FIRST SEPTENNIAL REVIEW REPORT

OF THE

UNIVERSITY OF TECHNOLOGY, JAMAICA

May, 2007

WRITTEN BY

PROFESSOR EMERITUS THE HONOURABLE ERROL MILLER

CONSULTANT

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ACKNOWLEDGEMENTS

The Council of the University of Technology, Jamaica owes a debt of gratitude to the many persons whose efforts made this first Septennial Review of the operations of the University possible. These persons are:

- The members of the Septennial Review Committee first chaired by Dr Franklin Johnston and later chaired by Professor Gerald Lalor, and comprised of Mr Victor Anderson, Ms Eleanor Brown, Mr Ryland Campbell, Dr Conrad Douglas, Mrs Audrey Hinchcliffe, Ms Minna Israel, Professor Hibbert Duncan, Mr James Rawle and Professor Ingrid Moses.
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- Dr Franklin Johnston who carried out the UTECH 2020 Study.
- Dr Audia Barnett who carried out the study on Science and Technology
- KPMG which carried out the studies on Financing the University and on Specific Areas of the Finance and Business Services Division.
- Mrs Corine LaFont who managed the Septennial Review Secretariat and the Review Process and Mrs Hillary Wasket who provided administrative support in the Secretariat**.**
- Professor the Honourable Gerald Lalor who wrote the Interim Septennial Review Report.
- Professor Emeritus the Honourable Errol Miller who wrote the Final Septennial Review Report.

On behalf of the Council of the University, I say to all of the above, thanks for the part you played in completing this pioneering experience of the University which sets the precedent for Septennial Reviews of the future.

Blossom O'Meally-Nelson, CD, PhD
Pro-Chancellor and Chairman of Council

MESSAGE OF THE CHANCELLOR

I am pleased to introduce this very comprehensive Septennial Review which has been written after wide consultation with our internal and external stakeholders. I feel satisfied that the assessment of the University's achievements in its first seven years of official existence has been thorough in scope. The report provides an excellent framework of recommendations for the further transformation, growth and development over the next Septennial period.

The Review demonstrates that the University has recorded substantial growth in many of its core areas and has implemented a significant proportion of its Charter. Given the numerous challenges during the period under review, this outcome reflects the collective commitment and talent of everyone concerned - staff, students and our partners.

While there is much evidence which confirms that the University is making substantial impact in the quality of our academic programmes, there is much work yet to be done to deliver a shared vision of excellence throughout the University.

As UTech strides into the next stages of its development, I look forward to seeing an increasing role for our University in Jamaica and internationally as we expand our influence in research, scholarship, graduate programmes, entrepreneurship, leadership in technology, innovation and excellence in service.

We appeal to all our stakeholders to support the process of building UTech as a world-class institution.

The Hon Lord Morris of Handsworth, OJ
Chancellor

MESSAGE FROM THE PRO-CHANCELLOR

The Council in preparing the Charter governing the University was mindful of the need for periodic reviews to ensure that the University's objectives were being met. The Council is, therefore, pleased that the process that has generated this Septennial Review Report was comprehensive, engaging and instructive in scope.

I take this opportunity to thank members of the University community, including staff, students, faculty, and of course, members of the Septennial Review Committee and external stakeholders for the zeal and enthusiasm displayed at they made their contribution to this assessment.

The findings of the Review have given us reason to be proud of the enormous accomplishments of the University of Technology, Jamaica (UTech) after its first seven years as a University. At the same time, it has given us a clearer picture of areas of critical shortcomings and a visionary blue print for further strategic planning for the growth and development of the University.

Despite limited resources in an increasingly competitive environment, the University has recorded significant progress in carrying out its functions as required under its statutes. We have marked substantial growth in establishing matriculation and articulation arrangements; in the design and delivery of curricula for undergraduate and graduate programmes; in the granting of fellowships, scholarships and bursaries to enable staff members to up-grade their skills and competencies and we have taken care to establish employee benefits, and student facilities.

As the University continues on the path of transformation and growth, we are depending on the support of all our stakeholders in meeting and surpassing planned strategic objectives to ensure the sustained relevance of the University of Technology, Jamaica as a world class institution.

Blossom O'Meally-Nelson, CD, PhD
Pro-Chancellor

MESSAGE FROM THE PAST-PRESIDENT

The completion of this Septennial Review marks a significant milestone in the history of the University of Technology, Jamaica. Beyond its significance as a legal requirement of the Charter of the University, this report records the first seven years of the University's development phase from transition to consolidation and growth.

The reflective exercise enabled us to closely examine the extent to which the University is achieving its objectives in accordance with strategic plans and operational objectives. The results are encouraging and have given us clear benchmarks to plan for the further growth and development of this noble institution.

UTech's first seven years as a full-fledged University have been ones of challenge but stakeholders strongly agree that the institution has made and must continue to make a tremendous contribution to Jamaica's social and economic development. The achievements of these challenging, exciting and productive years have placed the UTech administration in the position to focus on taking the best of the past and merging it with the best of the future.

I was pleased with the enthusiastic support and extensive participation from a broad-based group of both internal and external stakeholders in enabling the preparation of this comprehensive report and I take this opportunity to thank you all for the sacrificial assistance.

As the University continues on a growth path to become a world-class centre of excellence, that has its driving force in innovation, entrepreneurship and technology, I am confident that through shared vision and team work among all stakeholders, these goals and objectives will be achieved.

Rae A. Davis, OJ, PhD
President (August 1996- March 2007)

MESSAGE FROM THE PRESIDENT

This Septennial Review has been completed at an opportune time in the history of the University of Technology, Jamaica, when the institution is on a heightened growth trajectory to become a world-class centre of excellence.

I am happy to have come on board as President at such an exciting time. As Jamaica's premier national university, UTech has no doubt played a pioneering role in advancing national and regional development. The Report affirms that UTech has made significant strides in the areas of academic management, research, entrepreneurship, sports, the arts and culture and in community service.

The Septennial Report will prove instructive in determining future strategic objectives and operational plans for the continued development of the institution as the "People's University". In keeping with this mandate, the University is now on a mission to expand its capacity to respond to the needs of the nation and the region for broad scale training at both the undergraduate and graduate levels. We look forward to expanding research capacity and output as well as breaking new ground in training in the areas of law, nursing and health services, sports development and hospitality and tourism management.

As we continue to build on the strong foundation established in the first seven years of the University's existence, I look forward to working with students, faculty, staff, members of Council, alumni and other stakeholders to ensure quality of delivery in our programmes and services.

Prof. the Hon. Errol Morrison OJ, MD, PhD, FRCP (UK), FACP, FRSM (UK), FRSH
President

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

ATM	Asynchronous Transfer Mode
AV	Audio – Visual
BSC	Balanced Score Card
CAN	Campus Area Network
CARICOM	Caribbean Community
CASE	College of Agriculture, Science and Education
CAST	College of Arts, Science and Technology
CDB	Caribbean Development Bank
CE	Continuing Education
CEDL	Continuing Education and Distance Learning
CIM	Chartered Institute of Marketing
CNAA	Council for National Academic Awards
CSME	CARICOM Single Market and Economy
CTO	Caribbean Tourism Organization
CXC	Caribbean Examination Council
EU	European Union
EXED	Excelsior Education Centre
FHAS	Faculty of Health and Applied Sciences
FMD	Facilities Management Department
FOBM	Faculty of Business Management
FORGS	Faculty Office of Research and Graduate Studies
FSM	Food Service Management
FTE	Full time Equivalent
GDP	Gross Domestic Product
HEART	Human Employment and Resource Training
HRM	Human Resource Management
ICAJ	Institute of Chartered Accountants of Jamaica
ICT	Information and Communication Technology
IIT	Indian Institute of Technology
ISAS	Integrated Student Administration System
JBA	Jamaica Baker's Association
JIB	Jamaica Institute of Bankers
JIE	Jamaica Institute of Engineers
JMMB	Jamaica Money Market Brokers
JTB	Jamaica Tourist Board

KPMG	Merger of Peat Marwick International, PMI, and Klynveld Main Goerdeler, KMG
LAN	Local Area Network
LIMS	Library Information Management System
MBA	Masters in Business Administration
MIND	Management Institute for National Development
MIT	Massachusetts Institute of Technology
MOEY	Ministry of Education and Youth
MOU	Memorandum of Understanding
NCU	Northern Caribbean University
NWC	National Water Commission
OCLC	Online Computer Library Corporation
PD	Programme Director
PLA	Prior Learning Assessment
SEMT	Science, Engineering, Mathematics and Technology
SHTM	School of Hospitality and Tourism Management
SOBA	School of Business Administration
SRC	Scientific Research Council
SRS	Student Record System
SWOT	Strengths, Weaknesses, Opportunities, Threats
TIC	Technology Innovation Centre
TPDCo	Tourism Product Development Company
TV	Television
UCJ	University Council of Jamaica
UD	University of Delaware
USAID	United States Agency for International Development
UTech	University of Technology, Jamaica
UWI	University if the West Indies
VCR	Video Cassette Recorder
WILP	Work Integrated Learning/Internship Programme
WTO	World Trade Organisation

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EXECUTIVE SUMMARY

Purpose

The purpose of this Report is to comply with the requirement of the Charter of the University. Article 13 of the Charter states:

1. Every seventh year, the Council shall appoint a committee to examine whether, and the extent to which; the University is fulfilling its functions.
2. The members of the committee mentioned in sub-paragraph (1) shall not be employees of the University and not more than one-third shall be members of the Council.
3. The Report of the Committee shall be considered by the Council and Academic Board.

Acting in accordance with the Charter, the Council of the University of Technology, at its meeting of August 2004, established a Septennial Review Committee to conduct the first review of the University. The Committee was comprised of ten members and was chaired by Dr Franklyn Johnston.

A Secretariat with a staff of two was also established to provide the necessary support for the Committee. It was headed by Mrs Corine LaFont.

The specific mandate given to the Septennial Review Committee by the Council was to "assess the University against its several strategic plans, assess its operations since start up and posit directions for future development (2006-2020)"

Process

The Septennial Review Committee employed *three* main devices to conduct the Review. These were:

- Site visits by members of the Review Committee which included inspection of the physical facilities and interviews with university personnel including the Pro-Chancellor, President, Senior Vice Presidents, Deans and members of academic staff and administrative divisions.
- Self-Studies done by all Faculties and Administrative Divisions of the University, with the exception of the Finance and Business Services.
- Studies commissioned from sources external to the University. They were as follows:
  - University Council of Jamaica: Academic Assessment Report
  - Dr Audia Barnett: A Review of Science and Technology in relation to the University of Technology
  - Caribbean Development Bank: Institutional and Organisational Assessment of the University of Technology
  - Dr Franklin Johnston: UTECH 2020

- Caribbean Applied Technology Centre: Internal (Employee) Customer Service Survey
- Market Research Services Ltd: An Image Evaluation Survey
- KMPG: A Review of Specific Areas of the Finance and Business Services Division of the University of Technology
- KPMG: Review of Current Financing and Developing Financing Options and Strategies.

Over the two year period, the Review Committee lost several of its original members, including its Chairman. However, as a result of the appointment of a new Chairman, Professor the Honourable Gerald Lalor, and help given by the remaining committee members, an Interim Septennial Review Report was produced in July 2006.

As not all the externally commissioned reports had been completed in time for inclusion in this Interim Report, the Council decided to contract Professor Emeritus the Honourable Errol Miller to write the Final Report which would be based on the Self Studies, the externally commissioned studies, now completed, and the Interim Report of 2006.

Findings

The Review Process revealed that the University is *fully* carrying out *seven* of its twenty-five functions. These are:

- Offering full and part-time instruction.
- Granting Degrees, Diplomas and Certificates to students who have completed the prescribed course of study and whose assessment and evaluation has shown that they have acquired the specified competencies and achieved the desired standards.
- Granting honorary degrees to distinguished persons.
- Setting out the conditions for and establishing the mechanism for withdrawing academic credentials for good cause from persons to which they have been granted.
- Establishing conditions of services for employees of the University.
- Managing the properties of the University.
- Giving guarantees where the University enters into contracts.

It also showed that the University has made *substantial progress* in carrying out *ten* of its twenty-five functions. These are:

- Setting the conditions of entry and use of its facilities by students.
- Establishing matriculation and articulation arrangements.
- Designing, developing and delivering curricula for undergraduate and graduate programmes.
- Providing access to the resources of the University.
- Allowing use of its facilities by staff and students of other educational institutions subject to certain conditions.
- Granting fellowships, scholarships, bursaries, exhibitions and prizes.

- Charging fees and engaging in fund raising.
- Managing investments.
- Establishing pension and other benefits for its employees.
- Acting as trustees for legacies bequeathed to the university by benefactors.

Further, the Review Process showed that the University is still in the *initial stages* of implementing and carrying out *seven* of its twenty-five functions. These are:

- Establishing research and training in research.
- Engaging in collaboration with other institutions of higher education.
- Granting other academic distinctions that earned and honorary degrees.
- Facilitating and conducting consultancies
- Disseminating the results of scholarly activities by using a variety of media
- Instituting such offices as are necessary to the effective running of the University.
- Conducting businesses that are in the interest of the University.

In essence, there is only *one* function that the University is still to implement in a significant way - that of facilitating access to students with physical disabilities. Since 2002 the Student Services Department has been advocating for a policy that would include facilitating access to students with other disabilities, but thus far, only minimal action has been taken.

In summary, it is reasonable to infer that with regard to implementing its functions, the University is fully carrying out 28 per cent of these; substantially implementing another 40 per cent; has made a sound start in carrying out a further 28 per cent and in respect of one function only – 4 per cent – the University is still to commence significant implementation. What this means, therefore, is that in its first Septennial period the University has implemented, to some extent, *96 per cent* of the functions prescribed by the Charter. This accomplishment is indeed impressive by any standard, but especially so, when account is taken of the fact that during the same period that the University was achieving this level of compliance with the Charter, it was also engaged in a number of other crucial activities, namely, increasing significantly student enrolment, enlarging substantially its physical facilities, upgrading members of staff to the Masters degree level, franchising Diploma and Certificate programmes to other tertiary institutions, and expanding its own degree programmes.

Discussion of the Findings of the Review

The Septennial Review Committee conducted the Review Process in a manner consistent with the remit given by Council. The Review process was comprehensive in scope and penetrative in depth. A vast array of persons was consulted, a great amount of literature was reviewed and a considerable amount of time and effort was devoted to the exercise.

The end result is that the First Septennial Review was broader in scope and provided much more information than is required by the Charter for a Septennial Review. In fact, it went beyond a mere assessment of the extent to which the University was carrying out its

functions, and included an assessment of the University in relation to its objects as stated by the Charter. In this regard the first Septennial Review has exceeded the requirements of the Charter. It has not only provided a thorough assessment of the University during its first seven years of official existence but also has carefully documented its activities over the decade in which the institution was declared a University. Further, the Committee invited and received a number of different perspectives on the extent of the University's achievements in this first period of review.

As would be expected from such an open, thorough and comprehensive review there is a rich diversity of views, judgements, conclusions and recommendations. The views and judgements of the different groups that were consulted and who, in turn, offered their inputs, are discussed in Chapter 4 in order to:

1. Identify and discuss the points of convergence and consensus.
2. Identify and discuss points of divergence and difference.
3. Determine if there are any serious omissions.

For reasons of economy and coherence these three tasks were discussed in relation to the following topics and themes:

- Transformation of the University: From CAST to UTECH
- Academic quality
- Relevance
- Governance
- Organisation and structure
- Research and Graduate Studies
- Administration
- Customer Satisfaction
- Finance.

The Way Forward

The main recommendations of this First Septennial Review, with respect to the way forward are:

1. that the University should strictly comply with the Governance structure as prescribed by the Charter and in the process strengthens the reporting mechanisms so that Council receives quarterly and annual reports from the President and Academic Board, as well as Financial reports.

2. that Council should initiate a process, led by the President, that aims at developing a shared vision of what a University of Technology is intended to be. Central to this process would be specified qualities which the University would expect a *technologist* to have developed at the level of a Masters degree in an area of specialization within any of the five Faculties.

3. that the University should clearly define and differentiate the entities that could comprise a Faculty namely: *School, Department, Institute* and *Centre*. In this regard the University may wish to consider defining a *School* as an entity within a Faculty whose major function is teaching a particular discipline, while a *Department* could be a sub-unit of a School, teaching a particular area of specialisation within the discipline. An *Institute* could be an entity within the Faculty principally engaged in research, development and innovation related to the particular Faculty. A *Centre* could be an entity in the Faculty engaged principally in outreach activities related to the discipline of that Faculty.

4. that over the next Septennial period the University should carefully plan and implement high quality Master's programmes in each of the Faculties. Council should satisfy itself with respect to the number of programmes to be developed in each Faculty, the annual student intake relation to the pool of qualified applicants and the capacity of the Faculty to mount each programme.

5. that the University should review and consider reversing its present policy which requires that all members of the academic staff become researchers and be appointed and promoted in relation to the research capacity and output that they have demonstrated. Instead, within each Faculty an *Institute of Research, Development and Innovation* should be established, designed and staffed to carry out research, development and innovative activities related to the disciplines of the Faculty. In addition, this Institute should be responsible for the supervision of doctoral candidates and should give top priority to staff members with Master's degrees who wish to obtain their doctorates.

6. that Council and the Academic Board should consider reforming the academic structure and organisation of the University along the following lines:

- Establishing *one* Faculty serving the general education and foundation needs of students of all areas of specialisation within the University and *four* Faculties producing professional *technologists* in different areas of specialisation.
- Refocusing the Faculty of Business and Management so as to include emphasis on technology businesses.
- Establishing in the four Faculties producing professional technologists an Institute designed to carry out research, development and innovative activities and to offer Doctoral programmes in the areas of that Faculty's specialisation
- Transferring all academic programmes now being offered by Administrative Divisions to the appropriate Faculties within the University.

7. The University needs to raise the minimum admission requirements for first degree programmes from five passes in CSEC to some combination of CAPE Year 1 and CSEC passes. This will allow the University to conform to UNESCO's International Standard Classification (ISCED) Revised Version III which was adopted by CARICOM in 1998.

8. The University needs to establish a unit within CREODL dedicated to managing its Franchised Programmes. It should abolish across the board franchise fees and instead charge an examination fee for each student for each year of its franchised programmes.

9. Council should set up a Task Force to determine the needs and finance the ICT infrastructure and its related relationships and include the same in its capital development.

10. Advisory Committees should become mandatory in all Faculties. However, the University should be practical and shrewd in mounting programmes to meet the emerging needs of various sectors of industry. Where new programmes are not feasible by virtue of strong student and sector demands backed by willingness and ability to pay, then Government or corporations requesting such programmes should bear the costs involved. The University should employ the triple Helix Model in the development of such programmes.

11. Council needs to make the hard and tough decisions repeatedly recommended by the Internal and External Auditors with respect to improving the efficiency of administration of the University and reducing its cost.

12. The Council should immediately mandate the President to carry out the following exercises:

    - Review programmes of the University in order to identify non-economic programmes with a view to taking steps to make these viable in instances where they serve vital interests in the Jamaican economy; obtain support for such programmes from the sectors affected and determine where savings would result if such programmes were eliminated. This review should clearly identify the programmes that the University will definitely offer say over the next three to four years in the various Faculties**.**
    - Set enrolment limits and targets for the undergraduate programmes in the five Faculties over the next three to four years, taking into consideration the necessity to consolidate the accomplishments of the first Septennial period; ascertaining the number of qualified applicants in each area, and the physical capacity of the University to offer high quality support for these programmes.
    - Project the establishment and/or expansion of post-graduate programmes in each of the Faculties, the numbers to be enrolled and the estimated cost, over the next five years.
    - Project the cost of establishing an Institute of Research, Development and Innovation, with a core staff of four to five members, including a head, in each of the Faculties. Basically, the University should bear the ongoing cost of staff, provide the facilities, and finance the operational expenditure for the *first year only*, after which the institutes should finance their own operational expenses from income earned from projects, consulting services and policy advice.

13. Council should seek to obtain a Memorandum of Understanding, MOU, on the Financing of the University from the Government. The following are proposed as the main elements of this memorandum.

- that the financing of the University by the Government be done on a *triennial* basis with the annual budget being a reflection of the triennial agreement.
- that in arriving at an agreement on the triennial budget the University shall submit and justify the projected student enrolment, programmes to be offered, and staff establishment which the Ministries should approve.
- that the University shall undertake not to take unilateral action to vary the staff establishment or student enrolment within the triennial period.
- that the formula for financing the recurrent expenditure of the University be 60 per cent by Subvention, 30 per cent from student fees and 10 per cent from the entrepreneurial enterprise of the University, that is, from income earned each year by different units within the University.
- that the University, under normal circumstances, will take responsibility for the *capital* needs of the University and use its reserves solely for this purpose. In other words, *the reserves of the University will not be used to meet shortfalls in recurrent expenditure or to provide support for areas not approved by* Government. In this regard the University could fund some capital needs directly from interest earned from investment, or by leveraging these resources by going to the market for the needed financing or by obtaining matching grants from agencies and companies.
- that in circumstances where the Government wishes the University to introduce programmes whose feasibility is not assured by market forces (for example, a Forensic Science programme) then the Government itself shall provide directly both the capital and financial means to mount such programmes.

CHAPTER 1

BACKGROUND AND PURPOSE

BACKGROUND

Generally speaking, educational institutions do not exist in isolation. They are a part of an education system, and the wider society, thus at the very outset of this first Septennial Report, it is necessary to place the University of Technology, UTECH, within the educational, social and economic context that has framed its establishment, development and transformation within the Jamaican society.

Technical Education and the Founding of CAST

The first attempt in Jamaica to provide technical education, at a level above that of the elementary school, and in a specially designated institution, began with the establishment of the Kingston Technical School in 1897. For just over forty years it was the only such institution in the colony. In the late 1930s a number of trade training centres were established by the Department of Education in various parishes of the island: at Carron Hall in St Mary, Dinthill in St Catherine, Holmwood in Manchester, Knockalva in Hanover and Vere in Clarendon.

Following the constitutional changes which brought about adult suffrage in 1944, it took almost a decade to transfer internal self-government to the elected representatives of the people. In education, this resulted in the establishment of the Ministry of Education in 1953.

The first decade of the post-war era in Jamaica (1945-1955) not only commenced with fundamental constitutional and political change but also cradled the beginnings of sustained and strong economic growth in the country, a growth which was to last until the 1970s. That decade was the start of one of those remarkable instances when political will, economic means and social demand occur at the very same time in the history of a country and thus facilitate the implementation of fundamental change in a wide range of sectors within the society. The decade of the fifties was of one of those unique instances in the history of Jamaica.

The change of Government in 1955 brought with it an added impetus and energy that often attends regime change and, in turn, the education system was to become a principal focus of this change. Reforms in education in the 1950s that are most frequently remembered and often recited usually relate to the substantial increase in access to high school education which was made possible through the Common Entrance and Free Place policies of 1957. Often overlooked, but of equal importance to this social revolution, was the re-structuring of technical education that also took place in the late 1950s.

First, in 1957, the Kingston Technical School, as well as the trade training centres of Dinthill, Holmwood and Vere were converted into Technical High Schools. With the establishment of two new Technical High Schools: St Andrew Technical and St Elizabeth Technical, the creation of a Technical High school system was complete. Entry to Technical high schools was through the system's own common entrance examination. Second, in 1958 the Jamaica Institute of Technology was established and became the tertiary institution that would receive school leavers from the Technical High schools. In the following year, 1959, the Jamaica Institute of Technology was renamed the College of Arts, Science and Technology, CAST.

It is important to note that from a social standpoint both the Technical High schools and the Jamaica Institute of Technology were established as educational options of second choice. The common entrance for Technical High schools was taken by students one year after the common entrance for Traditional High schools. Most of the students sitting the common entrance for Technical Highs schools had not succeeded in the common entrance for the Traditional High schools which they would have sat a year earlier. Further, in the 1950s very few Traditional High schools offered any technical subjects in their curriculum, and where these were offered it was for students who were not doing well with the classics, humanities and sciences.

The Jamaica Institute of Technology/CAST was not established as a rival of the University College of the West Indies, as it was then. Neither was it a real rival of the Sixth Form in that students entering The Sixth Form were destined for further education. Rather, the new Institute was established for students heading immediately for "the world of work" Further, the Jamaica Institute of Technology was established during the infancy of technical education development in the Jamaican education system. It was designed to produce technicians at a higher level than those students in the high school system.

