda was enforced during the '90s, which had unexpectedly created frustrating and stressful experiences for many staff, causing them to leave the university for good, unfortunately.

While all this was taking place, the IIUM decided to introduce several structural innovations and policy interventions to support its research direction, some of which were attempts to address the preceding issues and concerns. For instance, each kulliyyah was required to set up specialized labs for researchers, establish its own research unit, offer postgraduate programmes, and link postgraduate students' research to faculty research. The university's Information Technology Division (ITD) was directed to cater to the research needs of the kulliyyahs, especially in regard to infrastructure development and the purchase of computer hardware and software, while the library was responsible for enhancing its resources on research, especially the online research databases. The Research Management Centre (RMC), on the other hand, was given the tasks of conducting short courses and workshops on research skills and preparing research proposals, developing policies governing short-term and long-term research grants and the procedures for securing them, managing PhD research funding for its academic staff, facilitating applications for research grants and the disbursement of the grants, offering consultancy services, and arranging payments of honoraria and royalties for textbook writers and reviewers. By 1998, research activities, products and outputs were proliferating, providing impetus for the RMC to start formulating a policy on Intellectual Property Rights to promote high-impact research and safeguard the rights of the IIUM's faculty members.

Intensification of Systematic Scientific Research

The new millennium distinctively marked the dawn of a new era in the Malaysian public HEIs' engagement in research; it marked the era of harnessing

research practices and culture. Specifically, the Malaysian government established the National Council for Scientific Research and Development in the early 2000s. An advisory council, comprised of prominent academics, government officials and industrialists, served the government through the Ministry of Science, Technology and Innovation, Malaysia, in the following aspects: (i) the formulation of science and technology (S&T) policies, (ii) the identification of S&T priorities, (iii) the coordination, implementation and evaluation of S&T programmes, (iv) the use of S&T by public and private sectors, (v) the enhancement of S&T awareness and appreciation, and finally, (vi) the monitoring of the implementation of the recommendations proposed by the National Action Plan for Industrial Technology Development and other action plans approved by the government.

At the present time, Malaysian universities are strongly urged to take part in indigenous capacity building in key technologies. They are to conduct and emphasize R&D activities in biotechnology, ICT, advanced manufacturing, advanced materials and nanotechnology. To *cater to* the research needs in these highly specialized areas, state-of-the-art science laboratories have been created. For example, to date there are special laboratories for genomics and molecular biology at UKM, and pharmaceuticals and nutraceuticals at UPM. In addition to these labs, both UKM and UPM have been restructuring themselves in order to address the increasing demand for industrial linkages, the commercialization of research and technology, innovation and intellectual property, the creation of incubators for technology-based enterprises, the development of technopreneurships, and standardization and quality assurance.

The competition to excel in research between UKM and UPM did not go unnoticed, and has somewhat affected the IIUM. With a similar competitive drive, the IIUM which holds to the motto *"Garden of Knowledge and Virtue,"*[3] has also begun the process of strengthening its academic standing among Malaysian universities through R&D activities. Tan Sri Professor Mohd Kamal Hassan, the IIUM's third rector, had a decade ago stressed the importance of the IIUM making its mark in research:

> ...the IIUM must strive to restore [its] wisdom, strengths, and dignity... the university community should strive hard to make [the] IIUM a leading international centre for educational excellence and research based on the *Tawḥīdic* paradigm.[4]

Accordingly, the IIUM has to position itself as an institution that *"promotes the concept of the Islamization of human knowledge in teaching, research, consultancy, dissemination of knowledge and development of academic excellence in the university."*[5] Thus, strategic planning for R&D inevitably had to be, and

3 See Mohd Kamal Hasan in Chapter 1.
4 "Editorial.", *The Researcher*, 5(2), (1999, April): 2.
5 IIUM's vision and mission (1999).

continues to be, the order of the day. Expressions and catchphrases such as "research university", "world class university", "academic integrity", "quality assurance", "university rating and ranking", and "research niche areas" began cropping up, indicating the associations made between the strategic planning processes and the university's research agenda. Used as the framework for future directions and development, the IIUM's 1999 statements of *Vision and Mission* inspired the propagation of a research and consultancy culture as the main strategy in its research agenda, while seven other strategies related to academic programmes, students, postgraduate programmes, infrastructure and facilities, human resources, finance, and networking were seen to complement and support the IIUM's research performance.[6]