The economic rationale for the creation of a technical education sector within the education system resided in the diversification of the Jamaican economy that was taking place. The discovery of bauxite in 1943 had resulted in the commencement of the bauxite/alumina industry, while renewed interest and investment in Tourism was reflected in the expansion of new attractions and destinations opening up on the North Coast. Light manufacturing was taking root and being actively promoted by Government, while with the establishment of the cement factory at Rock Fort, construction was beginning to boom. These growing sectors of the economy needed technicians of various types, clerks, secretaries and administrative assistants. The establishment of a technical/vocational sector within the education system was designed to supply the manpower needs of these sectors, thus consolidating the economic development taking place. This part of the education system would provide technicians, clerks and secretaries at levels appropriate to the demands of these sectors of the economy. The Jamaica Institute of Technology/CAST would provide the higher level personnel within the sector. Students of Technical High schools sat their GCE and City and Guilds examinations, and those successful candidates were admitted to The Jamaica Institute of Technology/CAST where after two or three years of successful study they gained their qualifications and were awarded Certificates and Diplomas in technical education.

The establishment of Jamaica Institute of Technology/CAST as a technical college mirrored, if not mimicked, similar reforms that were taking place in post-war Britain where the Government was implementing measures to improve the level of skills in the country in order to make British industry more efficient and competitive. Jamaica was by no means the only Commonwealth country that followed the pattern of British post-war education reforms whereby higher technical institutions were established, which, in turn, related to Technical High schools. It is instructive, as an example, to briefly take note of similar developments in Ghana and India.

The Kumasi College of Technology in Ghana began operations in January 1952 with a nucleus of students in teacher training. In August of that year, Engineering, Commerce and General Studies were added followed by Pharmacy in January 1953 and Agriculture later in that year. In 1955 engineering students began reading for the Bachelor of Engineering as external students of London University. In 1957 the School of Architecture, Town Planning and Building was added. In 1958 it was decided to let the institution focus entirely on Science and Technology, hence Teacher Training, General Studies and Commerce were transferred to other institutions. However, the School of Art was retained. In 1961 by Act of Parliament the institution was made an autonomous University and named the Kwame Nkrumah University of Science and Technology. Currently, it is the only university of science and technology in Ghana and is one of the highly respected universities in Africa.

Anticipating Indian independence and contemplating post-war development, the Viceroys Executive Council established in 1946 a committee to consider the setting up of higher technical institutions. The committee recommended the establishment of four higher technical institutions, possibly modelled on the Massachusetts Institute of Technology, MIT, and with a relationship to a number of affiliated secondary institutions. The standards to be achieved should be on par with comparable institutions in the world. These higher technical institutions should not only produce undergraduates but also engage in research, produce research workers and technical teachers.

India gained political independence in 1947. The newly independent government acted on the recommendation of the Viceroys Committee and the first Indian Institute of Technology, IIT, was established at Kharagpur in the eastern part of India in September 1950. It was to be one of four such institutions spread geographically across India. It was sited in the quarters of the former detention centre at Hijli at which many famous freedom fighters of the non-violent resistance movement had been incarcerated. By 1956 the Indian Institute of Technology, Kharagpur by an act of Parliament, was granted the status of an autonomous university and served as the pioneer institution of the IIT brand that has become internationally recognized. Prime Minister Jawaharlal Nehru stated at its opening that this new institution was not only located on premises of great symbolic significance but was “the future of India in the making”. Having established the prototype at IIT, Kharagpur, the India Government quickly added IIT, Bombay in 1958, IIT, Kanpur 1959, IIT Delhi and IIT Madras 1961. By 1996 the number of IITs was increased to seven with the addition of IIT, Guwahati in 1994 and IIT, Roorkee in 1996.

Currently these seven IITs admit 4000 undergraduates per year through a joint entrance examination. Their total enrolment comprises 15,500 undergraduates and 12,000 graduate students. These seven IITs, in addition to teaching undergraduates and graduate students, engage in research, consultancy and collaborative activities with peer institutions internationally. Over the last 30 years India has also developed the National Institutes of Technology which are comprised of 18 regional institutions regarded as being next in level to the IITs with respect to student quality, research and placements.

In the 1950s, state intervention was undertaken to establish higher technical institutions by the governments of Ghana, India and Jamaica. All three countries were breaking new ground in technical education and faced similar challenges which they addressed in very similar ways. To ensure a continuous supply of appropriately qualified students, the Kumasi College of Technology and the Indian Institutes of Technology had to produce teachers for the various disciplines in which they were specializing. In addition, a strong relationship had to be developed with the industries which they had been designed to serve.

At an early stage, decrees established that the Ghanaian and Indian institutions would function as *universities* and this decision provided them with a head start in changing perceptions and in turning them into institutions, comparable to the traditional universities with which they now competed as a first choice for students. From the inception, their mandate included strong graduate programmes with teacher training as a component, and a research capacity.

While Ghana and India had become independent countries in the 1940s and 1950s, the island of Jamaica remained as a British colony until 1962, and CAST remained as a teaching institution at the *undergraduate* level. Twenty years after its founding the training of technical teachers was added to its mandate. University status was conferred on the institution in 1995, thirty seven years after it's founding as the Jamaica Institute of Technology in 1958, and its charter granted in 1999. Any contemporary comparisons of the University of Technology, Jamaica with Kumasi or the Indian IITs must not only take account of the similar times of their founding but the different trajectories of their histories over the ensuing period.

UTECH, as a single institution, has an enrolment that is about 40 per cent of the combined enrolment of the seven Indian institutions (the IITs); their curricula concentrate on the sciences and engineering and are not as wide as that of UTECH whose range includes business and management as well.

Currently, it is regarded as passé to make international comparisons without taking into account differences in context, and, therefore, different imperatives driving development in different countries. While international comparisons are important, of equal importance is the understanding and assessment of institutions on their own terms and within their own context. Hence, while UTECH and the IITs are now autonomous universities devoted to technology, and share similar histories in some respects, they have

arrived at this destination at different times and by different routes determined by the different political, social and economic outlooks and imperatives of their respective countries. The same would hold true of any other comparison of UTECH with universities of technology in any other part of the world.

Changes in Jamaican Education during the CAST Era

The changes that took place in Jamaican education and society along with those that have taken place globally since the founding of CAST in 1958 form the backdrop against which the University of Technology came into being in 1995. It is necessary to identify and describe briefly at least seven of these changes.

- The technical education sector of the Jamaican education system has now been firmly established. At present there are fourteen technical high schools with an enrolment of over 20,000 (approximately 15 per cent of the students that receive five years of secondary schooling in Jamaica). These schools have a constant and continuous supply of qualified teachers, a large proportion of which is supplied by CAST/UTECH. While the technical high schools may not have completely overcome their status as institutions of second choice, they run a close second to the Traditional High Schools in terms of the perception of parents and community which is based on their strong performance in external examinations. Particularly, these schools have developed a reputation of producing students with strong science backgrounds. A truly symbiotic relationship has, therefore, been established with CAST/UTECH in that while the qualified secondary students are a prerequisite for the CAST/UTECH, the latter has provided opportunities for further education and thus acts as an inspiration to Technical High School students.
- The curricula of traditional high schools have been diversified to such an extent that all schools of this type now offer technical subjects as a part of their curriculum, and these subjects are no longer automatically regarded as 'Cinderella subjects' for the less able. As a result, CAST increasingly drew students from traditional high schools thus broadening its relationship within the secondary education system.
- CAST developed a strong relationship with the industries related to the disciplines taught at the college and with this, a reputation for producing 'work ready' graduates as evidenced by high levels of employment of its graduates.
- Though established as a national institution, CAST also developed a regional reputation and as a result has attracted a small, but significant clientele of students from other Caribbean countries. This connection was enhanced and assisted through scholarship schemes offered by international agencies and organisations and made tenable at CAST. The reputation of CAST has been further enhanced by the fact that its graduates were able to hold their own not only in Jamaica and the Caribbean but also internationally, wherever they go to access further education or to find work.
- The paradigm for wealth-creation in the world shifted from the possession of large amounts of capital and the availability of an abundance of cheap labour to

the application of knowledge and technology to various aspects of human endeavour. This paradigm shift has been described as the shift from industrial production to knowledge production, or from the industrial society to the information/knowledge society. However, the implication for education is that tertiary education is now perceived and regarded as the factor that confers competitive advantage in global competition. In this regard Jamaica and the Caribbean are particularly challenged. Jamaica and Caribbean education is characterised by universal access to early childhood and primary education, mass or universal access to secondary education but very limited access to tertiary education. Evidence of this fact is that at the beginning of the 1990s the total capacity of tertiary institutions across the region could only accommodate less than 10 per cent of students in the 18 to 24 age cohort. Recognition of this deficiency brought with it policies to upgrade and expand tertiary education across the region.

- An often overlooked but a highly important development in Jamaica, and several other Caribbean countries, is the change that has taken place in the demographic structure of the population. *The school-age population of 4 to 19 years is now smaller than the prime-age adult population of 20 to 49 years. Equally important is the fact that this bulging population of prime-age adults includes many who have missed out on educational opportunities at the secondary and tertiary levels because the provision or the quality of education offered when they were of school age was not adequate or sufficient for their needs and demands*. Hence, the expansion of tertiary education cannot be directed only at school leavers. Persons in the workforce, also, are in need of these educational opportunities. Further, with respect to tertiary education, the competitive advantage for the most immediate returns are likely to come from upgrading prime age adults already in the work force.
- The coincidences in the inventions related to digital technology, fibre optics and micro-chip technology have created revolutions in information and communication technologies that have revolutionised technology itself. The Internet, broadband connectivity, cell-phones, digital cameras and camcorders, smart appliances, powerful desktop and notebook computers, ATMs, directions through GIS devices, instant communication, video-conferencing, web-casting and remote control of numerous types of devices are but some of the developments, the potentials of which are only just being contemplated especially within education. For example, while distance education has a long history beginning with correspondence education, ICT brings the teacher and the student near together and puts them into a relationship that is much closer to the traditional face-to-face modality than the distance education modality where the student learned largely on his own with little interaction with his teachers.

The Establishment of the University of Technology

The developments and changes outlined above, combined with the exertions of the CAST Community itself, especially that of the former Principal, Dr Alfred Sangster, O.J. resulted in the Ministry of Education, Youth and Culture decreeing that CAST be

upgraded to University status; thus the University of Technology, Jamaica came into being as of September 1995. It took another four years before the appropriate legislation, "The University of Technology, Jamaica Act, 1999," granting the institution autonomous university status was passed by the Jamaican Parliament. The Act recognised the action of the Ministry of Education, Youth and Culture by retroactively granting university status to September 1995. It states in clause 4 that "The University shall be a teaching, research and examining body and shall carry out the functions necessary to achieve the objects set out in Article 2 of the Charter."

Article 2 of the Charter states the objectives of the University as follows:

a) To advance education and development of technology through a variety of patterns, levels and modes of study and by a diversity of means by encouraging and developing learning and creativity for sustainable development for the benefit of the people of Jamaica, and the Caribbean and elsewhere.
b) To preserve, advance and disseminate knowledge and culture through teaching, scholarship and research.
c) To make available the results of such research and service.
d) To promote wisdom and understanding by example and influence of corporate life.

PURPOSE

The purpose of this Report is to comply with the requirement of the Charter of the University. Article 13 of the Charter states:

1 Every seventh year, the Council shall appoint a committee to examine whether, and the extent to which; the University is fulfilling its functions.
2 The members of the committee mentioned in sub-paragraph (1) shall not be employees of the University and not more than one-third shall be members of the Council.
3 The Report of the Committee shall be considered by the Council and Academic Board.

The functions of the University, as set out by the Charter, are as follows:

a) To provide full-time and part-time instruction, leading to awards and qualifications or otherwise;
b) To make provision for research and research training for the preservation and advancement or knowledge in such manner and through such media as the University may determine;
c) To prescribe the conditions under which persons may be admitted as students of the University or of any particular course of study within the University, or to the use and enjoyment of any resources and facilities provided by the University;
d) To provide the means in so far as is practicable to enable physically challenged persons to undertake courses of study and or research in the University;

e) To collaborate with other institutions, including institutions of further and higher education, in the provision of educational opportunities;
f) To grant and confer, under conditions laid down by the University, degrees and other academic distinctions and to grant diplomas, certificates or other distinctions to persons who pursue courses of study or research approved by the University and attain the prescribed standards in such examinations, tests or other assessment as shall be prescribed by the University;
g) To grant and confer degrees or other academic distinctions on other persons under such conditions as are prescribed by the Statutes;
h) To grant and confer honorary degrees on approved persons;
i) To accept the examinations passed and periods of study and research spent by students of the University at other universities or places of learning or elsewhere as equivalent to such examinations and periods of study or research of the University as may be determined by the Academic Board and to withdraw such acceptance at any time;
j) To provide a range of courses of study, academic, professional, technical or otherwise, at higher degree, degree and non-degree levels leading as appropriate to qualifications awarded by the University or by national or professional bodies;
k) To facilitate consultancy and related activities;
l) To provide, for members of the University and others, on or off the campus, access to the courses of study of the University and to its educational, social, cultural and recreational resources;
m) For what the Council, on the recommendation of the Academic Board, shall deem to be good cause, to deprive any person of any degree, diploma, certificate or other distinction granted to or conferred on that person by the University;
n) To admit to the privileges of the University or to recognize for any purpose, in whole or in part, any college or other institution or the employees or students thereof, on such terms and conditions as may, from time to time, be prescribed in the Statutes or by Ordinances;
o) To institute and award fellowships, scholarships, exhibitions, bursaries, prizes and other aids to study and research;
p) To provide for the printing, recording, broadcasting, publication, transference through electronic media and distribution of works of scholarship, research reports, teaching material and other works;
q) To institute such offices as the University may require;
r) To appoint persons to and remove them from such offices and employment and to prescribe their conditions of service;
s) To enter into any agreement for the incorporation within or association with the University or any other institution and for taking over, in whole or in part, its rights, property, privileges and liabilities and for any other educational purposes not repugnant to this Act;
t) To demand and receive fees, subscriptions and deposits, impose charges, accept legacies, endowments, bequests and other gifts, to procure and receive contributions to the funds of the University and to raise money in such other manner as the University may think fit;

u) To maintain, manage, administer, dispose of and, save as hereinafter provided, to invest all property, money assets and rights of the University to mortgage, to lend, to borrow and to enter into engagements and to accept obligations and liabilities in all respects without any restriction whatsoever, and in the same manner as individuals may manage their own affairs;
v) To establish, hire, lease, maintain, administer, govern, license and supervise places or residence, recreation and study for officers, staff, students and guests of the University;
w) To make provision for the welfare of officers, staff and students of the University, of persons formerly in any such category, and of spouses, widows widowers and dependents of such persons, including provisions for the payment of money, pensions or other payments or benefits and to subscribe to benevolent and other funds for the benefit of such persons;
x) To give guarantees for the payment of any sum or sums of money or the performance of any contract or obligation by any company, body society or person if it is in the interests of the University to do so, and in accordance with the provisions of the Statutes;
y) To act as trustees or managers of any property, legacy, endowment, bequest or gift for purposes of education or research or otherwise in furtherance of the work and welfare of the University.

Acting in accordance with the Charter, the Council of the University of Technology, at its meeting of August 2004, established a Septennial Review Committee comprised of ten members to conduct the first review of the University and supported the Committee with a two-person Secretariat. The Committee was chaired by first Dr Franklyn Johnston and latterly by Professor Gerald Lalor. The Secretariat was headed by Mrs Corine LaFont**.**

The specific mandate given to the Septennial Review Committee by the Council was to "assess the University against its several strategic plans, assess its operations since start up and posit directions for future development (2006-2020)". As can be seen from the above the Council gave the Septennial Review Committee a broader remit than specified in the Charter and initiated the review exercise well before it was due in September 2006.

The Council's decisions to start the Review exercise two years early and to give the Review Committee a broader remit has to be considered against the background that the Ministry of Education, Youth and Culture authorized the upgrading of CAST to university status as of September 1995 but the Act requiring the Septennial Review did not come into effect until June 1999. Hence the period under review exceeds seven years. At the same time the first Septennial review could not be conceived as routine, since it gave the Council and the University the opportunity to review the period of transition and to assess the possibilities for the future. The two-year period for the review and the broader remit are, therefore, not inconsistent with the circumstances of this, the First Septennial Review.

CHAPTER 2

THE SEPTENNIAL REVIEW PROCESS

The Septennial Review Committee employed three main devices to conduct the Review. These were:

- Site visits by members of the Review Committee which included inspection of the physical facilities and interviews with university personnel including the Pro-Chancellor, President, Senior Vice Presidents, Deans and members of academic staff and administrative divisions.
- Self-Studies done by all Faculties and Administrative Divisions of the University, with the exception of the Finance and Business Services.
- Studies commissioned from sources external to the University. They were as follows:
    - University Council of Jamaica: Academic Assessment Report
    - Dr Audia Barnett: A Review of Science and Technology in relation to the University of Technology
    - Caribbean Development Bank: Institutional and Organisational Assessment of the University of Technology
    - Dr Franklin Johnston: UTECH 2020
    - Caribbean Applied Technology Centre: Internal (Employee) Customer Service Survey
    - Market Research Services Ltd: An Image Evaluation Survey
    - KPMG: A Review of Specific Areas of the Finance and Business Services Division of the University of Technology
    - KPMG: Review of Current Financing and Developing Financing Options and Strategies.

Over the two year period the Review Committee lost several of its original members including the Chairman. Professor the Honourable Gerald Lalor was appointed Chairman and with the help of the remaining members of the Committee produced an Interim Report in July 2006.

Not all externally commissioned reports were completed at the time of the Interim Report. Council therefore decided to contract Professor Emeritus the Honourable Errol Miller to write the Final Report based on the Self Studies, the externally commissioned studies and the Interim Septennial Review Report.

It is important to give a brief synopsis of each of the Self Studies and the External Studies before analysing their findings in relation to the functions of the University.

THE SELF-STUDIES BY FACULTIES AND THE LIBRARY

The academic entities of the University of Technology consist of five Faculties and the Calvin McKain Library, the central library of the University. Each of these academic entities produced a Self-Study.

The Five Faculties are:

- The Faculty of the Built Environment
- The Faculty of Education and Liberal Studies
- The Faculty of Engineering and Computing
- The Faculty of Health and Applied Sciences
- The Faculty of Business and Management.

Self Study of the Faculty of the Built Environment

The Faculty of the Built Environment is comprised of the Caribbean School of Architecture and the School of Building and Land Management. During the period under review the Programmes offered by the Faculty of the Built Environment, FOBE, included the following:

- Certificate in Construction Engineering
- Diploma in Construction Management
- B.Sc. in Construction Engineering and Management
- B Sc. in Construction Engineering
- Certificate in Land Surveying
- Diploma in Land Economy and Valuation Surveying
- Diploma in Land Surveying
- B. Sc. in Land Economy and Surveying
- B. Sc. In Surveying and Geographic Information Sciences
- Diploma in Inter-Disciplinary Planning and Environmental Resource Development
- Post-Diploma in Inter-Disciplinary Planning and Environmental Resource Development
- Post Diploma in Geographic Information Systems and Land Management
- B. Sc. in Urban and Regional Planning
- Diploma in Quantity Surveying
- B. Sc in Quantity Surveying
- Associate Degree in the Built Environment
- B. Sc in Architectural Technology
- B. A. in Architectural Studies
- Master of Architecture

The Faculty identified some of its major achievements and strengths as:

a) Good support from national and regional professional associations
b) Accreditation of its programmes by various bodies and favourable comments on its standards by External Examiners.
c) High demand for graduates who are readily employed.
d) Strong demand for admission into the Faculty by students
e) Committed and experienced staff

Among the main weaknesses identified by the Self-Study were:

- Having outgrown the physical facilities of the Faculty
- Under-funding, especially of furniture and equipment
- Large classes.
- Voluminous course work to be covered by students in relatively short time
- Restricted opening hours of the Library.

The FOBE perceives threats and challenges currently and in the future mainly through competition especially from Offshore Universities operating locally but maintains a positive outlook based on the notion that Construction and Installation contributes approximately 9.8 per cent to Jamaica's GDP and that "Jamaica, and indeed the Caribbean region, unlike many first world countries is far from being "built out", and therefore, for many years to come, there will be large construction projects in the region."[1]

Self-Study of the Faculty of Business and Management

The Faculty of Business and Management is comprised of the School of Business and the School of Hospitality and Tourism Management. During the period under review the Programmes offered by the Faculty of Business and Management were as follows:

- The Certificate in Marketing
- The Certificate in Events Planning and Management
- The Certificate in Catering
- The Certificate in Food Service, Organisation and Supervision
- Certificate in Pastry Making
- Diploma in Marketing
- BA in Business Administration in seven areas of specialisation: Accounting, Administrative Management, Banking and Financial Services, Finance, Human Resource Management, Marketing and Production and Operational Management.
- B. Sc. in Administrative Management

[1] Page 105 University of Technology, Jamaica Faculty of the Built Environment Septennial Review 1997-2005

The FOBM identified the following among its major achievements over the period under review:

- Strong student demand for its programmes.
- The upgrading of its academic staff so that 96 per cent now hold Masters Degrees or a higher qualification and therefore only 4 per cent fall below the minimum requirement set by the University as compared to 37 per cent in 1998.
- All full-time academic staff members now have full access to desktop computers.
- Continued financial contribution to the operating surplus of the University
- Rationalisation of its programmes including the out-sourcing and franchising of several Certificate and Diploma programmes to Community Colleges.
- Accreditation of several of its programmes and strengthening of peer review through doubling the number of external examiners participating in the quality assurance process.
- A strong and vibrant internship programme that involves local, regional and international placements giving needed hands-on experience to its students.

Among the weaknesses identified by the Self-Study of the FOBM were:

- Shortages of lecture theatres, classroom and laboratories in relation to the size of its operation.
- Existing remuneration levels which hamper the recruitment of full-time staff; high levels of part-time staff employed to fill gaps.
- Heavy work load of some staff members, exceeding the limits set by the university.
- The distribution of seniority among lecturers where only 15 per cent are at the level of Principal and Senior Lecturer with the remaining 85 per cent at the level of Lecturer.

Among the future challenges that the FOBM needs to undertake, the Self-Study listed the following:

a) The promotion of greater levels of research activities, particularly in carefully selected niche areas.
b) The expansion of existing income sources, investigating new possibilities of income earning and diversifying programme delivery.
c) The implementation of the Balanced Score Card System of strategic management with a view to achieving more efficient internal business processes, higher customer satisfaction and better financial surplus.

Self-Study of the Faculty of Engineering and Computing

The Faculty of Engineering and Computing is comprised of the School of Engineering, the School of Computing and Information Technology and the Computing and Engineering Extension Centre. The Programmes of the Faculty of Engineering and Computing, FENC, during the period under review are:

- The Diploma in Engineering with majors in Plant Production, Power Communication and Instrumentation and Chemical Engineering Technology
- Bachelor of Engineering in Mechanical, Electrical and Chemical Engineering
- Masters in Engineering
- M Phil in Engineering
- Ph D in Engineering
- Certificate in Computing and Management Studies
- Associate Degree in Computing and Management Studies
- B Sc in Computing and Management Studies
- B Sc in Computing and Information Technology
- Continuing education programmes in computing and engineering as requested by private sector companies and international agencies.

The FENC Self-Studies identifies among its strengths and achievements the following:

- International recognition of its programmes and the success of its graduates in gaining access to further education overseas as well as successfully competing for jobs in the international labour market.
- High demand for their graduates locally and regionally who are readily employed.
- Strong alumni support.
- About 40 per cent of full-time staff is enrolled in doctoral programmes.
- Strong links with the industries they serve through the Faculty's Advisory Board
- Growing research capacity and links with industry and overseas institutions.
- Franchising Certificate and Diploma programmes to community colleges
- The developing of the Pre-Engineering Course of Study, PEC, equivalent to CSEC, and the Pre-requisite of Study, PSC, equivalent to CAPE and GCE A levels which give prospective students a second chance to obtain matriculation requirements.
- Committed and competent professional and technical staff.

The FENC identifies among its weakness and challenges the following:

1. Too many levels of programmes in Engineering being offered simultaneously.
2. Insufficient classroom and laboratory places.
3. The difficulty of doing research with a high teaching load.
4. The difficulty of recruiting and retaining suitably qualified staff given the scales at the University and the competition for persons with the desired level of competence.
5. The relatively high costs of its programmes and the inability of some prospective students to afford these costs.
6. Some staff in engineering needing to improve their teaching competence.
7. Staff in Computing with limited industrial experience.
8. Curriculum in Computing restricted to hardware and software of the desktop environment.

9. The facilities of the School of Computing being used to service the entire University with respect to computer literacy and other competency issues while at the same time being used to produce professionals and technicians in this field.

Despite competition from local and other universities the Faculty of Engineering and Computing is optimistic of its future given the international, regional and local demand for professionals and technicians in engineering and computing.

Self-Study of the Faculty of Health and Applied Science

The Faculty of Health and Applied Sciences is comprised of the School of Pharmacy and Health Sciences and the Department of Science and Mathematics. The Programmes offered by the Faculty of Health and Applied Science, FHAS, over the period under review are as follows:

1. Certificate in Health Services Management
2. Certificate in Health Records and Statistics
3. Certificate in Social and Economic Statistics
4. Certificate in Child Care and Development
5. Certificate in the Art and Science of Coaching
6. Associate Degree in Water Systems Engineering
7. Associate Degree in Science Laboratory Technology
8. Diploma in Water Systems Engineering
9. Diploma in Meats and Food
10. B Sc in Environmental Health
11. B Sc in Public Health Nursing
12. Bachelor in Pharmacy
13. B Sc in Medical Technology
14. B Sc in Dietetics and Nutrition
15. B Sc in Health Sciences
16. B Sc in Child Care and Development
17. B Sc in Science and Education

The FHAS identified the following among its strengths and achievements over the period under review:

- Upgrading of its staff so that 86 per cent now hold Masters or Doctoral degrees.
- Establishing degree programmes that now have a through-put of students gaining degrees that are of internationally acceptable standards in the prescribed time.
- Strengthening quality assurance through establishing appropriate mechanisms at all levels of the curriculum, instructional and evaluation processes.
- Applying the Balanced Score Card Process to assess performance measures and targets within the Faculty
- Establishing Advisory Committees to ensure that all programmes continue to serve the sector to which they are related.
- Intensifying its thrust for research activities.
- Obtaining re-accreditation of two of its degree programmes

The FHAS identified its immediate challenges to be:

- Recruiting staff to fill critical vacancies
- Constructing an additional floor on the new wing of the Faculty building to create additional space for staff-rooms, lunch rooms, post-graduate work and research laboratories.
- Establishing cooperation in research activities with other faculties, institutions and industrial partners.
- Developing and implementing plans for post-graduate programmes.
- Establishing a Wellness Centre as a reference site for health promotion.
- Developing a proactive marketing strategy for income generation based on high quality services

Self-Study Faculty of Education and Liberal Studies

The Faculty of Education and Liberal Studies is comprised of the School of Technical and Vocational Education and the Department of Liberal Studies. The Programmes offered by the Faculty of Education and Liberal Studies, FELS, during the period under review are as follows:

1. The Diploma in Technical Teacher Education
2. The Special Diploma in Technical and Vocational Education
3. The B Ed
4. The B Ed in Technical Education
5. The B Ed in Technical and Vocational Education and Training
6. The Postgraduate Diploma in Education
7. M Sc in Workforce Education and Development
8. M A in International Services

The Self-Study of the Faculty of Education and Liberal Studies, FELS, identified the following among its strengths and accomplishments during the period under review:

- A reputation for producing quality teachers of technical education for the entire school system in Jamaica.
- The upgrading of its staff from 50 per cent holding Masters and Doctoral degrees in 1996-97 to 87 per cent in 2004-2005.
- The enrolment of 66 students in post-graduate programmes in the Faculty, accounting for over 85 per cent of total post-graduate enrolment in the University.
- The design and implementation of the Post-Graduate Diploma in Education for University teachers that has helped to upgrade and improve teaching competence in the University.
- The provision of staff development services within the University, and to many regional and national groups.

- The establishment of the Self Access Learning Centre which has assisted students across the university to improve their English Language and communication skills based on their individual strengths and weaknesses.
- The offer of classes in the languages: Spanish, Japanese, French and German to interested students across the University, and particularly to those in the School of Hospitality and Tourism Management and the School of Engineering that have included foreign language competency as a part of their programmes.
- Committed and dedicated staff
- Success in bidding competitively on projects funded by international agencies and put out to international tender in St Vincent and the Grenadines and Jamaica.

The FELS identified the following as its major challenges:

- The Self Access Learning Centre is already outgrowing its new facilities.
- The need for more human resources to allow the Self Access Learning Centre to be kept open between 8.00 am to 8.00 pm on week days and 9.00 am to 12.00 noon on Saturdays and Sundays.
- The need for more learning, instructional and laboratory facilities and resources to support the education programmes.
- The need to develop stronger links with industry
- The need for more full-time staff, especially with respect to the supervision of students during their teaching practicum.
- The need for more flexibility in the Programme Structure of the School of Technical and Vocational Education.

Self-Study of the Calvin McKain Library

The Self-Study of the Calvin McKain Library noted the following among its major accomplishments during the period under review:

- At any one time the physical facilities have seating accommodation for approximately 7 per cent of the student and staff population of the University.
- The book collection grew from approximately 65,000 in 1995 to 110,478 in March 2005.
- The instructional media services were substantially upgraded to support a wide range of instructional activities.
- A Caribbean Collection was established in 2001 and has been expanding rapidly with donations of local publishing houses. This Collection includes materials in DVD, CD-ROM and videotape formats.
- The Development of the Art and Architecture Video Archive has been a great asset to the Caribbean School of Architecture and the Department of Liberal Studies and can be accessed by staff and students of other tertiary institutions.
- The Library Information System and Outreach Services Division was created in 2000 and has facilitated increased access to non-print information and on-line databases.

- The Library now delivers a wide range of services including reference, literature searches, journal routing, inter-library loans, document delivery, current awareness programmes, photocopying, selective dissemination of information, staging exhibitions, coordinating annual textbook lists for Faculties, information literacy classes, preparation of video materials and video-taping in support of class and public relation activities.

The Self-Study identified the following among its major weaknesses and challenges:

- The classification of Librarians as administrative staff. Piecemeal attempts to address the matter, along with the staff review of the paraprofessional staff in 2002, have combined to lower morale and cause dissatisfaction.
- Inadequate number of professional staff to manage effectively electronic resources and cataloguing and the absence of a clear policy on the employment of part-time staff make it difficult to effectively operate all service access points.
- Inadequate or ineffective building maintenance which results in leaking roofs, flooded bathrooms and unsightly electrical cords.
- Inadequate security equipment and arrangements that do not deter student theft and recurrent break-ins.
- Inadequate budgetary allocation for subscriptions to professional journals.
- The need for the allocation of time for staff to introduce first year students to information literacy skills, and for new lecturers to be oriented to the resources of the Library.
- Length of time taken in the installation of new equipment and the removal of obsolete items so as to free up required space.
- Length of time taken in supplying equipment when official request has been submitted.

THE SELF-STUDIES OF THE ADMINISTRATIVE DIVISIONS

The University of Technology is administered by six Divisions. These are:

- The Office of the President
- The Corporate Services Division
- Finance and Business Services
- The Planning, Development and Technology Division
- The Division of Student Services and Registry
- Academic Affairs Division.

The Septennial Review Committee requested that each of the *six* Administrative Divisions carry out and submit a Self-Study. Five of the six Administrative Divisions submitted Self-Studies. *Finance and Business Services submitted the Balance Sheet of* the *University for March 31, 2006 but did not submit a Self-Study*. A brief description will be given of the functions of each Division along with the major features of each of the *five* Self-Studies.

Self-Study of the Office of the President

The main functions of the President of the University of Technology are:

- Provide leadership to the University and to develop an effective Senior Management Team to achieve its mission, goals and objectives.
- Lead the development of quality and standards in the University
- Integrate and coordinate academic, administrative and technical areas of the University
- Plan and manage organisational change, institutional development and resolve organisational conflicts.
- Keep the organisation focused on its key outputs.
- Establish and maintain linkages and relationships with Governments, stakeholders, industries, and local, regional and international institutions.
- Monitor the organisational climate and build a mission supportive environment and culture.
- Develop, review and monitor organisational systems and processes to ensure efficiency and effectiveness.
- Plan and manage the acquisition and build the capacity to effectively use these resources to achieve the mission, goals and objectives of the University.
- Monitor and influence the internal and external environments and engage internal and external stakeholders.

While in the final analysis, all students and staff are accountable to the President and all academic, administrative and technical units report to him, to make his portfolio more manageable during the transition period, the Council in 1998 decided to establish the Office of the President which would have direct responsibility for the following:

1. International and institutional linkages
2. Endowment and funding
3. Communications and public relations
4. Internal Audit
5. Community services
6. Special Projects
7. Organisational well-being
8. The Technology Innovation Centre
9. Centre for Arts and Culture
10. Sports

The Self-Study of the Office of the President cited the following among its major accomplishments:

- Successfully guided the University through organisational transition and transformation of governance, strategic planning, human resource structures and systems, student services, utilisation of technology, stakeholder engagement and participation, and the learning environment.

- Successfully guided University through processes to improve quality and standards through mechanisms like the Curriculum Development and Evaluation Unit, obtaining accreditation of 22 programmes offered by the University and gained membership in several Associations of critical importance to the development and maintenance of international standards.
- Successfully negotiated Memoranda of Understanding with several local, regional and international institutions and partners.
- Increased funding for Scholarships for students from $9,500,000 in 1995 to 39,000,000 in 2004-2005.
- Instituting seed grants for research and establishing Technology Day.
- Added a total of 73,357 additional gross square feet of space in mission critical areas which expanded the capacity of several Faculties and improved the utility of existing spaces. In addition there was significant upgrading and improvement of the main entrance to the University and its internal road network.
- Developed a Master Plan for the Physical Development of the Campus and commenced its implementation.
- Significantly raised the image and profile of the University locally and regionally through systematic publication of material through print, radio and television.
- Transformed in 2001 the Entrepreneurial Centre into the Technology Innovation Centre. Since then nine new technology businesses have been started, 19 companies incubated and 99 jobs created.
- Successfully developed the University as a Centre of Excellence in athletics. Several athletes who were trained at the University have achieved great international success at the Olympics and other international championships. As a result the IAAF selected the University and established one of its six High Performance Training Centres worldwide, on the Campus. The Department led the University in co-hosting IAAF World Junior Championships in July 2002.
- Established and opened the Caribbean Sculpture Park in 1999.

The Self-Study identified the following areas as major challenges and points for future action.

a) Upgrading of the utilities infrastructure of the Campus including the sewage, water, electrical and telephone/communication systems.
b) The need for additional classrooms and laboratories for all Faculties and the need for additional student and staff housing accommodation.
c) Transferring the Technology Innovation Centre, the Centre for Arts and Culture, Sports and Community Services to appropriate Faculties and academic programmes.
d) Continuing efforts to build the desired organisational and academic culture.
e) Rationalising staff ratios within and among staff categories.
f) Establishing mechanisms for resource mobilisation.
g) Succession planning

Self-Study of the Corporate Services Division

The Corporate Services Division was created in January 2004 as a result of KPMG study that suggested the rationalisation of a number of functions. It was created from Units drawn from the Office of the President, the former Administration and Registrar Division, Finance and Business Services, and the former Physical Development and Operations Department.
The functions of the Corporate Services Division are to:

- Manage the 30,200 square feet of buildings that house the University.
- Manage all construction activities.
- Manage the grounds that comprise the campus.
- Procure all goods and services for the University.
- Manage the HRM and HRD services of the staff.
- Manage all security services.
- Manage all the mail services.
- Manage disaster preparedness
- Manage occupational health and safety programmes.
- Manage special projects
- Do periodic review of the structures and systems of the University.

The Division counts the following among its notable achievements:

a) Implementing the policy and carrying out all the logical arrangements in the recruitment of new staff and the upgrading of the existing staff, whereby the University moved from having only 33 of its full-time staff holding Masters degrees or above in 1995 to having 95 percent meeting this criterion by 2005.
b) Successfully managing the construction activities by which the University increased its building by just over 30 per cent, over a five year period.
c) Managing the 126 per cent increase of the staff over the period under review.
d) Commissioning the development of a Master Plan for the physical infrastructure of the Campus and commencing the implementation of that plan leading to significant improvements in the power supply, telephone and other systems.
e) Establishing and operating a system of procurement that is consistent with that required by the National Contract Commission and the Government of Jamaica.
f) Conducted several reviews of the structures and systems of the University leading to important changes and noted improvement in operations in several areas.
g) Commissioned a major audit of safety and security in 2004 and have implemented 95 per cent of the recommendations. Indeed, the University was in a sufficient state of readiness at the time of Hurricane Ivan, that it sustained also no significant damage to property or injury to persons.

The Self-Study of the Division identified several weaknesses and challenges. Among them are:

- The poor image among the University staff of the Human Resources Management, HRM, Department and the lack of adequate human and physical resources within the Department to support the HRM function.
- The Human Resource Management Information System installed in the HRM Department is inadequate for the size and complexity of the University. Even so, the staff of the Department is not sufficiently trained to make full use of its limited capabilities.
- Dealing with the conflicts arising from the differences in staff establishment approved by the Council and employed by the University and that approved by the Ministry of Education and Youth, and the Subvention provided by the Ministry of Finance based on the Ministry of Education and Youth approved establishment.
- The limited land space that accommodates the University and the expanding needs of student and staff accommodation and that of the Faculties for additional space, notwithstanding the rapid expansion of facilities that has taken place.
- Managing the health and security concerns of the students and staff of West Indies School of Public Health, now taken over by the University, and named the Slipe Road Campus.
- Maintaining the standards and requirements of the procurement system in circumstances in which several Budget Holders do not engage in forward planning with respect to the goods and services needed by their departments; where several orders are placed without the requisite purchase order and thus are not known by the Procurement Department; and where suppliers are not paid in a timely manner on approved invoices and therefore refuse to be contracted for new supplies and services.

Self-Study of the Planning, Development and Technology Division

The Division had its beginning with the appointment of the Advisor to the President in 1997. It became a Division formally in April 2000. The functions of the Division are to:

- Establish and maintain a reliable ICT infrastructure for and within the University.
- Ensure effective technology integration in order to achieve operational efficiency and achieve the optimal learning environment.
- Promote and practice integrated planning across the University and encourage the utilization of the plans.
- Build institutional capacity through development projects.
- Use operational research to inform the decision-making processes within the University.

The Division is comprised of the following Departments

1. Information Systems
2. Marketing and Alumni Affairs
3. Planning and Development
4. Technology Information Management
5. The Multimedia Centre

The Self-Study of the Planning, Development and Technology Division identified the following among its major achievements:

- Developing four strategic plans for the University including its current plan: The Strategic Plan 2006-2010.
- Establishing and maintaining a broadband Campus Area Network with fibre links to Department networks, which were also created in the process.
- Creating an Intranet to enhance communication and collaboration within the University and developing, upgrading and maintaining the University's link with the Internet.
- Advancing technology integration through the establishment of the Integrated Student Administrative System in the Office of the Registrar, the Library Management Information System in the Calvin McKain Library, the new Payroll System in the Finance and Business Division and the Facilities Management System in the Physical Development and Operations Department.
- Establishing a Wireless Network on the Campus which can be accessed by staff and students in most areas of the University.
- Establishing the Multimedia Centre in partnership with VILCOM and enabling and supporting the development and production of multimedia materials in all Faculties.
- Establishing the Learning Technology Support Unit which has assisted staff to apply and use technology in the instructional processes.

The Self-Study identified the following among its weaknesses and challenges:

a) The planning culture has not satisfactorily permeated the University.
b) The rate of the development of both information technology and the physical infrastructure has been retarded by inadequate financial resources.
c) The upgrading of staff in the Division to the Master's level needs acceleration.
d) The rate of improvement of teaching labs has been retarded by inadequate financial resources.
e) Some efforts to foster alumni support for the University has been hampered by poor response.

Self-Study of the Academic Affairs Division

The Academic Affairs Division is at the very heart of the purpose and mission of the University and therefore describes itself within this context. The functions of the Academic Affairs Division are to:

- Provide leadership and strategic direction to the University in relation to the academic needs of students and faculty while collaborating with other Divisions.
- Plan, formulate and review requisite policies, and provide oversight for the implementation.
- Support the provision of requisite resources to enhance teaching, learning and research.
- Evaluate the Universities educational schemes and programmes.

The Units that comprise the Academic Affairs Division are:

a) The Office of Curriculum Development and Evaluation
b) The Office of Research and Graduate Studies
c) The Office of Continuing Education, Open and Distance Learning.
d) The University Library
e) The Cooperative Education Office
f) Prior Learning Assessment Unit.

The Self-Study of the Academic Affairs Division does not explicitly and in summary fashion identify major achievements or challenges. Rather it carefully and critically describes its efforts to:

- Ensure quality and standards through the work of the Office of Curriculum and Evaluation
- Promote a student-centred approach as the institution's philosophical approach to teaching and learning.
- Institute quality assurance mechanisms across all Faculties
- Establish the four-year degree programmes
- Negotiate and implement franchise and outreach agreements with other tertiary institutions.
- Establish post-graduate programmes
- Promote and sponsor research
- Develop and implement staff development programmes in support of various academic programmes.
- Pilot on-line courses
- Initiate and implement academic advice based on the American model and the systems and regulations of the University.
- Develop open learning distance teaching programmes.
- Develop and enhance professional and community service activities.

Division of Student Services and Registry

The Division of Student Services and Registry had its beginning, as the Office of the Registrar, with the founding of the Jamaica Institute of Technology in 1958. Its current configuration came from a reorganisation in 1999. The Division is comprised of the following Departments and Units:

1. The University Secretariat which services the Council and Academic Board.
2. The Department of Academic Affairs which deals with Admissions, Student Records, Examinations and Overseas Students.
3. The Student Services Department which deals with the Health Centre, Day Care Centre, Scholarships, Accommodation, Counselling Centre, Careers and Placement.
4. The Student Relations Office deals with student social and welfare matters, student academic matters and keeping students abreast of policy changes within the university and their implications.

The functions of the Division are:

- To provide all the support services needed by the Council and Academic Board to perform their functions in the governance of the University.
- To carry out all the academic-related and student support services required to meet the needs of the diverse student population from their enrolment to graduation and beyond.
- To promote and support the holistic development of students
- To maintain an environment that is responsive and supportive of the University's overall goals and objectives.

The Self-Study sees the Division as the administrative hub of the University with respect to its governance and chief customers who are the students themselves. It identifies the following among its major achievements for the period under review:

- Provided the support to the Council and the Academic Board with respect to all the governance-related activities involved with the transition from College to University including the finalisation of the University Act.
- Played a major role in developing the University symbols, including Mace, Flag and Arms and Song, as well as the procedures for the installation of the Chancellor and the award of honorary degrees.
- Established four new Units with the Division: Accommodations, Admissions, Secretariat and Student Relations.
- Managed the substantial increase in student numbers and the increase of scholarship funding from $9,500,000 in 1995 to $49,000,000 in 2005.
- Introduced the Mentoring Programme for students.

- Prepared and distributed several new publications including the Student Handbook, International Student Guide, Important Regulations Governing Undergraduate Students, and Financial Aid.
- Implementation and use of the examination databases/tracking and electronic Student Record system.
- Expansion of training for student leaders, and programmes for students in the areas of Financial Management, Etiquette and Protocol.

The Self-Study listed the following as its major weaknesses and challenges:

- Constant relocation of Units, cramped office space, stressful working environment and low morale
- Late submission of inputs which stymies the workflow and outputs of the Division, and which leads to perceived poor performance of the Division in its interface with stakeholders in the University.
- The Division structure is still not clearly defined.

EXTERNAL STUDIES COMMISSIONED BY THE SEPTENNIAL REVIEW COMMITTEE

The studies commissioned by the Septennial Review Committee from external sources can be classified into the following *three* distinct categories:

- studies taking an holistic look at the University:
  - An Image Evaluation Survey
  - The Institutional and Organisational Assessment
  - UTECH 20/20

- studies related to major areas of the University's mandate and operation:
  - Science and Technology in Jamaica, CARICOM and Relevant Trading Partners
  - Academic Assessment Report

- studies related to problem areas identified by Council and the Self-Studies:
  - A Review of Specific Areas of the Finance and Business Services Division
  - Internal (Employee) Customer Service Survey
  - Review of Current Financing and the Development of Financing Options and Strategy.

A brief synopsis will be given of the major findings and recommendations of the studies in each of the three categories.

Studies taking a Holistic View of the University

The study titled "An Image Evaluation Survey" was conducted by Market Research Services Ltd. The study canvassed the views and impressions of the University from past students, parents, guidance counsellors in secondary schools, and employers.

The main views of the past students of the University are summarised as follows:

a) Almost half felt that UTECH prepared them adequately for life.
b) More than half felt that UTECH prepared them adequately for work.
c) Over 70 per cent were of the view that UTECH prepared them reasonably well for their first job.
d) All had a very positive view of the academic staff of the University especially with respect to their knowledge of their subjects, skill, and preparedness to help students and care for student well-being.
e) The vast majority did not have a favourable view of customer service particularly with respect to the administration of student fees and loans.
f) The vast majority of past students did not have a positive view of the various offices of the University and their location.
g) The majority of the past students had an overall positive and favourable view of the University and located its strengths in its programmes, practical nature of the preparation and teaching staff.
h) All identified the main weaknesses of the University in customer service and administration.
i) All felt that UWI was better recognised locally and internationally but that UTECH served the interests of Jamaica better in caring for students and in the quality and relevance of programmes.

It should be noted that 97 per cent of the past students interviewed by the Survey were employed.

The main views of the parents and guidance counsellors interviewed can be summarised as follows:

- 84 per cent thought that tertiary education in Jamaica was improving.
- Over 70 per cent rated UTECH as excellent or very good.
- All were of the view that UWI was better recognised locally and internationally, and that persons thought first about UWI, and most aspired to going to that institution which had a wider variety of programmes.
- Most were of the view that UTECH was better than UWI in keeping pace with technology, keeping pace with the world of work and was more affordable.
- Neither University was perceived as caring particularly about students.
- Both universities were seen as good value for money
- The limited range of programmes, security and student accommodation were perceived as areas of weakness at UTECH

The main views of employers are summarised as follows:

- 97.8 per cent of employers were aware of UTECH
- 87 per cent rated the University as either excellent or very good.
- 74 per cent currently employ graduates of UTECH, which is up from 57 per cent five years ago.
- 82 per cent of employers did not employ persons on the basis of which university the employee attended but rather on their judgement of the suitability of the person for the job.
- Important characteristics that employers looked for in an employee with a first degree were: work attitude, readiness, interpersonal skills, communication skills and commitment.
- Most employers were of the view that UWI was better recognised locally and internationally and had a wider variety of programmes, produced good crops of graduates, maintained high standards and was the first choice among students and parents.
- Most employers were of the view that UTECH had the advantage over UWI with respect to keeping pace with technology, keeping pace with the world of work, was a good training ground for employees and was more affordable.
- The vast majority of employers were satisfied with the graduates of UTECH that they employed. They perceived these graduates to have good practical skills, hands-on experience and were well prepared technologically.

"The Institutional and Organisational Assessment Study" funded by the Caribbean Development Bank was carried out by Hickling International Ltd and Trevor Hamilton and Associates. The purpose of the Study was to assess the University's performance as an effective, efficient and sustainable institution that has remained relevant in carrying out its mandate, and to propose strategies to ensure sustainability and relevance of the institution. Specifically the Study was to assess the effectiveness, efficiency, relevance and sustainability of corporate systems, functions, capacities, programmes, processes and operational procedures; the University's competitive advantage and how it was positioned to ensure its continued relevance. The Study was carried out over a four-month period between May and August, 2005 and involved a consultative and collaborative process which included interviews with key internal and external stakeholders, review of documents (particularly strategic and operational plans), review of policy decisions, constraints, challenges and opportunities and a review of successful models.