In 2007, when Professor Dato' Dr. Syed Arabi Idid assumed office as the IIUM's fourth rector, the *"Blue Ocean"* strategic planning was adopted to intensify and transform research activities. The strategy was meant to create innovative values that would give rise to new and untapped market demands for the IIUM's research products and consultancies. Extensive research planning workshops, involving staff at all levels, were conducted to formulate short-term and long-term strategic objectives, identify key performance indicators, establish each kulliyyah's specific targets, and determine the initiatives and action plans to achieve the targets. For example, the first strategic objective was defined as *"to achieve the status of a leading international academic and research institution imbued with Islamic values,"* while the key performance indicators (KPIs) included *"publication[s] from the Islamic perspective,"* and "[creation of] *new [Islamically focused] research niche areas."*[7] Hence as of 2008, the targeted annual KPIs for an assistant professor are the publication of at least one article in a citation-indexed journal, one conference paper, a research grant amounting to RM10,000 (for arts-based staff) or RM50,000 (for science-and technology-based staff), and one postgraduate student's research supervision.[8] To continuously monitor, evaluate and reformulate the university's performance against the targeted KPIs, the IIUM applies the *"balanced scorecard corporate analysis,"* a strategy recognized for its success in achieving and sustaining breakthrough performance results.[9] The implementation of this strategy brought yet another success to the IIUM; in 2008, it emerged as a recipient of the prestigious Palladium Balanced Scorecard Hall of Fame Award.

In keeping with the preceding developments, the RMC has initiated several noteworthy programmes. For instance, to facilitate the IIUM's first strategic objective, which is to achieve the status of a leading international

6 Planning and Development Unit, Office of Deputy Rector, IIUM, *Strategic Planning Report 2001-2010.*
7 Planning and Development Unit, Office of Deputy Rector, IIUM, *IIUM Strategic Agenda 2007.*
8 Management Services Division, IIUM, *Proposed Minimum KPIs for IIUM Academic Staff, (2008).*
9 Palladium Group Inc., (2008). Palladium Group honors six organizations with prestigious Palladium Balanced Scorecard Hall of Fame Awards at Asia-Pacific Summit.

academic and research institution imbued with Islamic values, the RMC itself has set to become "a leading centre for the management of research, development and commercialization, and consultancy and publication" as its mission. By 2007 the RMC had documented a set of strategic objectives, KPIs, short- and long-term targets, and strategic initiatives. The plan was to activate a quantum leap in research. Specifically the RMC targeted to achieve the minimum standards that a "Research University" should have. The action plan to achieve these standards comprised (i) pushing 60% of the university's academic staff to lead a research project, (ii) getting research grants collectively amounting to about RM19 million per year, (iii) spending 80% of the annually allocated fund, (iv) establishing new niche areas of research, (v) creating endowment funds for research, (vi) promoting and managing the submission of research proposals for local and international funding, (vii) introducing new grant schemes, in particular the "Research Matching Grant Scheme" to cater to the needs for international collaboration in research, and (viii) conducting seminars that create awareness on commercialization, workshops on patent drafting, and local and international exhibitions on innovations of research products.

Another target specified in the university's research strategy was the publication of research outputs by its academic staff in high-impact journals; this idea was championed by Professor Dato' Dr. Azmi Omar, the Deputy Rector (Academic and Research, 2001-2008) who, despite being proud of the university's achievement in producing the highest number of original books in comparison to other local public universities, observed that the IIUM lecturers performed poorly in the publication of articles in cited journals as compared to their counterparts in other public universities in Malaysia. Up to the year 2008, the IIUM lecturers had been able to publish less than 500 journal articles cited by ISI and SCOPUS; this was indeed a dismal achievement, and not only that, but none of the university's seven journals had been successful in getting indexed in the ISI and SCOPUS databases. This poor journal publication certainly did not help to secure the IIUM a good standing in the rating and ranking of world universities. In fact, in all likelihood, it had substantially contributed to the fact that, up to the present day, the IIUM is yet to be listed in the ranking of world universities by major ranking agencies.