Some of the key findings of the Study are as follows:

- Although the University has increased student enrolment significantly, the number of qualified applicants exceeds its intake each year in each of the five Faculties. Further, full-time students now outnumber part-time students.
- The University has in place the requisite structures to manage its affairs as required by its Charter. Its long-term financial health may be the single most

important challenge that it faces since it will have to find additional resources to fund it growing needs.

- Since it became a university UTECH has spent a considerable amount time developing and reviewing its mission, preparing strategic plans and having Faculties and Divisions prepare complementary strategic and operational plans. However, the Planning, Development and Technology Division is a service one, and thus does not have line authority and cannot enforce strategic initiatives. Further, some of the specific strategic objectives do not address the core mission of the University with respect to teaching, learning and research.
- Overall, given its developmental stage, UTECH is on track as an effective organisation. Its academic programmes are receiving accreditation and there is an extensive process for the development and approval of new programmes.
- Overall, the University is managing its resources efficiently. It is allocating its resources in a responsible way to meet its requirements. This responsibility is particularly marked in the University's management of its programmes, finance and budget. However, the same is not the case with its Human Resource Management.
- UTECH needs to ensure that its output includes technologists. A technologist is one who trouble shoots, diagnoses, and finds solutions that add value to the employer's work processes. These abilities imply that graduates receive training not only in their professional specialisation, but that they also acquire higher order thinking, problem solving, communication and language skills. The technologist level is higher than that acquired through a first degree.
- To ensure continued relevance of the University, Council needs to pay particular attention to two major policy related responsibilities: fiscal management and the setting and monitoring of objective standards of institutional performance that are aligned to the mission and strategic objectives.
- In the analysis of factors driving the University's propensity for sustainability there were major strength and weaknesses. The weaknesses outnumber the strengths but because there is no weighting of the factors there is no general conclusion on the status of sustainability. However, it can be concluded that the key challenge to sustainability at the University is innovating and implementing high impact strategies to increase effective demand, improve predictability of income and financial soundness and create an appropriate organisational culture.

The main recommendations of the Study are that the University takes actions as follows:

- Articulate a vision of its graduates as technologists, which differentiates them from those of other local universities.
- The President takes direct responsibility for the strategic planning process including its development and its implementation.
- Council requests the Government of Jamaica to include additional members of the private sector as its Members.
- Develop and implement a plan that includes offering degrees on an incremental basis that would allow former CAST graduates to upgrade themselves on a part-

time basis and that the Business Management programme be enriched with more technology.

- Establish an Office of Industry Liaison in order to expand strategic alliances to strengthen its applied research capacities and capabilities and enhance collaboration in joint projects.
- Establish written contracts with Community Colleges and other institutions in the organisation of its franchised programmes.
- Improve the internal climate for performance through a new job classification system, a professional development plan and measures to improve the retention of personnel.
- Introduce a variety measure to create an entrepreneurial climate throughout the University.
- Improve and renew the labs and facilities on a phased basis using small capital inputs from the University's investment income and funds generated locally.
- Strengthen and improve the mechanisms by which the Academic Board carries out its functions so that the Board can execute its tasks in a more timely manner and better communicate with its internal and external communities.
- Restructure the Administrative Divisions so that there are only two Senior Vice Presidents: Senior Vice President Academic Affairs and Senior Vice President Administration and re-assign marketing and fund-raising to the Office of the President.
- Develop an Action Plan to implement these recommendations as a part of the 2006-2010 Strategic Plan and with possible assistance from the Caribbean Development Bank.

The UTECH 20/20 study was done by Dr Franklin Johnston, the first Chairman of the Septennial Review Committee. Its mandate was to examine issues and practices in the life of the University, assess where the University was in 2006 and posit elements in a development scenario with respect to what it should achieve by 2020. In essence the study was a 'no holds barred' critical assessment of the University which paid little attention to what had been accomplishments during the first decade of its transition, but rather highlighted shortcomings and deficits and posited a future far different from the past. The methodology of the study employed interviews with senior members of several Universities, discussion with UTECH staff, a review of relevant literature in order to identify best practices in leading universities across the world and cherry-picked items thought to be most useful to UTECH over the next decade and a half.

The UTECH 20/20 Study came to the following conclusions:

- CAST was established to train technicians, fitters and workers in industry rather than the 'captains of industry', 'mandarins' of government or academics. This past is substantially different than what is expected of a university of technology.
- The University of Technology was born at a time of significant decline in industry in Jamaica, a growing trader market, opening up of the economy to market forces, substantial decline in Government's capacity to fund education and social services and increasing competition from very nimble private institutions that were taking away market share from CAST.

- CAST had developed an excellent reputation for vocational education but this constituted a mixed blessing for the University because the CAST brand is not transferable to the University because the mindset and culture may constitute the major hindrance on the path to scholarship and research output. Further, the rather seamless transition from college to university, which was politically correct and avoided rancour, may prove costly to quality, performance and the reputation of the university.
- The University Council of Jamaica, UCJ, which has responsibility for accreditation and the monitoring of academic quality, has not been of great assistance to the University with respect to the matter of enhancing academic quality. UCJ has conducted two reviews of the University in 1995 and again in 2005. In the first Report of the 59 recommendations 44 were on administration, and 11 about better pay and conditions for academic staff. Likewise the 2005 Report made 20 recommendations 10 of which were again with respect to pay and parity with UWI. Neither report assessed academic quality and standards or set any benchmarks or goal posts for the future.
- While the Government of Jamaica is the owner and chief financier of the University the future of tertiary level institutions which rely on full funding from the Government is bleak given the fiscal situation of the government and the priority given to other levels of education.
- Increasingly UTECH will need to rely on students paying economic costs and income generation to meet an increasing share of its budget. Students paying full costs can be expected to demand value of money, good customer service and to shop around in that regard. UTECH can expect competition from tertiary level operations arising in the private sector and from offshore universities.
- Universities of technology around the world are based around science, engineering, mathematics and technology, SEMT. These universities work at the cutting edge of their disciplines. They are characterised by significant funding from non-core sources, research-active staff, research-led graduates, technology parks related to innovation and a pool of valuable intellectual property.
- UTECH does not exude the qualities of a technology university. Two of its five Faculties and more than 50 per cent of its students are in Non-SEMT disciplines. Its focus is on work-ready rather than mind-ready graduates and this is recited in University publications. UTECH should seek to emulate the work of superior SEMT universities like MIT and ICL.
- The current issues in Universities worldwide are to do with Governance, the use of Information Technology, Management, Finance, Academia and Academic Freedom. In this regard the issues facing UTECH are no different from those facing other universities across the world.

The Study made the following main recommendations:

1. The umbilicus between CAST and UTECH should be severed decisively. A mission should be authored that speaks equivocally to the University. All Faculties and Departmental missions should be updated, aligned and the enabling job descriptions and work packages should be updated to match them.

2. Franchise the CAST Brand for local and regional use and its cachet in vocational education in the University should be an 'arms length' commercial venture. However, University staff would continue to develop market driven 'work-ready courses as a by-product of normal University work to meet the demands of its franchisees.
3. That a full 2020 Business Plan be developed and submitted to the Government for funding or bond guarantee. This Plan should include a statutory link between the University and all public SEMT bodies in order to give focus and coordination to professional practice, research and innovation. The Business Plan, strategic plans and all University communication should reference the SEMT orientation of the University. A study would be done to determine the extent of the Liberal Arts and Humanities necessary for enrichment and the latter limited to that purpose.
4. That a Governance Secretariat be set up to handle the business of the Council, which should focus on academic quality and finance. These two subjects should be the top priority items at each Council Meeting. Linked would be the setting up of an independent Academic Audit Unit commissioned to assess and document academic quality using 2006 as the baseline. Academic quality should be the subject of periodic annual or biannual retreats of the Council.
5. The Planning and Development functions should become a direct responsibility of the Council and that Department should report directly to Council.
6. That an annual assessment of workload be a regular practice of the University and that Council is given more flexibility to vary the retirement age of the President, Vice President and particular senior academics and to extend contracts for cause.
7. Design and implement a variety of measures to foster and nurture a culture of enquiry, deepen the research orientation and promote scholarship in SEMT fields. Link to this a project where the University would mentor the fifth and sixth forms of a number of secondary schools to develop their SEMT orientation and choices.
8. That a Genius 2020 Project be initiated by the University at both the primary and secondary levels for mentoring students to careers in SEMT and providing scholarships and other support to the selected students.
9. That a new organisational structure be implemented that would ensure that academic delivery is restructured to achieve effectiveness, production, accountability, transparency and incentives for high-flyer academics.
10. That a wholly owned self-financing UTECH Enterprise company be established to engage in professional fund raising, marketing, public relations, technology transfer and other relevant tasks and that a UTECH Trust/Foundation be established to hold, invest and deploy funds raised and income earned to further the objects of the University.
11. That a Faculty of Science be established with 10 to 12 free standing and autonomous and accountable Schools, Centres and Departments. At least two of these schools should become Centres of Excellence by 2020. Schools that should be considered for inclusion in the Faculty are
    - School of Hurricane, Climate and Earth Science.
    - Centre of Intelligence, Security and Strategic Sciences.
    - School of Performance and Sports Science
    - Centre for Transportation Science

- School of Homoeopathy, Organic and Herbal Sciences
- Centre for Work, Production, Migration and Labour Market Sciences
- Technology Transfer Centre

12. Establish a School of Complementary Studies that would offer courses to support the SEMT focus and to produce total human beings. Courses offered would include Selected Areas of Humanities and Liberal Arts, Project Management, Philosophy and Ethics, Logic, English Language comprehension, speech and reading, Art and Culture and Continuing Education.

Studies from Particular Perspectives of the University

Two studies looked at the University from different perspectives. These perspectives were Science, Technology and Innovation and the Academic Assessment. Each of these will be described in turn.

Dr Audia Barnett was commissioned to prepare a study on Science, Technology and Innovation. The terms of reference given to Dr Barnett included in her work the task of scanning the Science, Technology and Innovation, (STI) environment in Jamaica, the Commonwealth Caribbean and selected trading partners; identifying the scope of STI activities and potential in Jamaica and the region; assess the potential and role of the University of Technology to contribute to the STI potential and make appropriate recommendations with respect to the latter.

The study identified the following main areas of economic activities with the greatest potential for further and future developments:

- Tourism particularly with respect to the areas of ecology, health tourism, agriculture, heritage, and culture.
- Mining particularly in bauxite, limestone, sand and some non-metallic resources.
- Agriculture in such areas as Nutraceuticals, functional foods, herbs and medicinal plants.
- Information and communication technology, ICT.
- Renewable energy.

In assessing the capability of the University and its potential to contribute the pursuit of opportunities in the areas identified, the study concluded as follows:

- The University of Technology has the potential to contribute constructively and significantly to the areas identified.
- The university has inherited the reputation of CAST to produce “work-ready” graduates and has continued along the same line. Hence graduates are noted for possessing the requisite skills but not necessarily having the necessary leadership and management training.
- While the University has the potential it has not yet begun to deliver on its potential.

- The University has lagged in the implementation of a research portfolio and the physical plant has not been upgraded in line with the new thrust towards research.
- The concept of a Science Park is an excellent way of creating meaningful synergies between the University and other organisations however the proposed model needs to be reviewed, repackaged and phased for implementation.

The recommendations of the study are as follows:

- Formalise the Triple Helix model of University/Industry/Government partnership for increased relevance, ensuring that outputs are industry driven.
- Focus research activities in the cluster areas of agriculture, built environment and renewable energy.
- Investigate establishing two or three centres of excellence based on market demand, resident competencies, capabilities and resources for example, commercialisation of technology, tourism and sport performance.
- Integrate the activities of Technology Innovation Centre with research priorities of the University
- Benchmark the performance of staff, resources and performance against norms such as patent applications and peer-reviewed publications.
- Include courses on Entrepreneurship as non-electives for undergraduate and post-graduate studies.
- Upgrade the physical plant commensurate with priority research and development activities.
- Introduce on-line courses and additional modular courses where feasible, to expand client base
- Promote and aggressively market, locally and within the region and beyond, programmes with "niche appeal".
- Engage in joint development programmes and degrees.
- Investigate the feasibility of a Virtual Network of Excellence.
- Utilise the model of the National Innovative System in the operations of the University.
- Review the proposal for a Technology Park, focusing in the short-term on areas in which the University has comparative advantage.

The University Council of Jamaica (UCJ) was responsible for the preparation of the Academic Assessment Report. Essentially the Terms of Reference required the UCJ to assess the University against its plans, and operations over the period and posit directions for future development. The Assessment was required specifically to identify what collegiate retentions should be jettisoned at this stage and what should be the emphases and priorities of the University. The UCJ appointed a team of distinguished academics led by its Chairman the late Dr Dennis Irvine. The Team Members were Dr Dennis Mock, President and Vice Chancellor of Nipissing University, Canada, Dr Dennis Paul, Director of Institutional Advancement, St Georges University, Grenada, Mr John Randall, Former Chief Executive Officer of the Quality Assurance Agency of the United Kingdom, and Professor Ronald Young, Dean of the Faculty of Pure and Applied Sciences, University of the West Indies, Mona.

The team conducted the study using three principal instruments. First, a site visit of the facilities. Second, a series of interviews with persons related to the University at all levels, including the President, members of Council, the Academic Board, Deans, Heads of Divisions, Schools and Departments, representatives of Students, Student Unions, Chairmen of Faculty Advisory Committees and staff members drawn from across the University. Third, a review of relevant documents pertaining to the academic operations of the University.

On completion of the assessment, the team commended the University for the following:

a) The successful implementation of the vast majority of the recommendations made by the UCJ's 1995 assessment.
b) The demonstration of an institutional capacity to draft and implement strategic plans.
c) The significant increase in the academic credentials of the staff not only by bringing them up to the norm of the Master's level but also by addressing the need for more Ph Ds.
d) Greatly improved student services and in particular that of student access to library resources on-line.
e) The transformation of the Entrepreneurial Centre into an operational Innovation Centre and Business Incubator, thereby adding an important dimension to national development.
f) The maintenance of the tradition of good teaching.
g) The institution of robust and rigorous processes for the initial approval of programmes of study; reviewing their effective operation and for periodic formal appraisal of their performance leading to re-approval, which lies at the heart of the maintenance of academic quality.
h) The range of feedback mechanisms used to ensure that academic quality is appropriate and equivalent to those used in well-established higher education institutions.
i) The establishment of Faculty Advisory Committees and the role they play in ensuring the relevance of the University's academic programmes to the industries to which they are related.

The Team observed that because it had spent so much time assessing teaching and research, it was unable to address with the same depth and thoroughness the issue of academic management. Hence at the end of the exercise it was unclear what criteria are used to elevate a Department to the status of a School and what factors governed the designation of the name, Faculty.

The findings of the Team with respect to deficits and areas for improvement are so intricately linked to its recommendations that economy of reporting would dictate that the recommendations be reported from which the deficits and areas of improvement can be deduced.

The Recommendations of the UCJ Report are as follows:

- The authorities should promote dialogue within the University community with the aim of achieving a shared vision of what is meant by a 'University of Technology'.
- The consensual understanding of the concept should be accompanied by a redefinition of the vision and mission statements to imbue them with greater excitement and to emphasise the University's applied focus on meeting community, national and regional society needs.
- Approval of programmes should be for a finite and not indefinite periods of times.
- Course Teams should review the effectiveness of each course following each running of it.
- Further guidance should be given to curriculum designers to assist them in developing higher level programmes.
- Attention should be given to improving the definition of learning objectives and quality benchmarks for non-professional courses and programmes.
- Student evaluation of programmes and instruction should be applied with rigor and consistency in order to extract the maximum value from this useful instrument of quality assurance.
- The monitoring of quality of programmes and staff instruction should not rely only on student evaluations. Observation of teaching should be conducted on a universal and structured basis to support professional development and individual appraisal.
- UTECH should lobby the Government to closer align the salaries of its academic staff to comparable positions and similar qualifications at UWI.
- In the interim UTECH should press for greater flexibility in determining salaries where this may be warranted to attract and retain persons of outstanding credentials.
- UTECH should define and adopt a more rigorous process in selecting and implementing new graduate programmes. The Ontario guidelines might be found to be useful in this regard.
- The University should avoid a too conventional and narrow definition of research and should aim to complement rather than compete with what is done at UWI, focusing heavily on the social and practical utility of what it does.
- The research capacity of the University should be founded on two areas: the scholarship of pedagogy and the scholarship of application.
- The University should develop Centres of Excellence for undergraduate, graduate and research enhancement, which complement rather than compete with what is being done at UWI.
- Clearly define the types and amounts of scholarly activity that will contribute to promotion to different levels, bearing in mind the qualification of staff, availability of resources, and the strategic objectives of the University.
- Establish and make known the criteria governing substantive appointments to leadership positions, and the conditions under which appointment to these positions can be only on an acting basis.

- Initiate opportunities for leadership development of senior academic managers.
- Address the excessively high number of acting administrators.
- Improve communication between administration, faculty, staff and students.
- Strengthen inter-Departmental/Faculty collaboration. In particular, address the issue of territoriality such as control of use of labs, computer resources etc.

Studies that Targeted Particular Areas

Three areas identified as posing particular challenges to the University were targeted. The studies investigated Employee Satisfaction, Specific Areas of the Finance and Business Services and Current Financing, and the Development of Financing Options.

The Caribbean Applied Technology Centre was commissioned by the President to conduct the Internal (Employee) Customer Satisfaction Survey. The survey was conducted between February and May, 2003. As it was done just before the period of Septennial Review it was incorporated into the process on the grounds that it had only recently been done. The objectives of the study were to provide the Management of the University with empirical information on the perceived needs of employees and their level of satisfaction.

The instrument used in the survey was designed and developed by the Caribbean Applied Technology Centre through a process of consultation with senior Staff of the Corporate Services Division. The questionnaire consisted of 129 questions which covered the areas of Job Importance, Job Satisfaction, Training and Development, Communication, Management, Benefits, Compensation, Facilities/Recreation and a Section which asked respondents to provide basic demographic information essential to the analysis of the information provided. The questionnaire used a five point rating scale for most questions and four points for some. It was not pilot tested. The questionnaire was distributed by the Multimedia Department to all 840 full-time staff members via the University's Intranet. Responses were received from 208 staff members, 25 per cent, and the response rate to different questions varied.

The findings of the Study can be summarised as follows:

- 92 per cent of the respondents viewed their jobs as important to the University.
- 58.4 per cent were satisfied with their jobs and 33 per cent reported varying degrees of dissatisfaction.
- 51 Per cent were satisfied with the opportunities for training and development while 43 per cent reported varying degrees of dissatisfaction.
- 60 per cent were dissatisfied with the basis on which promotion was granted and only 14 per cent was satisfied.
- 45 per cent were satisfied with benefits while 34 per cent reported varying degrees of dissatisfaction.
- 73 per cent reported dissatisfaction with compensation and only 16 per cent reported varying degrees of satisfaction.

- 50 per cent were dissatisfied with facilities/recreation and only 26 per cent reported varying degrees of satisfaction.
- 59 per cent reported dissatisfaction with communication within the University while 20 per cent reported varying degrees of satisfaction.
- There was a 65 per cent rate on questions dealing with Management. Of those responding 53 per cent reported satisfaction, while 32 per cent reported varying degrees of dissatisfaction.
- Among the staff of the University overall the highest level of dissatisfaction was among the Academic Staff, 68 per cent, and the lowest level of dissatisfaction, 26 per cent, was among the Ancillary staff. More than 50 per cent of Administrative and Technical Staff reported overall dissatisfaction.

KPMG was commissioned to do a study "A Review of Specific Areas of the Finance and Business Services Division of the University of Technology." It was required that KPMG review the procurement, payables, payroll and budgeting processes, examine and compile the key recommendations of the external audit reports and management letters and review the job specifications and individual competences of key staff related to the four processes under review.

The main findings of the study were:

- The procurement process appears to be inefficient and several recommendations made by the Internal Audit Department to remedy these inefficiencies had not been implemented.
- There is no fixed location for the receipt of goods procured; hence goods are delivered throughout the Campus by suppliers who sometimes are unsure of where deliveries should be made. Mistakes have been made in deliveries that were not discovered for some time.
- There appears to be no formally documented policy or procedure dealing with conflict of interest, hence such issues may not be properly addressed.
- The payment process is inefficient which results in delays in the processing of payments to suppliers invoices. This could affect the relationship between suppliers and the University, with adverse consequences for the University. In addition, the amounts reported in the financial records for accounts payable at any particular time may be inaccurate because suppliers' invoices for goods already received are not always captured for processing in a timely manner.
- Reconciliations are being done on a timely basis, but these are not reviewed and approved by anyone.
- There is uncertainty in the projected income in the Budget principally because of delays in knowing the amount of the GOJ Subvention which, when finalised, is less than the sum requested. Budget personnel are sometimes advised to spend on the basis of the previous year's Budget which may not be aligned with their plans and activities for the current year.
- The balanced scorecard approach is now being used for the first time, however some budget holders are having difficulties adapting to the approach.

- Accurate and complete information is not always submitted to the Payroll Unit on a timely basis and the payroll is not being reviewed by a party external to the payroll unit.
- Several recommendations related to deficiencies in the payroll processes made by the Internal Audit Report and the Management Letters of the External Auditors have not been implemented.
- It appears that some staff members within the Payroll Unit do not have sufficient knowledge of the regulations surrounding payroll.
- The work performed highlighted disparities between the four senior staff that were reviewed, particularly in relation to academic qualifications and the documentation of on-going specialised knowledge/specialised training programmes.
- Three of the four persons reviewed should have professional accounting qualifications. None of the three were chartered accountants, although one had an equivalent qualification. However, the three persons had the appropriate management qualification outlined in the job specification.
- There was no evidence of regular performance reviews of the senior staff of the Finance and Business Division or the Director.
- The 360 degree feedback process highlighted issues across the four senior staff members who were reviewed. These points in question would potentially be a contributing factor to the Unit's overall performance falling below the required standard.

In essence the main findings of the Study could be summarised thus. The procurement, payable and payroll inefficiencies are by no means new. They had been recognised by the Internal and External Auditors who had made recommendations that have not been implemented. The key reasons for the lack of implementation appear to be explained by issues related to the senior staff of the Units concerned.

The challenges related to Budget are of a different origin. They largely stem from issues arising from uncertainty in the processes by which the Government Subvention is provided and its quantum.

KPMG was commissioned to do a second study "Review of Current Financing and Developing Financing Options and Strategies" which was mandated to explore methods of financing in USA and Commonwealth Universities and identify possible sources of funds within Jamaica, CARICOM and various other countries and regions as well as donor agencies.

The methodology of the study included the following:

- Discussions and interviews with a wide variety of persons within the University
- Review of pertinent documents
- Attendance at a Strategic Planning Workshop
- Review of the University Organisational Charts.

The review gathered data on the core operations of the University, the current financing of the University, and the financing of the university in relation to its strategic plans.

The study was limited by the fact that the University was unable to provide precise information on its capital needs and the levels of financing required; all the programmes that would be offered during the period of the projections, the numbers of students projected for these courses and the anticipated cost of providing these courses. A rigorous analysis of its financial needs was not therefore possible.

The main findings of the study were:

1. Pressures on the Government's Capital Budget have reached a level that is placing adequate financing for the University at risk.
2. The cost of the University is rising. Preliminary estimates indicate that the cost of the University for 2006/2007 could be 33 per cent more that 2005/2006.[2] These increases are related to the institution moving from predominately offering diplomas to predominantly offering degrees and the consequential upgrading of quality, and the profile and quantity of staff.
3. Government subvention has not increased in correspondence to the changes resulting in a significant gap between Subvention and staff costs.
4. Some of the increases have been met by increases in student fees. UTECH students are paying up to 50 per cent of the economic cost, which is higher than that paid by students in other tertiary institutions.
5. Unmet capital funding needs are affecting the condition and usefulness of the facilities and limiting the University's ability to grow.
6. The uncertainty surrounding the level and timing of Government Subvention is impacting the ability of the management to plan and effectively manage its financial commitments.
7. The university has built up a substantial reserve which is only growing modestly due to the decline in interest rates and due to the fact that its funds are being drawn on for the operations of the University when Government subventions are late.

The main conclusions of the Study are:

- Until adequate levels of funding are established, any significant increase in student intake and expansion of programmes should be deferred.
- The development of non-traditional funding sources or mechanisms should be given serious consideration by the University.
- Both *not-for-profit* and *for profit* public private partnerships and revenue bonds are among the measures that the University should consider.
- Today's financial market-place allows the University access to, and utilization of an array of financial options which the University should consider.

[2] It should be noted that $360 million or about half the increases projected for 2007 related to retroactive payments resulting from salary increases to staff.

CHAPTER 3

FINDINGS OF THE REVIEW PROCESS

The Charter of the University is very specific. It states that every seventh year the University shall establish a Committee to examine whether and to which extent the University is fulfilling its functions. That Committee is required to write a Report which shall be considered by the Council and Academic Board. At a minimum the Septennial Review process is therefore obliged to investigate and state 'whether, and to which extent,' the University is carrying out the twenty five functions listed by the Charter. This Chapter seeks to provide the findings of the Review Process with respect to these twenty-five functions.

Review of both the Self-Studies and the particular externally commissioned studies, in conjunction with the two Senior Vice Presidents' rating on a ten point rating scale on the state of implementation of each function, was the base on which Table 1 below was constructed.[3]

In determining the extent to which a function was being carried out or has been implemented *four* categories were employed. These were 'Minimal Action' where very little has been done; 'Sound Start Made' where the function is being carried out but is still in the first stages of implementation; 'Substantial Progress' where much has been done and implementation is in its final stages but where a few things remain to be done; and 'Fully Implemented' where the function is fully operational.

Table 1 shows findings of the Review with respect to the extent to which the University in its first decade of operation has implemented and is carrying out the functions prescribed by the Charter.

Table 1

Implementation of Functions of the University

Functions	Minimal Action	Sound Start Made	Substantial Progress	Fully Implemented
Offering full and part-time Instruction				X
Provision of research and research training		X		
Prescribe conditions of student admission and access to the use of University facilities			X	
Facilitate access to physically	X			

[3] An average rating by the Senior Vice Presidents of 1or 2 was equated to Minimal Action; 3 to5 equated to Sound Start Made; 6 to 9 equated to Substantial Progress and 10 equated to Fully implemented.

challenged students				
Collaboration with other higher education institutions		X		
Grant academic credentials to students successfully completing courses of study				X
Grant other academic distinctions to other persons		X		
Grant honorary degrees to approved persons				X
Set matriculation and articulation standards			X	
Establish appropriate curricula for graduate and undergraduate programmes			X	
Facilitate consultancies		X		
Provide members of the university and others access to the resources of the University			X	
Withdraw University credentials for good cause				X
Provide conditional access to personnel of other institutions			X	
Grant fellowships, scholarships, bursaries, exhibitions, prizes			X	
Dissemination of works of the University through different media		X		
Institute offices as required		X		
Establish conditions of service of employees				X
Conduct businesses that is in the interest of the University		X		
Charge fees, accept endowments and fund raise			X	
Manage investments			X	
Manage University properties				X
Make provisions for pension and other benefits for staff			X	
Give guarantees for contracts				X
Act as trustees of legacies given to the University			X	

Table 1 shows that the University is fully carrying out *seven* of its twenty-five functions. These are:

- Offering full and part-time instruction
- Granting Degrees, Diplomas and Certificates to students who have completed the prescribed course of study and whose assessment and evaluation have shown that they have acquired the specified competencies and achieved the desired standards.
- Granting honorary degrees to distinguished persons.
- Setting out the conditions for and establishing the mechanism for withdrawing academic credentials for good cause from persons to which they have been granted.
- Establishing conditions of services for employees of the University.
- Managing the properties of the University
- Giving guarantees where the University enters into contracts.

Table 1 also shows that the University has made substantial progress in carrying out ten of its twenty-five functions. These are:

- Setting the conditions of entry and use of its facilities by students.
- Establishing matriculation and articulation arrangements
- Designing, developing and delivering curricula for undergraduate and graduate programmes
- Providing access to the resources of the University.
- Allowing use of its facilities by staff and students of other educational institutions subject to certain conditions.
- Granting fellowships, scholarships, bursaries, exhibitions and prizes
- Charging fees and engaging in fund raising
- Managing investments
- Establishing pension and other benefits for its employees
- Acting as trustees for legacies bequeathed to the university by benefactors.

The Table also reveals that the University is still in the initial stage of implementing and carrying out *seven* of its twenty-five functions. These are:

- Establishing research and training in research.
- Engaging in collaboration with other institutions of higher education
- Granting other academic distinctions that earned and honorary degrees.
- Facilitating and conducting consultancies
- Disseminating the results of scholarly activities by using a variety of media
- Instituting such offices as are necessary to the effective running of the University.
- Conducting businesses that are in the interest of the University.

In essence there is only *one* function that the university is still to implement in a significant way in that only minimal action has been taken thus far. That function is in

facilitating access to students with physical disabilities. It should be noted that in 2002 the Division of Student Services and Registry, specifically the Student Services Department, began its advocacy for students with Special Needs, upon the registration of a visually impaired student.

The Department recognized the need for a broader policy than one dealing only with access to physical facilities. This policy would provide for a range of specialized services including: liaison with faculty, academic advising and counseling, referrals, liaison with the Examinations Officer, to provide special sittings for the writing of examinations, and the provision of readers and note takers. These support services have been provided for the visually impaired student referred to earlier.

In summary, it is reasonable to infer that if *28 per cent* of the University's function is being carried out in full, and if another *40 per cent* is being substantially implemented, and, in addition, a sound start has been made in carrying out a further *28 per cent*, then it is only *one* function - 4 per cent - which needs to be implemented from scratch by the University. Put another way, in its first Septennial period the University has carried out and implemented, to some extent, *96 per cent* of the functions prescribed by the Charter. This accomplishment is, indeed, impressive by any standard, especially when account is taken of the fact that at the same time that the University was achieving this level of compliance with the Charter it was also engaged in significant increase in student enrolment, substantial increase in physical facilities, major upgrading of staff to the Masters degree level, franchising of Diploma and Certificate programmes to other tertiary institutions and the substantial expansion of its own Degree programmes.

CHAPTER 4

DISCUSSION OF THE FINDINGS AND RESULTS OF THE REVIEW PROCESS

The Septennial Review Committee conducted the Review Process in a manner consistent with the remit given by Council. The Review process was comprehensive in scope and penetrative in depth. A vast array of persons was consulted, a great amount of literature was reviewed and a considerable amount of time and effort was devoted to the exercise. The review process demanded much from the Staff of the University and was extremely taxing on the Senior Management. Not only were they required to produce self-studies of the entities to which they were directly employed, but also they were required to accommodate on site numerous visits from external reviewers, provide information to those conducting external studies and give their opinion and views on a wide range of matters. The exercise was treated with seriousness by Staff members and it would not be surprising if several members of the Senior Management have not been afflicted with 'review fatigue'!

The end result is that the First Septennial Review has provided much more than is required by the Charter for a Septennial Review. It went beyond a mere assessment of the extent to which the University was carrying out its functions, and included an assessment of the University it relation to its objectives. In this regard the first Septennial Review has exceeded the requirements of the Charter. It has provided a thorough assessment of the University during its first seven years of official existence and carefully documented its activities over the decade in which the institution was declared a University. Further, it invited comment on levels of achievement, and has received a number of viewpoints expressing different perspectives on has or has not been accomplished by the University in this first period of review.

As would be expected from such an open, thorough and comprehensive review, the different groups that were consulted and who offered inputs had provided a rich diversity of views, judgements, conclusions and recommendations.

The purpose of this Chapter is three-fold.

1 To identify and discuss the points of convergence and consensus
2 To identify and discuss points of divergence and difference.
3 To determine if there are any serious omissions.

It is important to note that for reasons of economy and coherence it is necessary to carry out these three tasks simultaneously with respect to any particular topic or theme, as there may be consensus of some aspects, divergence in others and a critical omission in yet others. The risk of introducing repetition and disconnection in thought becomes more likely when the exercise is treated as three separate tasks. Such a procedure could make the argumentation difficult to follow.

THE TRANSFORMATION OF THE INSTITUTION: FROM CAST TO UTECH

The point is well made by Dr Johnston in the UTECH 2020 study that UTECH is not a green-field university. It was not starting from scratch in 1995. It was intended that the University would to be brought about by a transformation of CAST. There is a broad consensus that CAST, in its 37 years of existence to 1995, had achieved the following:

- A good reputation for its academic staff and as a teaching institution.
- Recognition for producing 'work ready' graduates who were well prepared and held their own in workplaces locally, regionally and internationally.
- A good record and reputation with employers locally and across the region.
- A sound working relation with industry with respect to the fields in which the institution operated.
- A Jamaican institution that served the Caribbean region.
- A record of its students going on to universities in the region and internationally and being successful.
- A good, but not the first, choice for tertiary education among students.

The Major Transformations Accomplished in the First Decade of UTECH

The Self-Studies are unanimous in enumerating the major accomplishments of the University in the first decade of its existence. These can be listed as follows:

1. The upgrading of Academic Staff so that 96 per cent now have Degrees at the Masters level or higher. The University set the Masters degree as the minimum qualification for the Academic staff. Almost all new staff members were required to satisfy this minimum qualification and existing members of staff, who did not have this qualification, were assisted, through study leave and other facilities, to upgrade their qualifications in order to meet this new standard. In addition, members of staff who had obtained Master's Degrees were assisted in obtaining Doctorates.
2. The establishment of the Academic structure of the University, replete with Academic Board, Faculties, Schools, Departments, quality assurance mechanisms and the making of these structures fully operational.
3. The introduction and growth of first degree programmes in all Faculties and the introduction of Master's Degrees and Doctoral programmes in some Faculties. The majority of programmes now offered by the University are at the Degree level.
4. The franchising of most Certificate, Diploma and Associate Degree programmes to other tertiary institutions and the articulation of these programmes with the Degree programmes.
5. The expansion of student enrolment in response to the mandate of the Montego Bay Accord issued by CARICOM Heads of Government to expand tertiary enrolment to at least 15 per cent of the 18-24 years age cohort by 2005 taking into consideration that Jamaica's provision in 1995 was for about 7 per cent of this age

cohort. This expansion took place despite raising the level of the programmes offered.

6. The obtaining of accreditation for most of the degree programmes.

The Assessment of the Major Transformations Accomplished in the First Decade

There is a broad consensus that UTECH in its first decade of existence has, despite the areas that have been transformed, largely continued along the same lines as CAST and has maintained the same standing and reputation albeit operating at the first Degree level, in contrast to CAST which operated largely at the Diploma and Certificate levels. The recent publications and official literature of the University are cited as ample evidence of this conclusion. The Institutional and Organisational Study was of the view that the vision of UTECH is grounded in the traditional brand created by its predecessor institution. However, the external studies that adopted an *analytic methodology* in assessing the University holistically or with respect to its science, technology and academic programmes, took divergent positions on the character of the University as it had developed during its first decade. Four different views emerged, each of which is of critical importance and together point to reasonably clear directions for the future of the University.

The UTECH 2020 study took the radical position that the seamless transition from CAST to UTECH was a mixed blessing because it left behind much more than it changed. CAST and UTECH were established to serve two very different missions. CAST was set up to produce technical workers. It produced 'work-ready' graduates. UTECH was established to produce 'mind-ready' graduates. The study made the point that the blurring of the boundaries between college and university is not to the long term advantage of the university. CAST had built a reservoir of 'goodwill' which was not transferable to the UTECH, nor could it be used by UTECH, if it is to become a highly regarded university. Accordingly, UTECH should have made a drastic and distinct break with the CAST past of producing 'work ready' graduates and accepted as its new mission to produce 'mind ready' graduates. The study explicitly claimed that CAST had remained the same over its 37 years and had not become a *University College* by 1995; hence its transition to a university of technology required more of a metamorphosis than continuity in its growth and development. The critical issue in evaluating this very forthright and well articulated position of the UTECH 2020 study is whether or not CAST had remained unchanged since its inception or had evolved, *de facto*, into a University College by 1995.

The concept of a *University College* is by no means new. Its origins can be traced back to 1826 when the University of London was established as a joint stock company because it was denied a Royal Charter as a result of opposition from the Church of England and the universities of Oxford and Cambridge. These old universities dating back to Mediaeval times excluded Non-conformists, Catholics and Jews and restricted entry to members of the Church of England only. In was in this context that London University was established so as to admit students of all beliefs and was prohibited from the teaching of any religious subject.

In 1836 these antagonistic developments were rationalized. The University of London was re-designated as the University College London and given a Royal Charter. The University of London was established to grant degrees in Medicine, Arts and Law with Kings College, University College London and the University College Hospital being its component institutions. Through this rationalization in the establishment of London University, the concept of the University College became clearly defined as a college granting a Degree within a university system.

By the mid-twentieth century the University College idea was co-opted as the nursery for establishing Universities in colonies slated for independence and London University became the midwife. Hence the University of the West Indies had its beginning as the University College of the West Indies, with London University being the degree granting entity. This evolution of the University College concept added to its range of usage two other applications: a means of offering degree programmes and a stage in the evolution of institutions becoming universities.

Over the last twenty years the University College idea has added further usage to its range of application. Contemporary usage of the University College idea is best illustrated by reference to four institutions that are now designated University Colleges in England, Canada and the United States.

1. **The University College Chichester** can trace its beginnings to 1840 and the establishment of the Bishop Otter's School for the Training of Masters, which in 1873 was transformed into the school for training women teachers. Allied to it in 1946 was the Bognor Regis College of Education set up as an emergency training college. In 1977 both institutions were merged to become the West Sussex Institute of Higher Education whose degrees were awarded by the Council for National Academic Awards, CNAA, and later by Southampton University. In 1998 the college gained degree granting status and was renamed the University College Chichester.
2. **Cariboo College** was established 1970 to serve the southern interior of British Columbia, an area of approximately 155,000 square kilometres. In 1989 it was given University College status and offered degrees awarded by University of British Columbia, Simon Fraser University, University of Victoria and the Open University. With the passage of the College and Institute Amendment Act in 1994 Cariboo University College was given its own degree granting status and by 1999 only one of its degree programmes was not awarded internally. At the end of 2002 Caribboo University College had 10 Degree Programmes, 23 two-year Diploma Programmes, 50 one-year Certificate Programmes and a Continuing Education Programme. Eight thousand students were enrolled in its credit programmes at the degree, diploma and certificate levels while 7000 students were enrolled in its non-credit Continuing Education programme.
3. **Kwantlen University College** operating out of four campuses in British Columbia is the largest university college in Canada with an enrolment of 25,000 students. It was given degree granting status in 1995. It offers eight degree programmes, a full range of associate degrees, diploma and certificate

programmes. Most of its students transfer to universities to continue and complete their higher education.

4. **The University of Maryland University College** is part of the University of Maryland University System and approved by its Board of Regents. It is established principally to extend post-secondary educational opportunities to individuals who combine work with study and particularly to serve the professional work-force's educational needs of Maryland; but it includes a global dimension in its Mission Statement. Its students are mainly adults enrolled as part-time students. Its services to its 70,000 students, clients and customers are being designed to be independent of time and place. The University College offers a range of certificate, diploma, associate degree, bachelor's and master's programmes for credit and non-credit personal and professional development programmes that respond to the needs of the lifelong learner. The University College is headquartered in Maryland and operates from 25 regional sites.

By the end of the twentieth century, the concept of a University College has come to be associated with institutions that share some or all of the following features, viz:

- Has its own identity and Degree granting status.
- Offers a limited number of Degree programmes
- Offers most of its programmes at the Continuing Education, Certificate, Diploma and Associate degree levels.
- Offers a wider range of programmes than is usually the case at Universities
- Enrols in Continuing Education, Certificate, Diploma and Associate degree programmes *the majority* of its students.
- Enrols in Degree programmes *a minority* of its students.
- Has a large number of students that move on to universities to complete higher education.
- Has as its main mission the teaching and transmission of knowledge.

The evidence is unequivocal. CAST had not remained unchanged as an institution since its inception in 1958. By 1995 it fitted the now widely accepted definition of a University College. CAST was a teaching institution which offered programmes spanning the range of Certificates, Diplomas, and First Degrees. However, the majority of its programmes were Certificate and Diploma programmes and the majority of students were enrolled in such programmes.

The nature of the transformation that has been accomplished by UTECH in its first decade is the shift which has taken place in its programmes, student enrolment and staff qualification. The majority of its programmes are now Degree programmes but also there has been the expansion of post-graduate programmes as well as the institution of Research. This transformation is more consistent with continued development than with radical metamorphosis and equates with the transition which takes place when any University College is turning into a University.

While the data does not support the UTECH 2020 assertion that CAST remained unchanged during its existence and that the transformation to university status required UTECH to make a radical and fundamental break with its CAST past, they do not imply that UTECH should continue as CAST with a new name and designation. On this latter point Dr Audia Barnett joins with Dr Johnson in asserting that UTECH has not yet delivered on its potential and that its graduates are reminiscent of CAST graduates. One interpretation of Dr Barnett's position centres on the question of Time: "Is a decade a reasonable amount of time to expect the institution to engage in significant and substantial transformation of its character and so achieve its expected potential? Is the upgrading that took place not a stage and necessary condition for the achievement of its expected goals?" While there may be very different answers to these questions, if the issue is solely a matter of time then, at some future time, the institution continuing on its current path will realise the promised potential.

Another interpretation of Dr Barnett's position is that UTECH has not yet made the qualitative changes that would allow it to achieve its expected goals. This is the essential position of the UTECH 2020 study. A very similar position, but more gently phrased, is that of the Academic Assessment Report by the University Council of Jamaica which states that "We are not altogether satisfied that the concept of the University of Technology was well understood." The Report recommends that there should be dialogue within the University with the aim of achieving a shared vision of what it meant to be a 'University of Technology'.

What emerges when the variant forms of this position are taken together, with the objective reality of what CAST had become by 1995, the UTECH 2020 Study's position can be refined to state that while the University did not have to jettison most of what it had become as a University College, its future as a University of Technology implies much more than could be accomplished by continuing as CAST by another name. In other words, while its past as CAST has laid a sound foundation on which to build, the future as the University of Technology needs to be inspired by a different vision for the future.

A 'University of Technology' is a particular kind of University hence being upgraded to the general status of a University does not by itself achieve the character of a 'University of Technology'. Further, while the first decade of the University was dominated by the efforts and the processes of transformation from being a University College to being a University, the immediate challenge, now that the general university status has been achieved, is to take the qualitative actions that would cause it to achieve the character of a 'University of Technology,'

The UTECH 2020 study maintains that being a University of Technology implies focus on Science, Engineering, Mathematics and Technology (SEMT) and that currently *two* of the five Faculties of the University are non-SEMT. The two Faculties being referred to as non-SEMT are the Faculties of Business and Management, and the Faculty of Education and Liberal Studies. While on first sight this may appear to be the case, on second thought, a closer look is required.

The Liberal Studies relate to communication skills and social understanding that support education and training in technology. No degree in Liberal Studies is offered by the University. The School of Education produces secondary school teachers of technology. In the Indian Institutes of Technology the training of secondary teachers of technology has been a part of their mandate from their inception. At a time when technology has become the mainstream of secondary education in the Caribbean, and across the world, it would be a colossal error to exclude a School of Education from the University of Technology on the basis that its mission is teacher education, while ignoring the fact that the teachers being produced are secondary school teachers of technology. The case against the Faculty of Education being non-SEMT could be summarily dismissed on the basis that the evidence in support of the accusation is totally semantic and ignores the substantial mission of the Faculty, which is entirely consistent with being part of a University of Technology.

The case against the Faculty of Business and Management is much more substantial. Indeed, it could be sustained if the Faculty's focus was on general business and management. Since comparisons have been made with India, it can be shown that Business and Management is provided in its own Institutes and autonomous universities. However, there is a strong case to be made for the inclusion of a Faculty of Business and Management in a University of Technology, Jamaica, if the focus and mission of that Faculty includes emphasis on technology businesses and their management. The strength of that case resides in the fact that there has been a great explosion of opportunity for business formation and development, especially of small business, and of employment in technology over the last 25 years and which has continued especially in the information and communication technology sector. New businesses have emerged, for example, internet businesses. These new areas of business enterprise need to be supported and consolidated through the generation of knowledge and the production of entrepreneurs and managers. Further, the particular opportunity for the University of Technology, Jamaica is that there are not many universities in the so-called developing world that have specialised in technology businesses and their management. To justify its inclusion in the University of Technology, the Faculty of Business and Management would need to make adjustments and embark upon new initiatives which would transform it into an entity placing special emphasis on technology businesses and their management.

Simply re-focusing the Faculty of Business and Management would not be all that is required to bring about the qualitative changes to which the reports allude. The most incisive and insightful input as to what it means to be a 'University of Technology' came from the Study on Institutional and Organisational Assessment and its recommendation that the University sees the producing of technologists as its purpose. Its definition of technologists, previously quoted; and its observation that technologists are usually produced at the Master's level, is insightful. This input is particularly important for it allows the University to better interpret its past as CAST, and for it to understand its present transitional position and future as a 'University of Technology'.

CAST as a teaching institution produced graduates within circumstances that were fairly well-defined, who were soundly schooled in principles of technology that were widely

accepted, and procedures that were of proven effectiveness. The emphasis was on competence. As a 'University of Technology' it is expected to produce graduates whose conceptual understanding of their fields and mastery of what is known allows them to venture into the unknown and unfamiliar, identify the critical issues related to the problems to be solved, design and develop novel solutions, create new tools and test these to determine fitness for their purpose. With the technologist, competence is assumed. Creativity and higher order thinking is required.

Being well schooled in the known is an absolute prerequisite for being able to venture into unknown - to generate knowledge, create new tools and design novel solutions. The CAST past is, therefore, an important platform from which to move on to this new level of output. If for reasons of simplicity the labels of *technician* and *technologists* are used, then the Certificate and Diploma could be seen as two benchmarks with respect to levels of technicians, while the Master's degree is that of the technologist, then the Bachelor degree graduate would be somewhat of an intermediate stage: a technician on the road to becoming a technologist. While this is a simplification of the issues involved, and ignores several important nuances, it provides the broad contours within which the University Community could carry out the dialogue recommended by the UCJ for developing a shared vision of what it means to be a University of Technology.

The point that should not be missed is that many CAST graduates in the past, through access to universities in the Caribbean, North America, Europe and elsewhere, have become technologists that are widely respected in their fields. The University of Technology now has the opportunity to do for its students what it previously relied on other universities to do. This requires the development of new capabilities, the introduction of new arrangements, and changes in some aspects of the culture of the institution.

Deepening and Expanding the Sciences and Venturing into Agriculture

The UTECH 2020 study makes a passionate and almost compelling case for deepening the Sciences at the University based on the premise that Science is at the root of all technology. Currently the Sciences at the University are taught as foundation courses for the different areas of specialisation in technology but no degrees are offered in the Sciences *per se*. The case for deepening the Sciences and including Science in the name of the University could not be challenged if the University of Technology were the only University in Jamaica. However, this is not the case. The University of the West Indies has a Faculty of Pure and Applied Sciences that has been operating for the last fifty years. Deepening the Sciences at UTECH would introduce competition between the two institutions.

Clearly, nothing would be wrong for the two Universities to compete in such an important area given the importance of the Sciences to development and the shortages that currently exist internationally in this area. However, it is necessary to take into account the recent experiences of the UWI in expanding the Sciences, through a loan from the Inter-American Development Bank, for which the Government of Jamaica was

one of the guarantors. Taking account of the very arguments made by the UTECH 2020 study regarding the central importance of the Sciences, in the mid 1990s UWI significantly expanded and upgraded the physical facilities of its Faculty of Pure and Applied Sciences with the intention of increasing student enrolment. The fact is that after the completion of the project the anticipated increases in student enrolment did not materialise. The Faculty of Pure and Applied Sciences now has excess capacity in several areas.

It is important to take account of the principal factors that appear to have brought about this outcome. First, there were not enough qualified candidates applying for the places that were available in the Faculty. This had to do with standard of performance in the CSEC, CAPE and 'A' levels in the Sciences. This in turn was related to insufficient qualified teachers of the Sciences in the schools and also to the quality of the facilities. The Ministry of Education and Youth has since taken steps to address the issues by offering more Bursaries and Scholarships to persons desiring to be trained as teachers of Science and included the upgrading of Science laboratories in its building programme. Second, the Sciences are no longer the primary choice of students in Jamaican schools as it was up to the 1980s where many of the most able and ambitious students opted and were guided into the Sciences. Business subjects have supplanted the Sciences as the preferred choice for many students. Third, students who opt for the Sciences, upon graduation are not finding jobs in the Sciences in Jamaica. Many of them are forced to find occupation in other fields or to migrate in search of job opportunities.