Consequently, with this turn of events, the IIUM's post-2001 academic deans had much to worry about their faculty's publication in high-impact journals. The deans would now have to be responsible for promoting their staff to higher academic positions, recruiting new staff members, and renewing tenureship of contract staff mainly on the basis of the staff's journal publication. From this time onwards, every member of the academic staff would be required to present his or her research work in at least one national or international conference every year, in addition to having to attend the

"Competency Level Assessment" training and pass its assessment, which focuses primarily on the competencies pertaining to research and publication. These strategies began taking effect in 2001, and since then, the IIUM faculty members have been receiving much recognition in the form of varied awards for publication, namely, the "Quality Research Award," the "Outstanding Researcher Award," and the "Al-Faruqi Award". In addition to being given these prestigious awards, three of the IIUM's journals, *Intellectual Discourse, at Tajdid,* and *al-Shajarah* have been identified as the flagship journals of the university. In this respect, the RMC's role is to provide the support needed to transform the flagship journals into highly reputable journals. The RMC must also provide support for the initiatives made to improve the quality of IIUM staff's publications by creating the post of senior fellows, who would be responsible for assisting with faculty's scholarly writing and editorial processes.

When it comes to managing high-impact research, the IIUM's hopes rest upon how efficient and how effective its Research Management Centre is. Naturally the intensification of scientific research has spurred changes in the structural and operational systems of the RMC. By 2007, 16 years after its inception, the centre had established three units—the Research Unit, the Consultancy and Commercialization Unit, and the IIUM Press—to plan and manage the staff's research, publications, and consultancy projects, as well as their innovation and commercialization of research products. An office headed by a research coordinator was set up at the Kuantan Campus to extend the RMC's services to that campus. In 2003, the centre developed quality work systems, and now it has the ISO 9001-2000 certification with respect to 17 procedures, which also included its lab that was specifically set up for the purpose of conducting computer-assisted telephone interviews.

To extend this service of quality research management, the RMC has been advising the science-based kulliyyahs to get their laboratories certified by international accreditation agencies. Recently, three integrated online databases were developed to enhance the management, assessment, and communication of the IIUM's R&D activities; these databases include information on the IIUM staff's publication, research management, and consultancy and commercialization. They enable faculty members to continuously update their R&D progress report, administrators to gain access to real-time statistics on staff's research performances, and stakeholders to keep abreast with the IIUM's research, publications and commercialization activities.

Research Focus and Funding

In the first decade of the university's research history, three kulliyyahs dominated the research scene—the Kulliyyah of Economics and Management Sciences (KENMS), the Ahmad Ibrahim Kulliyyah of Laws (AIKOL), and the Kulliyyah of Islamic Revealed Knowledge and Human Sciences (KIRKHS). But over the last 15 years, the research activities undertaken by the IIUM's faculty members have noticeably diversified in scope. They have varied from critical inquiry on the works done by Muslim scholars to quantum cryptography, to religiosity inventory development, to immunological response of dengue fever virus protein isolates, and to Islamic perspectives on environmental and waste management issues. These new research areas covered the three categories of scientific inquiry—basic, applied and experimental development—across all academic disciplines at the IIUM. While the works in the basic research category focused mainly on theoretical analysis and basic experiments that would generate new theories, the works in the applied research category explored the practical applications of theories and the solutions to problems based on existing knowledge. The experimental development research, in contrast, had a different emphasis altogether; it used existing knowledge to create new products or processes.

In yet another effort to stimulate more focused research activities, a number of niche areas and research clusters were created in 2004, resulting in the establishment of multi-disciplinary research units and centres at the IIUM, such as the Quantum Information Research Unit, the Electoral Studies Research Unit, the Functional Food and Neutraceutical Research Unit, the Religion & Science Research Unit, the Testing and Assessment in Higher Education Research Unit, the Halal Industry Research Centre, and the Institute of Islamic Banking and Finance.

These units and clusters were established in order to promote more focused research activities as well as to create a framework for quality research through team effort. The approval for the formation of a cluster was based on a set of criteria that would ensure the development, impact and sustainability of the cluster. In addition, it was hoped that the clustering of researchers into strategic areas would increase the bidding capability for the funding of pertinent major projects.