Before embarking on the recommendations of the UTECH 2020 study related to deepening the Sciences at the University of Technology, the University would need to determine whether the University of the West Indies has been able to attract students in the Sciences to make full use of the expanded facilities in this area. It would also need to determine if the circumstances that constrained the efforts of UWI in this area have changed materially and now warrant UTECH expansion into the Sciences.

The Study of Science and Technology in Jamaica, CARICOM and Relevant Trading Partners identified Agriculture as one of the areas in which qualified persons will be needed particularly in the areas of Nutraceuticals, functional foods, herbs, and medicinal plants. The Study encourages the University to continue to explore collaboration with the College of Agriculture, Science and Education, CASE, and the UWI that could cause UTECH to venture into the field of Agriculture. In considering this recommendation, there are similar issues to those related to the recommendation of deepening and expanding the Sciences at the University.

First, many of the graduates of CASE with Diplomas and Associate Degrees in Agriculture and of UWI with Bachelor and Master's Degrees have been finding it difficult to get jobs in their chosen field. Indeed, many are employed in the secondary school system as teachers. Second, why should the facilities and resources to be used in producing qualified graduates for the areas of opportunity in Agriculture not be placed at CASE and/or UWI so that they can better prepare students for jobs in these areas? Third, what unique value would UTECH add that are not within the capacities and capabilities

of those institutions with the remit to prepare persons and generate knowledge in the field of Agriculture?

In addition, the University would need to consider very carefully the opportunity cost of expanding its involvement outside of its current remit against addressing the imperatives of the areas in which it is the only higher education institution charged with scholarship and teaching in those areas. All the indications for the Review process strongly suggest that the University cannot continue to operate in an open-ended and impulsive manner but must carefully choose between competing options if it is to optimise the use of its scarce resources in the carrying out of its options and in the achievement of its objectives.

Franchising

One of the strategies adopted by the University in effecting its transition from CAST to UTECH was to franchise to other tertiary institutions, Certificate and Diploma programmes, and the first two years of Bachelor Degree programme. Students undertaking the first and second years of Degree programmes under the franchise arrangement are guaranteed places in the University in order to complete their degrees. The rationale informing this strategy was that it allowed the University to deploy and focus its on-campus resources on its Degree programmes while, at the same time, providing both greater access and lower costs to students. The Self-Studies of the Faculties that implemented this strategy all reviewed it positively. The Self-Study of the Academic Affairs Division, however, listed inadequate laboratory facilities for practical courses as the challenge faced in implementing the strategy. The partner-institution, on the other hand, suffered from a lack of competent instructors to teach some courses and an inability to pay the franchise fee charged by the University.

The UTECH 2020 study viewed franchising positively because, from its perspective, it saw franchising as helping to free the University from the CAST overhang thus facilitating the development of a university culture. Accordingly, it recommended that the CAST Brand should be franchised to local and regional tertiary institutions and its cachet in vocational education be continued as an 'arms length' commercial venture. Further, the study recommended that the University should continue to develop market driven 'work-ready' courses as a by-product of normal university work in order to meet the needs of its franchisees.

The Academic Assessment by UCJ made the observation that while there were several advantages to franchising, an institution that franchises its programmes, partially or totally, retains full responsibility, in particular, for its curriculum, assessment and quality assurances. It went on to state that its impression was that not all Faculties understood and accepted the responsibilities of franchising. It further observed that all Faculties should take active responsibility for working with tertiary institutions to ensure that the students are properly prepared.

The Institutional and Organisational Study observed that, with the exception of Excelsior Community College, there were no written contractual agreements between UTECH and

the colleges which outlined their respective contributions and obligations. Accordingly, the Study recommended the introduction of written contracts. The Academic Affairs Self-Study concluded that while franchise and outreach offerings did free up space on the campus, they do not really increase access to programmes of the University and are limited in their potential for expansion.

Both the Institutional and Organisation Study and the Self Study of the Academic Affairs Division arrived at similar conclusions that much greater long-term prospects reside in articulation agreements between UTECH and other tertiary institutions that permit graduates from accredited or validated programmes to matriculate into UTECH degree programmes. As of May 2005 the Continuing Education and Distance Learning (CREODL) Unit was mandated to be the central unit of the University to coordinate and manage all franchise, articulation and outreach arrangements of the University.

Academic Quality

Academic quality is a central consideration in the review of any University. The Self Studies of the Academic Affairs Division and the Faculties all recorded with pride the view that the University, despite the challenges of expansion and transformation, had maintained sound academic standards and achieved good quality. The UTECH 2020 Study on the other hand expressed grave concern on this matter and was highly critical of University Council of Jamaica on the grounds that neither its Reports of 1995 nor 2005 assessed academic quality and standards; and neither did they establish the baseline of academic quality nor set benchmarks for the future.

Internationally there are two broad methodologies and traditions in determining academic quality. One tradition and methodology is accreditation which essentially focuses on inputs provided to run and operate institutions and programmes. The general rationale is that if students are admitted with the requisite requirements, taught by academic staff with appropriate qualifications, follow the approved curriculum for the prescribed duration, taught in facilities with the specified equipment, and supported by rich library and information resources, then the output would be of the desired quality. In this tradition the individual competence of graduates is assumed. Generally it is the lecturer of the course that assesses and grades the performance of students and judges their competence.

The other tradition and methodology is that of peer review of the individual competence of graduates with only cursory attention to the inputs. In this tradition there are well prescribed examination structures that involve internal moderation of examination papers prior to being administered to students and the participation of senior colleagues in evaluating student performance following the examinations; and external examination which involves eminent colleagues outside of the institution also reviewing test papers and student scripts and paying periodic site visits. These patterns can be applied whether for evaluating individual student competence by oral examinations, written tests, practical examinations or practicum in the field.

Within the last two decades there has been some convergence taking place between the two traditions. Accreditation processes have been paying more and more attention to student performance and competence. On the other hand, peer review of individual competence of students has been paying more attention to inputs provided for instruction.

While it is true that the UCJ Academic Assessment Report made very few recommendations concerning academic quality, a careful reading of the Report leads to the conclusion that this was the result of the Assessment Team being satisfied with what they had found in respect to the academic quality. Three observations from the Report should be sufficient to substantiate this conclusion. The Report stated that:

1. The University had put in place robust and rigorous processes for the initial approval of programmes of study, for reviewing their effectiveness and for periodic formal appraisal of their performance prior to re-approval. This lies 'at the heart of the maintenance of academic quality'.
2. At the institutional level, use has been made of the criteria for graduate achievement set by the Australian Technological University. In addition extensive use has been made of advice from established partner universities mainly in North America. A picture emerges of an institution that has placed heavy reliance on the advice of, and standards set by others. There is nothing wrong with this; it is a responsible approach in the early years of a university-level institution.
3. There is evidence of well-established mechanisms to gather feedback on the effectiveness of programmes. Use is made of external examiners reports; accreditation reports; tracer studies; reports from internal supervisors; graduate surveys; and student evaluation reports. The range of feedback mechanisms used is appropriate and equivalent to those used in well-established higher education institutions.

The UCJ Academic Assessment Team making this determination about academic quality was composed of five academics well-versed and highly experienced in such matters. Notwithstanding the dissenting view of the UTECH 2020 study, a reasonable conclusion to be drawn is that the University, in its first decade of operation, has put in place credible and appropriate systems for setting globally accepted standards and for determining academic quality.

However, the UTECH 2020 Report raised a warning that needs to be heeded. It is with respect to continued growth of the institution at the undergraduate level driven by the pressures of what it calls 'massification' and the possible negative impact of such growth on academic quality. Three of the Faculties are currently accepting close to all the qualified applications. Growth in these circumstances could only take place with an increase in the number of qualified applicants.

The Faculty of Business and Management is accepting one of every two qualified applicants and the Faculty of the Built Environment one of every three qualified applicants. These two Faculties could increase their intake of students. However, their physical facilities are limited to the number of students that they can responsibly

accommodate. Hence, further expansion will depend on increased accommodation. It would appear that the Faculties of the University, for various reasons, have reached the limit in the number of students that they can admit annually at the undergraduate level. This is an important element for future planning and funding.

The question that arises is what is a healthy number of students to admit to a university in relation to qualified applicants? This question shall be addressed at a later point, when the issue of qualified applicants is considered.

Important Omission

Neither the Self-Studies nor the externally commissioned studies discussed the matter of the design of the UTECH Bachelor degrees as four years from CSEC/GCE Ordinary Level. This contravenes the international protocol of 16 years of full time education starting from Grade 1 to a Bachelor degree as specified by the UNESCO's International Standards Classification Revised Version III which CARICOM adopted in 1998. There are several different combinations by which the 16 years are achieved. These are as follows:

- Six years of primary education, six years of secondary education and four years of college/university.
- Eight years of primary education, four years of secondary education and four years of college/university.
- Four years elementary education, four years middle school, four years of high school and four years of college/university.
- Six years of primary education, five years of secondary education, two years of Sixth Form and three years of university.
- Six years of primary education, five years of secondary education, three years of college and two years of university.
- Seven years of primary education, four years of secondary education, two years of Sixth Form and three years of university.

CSEC/GCE 'O' Level are taken at the end of Grade 11, that is, after 11 years of education. Four years of university to a degree adds up to 15 years of education, which is one year short of the International protocol. When the Bahamas instituted a four year degree programme at the College of the Bahamas, it added Grade 12 to the secondary school system and contracted Cambridge University to design and administer an appropriate examination for Grade 12.

A four-year degree programme from CSEC/GCE 'O' Level not only breaches the international protocol and standard but also raises issues with respect to academic quality.

Relevance

The University has expanded, strengthened and systematised the relationships with industry that had been developed by CAST to ensure the relevance of its academic

programmes. These have been achieved by the establishment of Advisory Committees in each of the Faculties comprised of representatives from public and private sector bodies as well as representatives of professional bodies whose mandate and work are related to the mission of the Faculty. These Advisory Committees make inputs into curriculum development, the setting of academic and professional standards, work study programmes and all other pertinent matters related to ensuring that work of the Faculty is aligned to contemporary issues, development in that sector and the preparation of graduates to work in that sector.

The Academic Assessment Report commented favourably on the establishment and operation of the Advisory Committees but stated that it was not clear whether these Advisory Committees were mandatory or left to the discretion of the Dean. The Academic Assessment Report pointed to two limitations of inputs from the Advisory Committees. First, with few exceptions their inputs do not provide many benchmarks for Master's level programmes. Second, they address only one element of work readiness, namely, discipline-based technical competence. The Report recommended that these Committees be made mandatory and that some mechanism be put in place to ensure that the observations and recommendations of these Committees are brought to the Academic Board.

The UTECH 2020 Report suggested that to maintain its continued relevance the University should seek to establish at least two Centres of Excellence in areas in which it has comparative advantage and which are related to particular challenges facing Jamaican and Caribbean Society. Areas suggested by the Report included Climate, Renewable Energy, Forensic Science and Security, Transportation Sciences, Homoeopathy, Sports Sciences, Work and Production. Others areas that could be included for consideration were Telecommunications, Ethanol Fuel, and Mining.

The Institutional and Organisational Study found that the major challenges to continued relevance were not with respect to the relationships that the University has established to align its work with that of the industries it serves and the professional bodies related to its mission. These relationships were found to be satisfactory and healthy. Rather, the main challenges were with respect to fiscal management and the monitoring of standards of institutional performance relative to its mission and strategic objectives. The Study recommended that Council should pay particular attention to these two areas.

Governance

While the Self-Studies made tangential references to the governance structure of the University, two of the externally commissioned studies made direct reference and offered views and recommendations. The Institutional and Organisation Study found that the governance of the University followed the widely and well established bicameral structure in which Council has overall responsibility and general control of the operations of the University while the Academic Board has direct responsibility for academic affairs subject to the general powers of council. The Study also found that the roles and responsibilities of the Officers of the University were clearly defined in the various legal

instruments. The only recommendation of this Study was that Council should request the Government to include additional members from the private sector on the Council. In assessing this recommendation careful consideration would need to be given to the question of whether on the Council of a University of Technology the category of membership that should be strengthened should be that of Professionals in Science and Technology or Business persons? Further, is not such a request a special plea that could open a 'Pandora's Box' of similar requests?

The UTECH 2020 Study was much more critical. It took the position that while the UTECH was one of the newest Universities in the Commonwealth, receiving its Charter in 1999, it did not follow the United Kingdom Act of 1992, on university governance, which many regard as the gold standard on this subject. In addition, the publications of the University seem to equate Council and Academic Board as coequal bodies. This appears to blur the lines of accountability of the academics to Council as it does not seem to acknowledge that Council is the supreme authority of the University. Further, Council's needs and services require more than that which can be provided by a Registrar.

Based on these positions the Study recommended that

- A Governance Secretariat should be established to handle the business of Council.
- Academic quality and finance be the first priorities at all Council meetings and that a Committee of Council should be appointed on the matter of academic quality.
- Planning and Development should be the direct responsibility of Council and that this Department should report directly to Council.
- Council and its members should be assessed, say every two years.

The recommendations are radical departures that require the most careful consideration before reaching any decision on their efficacy and feasibility. In essence the recommendations are for an activist Council that micromanages the affairs of the University. At a minimum, to be effective, these recommendations would require a full-time executive Pro-Chancellor or Chancellor, and/or a Registrar or head of the Governance Secretariat whose roles and responsibilities would conflict with that of the President. Council would also be carrying out administrative and management functions which would compromise its general oversight responsibilities and its role as final arbiter in all matters related to the University. Direct engagement with academic matters could open the Council to the charge that, other than academic considerations, it enters into the assessment of staff and student performance.

The rationale implicit in the current governance structure of the University is that Council is the Board of Management of the University. It is the final authority on university policy. Council employs the President who, as the Chief Executive Officer, is responsible to Council for all aspects of the work of the University. Council holds the President accountable for all functions of the University. The President is therefore required to report to Council on a systematic basis on the overall operations of the University. Where

the University falls short, Council has the responsibility to take appropriate action including the dismissal of the President. The recommendations of the UTECH 2020 Study discard this rationale and *modus operandi*. One important question to be answered is whether or not the recommendations of the UTECH 2020 Study would lead to far more problems than those that they propose to resolve. Another question is whether all the outcomes envisaged in these recommendations cannot be achieved within the existing governance structure.

Organisation and Structure

Several references are made in the Studies to anomalies or ambiguities in the current structure and organisation of the University that need to be rectified. Given the complementary nature existing between structure and function, only a listing is provided below since they will be addressed in the discussion of other topics that have emerged.

- The Self-Study of the Office of the President points to the fact that while it is an Administrative Division there are units within that Office that are engaged in teaching activities that need to be reassigned to appropriate Faculties. The same could be said of the Planning, Development and Technology Division although the Self-Study of that Division does not make a similar acknowledgement.
- The Academic Assessment Report mentions the lack of clear criteria with respect to the designation of an entity as a School or Department and questions why Science and Mathematics are assigned to the Faculty of Pharmacy and Health Sciences given the existence of a Department of Liberal Studies.
- The Self-Study of Faculty of Engineering and Information Technology points to the difficulty of using the same facilities to perform the dual role of producing professionals in Information Technology while at the same time providing general proficiency courses in Information Technology for the entire university.
- The UTECH 2020 Study highlights the inefficiency of each of the Five Faculties only having two or at the most three entities. It also highlights the inconsistencies in the assignment of some entities within Faculties.
- The Institutional and Organisational Study made recommendations to improve efficiency and effectiveness in the administration of the University, particularly in the planning function, by way of a proposal of a new organisational structure for the University which focuses reshuffling units and entities with the Administrative Divisions and the designation of their headships.

Research and Graduate Studies

Research and graduate studies constituted the steepest task in the transition from being a University College rooted in teaching at the undergraduate level to being a University engaged in research and the production of graduates at the Master's and Doctoral levels. The results of the Review indicate that this is the area in which the University's achievements are most modest. The upgrading of staff that took place brought 95 per cent of the academic staff to the Master's level, but less that 10 per cent to the Doctoral level.

Further, the total enrolment of the University at the graduate level is under 100 students. In this regard the University clearly established its position as a University engaged in teaching but was only minimally prepared to engage in research and graduate studies

Research

The University enacted policies and offered incentives that sought to encourage the entire academic staff to engage in research, publish papers in peer reviewed sources, and all Faculties to establish Research Committees to monitor research activities. While Faculties did comply and some staff made a start in conducting research and publishing in peer review sources, the overall research and publications output over the first decade of the University's operation was small.

In commenting on this matter the Academic Assessment Report observed that only about 90 of the 3600 or 2.5 per cent of the universities in the United States qualify for the title of 'research university'. It opined that Jamaica is not in a position to support another research University and, therefore, the University in attempting to follow and compete with UWI in the area of the generation of new knowledge. Instead, it recommended that UTECH follow the path of advanced scholarship where it would concentrate its efforts on the application of professional knowledge to the solution of problems, the transformation and extension of knowledge through reflective practice and the scholarship of integration, making connections across disciplines.

While the University of Hartford's definition and classification of scholarly activities is useful in fleshing out its essential elements, the distinctions between discovery, integration, application, reflective practice and production of original works of art are more semantic than real. There are no discrete boundaries between the different types of scholarly activities. While there are standard methodologies to test new knowledge, scientific breakthroughs creating new paradigms are not lawful events. Discovery is not an objective process although what is created can be objectively verified. As Thomas Kuhn has pointed out discovery is very much like the creation of an original work of art and, as Polyani has shown, cannot be totally separated from the subjective understanding and personal knowledge of the scholar. In short, engagement with integration of knowledge across disciplines can lead to the generation of new knowledge. So, too, can the applications of existing knowledge to novel situations.

The Institutional and Organisational Study made the observation that the Strategic Plans developed by the Planning, Development and Technology Division did not take account of the stage of development of the institution. No where is this more obvious than with respect to the efforts to establish research as a part of the operations of the University. At the same time that the Staff was being upgraded, mainly to the Master's level, Bachelor degree programmes were being designed, developed and implemented, Certificate and Diploma programmes were being franchised and student enrolment was being expanded and shifted from Certificate and Diploma programmes, Research was being conceptualised as an activity in which all Faculties and all academic staff should become engaged. The unreality of such proposals is fully exposed when account is taken of the

fact that staff workload, the number of contact hours of academic staff and the facilities were all focused on teaching, with no specific structural adjustment in the terms and condition of service of staff, or the facilities, to accommodate Research.

The critical questions that need to be addressed do not appear to be whether the University should continue its current policies with respect to research which has yielded very modest results or whether it should abandon a broad research perspective by restricting itself to only some particular type of scholarly activities, but rather:

1. Given the fact that the imperatives driving the development of the University demand continued focus on teaching at the Bachelor and Master's levels, how best can research be institutionalised as an activity in the University?
2. Given the stage of development of the University, what are the optimal strategies that should be employed to build research capacity with respect to both its human and physical aspects?
3. How can the research capacity of the University be organised so that it is relevant to the needs of the sectors that it serves?

Graduate Studies

Although the University output of graduate students was as minimal as its research output, the immediate prospects for the growth and development of graduate studies at the Master's level is far less problematic and can proceed at a fairly rapid rate. This is principally because of *three* reasons. First, the international trend for Master's degrees is that the weight of such programmes is heavily biased towards taught courses and less weight on projects and dissertations. In a nutshell, Master's degrees are not research degrees although invariably they included courses on research design and research methods. Second, with the upgrading of the academic staff that has taken place over the first decade the University is much better positioned to offer Master's programmes. Third, with the increasing numbers of students now graduating from the University with Bachelor degrees the pool of candidates opting for Master's programmes can be expected to grow.

The Academic Assessment Reports mention the fact that several Master's Programmes are being considered by the University. It recommends that in selecting and implementing new graduate programmes the University should adopt more rigorous processes, taking into consideration that the reliance on inputs from professional bodies may not provide the University with a comprehensive set of benchmarks. The Report suggests careful study of the Ontario guidelines for graduate programmes. The Report also suggests that the University pays particular attention to the space, facilities, time and expertise of staff which graduate programmes demand.

A long standing tradition within universities is that one important source by which they sustain themselves and build capacity is from the advancement of the most capable students of the academy. A critical strategy in building the Doctoral programmes as well

as research capacity is the development of Master's programmes; successful Master's graduates move on to do research degrees.

Matters of Administration

The Self-Studies clearly identified matters of administration related to procurement, bills payable, and human resource management as factors inhibiting the academic functions of the University. The President and the Septennial Review Committee commissioned studies which found that the principal reasons for the problems identified were partial implementation of systems that the University had acquired for those operational areas and lack of implementation of recommendations made by the Internal and External Auditors. These studies also made straightforward recommendations concerning the matters. The issue that arises, therefore, is one of action on the part of Council, through the President, to ensure that the systems are fully implemented and recommendations of the Internal and External Auditors are acted upon in the appropriate manner.

Customer Satisfaction

The picture that emerges from the Self-Studies and the externally commissioned studies is that the University has a good image among its past-students, parents, guidance counsellors of secondary schools, and employers. Internally the picture is somewhat different. The Ancillary Staff has the most favourable view of the University and are most satisfied. The Administrative Staff is the most dissatisfied and somewhat demoralised in some areas. The Academic Staff is satisfied with their accomplishments, blames administration for some of the problems and is most dissatisfied with compensation. The internal picture is not surprising given the fact that the Ancillary Staff would perceive themselves as being most fortunate in the competition for similar jobs in the labour market and would be remunerated at public sector rates. Academic Staff is rated most favourably by the external customers and perceives itself to be central to the University's mission and accomplishments. The Administrative Staff on the other hand finds itself being blamed for some of the weaknesses of the University's operation without any compensating vision of their centrality to the mission of the University.

Five important issues arise from the Studies.

- To varying degrees the issue of compensation is common to all categories of staff within the University. The general sentiment in the University is that there should be parity of pay with the University of the West Indies. The counter argument used is that UWI is a regional university and also a research university; hence the claim of parity is not justified.
- The industrial relations climate leaves much to be desired because of complications in the University's employment policies. The University finds itself in a two way dispute with the Ministry of Education and Youth, MOEY, and with the Unions representing the staffs. The MOEY maintains that the approved establishment of the University is just over half the persons currently employed to the University. Hence the Ministry has no liability for salaries of those that the

University has employed outside of the approved establishment. The tenure of a significant proportion of the staff is, therefore, uncertain.

- At the same time, the Unions demand improved compensation for all staff regardless of their establishment status. Further, the Union also demands back-payment for Ministry approved increases, which the University has paid to Staff without first receiving funds from the Ministry even for the staff on the Ministry approved establishment.
- Communication within the University is inconsistent.
- Dissatisfaction with the criteria and methods of promotion is an issue with the Academic and Administrative Staffs.
- The staff of the Library are said to be demoralised with respect to the issue of Classification by the Ministry of Education and Youth, and which the University has challenged over several years without success.

There is no single approach that can be adopted to these issues related to employees of the University. The communication and promotion issues are within the competence of the University to address. On the other hand, the parity and classification issues are totally outside of the competence of the University and reside with the Government. The industrial climate issue requires a negotiated settlement which involves the Government, the University and the Union representing the staff.

The parity issue is particularly difficult because the Government has approved rates of pay and conditions of service for the staff of UTECH which they are obliged to honour with respect to any other tertiary institution within the Jamaican education system that is established as or upgraded to the status of a university. To concede parity with UWI is to permanently tie the compensation of staff employed in Jamaican universities to that of the regional University. This long-term aspect of the issue is not likely to be resolved in the short-term.

The issue with the Staff of the Library, while being outside the competence of the University, is one that should be pursued. The Librarians should be classified with the Academic Staff.

Finance

The chorus that runs through the refrains of all self-assessments, and some of the external studies, is that inadequate funding lay at the root of the difficulties and challenges confronting the University. Inadequate Government Subvention is invariably identified as the villain. This appears to be an almost universal perception and sentiment.