Between January 2001 and December 2008, a total of 1,968 research projects amounting to almost RM54 million, were awarded to the IIUM's faculty members. Among the many funding agencies, the Ministry of Science, Technology and Innovation has been the single most significant funding source for the university; meanwhile, internal grants and international collaborative funding and research-based consultancy awards continue to increase, most noticeably in 2008. For the first time in the history of the university, the amount of approved research fund exceeded

RM10 million in the year 2006, in which almost 25% of the academic staff were the principal researchers. By the end of December 2008, the total grant approved for the year exceeded RM18.5 million, an amount initially thought to be unattainable. With this achievement, the IIUM thus fulfilled the criteria of a Research University in terms of research funding. The following table summarizes the research grants awarded to the IIUM's faculty members since 2004 according to sources of funding.

Table 4.1: IIUM's Approved Research Grant by Sources of Funding 2004-2008

SOURCES OF FUNDING	RM				
	2004	2005	2006	2007	2008
Ministry of Science, Technology & Innovation	390,360	210,360	6,607,184	802,100	594,470
Ministry of Higher Education	-	-	4,108,500	3,319,397	869,400
Internal Funding	3,142,762	750,312	424,829	620,751	2,934,725
Other Sources of Funding	711,333	546,302	1,583,565	34,800	16,650,510
TOTAL	**4,244,455**	**1,506,974**	**12,724,565**	**4,777,048**	**21,049,105**

The tabulated data capture only those projects that were registered at and managed by the Research Management Centre. The figures do not completely reflect the actual amount of research funding awarded to the IIUM as quite a substantial number of research projects went unreported, particularly those in the forms of contract research and research-based consultancy works secured by individual staff and funded by external agencies. Similarly, external projects managed by individual kulliyyahs, primarily through their Strategic Business Units, are unaccounted for. The statistics presented in the table, although quite informative, do not reflect the actual research performance of the university.

Lessons Learnt

With respect to research undertaking, the IIUM has indeed achieved some degree of success. Gradually the engagement of its staff in scientific research has started to make notable impacts on knowledge and practice, albeit at a

somewhat slower pace than desired. More importantly, in terms of research the university has come a long way since its establishment, as is evident in the number, scope and diversity of projects conducted so far.[10] First, there has been a steady increase in the number of faculty members who have submitted proposals for research projects resulting in increased numbers of approved projects and principal researchers. As of December 2008, for example, almost 58% of the IIUM staff with a PhD qualification had led a funded research project compared to the previous year, in which less than 25% led a project. Some of the researchers, for example, Ismawi Zen of the Kulliyyah of Architecture and Environmental Design, Sano Khoutoub Moustapha of the Kulliyyah of Islamic Revealed Knowledge and Human Sciences, Azmi Omar of the Kulliyyah of Economics and Management Sciences, and Rosnani Hashim of the Institute of Education, have been recognized by foreign governments and multinational business agencies for their expertise through their appointments by these bodies as expert consultants.

Second, a number of completed research studies in the areas of the humanities and social sciences have succeeded in making significant impacts on the policies, procedures, and guidelines of national and international governmental agencies and industrial organizations. For instance, the recommendations made by one of the earliest research on the Malaysian Employee Provident Fund by a group of the IIUM's economists had resulted in the development of a programme to build affordable houses for low-income contributors. In another situation, the research outputs of Asiah Abdul Rahim from the Kulliyyah of Architecture and Environmental Design (KAED) were used by the Kuala Lumpur City Hall to draw up the policy, procedures and guidelines for the public facility requirements for physically disabled people. In addition, the IIUM's research in Islamic banking and finance has been perceived to be the trend-setter in the practices adopted by commercial banks, including those in countries that are beginning to apply Islamic procedures and instruments. Meanwhile, Zaleha Kamaruddin's research for the Malaysian *Sharī'ah* Judiciary Department (JKSM) has led to innovative practices in the way that the department now handles divorce cases. Internationally, the IIUM's researchers have also been consulted and involved in the areas of education and training, environmental planning and design, and in drafting constitutions, for example, for the governments of Afghanistan and the Republic of Maldives.

The inception of the science-and-technology-based kulliyyahs and research clusters has added weight to the R&D contributions made by the university. Consistently, the university's researchers have been receiving national and international awards and recognition for their research work. To showcase their research products, many faculty members have been participating since 2004 in national and international science and innovation

10 Interview with Syed Arabi Idid, In *The Researcher*, July 2002.

exhibitions, and have won a total of 136 awards. In fact, some of the researchers have won very prestigious awards, for example, Mohamed Riza Wahiddin who was conferred the Doctor of Science degree by the Manchester Institute of Science and Technology, UK; Mohamad Ismail Abdul Karim, who won the Malaysian Microbiology Society Award; and Farouk Gad, who received the Outstanding Scientist Award from the Malaysian Ministry of Higher Education. Equally important are the works of several researchers who, in collaboration with manufacturing companies, have started to commercialize their research products. In 2007, three of the IIUM's research products, namely, the IIUMMyFix™ (alternative medical implant), the GranuMas™ (alternative material for the repair of bone defects), and ROTAS (software for the transliteration of Arabic to English text), made a debut in the business market.

Its success story notwithstanding, the IIUM still has a long way to go in achieving its dream of becoming a leading international centre for educational excellence and research. Most importantly, the university is yet to build and sustain a vibrant research culture. There is a plethora of issues and challenges in getting the actors—qualified research students, competent researchers, prolific writers, and collaborators from the community—to dynamically and positively interact within the existing management and support systems, given the rules, norms and expectations. Recruiting good PhD candidates who could be engaged as research assistants is a familiar problem at the IIUM. Many freshly graduated assistant professors have not been given the trust to lead major research projects; some were even found to be ill-equipped with research and writing competencies, inadequacies that proved to be costly and demoralizing as they resulted in a very high rejection rate of research proposals. The Research Management Centre has made several attempts to provide proper research and writing skills training for the staff who would need them, but unfortunately the attempts received a lukewarm response from the parties involved. Even more worrying is that, among those who received funding, quite a number seemed to drag their feet in completing the project, apparently not understanding the urgency and the importance of completing their research on time. In addition, issues arising from management and support systems further added to the difficulty in creating a positive research culture among the IIUM staff. As the present Rector of the IIUM put it, where research is concerned, "it is going to be a long and winding road to reach the status of a world class university."

Additional challenges to the IIUM's R&D emerge with globalization, a phenomenon that presents significant challenges which demand substantial changes to research. Globalization has given rise to a new responsibility that all universities around the world must now shoulder, which is "*to demonstrate the impact of the faculty's intellectual contribution to the targeted audiences*"[11] in

11 D. Shinn, "A discussion on the impact of globalization", The Bulletin of the International Association of Universities, 2008.

order that they may grow and survive. The IIUM, in particular, is expected to do more than just tracking the publications made by its academic staff. In compliance with its stated mission and vision, the university is tasked to identify, measure, and disclose the impacts of their R&D on theory, practice, teaching and learning. The IIUM must find ways to recognize, monitor, and document all that results from research—specific practical outputs, policies, commercial products, intellectual property rights, Masters and PhD graduates, spin-off companies, and transfer of new knowledge, skills and technology. In fact, these R&D outputs have been used as the key performance indicators upon which universities are rated and ranked.

Another challenging aspect of globalization is the "commoditization" of knowledge. Universities are responsible for enhancing their resources that would help research. These resources include online research databases that allow for the public disclosure of a university's R&D outputs, which the World Trade Organization has classified as trade items. Hence, in these terms, knowledge is conceived as a commercial product rather than a public good. Knowledge is purchasable and saleable, and universities are merely service providers. Eventually, a trade body will have the final say in deciding how higher learning will function as a part of the 'knowledge economy'. Increasingly, the market will determine how education will develop, and if this were to happen, the ideal of the ownership of knowledge is likely to be compromised.

Conclusion

The aim of becoming a leading international centre of educational excellence is at the core of the International Islamic University Malaysia's values for and expectations of research. This aim is supported by the rationale that R&D activities, moulded within the Islamic framework of values, ethics and virtues, are important to the progress and development of the Muslim *ummah*. It still remains to be seen whether the academic staff of the university will understand and embrace this noble aim, and consequently conduct and produce high-impact research that may contribute to addressing the critical needs of the *ummah* who, as described by Mohd Kamal Hassan (2009), is in *"miserable conditions"* throughout the world and is in dire need of *"academic and intellectual reform."* Until the IIUM community realizes this very critical relationship between quality research and the future of the *ummah*, R&D activities at the IIUM may likely not develop in the much desired direction.