Yet, the KPMG study to identify funding options for the University found itself confined to generalities because the University had not specified all the programmes it intended to offer nor set targets for the number of students it planned to admit, nor provided costs for its strategic plan for the projected period. A close look at the KPMG study reveals six important issues which are not exactly just a matter of inadequate funding. These issues are:

- The upgrading from college to university and the expansion of the institution have brought increased costs that are just now beginning to be manifested and quantified.
- The University's Budget for 2006-2007 is constructed with an optimistic estimation of Government Subvention.
- The Budget projected a deficit, the funding of which is unclear.
- The University has substantial reserves that it has built up, through its own enterprise, and this is well-known by the Ministry of Finance, which apparently factors this into its determination of funding for the University.
- The cost of administration
- The capital needs are not clearly identified and listed concisely, nor is there a definite strategy for financing those needs.

Each of these issues requires some elaboration.

Increased Costs that are now Beginning to be Manifested and Quantified

The upgrading from college to University has brought increased cost principally through the upgrading of the qualifications of the academic staff, the teaching of programmes at higher levels than previously, significant expansion of the physical facilities and the reorganisation and expansion of the administration of the institution. Several new administrative Divisions have been added to better manage the affairs of the University. At the same time the institution has expanded in terms of student enrolment, staff complement, increased facilities and the number of programmes offered. The KPMG study pointed to the fact that the cost of operating the University for 2006/2007 is anticipated to be 33 per cent more than 2005/2006. In its first decade of existence, the upgrading and expansion of the University have proceeded year to year in an open-ended manner. It does not appear that there has been any projection of the consequential costs of these developments. It would appear that the principal reason why a cost has not been assigned to the different strategic plans is that no limits have been set on the total number of programmes to be offered by the University and the student enrolment for each programme.

In large measure it would appear that the University has been proceeding with its general mandate to be transformed and to increase its student enrolment, consistent with the Government's commitment to increase enrolment at the tertiary level without an agreement with the Government on the specifics of the upgrading and expansion and the cost implications of both. In these circumstances the University can more than justify its case for increased funding from the Government. At the same time, the Ministry of Education and Youth and the Ministry of Finance can rightly claim that they have not approved staffing levels and other matters that have resulted in increased costs.

It would appear that the time has been reached when the irrationality of this situation has to be addressed by the University and the Government. The Government needs to commit itself to specific targets of student enrolment for the University and the cost implications

of these targets over a three to five year period. The University will need to abide by these targets and budget its year to year expenditure accordingly, over the period of agreement.

Optimistic Projection of Government Subvention

Since the system of submission of annual budgets by secondary and tertiary institutions in Jamaica was introduced in the mid 1970s it has been a usual practice for institutions to project Government subvention support at a higher level than they expect to receive since the assumption is that the Ministry will provide less than the amount that has been requested.

Put another way, the budget system by which Jamaican secondary and tertiary institutions are financed prompt institutions to be optimistic in their projection of Government financial support. An element of the University's Budget for 2006-2007 can be attributed to this practice of optimistic projection of Government support.

The University's Budget for 2006/2007 seems to contain a second element of optimism that is specific to UTECH. It relates to the matter the staff establishment and the funding of the difference between the approved Ministry establishment and the University's increased establishment. The hope is that in this year the Ministry will accede to the University's repeated submission that it was impossible to operate the institution on the establishment approved in 1995 while addressing the imperatives of upgrading to university status and expanding the enrolment consistent with Government policy to increase tertiary enrolment. It would appear that while the University may have had some success with the Ministry of Education and Youth on this matter, the Ministry of Finance is still not convinced.

The point has to be made yet again that the real source of the problem here is not inadequate funding of the University. Rather, it is the willingness of the University to proceed in good faith to implement Government policy without explicit Government agreement as to the cost implications and its commitment to finance the same. In this regard, it must be acknowledged that the Government has been less than honourable in its financial dealing with the University in that it has failed to reimburse the University for payments made to staff for Government approved salary increases, even on the establishment agreed on by the Ministry of Education and Youth.

Based on this record the University has no rational grounds to proceed, either in good faith or be optimistic, with respect to its projection of Government subvention. The fact is that Government Subvention to the University has decreased in real terms. In 1998, the year before the Charter was granted, Government Subvention to the University was $638.9 million. In 2006 Government Subvention to the University was $882.9 million. This represents a 38.2 per cent nominal increase over the period while the inflation increased by 61 per cent.

Financing of Projected Budget Deficit

The University's Budget for 2006/2007 is predicated on a deficit of almost 20 per cent in circumstances in which the University is not allowed by Government to either borrow without its permission or incur overdraft at the bank. On the surface this appears almost incongruous in that such circumstances would dictate appropriate cuts in the University's programme in order to bring expenditure in line with expected income. At the same time, when the University's profile of annual expenditure is reviewed it reveals that small annual surpluses have accrued in some years, and small deficits in other years have been financed by transfers from the reserves of the University.

There are two factors that explain this seemingly paradoxical situation. First, in the first decade of the University's existence there have been substantial increases in student fees. The increase income from student fees has financed much of the increased costs in the University's operation. For example, fee income increased by 32.1 from 2005/2006 to 2006.2007. However, by 2006/2007 student fees have reached almost the limit to which they can be put. UTECH students now pay a higher proportion of the economic cost of the University than students in any other tertiary institution in Jamaica, including UWI. Hence, further increases in student fees is not a practical option bearing in mind that recent increases had drawn strong student reaction and resistance.

Second, the University, through its own enterprise, has built up a substantial reserve, the interest from which it has used to support operational costs. However, in circumstances in which interest rates have been falling, the income from this source is less and cannot support operational expenditure to the same extent as in past years. For example, between 2005/2006 and 2006/2007 interest earned from investments declined by 24.9 per cent.

Faced with this projected deficit, without relief from increases in student fees or earnings from interest, the University has asked Budget holders to operate on the Approved Budget of the previous year. This is at best a temporary postponement of the contradictions that need to be resolved. The strategies used to deal with these contradictions in the past are no longer available to the University. If agreements cannot be reached with the Government on its level of funding of the University then hard choices will need to be made.

University Reserves

As mentioned previously the University has a substantial reserve, inherited from CAST, and added to by its own enterprise over the last decade. This reserve is known to the Ministry of Education and Youth and the Ministry of Finance. Both Ministries are faced with their own very tight fiscal circumstances. It would be most surprising, and very unusual, if this knowledge of the reserves of the University is not factored into the Ministries' dealings with the financial affairs of the University. A projected deficit by the University will only be a matter of concern to either Ministry if it surpasses the amount held in reserve by the University. Most likely the position of these Ministries is that the University is able to deal with the matter because they 'have money'.

Faced with the pressures from staff, students and suppliers, if the University persists with a year-to-year open-ended expansion of the University, its only recourse will be to dip into its reserves to finance the resulting deficits. The period over which such an approach can be followed can be easily calculated taking into account the size of the deficit, the interest rate and the size of the reserve. The major question that arises is, is this the most appropriate and prudent utilization of the reserves?

Cost of Administration

As the UTECH 2020 study observed a modern university is like a small city. Garbage has to be collected, parking has to be provided, thousands have to be fed daily and numerous services are required. Further, in circumstances where students have to bear a substantial proportion of the cost it can be expected that they will demand value for money not only in terms of the instruction they receive but also in terms of the support services provided. The expansion of the administration of the University in its first decade can be explained and justified within this framework.

While various budgets and other financial analyses have not addressed the matter directly, it would appear that the cost of administering a student at the University is closely approaching the cost of teaching the student. A cursory glance at the estimated Budget for 2006/2007 would suggest a 40/60 ratio of expenditure between administration and instruction. However, each Faculty has some administration which is factored into the cost of instruction. Hence, if a detailed analysis is done the ratio is likely to change closer to 50/50. The point is that the core business of the University is not administration, it is teaching and research. Table 2 below shows the increases in student enrolment, academic staff and non-academic staff over the period 1998 to 2006 and highlights the observation being made.

Table 2

Increases in Student and Staff Numbers: 1998 to 2006

Category	1998	2006	Per cent Increase
Student Enrolment	7102	8803	24.0
Academic Staff	309	461	49.2
Non-Academic Staff	336	755	124.7

This suggests that at a minimum, some caps need to be placed on the cost of administration. Administration should not continue to grow on an open-ended basis. Indeed, there may even be a case to be made in some scaling back on administration based on a cost benefit analysis of the value added by particular administrative activities.

Another implication is that while it is natural that students will demand ever increasing services, the cost implications of these demands need to be considered before decisions are made and these costs need to be included in the discussions and negotiations on the

matter. The University cannot continue to operate on an impulsive basis in responding to demands for increased services.

Financing of Capital Projects

The KPMG Study on financing options for the University concluded that unmet capital needs are affecting the condition and usefulness of the facilities and could seriously jeopardise the University's long-term ability to maintain and upgrade its infrastructure to meet the demands of students and to ensure the quality of the education to be offered. The Study lays the blame squarely on the lack of support from the Government for the capital programme of the University.

It is important to understand the Government's apparent lack of support for the University's capital needs in the wide context of Government policy. Parkins 2002 showed that Government's capital support for education over the twenty year period 1975 to 1995 was only 2 per cent of its total capital expenditure. To put it in context, although Education is the largest single component of Government's Recurrent Expenditure, outside of Debt Servicing, each year, Government's capital expenditure in education has been extremely modest. Within this modest provision priority has been given to capital projects for primary and secondary education. The little support that has been given to tertiary education has gone to UWI though an Inter-American Development Bank Project and to the University of Technology through a Caribbean Development Bank Project.

In light of this background the University would be ill-advised to rely on Government provision to meet its capital needs. The University needs to explore other options. The KPMG study suggested public-private partnership both non-profit and for profit financing arrangements and going to the marketplace with some innovative instruments.

Concluding Comment

When the Self-Studies are taken as a whole it is fair to say that the staff of the University took the exercise very seriously and devoted a lot of thought in doing them. While all Self-Studies did not all follow the same format, they essentially told the story of what had happened in the particular Faculty or Division from the perspective of those who worked there. Generally speaking, the Self-Studies were all written with varying degrees of a sense of accomplishment, if not pride of achievement. What is interesting is that while the same successes may be shared, they are shared from different perspectives. For example, with respect to the upgrading of academic staff, the Faculties all point to their status in relation to the criteria, while the Administrative Divisions point to the management of the appointment, study leave processes, and financing mechanisms that produced the current status of the Faculties.

Invariably, lack of progress, felt deficiencies and frustrating deficits were approached in a different manner than the achievement of successes. The reaction, however, of all entities To the study was similar. While the Self-Studies of the different Faculties and Administrative Divisions were forthcoming in acknowledging deficiencies, deficits and

numerous difficulties, the sources of these were mostly attributed to factors and causes outside of the Faculty or Division itself. In this regard the Administrative Divisions were more self-critical than the Faculties. At the same time the general perception, internal and external, was that the most of the strengths of the University resided in the Faculties, and most of its weakness lay in Administration. Hence, it could be inferred that the Self-Studies were reasonably reflective on an objective reality. At the same time, where Self-Studies caused entities to identify issues that were within their sphere of influence to address, such realisation could lead more readily to effective remedy. In this regard the Administrative Divisions could have a head-start on the Faculties.

The Self-Studies clearly imply that during this first decade of the declaration of the institution as a University, there was a great burst of energy, enthusiasm and even euphoria that had motivated action. The promise and the possibilities of the transformation made it possible to accommodate inconsistencies, overlook incompetence, in some instances, ignore the full implementation of systems that would lead to greater efficiency and live with inadequate facilities in some areas. At the end of the decade, the energy, enthusiasm and euphoria have begun to subside. Some fatigue, and even frustration, has begun to surface in some Faculties and Divisions. Hence, there has been an increase in demands for choices to be made that would resolve inconsistencies, for measures to be taken where incompetence is impacting negatively on operations, for systems be fully implemented that would improve efficiency, and for the necessary facilities to be put in place in order to optimise effectiveness.

Taken together the externally commissioned studies add important dimensions to the self-assessment. Apart from concurring or disagreeing with different claims about the University, different externally commissioned studies, in numerous instances, brought fresh perspectives to bear on important aspects of the work and situation of the University.

Taken as a whole the Self-Studies have given an account of what has been accomplished in the first decade of the University. The Externally Commissioned Studies have contributed fresh insight and new perspectives on what has happened in the first decade. At the same time there is no unanimity on even the significance of what has been accomplished. Central to the way forward are the choices to be made on the options that have been proposed.

CHAPTER 5

THE WAY FORWARD

The Septennial Review process would not be complete if it were only a retrospective review. This is particularly so with this first Septennial Review. Having assessed the functioning of the University over its first decade of existence, it is necessary and prudent to explore what its prospects of success for the next decade may be. This Chapter is focused on the way forward.

Governance

The Institutional and Organisational Study suggested a relatively minor change of expanding the size of the Council by adding additional members from the private sector. The UTECH 2020 Study made other suggestions for more radical change. Both of these options have been discussed in Chapter 4. Council may be well advised to ignore both suggestions. There is nothing in this First Septennial Review which suggests that the University was inhibited or hampered by its Governance Structure. Both studies suggestions reflect more the opinions and preferences of their authors than any empirical evidence of malfunction.

The Council of the University is already large. Altering its structure by adding additional members from a particular sector opens the door to special pleads from other sectors for similar participation. Radical changes in the existing Governance structure could possibly lead to far more problems than the ones it would solve. It cannot be assumed that the Government of Jamaica in 1992 did not consider the governance structure being proposed in Britain for its newly converted universities, nor can it be assumed that it was not progressive in its thinking in not following these British proposals for governance The option chosen for the University was that of maintaining a clear distinction between the *general oversight* of the Council on all affairs of the University and the *specific responsibility* of the Academic Board for academic matters, subject to the general oversight of Council. This separation of powers is particularly critical in a small society, given the fact that it is extremely important to ensure that not even the appearance is given of a Government-appointed Council directly determining academic and professional standards and awards.

This is nothing in the Self Studies or Externally Commissioned Studies to suggest that the Governance Structure prescribed by the Charter has not served the University well in its first decade of operations. Further, the Governance Structure of the University follows a pattern that is successful and widely used throughout the Commonwealth. The grounds for change at this time are purely that of preference and not based on performance or pattern.

All the evidence of the Review Process would seem to indicate that the University should abide by the Governance structure as prescribed by the Charter and operate accordingly. This would mean that Council must preserve its position as the final authority on all

matters, performing general oversight of the operation of the University, setting University policy and being the final arbiter in disputes. As such it should remain at an appropriate distance from the administration of the University, which is the responsibility of the President.

Within this paradigm of University governance it is standard practice for University Councils or their equivalent to:

- Meet quarterly
- Establish one or two Standing Committees, one of which would be Finance, which meets monthly.
- Establish *ad hoc* Committees related to specific issues which cease to exist after they have completed their mandate and mission.
- Require Financial Statements at each quarterly meeting as well as an Annual Financial Report
- Require a Report from Academic Board at each quarterly meeting as well as an Annual Report.
- Require a Report from the President on the general operation of the University over the quarter, and also an Annual Report.

The Transformation to a University of Technology

A reasonable inference to be drawn from the Review, and particularly from the Externally Commissioned Studies that addressed this matter directly, is that UTECH in its first decade has made the transition to being a university. However, it is still in the process of becoming a University of *Technology.*

The UCJ Report specifically recommends that the "authorities should promote a dialogue within the University community with the aim of achieving a shared vision of what is meant by a 'University of Technology'." The UTECH 2020 Study advocates a shift in focus from the 'work ready' student that characterised CAST to the 'mind ready' graduate of the University of Technology. The Institutional and Organisational Studies recommends that the University should ensure that its output includes technologists. *That Study defines a technologist as one who troubleshoots, diagnoses, and finds solutions that add value to the employers' work processes.* It further observed that the technologist level is higher than that acquired through a first degree and begins to be achieved at the level of the Masters degree.

In a nutshell, these recommendations are suggesting that the University community now needs to focus its attention and thinking not just on being a university, but of becoming a particular type of university, that is, a university of technology. In that regard, the University community needs to reconceptualise the nature and raise the level of its desired output from the 'work ready' Diploma and first Degree graduate to the 'technologist' at the Masters degree level. Put another way the first Degree graduate does not represent the end product of the University's mission but an intermediary stage on the way to becoming the desired technologist.

Council would be well advised to initiate a process within the University, led by the President, which aims to develop a shared vision of what is meant by being a University of Technology. Central to that process would be the definition of the technologist to be produced at the Masters level in the different areas of specialisations across the various Faculties of the University. The result of this process would be not only a wide vision, shared by all members of the University but also a revised Mission Statement. It would reflect, too, consequential adjustments in the Curricula and assessment and evaluation mechanisms of the first Degree and Masters Degree programmes within the Faculties. It should also become the starting point of all new strategic plans of the University.

In carrying out this exercise the University may wish to benefit from the best practices and experiences of other Universities of Technology in the Commonwealth that have moved successfully in this direction. In so doing the University should take account of the contextual factors that contributed to the successful accomplishment of this transition and the time frame over which this was achieved.

As a part of this exercise the University should take the opportunity to address the recommendation of the UCJ Report in order to clearly define and differentiate the entities that could comprise a Faculty namely: School, Department, Institute and Centre. In this regard the University may wish to consider defining a School as an entity within a Faculty whose major function is teaching a particular discipline while a Department could be a sub-unit of a School, teaching a particular area of specialisation within the discipline. For example, within the School of Engineering there could be Departments of Civil, Mechanical, Electrical, Chemical and Marine Engineering. An Institute would be an entity within the Faculty principally engaged in research, development and innovation related to the particular Faculty. A Centre could be an entity in the Faculty engaged principally in outreach activities related to the discipline of that Faculty**.**

Graduate Studies

This Review Process has shown that it was extremely optimistic to expect that at the same time that the University was making the transition from Certificate and Diploma to first degree programmes, upgrading significant numbers of its staff and expanding its student enrolment at the first degree level it could at the same time make a substantial assault of instituting post-graduate programmes. It is not surprising, therefore, that the University's post-graduate output in its first decade was very small. However, the accomplishments of the transition make it possible to embark on substantial development of post-graduate programmes in the next Septennial period. As was pointed out previously, an upgraded academic staff and an expanded first degree output of students provide just the necessary conditions for the establishment of post-graduate programmes at the Masters level in all Faculties and with a substantial increase in numbers.

In this regard, the Academic Board would need to pay particular attention to the observations and recommendations of the Academic Assessment Report by the UCJ on the Masters Programmes and all new programmes, including those that are currently being designed. Its recommendations are that more rigorous criteria need to be used in

selecting and designing Masters programmes and that less reliance needs to be placed on professional bodies. *More attention needs to be paid to international standards*. The *modus operandi* that has served the University well in the development of Diploma and first Degree programmes will not be adequate when developing programmes at the Masters level.

Of even greater importance is the recommendation of the Institutional and Organisational Study that states that programmes at the Masters level should define the purpose of a University of Technology which is intended to produce technologists. The emphasis at this level is to be not only on additional content but also on developing habits of mind and ways of thinking that characterise professionals who are technologists. Council and the Academic Board will need to ensure that the dialogue that finally arrives at a shared vision of the University of Technology will be translated into effective programmes at the Masters level that turn vision into reality.

Another important aspect to consider is that increasingly Universities and agencies engaged in tackling perennial and persistent problems have embarked upon multi-disciplinary or inter-disciplinary approaches since no single discipline on its own has been able to generate satisfying solutions or explanations. Consequently, Universities have organised Graduate Schools on an inter-disciplinary or multi-disciplinary basis. The challenge for the University of Technology is to determine the extent to which it can afford to develop the critical mass and ensure the quality of Masters Programmes related to particular disciplines, while at the same time develop programmes that are multi-disciplinary or inter-disciplinary. Prudence would dictate that careful account is taken of the real needs and issues that need to be tackled in the Jamaican and Caribbean setting and that the University of Technology is best suited to deal with, and constrained to address.

Account should also be taken of the fact that the existing infrastructure of the University with respect to student services is geared to undergraduate students. Plans to expand graduate programmes would need to include support services to graduate students. How these specific needs of graduate students would be met, at the same time that these graduate students are being integrated into the general student body and student services, is a matter that the Administration and Council will need to consider and determine.

The observation must be made, too, that the higher up an individual climbs on the academic ladder is the more that he discovers that the standard of education becomes more of an international standard. This means that programmes at the Masters level should not be conceptualised in nationalist or even regional terms, even if the particular option being designed and developed is unique to country or region. *Programmes at the Masters level ought, therefore, to produce graduates that meet international standards and are employable globally.*

Careful planning is essential to the development of high quality Masters Programmes. Council will, therefore, need to satisfy itself with respect to the number of programmes being developed in each Faculty, the annual student intake in relation to the pool of

qualified applicants and the capacity of the Faculty to mount each programme. A good rule of thumb is to start small; work out all the kinks in the programme; and then expand based on successful implementation. There can be no question that a major challenge of the next Septennial period will be the development of post-graduate programmes in the University. The prerequisites are in place to allow for success, provided the challenge is executed in a systematic, thorough and prudent manner.

Research and Innovation

The University will need to abandon its present policy that all members of the academic staff should become researchers and be appointed and promoted in relation to demonstrated research capacity and output. This policy was unrealistic within the context of the first decade of the University's existence. Further, this policy is impractical for the next Septennial period. The imperatives dictating this course are clear. The implications for changing the conditions of service of the academic staff to include research as a part of their responsibilities are enormous. The financial implications are substantial because of reduced workloads of the academic staff and less contact hours with students and the consequential decrease in the staff/student ratio. Then again, the vast majority of staff does not have research degrees and still needs to be schooled in research. Not all good teachers can be transformed into good researchers. Premature and contrived transition could decrease teaching quality without increasing research output. In addition, the physical infrastructure for research is not in place and will take substantial investment to so do. Further, the building up of a sound post-graduate programme is a pre-condition for the institutionalisation of research in any university. In these circumstances the University will have to remain predominantly a teaching institution for at least the next decade.

Abandoning the policy that all members of the academic staff should be researchers does not automatically mean that the University should abandon its intention to build research capacity in the University. Council should, therefore, consider very carefully whether it will accept the recommendation of the UCJ Report that the University confines its work in this area to scholarly activities. In the context of the knowledge society it is imperative that the Caribbean generates knowledge from its location in the global society. Technological knowledge is at a premium within the knowledge society that is emerging. Further, as was pointed out in Chapter 4, there is no neat, watertight compartmentalisation of scholarly activities so that the generation of new knowledge can be isolated from an application, reflective practice or integration of knowledge across disciplines. While it is possible to set out deliberately and intentionally to produce new knowledge, the production of new knowledge can result from application, integration and reflective practice. It would, therefore, be artificial to attempt to limit scholarly activity in the University to any particular type.

The point that should not be missed is that research is largely dependent on allowing scholars to freely pursue their curiosity, to think "outside the box," to innovate and to invent new solutions whether these arise from engagement with pressing issues that are commanding the attention of the wider society or the academic community or whether it

arises from purely personal inclination or insight. Building research capacity in any institution involves providing shelter and scope for such pursuits on the part of those capable of so doing.

The challenge to be taken up by the University in the next decade it that of commencing to build research capacity within the institution, deliberately and systematically, while at the same time, taking account of the limited numbers of persons that are able and committed to conduct research. Essentially, this means establishing on a small scale, and in limited circumstances, conditions of service and physical infrastructure that will allow some qualified and capable members of University staff to conduct research in the areas that satisfy both personal inclination and societal needs.

The University of Technology needs to be able to offer itself in its areas of expertise, as a place to which governments, companies and organisations can turn to when faced with perennial problems that need to be addressed, or obsolete systems that need to be changed or new situations that demand innovative and novel approaches. In starting to build research capacity, research in the service of needs - felt, imagined or real - is as good a place as any to start. In this context it is the application of appropriate research methodology to the matters at hand that is most important. What may be required are replication studies to determine if results obtained elsewhere can be repeated in the particular circumstances that are being addressed. The opportunity that the University must not miss is that of beginning to create systematically and operationally a capacity in each Faculty to respond to circumstances demanding new knowledge and understanding, innovative solutions, and invention.

The Study on Science and Technology recommends that the University incorporate international benchmarks and indicators including the number of patents obtained among the means of judging its output. The inclusion of such indicators, however, can only meaningfully come after the University has put in place the wherewithal that would make it possible to demand the same from its staff and students. The proposal here is that a deliberate and systematic, but modest, start be made in each Faculty to build the research and innovative capacity that would make the incorporation of such indicators meaningful and reasonable.

The structure and organisational arrangements for this research and innovative function are discussed in the next section of this Report.

Academic Structures and Organisation

Both Self-Studies and Externally Commissioned Studies pointed to anomalies and inconsistencies within the current academic structure of the University. These need to be addressed in the next Septennial period. The issues involved are at the macro-level of the Faculties as well as the micro-level of the location of particular programmes. Some examples of anomalies at macro and micro-level, and inconsistencies are as follows:

- The Faculty of Education and Liberal Studies is comprised of a professional School, the School of Technical and Vocational Education and a department that serves the functional needs of all students of the University. The same is true of the Faculty of Health and Applied Sciences.
- The Faculty of the Built Environment does not include Engineering, which by any definition is an area of specialisation within any built environment.
- The Certificate in Sport Science is offered out of the Office of the President and some courses in Information and Communication Technology are offered by the Division of Planning, Development and Technology. Both the Office of the President and the Planning, Development and Technology are *administrative* divisions offering *academic* programmes.

Any restructuring of the academic structure would need to take account not only of anomalies and inconsistencies in the existing structure but also provide scope and room for new entities and structures to accommodate the further development of the University. For example, it would need to provide scope and room for structures to allow the University to build its research capacity and Doctoral programmes, as discussed previously, as well as new areas of specialisation, some already recommended by some external studies, and others that may arise in the future as the University seeks to respond to needs within the society that are within the purview and competence of a University of Technology.

Against this background the recommendation here is that Council and the Academic Board should consider reforming the academic structure and organisation of the University along the following lines:

- Establishing *one* Faculty serving the foundation needs of students of all areas of specialisation within the University and *four* Faculties producing professional technologists in different areas of specialisation.
- Refocusing the Faculty of Business and Management to include emphasis on technology businesses.
- Establishing in each of the four Faculties producing professional technologists, an Institute designed to carry out research, development and innovative activities and offer Doctoral programmes in the areas of specialisation of that Faculty.
- Transferring all academic programmes now being offered by Administrative Divisions to the appropriate Faculties within the University.

The details of each of these recommendations will need to be worked out.

Restructuring the Faculties

The rationale under-girding this recommendation is that the orientation that provides a general education for all students in a University of Technology so as to ensure that they receive a solid foundation in the sciences, mathematics, information and communication technologies, as well as are provided with satisfactory communication skills and a rounded exposure to the Arts and culture is quite distinct from the orientation

that provides education and training of professional technologists in different areas of specialisation. These two different aspects of the preparation of students should be dealt with in different structures within the university. The ethos and the ethic of professional studies in various areas of specialisation are sufficiently different from foundation education for all students to warrant this structural separation.

The proposal, therefore, is for **a Faculty of Basic Sciences and Liberal Studies** that would include Departments of Science, Mathematics, Liberal Studies, and Information and Communication Technology all designed to provide all students with general proficiencies that are prerequisites for their areas of specialisation. This Faculty would have a central responsibility for giving students an appreciation of Jamaican and Caribbean society and culture and the role of technologists within these societies.

The suggestions for the four Faculties which prepare and produce professional technologists are:

- **The Faculty of Engineering, the Built Environment and Information Technology.** This would involve a merger of the Faculty of Engineering and Information Technology and the Faculty of the Built Environment into a single Faculty.
- **The Faculty of Business and Management** which would maintain its current internal structure.
- **The Faculty of Health and Applied Sciences** which would include the School of Pharmacy and have scope and room for additional schools such as the School of Sports Sciences, the School of Medical Technology, the School of Nursing, the School of Public Health, the School of Medicine, the School of Forensic Science, etc.
- **The Faculty of Technical and Vocational Education.**

Refocusing the Faculty of Business of Management

The existence of a Faculty of Business and Management in a University of Technology is problematic if that Faculty does not focus its emphasis on technology businesses and develop graduates with an understanding and expertise of technology enterprises. Technology businesses have been one of the major growth areas in business across the world and especially so with respect to small businesses. In this regard a special relationship would need to be developed with the School of Computing. A special relationship between the School of Business and the School of Computing would provide a unique opportunity for synergies to develop that would be hugely beneficial to both. The issue at stake is not just about teaching courses but rather that of forging relations with this emerging technology industry in Jamaica and the Caribbean that are supportive of the development of this sector. These relations will not only affect teaching but also w research, development, and advice on policy. Further, the University of Technology could become the major source of graduates specially educated and trained to establish or work in technology businesses.

Establishing Institutes of Research, Development and Innovation

The proposal here is that in each of the four Faculties producing professional technologists, the University would create an Institute which bears the name of the Faculty, for example, the Institute of the Built Environment. The mandate of each Institute would be to spearhead and engage in research, development and innovative activities related to their Faculties; consultancy services, and policy advice related to that field; the supervision of Ph D candidates of the Faculty, and staff development within the Faculty to ensure that teaching in the Faculty takes account of the latest innovations in that field. Each Institute would be staffed by specialists in the field holding Ph D degrees and a core of experienced researchers. The head of the Institute would be a respected researcher in the field with experience in managing such or similar units.

Each Institute would be an income generating unit by virtue of its engagement in research, development and innovative projects, consultancy services and policy advice. Put another way, *each Institute would be the locus of research, innovation and entrepreneurship of its Faculty*. The nexus of these three activities should ensure that each remains realist to the others. Surplus funds generated from these activities should provide financial incentives for those engaged in the projects and services; support for unfunded but promising research and innovations within the Faculty; and general support of the Faculty.

Special mechanisms would need to be put in place to ensure that the Institutes can execute their income earning projects and be accountable to those that contract their services with the minimum of involvement of the central administration. Further, rules would need to be devised to ensure that the income earned serves the interests of the Faculties in which it is earned and that the funds are not co-mingled with either Government Subvention or the general investments of the University. Further, until the Institutes have firmly established themselves as income generating centres, central administration should allow them and their respective Faculties to retain and use the income generated and refrain from imposing any tax, cess or overhead demands on them. Central administrations invariably have an insatiable need for cash. Further, they have the power to appropriate the earning of other entities within the University. However, the appropriation of hard-earned resources of entities is a huge disincentive to continue their entrepreneurial efforts and Central administrations should avoid imposing arbitrary measures on those Institutes and Faculties which are attempting to be entrepreneurial.

Special tasks of the Institutes would be first to provide opportunities for those members of their Faculties holding Masters degrees and who are interested and committed to earning Ph D degrees to upgrade themselves and second, to involve those members of the Faculties who are interested and possess the required skills to be engaged, as time allows, in research, development and innovation, consultancy services and policy advice. Institutes should help to build, broaden and deepen research and innovation capacity in the University, while helping to earn their keep.

Divesting Administrative Divisions of Teaching Operations

In the context of the transition where a premium was placed on getting things done and where leadership was critical in breaking new ground, it is understandable that some teaching activities were located under Administrative Divisions, particularly in the Office of the President. However, as the Self-Study of the Office of the President pointed out this cannot become standard practice. Hence, it will be necessary as soon as possible following the conclusion of the Review exercise, for the Council to take appropriate action to ensure that Administrative Divisions divest their teaching operations to the appropriate Faculties in time for the beginning of the new academic year. The Septennial Review provides an opportune time to carry out this correction. If this opportunity is missed the necessary correction will become more difficult in the future.

No attempt is being made here to prescribe where particular teaching operations of Administrative Divisions should be placed within the Academic Structure, particularly when some reorganisation of the Academic Structure has been recommended. What is essential; however, is the acceptance of the principle of divestment of teaching operations by Administration and the identification of the operations so affected. These teaching operations are:

1. The Certificate in Sports Sciences
2. High Performance Athletic Centre
3. The Multimedia Centre
4. The Technology Innovation Centre
5. The Centre of Arts and Culture
6. Community Services
7. Sculpture Park

Academic Quality

The review process has revealed that the University has put in place all of the standard practices to ensure the quality of the programmes that it offers to students whether this involves peer review with internal moderation and external examination or accreditation, or such other measures as tracer studies of graduates. From reports derived from these various sources it seems reasonable to infer that the University is delivering sound programmes and that students are meeting the standards that have been set. Further, it would appear that the standards being achieved are acceptable at the various levels.

The results, however, do not mean that the University can be sanguine about academic quality. In going forward there are several factors that should be taken into account in making decisions about future developments. In *three* Faculties the University appears to be admitting almost all qualified applicants. In these circumstances the University should not contemplate any significant expansion of programmes since this could lead to the admission of students not qualified to undertake these programmes. This could dilute academic quality.

In the Faculties of the Built Environment and Business and Management where the University is admitting only *one* of every three or two qualified applicants, respectively, some expansion of intake could be contemplated. However, the Self-Studies of both Faculties highlight current limitations of the physical infrastructure with their present enrolment. Expansion of enrolment in these Faculties would need to be preceded by the provision of additional space appropriately equipped. To expand without making this provision could also lead to dilution in academic quality.

The most pressing issue that the University will need to address with respect to academic quality is that of raising the minimum admission requirements for first Degree programmes from five passes in CSEC to some combination of CAPE Year 1 and CSEC passes. The issue at stake must not be confused with other issues. The question is not whether some students cannot reach the degree standard in four years from five CSEC passes. Nor it is that in the past some North American institutions have accepted some students with CSEC passes. The issue is that the international standard for first degrees is 16 years of education starting from Grade 1. This is the Protocol that CARICOM has accepted. CSEC performance relates to Grade 11. Four years from Grade 11 is one short of the prescribed standard. CAPE Year 1 relates to performance equivalent to Grade 12.

When all factors are taken into consideration, the overall strategy for the University for the immediate future ought to be to consolidate the achievements at the first Degree level and to develop and expand graduate programmes at the Masters and Doctoral levels. Consolidation of the first Degree level is important and essential, given the Herculean efforts that were made to establish these first degree programmes in the first decade of the University's existence. As the Self-Studies have pointed out, while the objectives were achieved, there are several kinks that need to be smoothed out, and deficiencies that need to be rectified. In addition, it would be opportune to engage in consolidation of the first degree programmes in circumstances where further expansion is not warranted.

Another consideration that ought not to be overlooked is that generally in education, access to the upper levels of the educational ladder serves as inspiration to the lower levels and actually inspires higher standards at the lower levels, as students and their teachers strive to gain access to the higher levels. It is, therefore, reasonable to expect that development and expansion of graduate programmes at the University will improve academic quality at the first Degree level as students strive to gain access to post-graduate degrees.

Franchising

The Self-Studies of the Faculties all identified the franchising strategy as playing an important part in the transition that the University made from Diploma to Degree programmes. The Externally Commissioned Study that reviewed the franchising operations all agreed as to its usefulness but recommended changes that needed to be made. The UTECH 2020 Study recommended that an entity be created to manage franchising. There is much merit to such a recommendation in that this entity would become a one-stop point with which tertiary institutions could interface with the

University with respect to its relationships with programmes in different Faculties. Currently, the franchising arrangement relates to specific programmes and Faculties, hence a single tertiary institution may need to interface with several Faculties and as the UCJ Study points out, all Faculties do not currently accept the same responsibilities with respect to programmes that are franchised. *A central franchising unit could deal externally with tertiary institutions and internally coordinate the responses and responsibilities to these institutions*.

The Institutional and Organisational Study pointed to the fact that with the exception of Excelsior Community College there are no written contracts governing the franchising arrangements with the various tertiary institutions. Having a central franchising unit would facilitate the standardisation of the franchising arrangement and the development of standard contracts governing the relations between the University and the other tertiary institutions. Standard franchising contracts which are applied to all tertiary institutions to which programmes are franchised and carrying with them common commitments by the Faculties, would address the present inconsistency observed by the UCJ report.

The Self-Study of the Academic Affairs Division commented on the inability of partner tertiary institutions to pay the franchise fee charged by the University. The UTECH 2020 Study suggests that franchising could become a revenue stream for the University. As of May 2005 the University has designated the Continuing Education and Distance Learning, CREODL Unit to be the central unit to coordinate, and manage all franchise, articulation and outreach arrangements of the University. The latter would suggest that the University has accepted the fact that franchising benefits the University with respect to its resource utilisation and, therefore, it is worthwhile to meet the overhead cost of franchising. However, franchising is bundled with organising articulation and outreach activities.

In these circumstances an option that Council may wish to consider is that of abolishing a blanket franchise fee charged to tertiary institutions. Instead, Council could institute examination fees charged on a student and subject basis for all students of tertiary institutions to which programmes are franchised. The level of the examination fees charged should be determined by the operational cost of the franchise programme. In other words, while the University will bear the cost of the central franchising unit, embedded in CREODL, examination fees would cover the operational costs related to technical support to the staff of tertiary institutions, site visits, curriculum revision and the setting and marking of the examinations by the Faculties annually.

The University should operate the franchising arrangement so that within the next 10 years programmes that are now franchised to other tertiary institutions can be divested to them and replaced with articulation arrangements. This would involve work with the partner tertiary institutions in the areas of institutional development, staff development, curriculum development and assessment and evaluation. The University should consider developing a five year project with these elements and seek funding for the same from some interested donor agency. An important element that should be stressed with such a project is that its aim would be to development of technology education capacities in

community and other colleges, thus expanding the pool of competent persons in the various fields that are targeted.

Information and Communication Technology

Over the period of the Review the University has made considerable advances in developing its information and communication infrastructure, connecting Faculties and Administrative Division to the University's central fibre-backbone, installing and supporting various software applications in Divisions and Faculties, creating an Intranet, creating a wireless campus network, improving bandwidth to the Internet and supporting staff of all categories in the use of the technology.

The Self-Study of the Planning, Development and Technology Division stated that the rate of development of both the physical infrastructure and Information Technology applications has been retarded by inadequate resources. Given the increasing centrality of information and communication technology in instruction and management, as well as the rapid changes taking place in these technologies, it would be advisable for Council to commission a task force to take stock of the existing ICT capabilities, project its future needs, cost the same and include this in the capital needs of the University.

Relevance

The University has, through its Advisory Committees, strengthened its relationships with the economic sectors and professions related to the areas of education and training offered by the University. The UCJ Report recommends that these Advisory Committees become mandatory and are not left to the pleasure of the Deans of the Faculties. Further, it recommends that the Academic Board requires that the advice given by the Advisory Committees be brought to its attention. The Science and Technology Report recommends that the Triple Helix Model of relationship between Government, Industry and University be followed. However, to a large extent the University is already following this model. Relevance is clearly one area of strength of the University. To ensure relevance its existing systems seem to need only minor tweaking.

The more pressing consideration is that which was made by UTECH 2020 Report to the effect that in order to enhance its relevance, even beyond the level already reached, the University should establish at least two Centres of Excellence in relation to some new area of challenge that faces the Jamaican society. While there is great merit in the recommendation, the University must be hard-headed with respect to the choices that it makes. In circumstances where it is unlikely that a benefactor will independently sponsor such development, the University will need to develop strict criteria in selecting at least the two areas.

Criteria that readily come to mind are as follows:

- The size of the sector that is being targeted.
- The levels and types of training that are needed in that sector.

- The demand for training by the sector itself.
- Ability and willingness to pay

Areas that appear worthwhile to pursue in terms of the exploration of feasibility are security management, telecommunications and renewable energy.

Administrative Challenges

The Self-Studies of both Faculties and Administrative Divisions have identified problems and challenges related to procurement, payment of suppliers, human resource management, and internal customer dissatisfaction. Externally Commissioned Studies have addressed these problems and challenges and observed that the problems have been well known, solutions and remedies have been repeatedly offered but not implemented. *There seems to be little merit in continuing to make recommendations. On reflection, this is probably one area in which the observation of the UTECH 2020 Study that the seamless transition from college to university has not served the best interest of the University may, indeed, be valid.*

The two main options open to Council and the President are listed as follows:

1. Hard choices with respect to the implementation of the recommendations that have so far been ignored but which are critical to ensuring the desired efficiencies.

2. Continuing to live with the inefficiencies but mitigating their effect by rapid recovery emergency measures and the early pacification of those that are aggrieved.

The implication of the first option is the recommended solution. There could, however, be a measure of disruption if this option is implemented as the matter concerns aggrieved persons who have given long service to the institution and who attract the sympathy of a significant number of persons, within the University itself, and beyond, who have known of their past service. The assumed disruption could be mitigated by the way in which the matter is handled and what inducements and packages are offered to these aggrieved parties. The most optimistic scenario is that the disruption might be muted and short-term, while solving and remedying the problems identified will certainly bring medium and long-term benefits to the entire University.

The implication of the second option is the avoidance of any open disruption but the continuation of underlying disgruntlement and frustration, especially among the academic staff, and the growing impression that Management is ineffective and unable to address legitimate concerns concerning needed efficiency in the operations of the University, could negatively affect morale further. There is the possibility that this risk could be mitigated if there is some amount of transparency in discussion of the problems and the options that are open to the University. Some involvement of the Staff Unions in the decisions that are made could also help to mitigate the situation.

Branding

It is currently passé to extend corporate language and concepts to everything. The extent to which some of these concepts can be applied meaningfully to universities is not unequivocal. While it is necessary and important to run many aspects of universities like a business, and while some corporations have established universities to promote their particular business, a public university is not exactly a corporation. Not all aspects of any public university can be entirely utilitarian. A good university should be able to shelter what to many may seem to be a lost cause, and also to incubate an idea whose time has not yet come. It should be able to offer sanctuary to persons of talent and ability who are not mainstream thinkers or who have run afoul or offended the mainstream. The fact is that given the limits of human foresight and rapidly changing social, political and economic environments and unexpected and unimagined developments, many a lost cause suddenly becomes very relevant and way-out ideas become the substance of everyday life.

Essentially, a brand is a stamp or pattern that is recognised anywhere. Applied to a university it speaks to the competence, creativity and habits of mind and thinking that characterises its staff and is internalised by its students and is manifested in the performance of both. As such the brand of any university is not determined by administrative means and can only be articulated in a very limited way through public relations. The recognition of a university brand comes through encounter with its staff and students that are engaged in the testing issues of communities, corporations, organisations and institutions in which they reside or are invited to participate.

From this perspective it is artificial and somewhat superficial to attempt to try to brand any university outside of the measure that creates the climate and circumstances through which highly competent, capable and creative academics can engage their students in high quality programmes that inspire and require them to develop insights and competences, acquire ways of thinking and become conversant and comfortable with the latest paradigms in their fields and through the synthesis of these themselves become competent, capable and creative professionals, technologists and academics. The CAST brand became firmly recognisable over its 37 years. The UTECH brand is still very much a work in progress. Its successful emergence demands close attention to the fundamentals and not to any artificial means.

Financing the University

In looking at the way forward in financing the University it is of critical importance at the very outset to identify and understand the differences between the context of the first Septennial period and the one now being embarked upon. In large measure, the Government has had its CARICOM commitment, as documented in the Montego Bay Declaration of July 4, 1997, to increase tertiary enrolment to 15 per cent by 2005, implemented at the University of Technology without really paying for it. First, the demand for university status came from CAST. The Government acquiesced to the demand. The granting of University status to the UTECH therefore did not arise from any

policy determination of the Ministry of Education. The Ministry Policy gave priority to primary and secondary education. Second, the Government had severe fiscal constraints during this period in which it struggled with the debt burden in circumstances of very sluggish economic growth. Third, the Ministries of Education and Finance were always aware that the University had healthy reserves that it was able to use and that it could pass on increases to students through increased fees.

The institution got its demand to be upgraded to university status. The University was, therefore, not about to stymie its transition because of limited financial support from the Government. With a fair amount of euphoria, a great deal of energy and exemplary ingenuity, it set out to accomplish the transition from college to university. In an environment of high interest rates it astutely invested its reserves and applied the proceeds to both capital and recurrent expenses of the University. As interest rates declined it boldly increased student fees based on demand of students for access to Degree programmes. The University also managed to get Government support for some capital expansion through the Caribbean Development Bank and grant funding from other agencies including the European Union. In large measure the University proceeded in an open-ended manner with respect to most of the measures it implemented while at the same time requesting, but not receiving, greater Government support.

To the credit of the University, and particularly to its leadership, the institution accomplished the transition from college to university within a decade. In this regard the University can with justification proclaim mission accomplished. But, this is just the end of the beginning.

The circumstances that surround the commencement of the second Septennial period are quite different from that of the first. With the clear emergence of the knowledge economy and the fact that competitive advantages in the world now rest with tertiary education, the Ministry of Education and Youth appears to be open to a change of policy where some priority may be given to tertiary education. Indeed, some donor agencies have certainly changed the grant and lending programmes in order to accommodate this change. In addition, over the last two to three years the Jamaica economy has begun to show signs of more robust growth, which if it continues, could lead to the greater ability of the Government to address non-debt capital programmes as well as better levels of support for recurrent expenditures.

While the situation with the Government hints of a more favourable climate for support of tertiary education, the circumstances within the University have moved in the opposite direction. The euphoria and energy of the first decade has almost been exhausted. Student fees are almost at the limit to which they can be increased without adverse effects to equity and quality - that is if students' ability to pay is the bottom line of the admission policy. Interest rates have fallen and continued reliance on the reserves will be dipping into the capital as well as using the annual interest. The full cost of the expanded physical facilities, upgrade of staff and expansion of administration now have to be funded annually. In this context the University could court great danger if it continues to proceed in an optimistic and open-ended manner.

The circumstances and situation at the commencement of the second Septennial period requires a new and different dialogue between the University and its owner, the Government of Jamaica. The fundamental basis of this dialogue is that the University will seek and obtain approval from the Government on its future size, programmes and targets and that the University will operate within the agreements reached. The content of this dialogue has to include all the hard choices to be made, the principles guiding the decisions made, and their consequences.

The best that can be done by this Septennial Review is to propose to Council the broad contours of the approach and framework within which to tackle this crucial issue of the financing of the University. The elements of the approach and framework are briefly set out below.

Review of Critical Areas

Council should immediately mandate the President to carry out the following exercise:

1. Review the recommendations of the studies that have been done on the administration of the University as well as the size of the Administration and to implement appropriate actions, based on the review, to achieve efficiencies, contain costs in some areas and reduce cost in areas not vital and critical to accomplishing the functions of the University.
2. Review programmes of the University in order to identify non-economic programmes with a view to taking steps to make them economical where they serve vital interests in the Jamaican economy, obtain support for such programmes from the sectors affected and determine the savings that would result from the elimination of such programmes. This review should clearly identify the programmes over the next three to four years in the various Faculties.
3. Set enrolment limits and targets for the undergraduate programmes in the five Faculties over the next three to four years, taking into consideration the necessity to consolidate the accomplishments of the first Septennial period, take account of number of qualified applicants in each area, and the physical capacity of the University to offer high quality support for these programmes.
4. Project the establishment and/or expansion of post-graduate programmes in each of the Faculties, the numbers to be enrolled and the estimated cost, over the next five years.
5. Project the cost of establishing in each of the Faculties an Institute of Research, Development and Innovation, with a core staff of 4 to 5 members including the head.. Basically the University would bear the ongoing staff cost, provide the facilities and finance the operational expenditure for the *first year* after which the Institutes would finance their operational expenses from income earned from projects, consulting services and policy advice.

The results of this internal review led by the President should establish the parameters of the University's capital and recurrent expenditure over the next three to four years. This

should enable the University to develop a proposal with attendant estimated costs that would enable the Council to enter into dialogue with the Government, that is, the Ministries of Education and Youth and Finance and Planning with respect to the financing of the University over the next three to four years.

It is desirable that in the dialogue with the Government, Council should seek to obtain a Memorandum of Understanding on the Financing of the University. The following are proposed as the main elements of the Memorandum of Understanding.

- That the financing of the University by the Government be done on a triennial basis with the annual budget being reflecting of the triennial agreement.
- That in coming to the agreement on the triennial budget the University will submit and justify the projected student enrolment, programmes to be offered, and staff establishment which the Ministries must approve.
- That the University will not take unilateral action to vary the staff establishment or student enrolment within the triennial period.
- That the formula for financing the recurrent expenditure of the University be 60 per cent by Subvention, 30 per cent from student fees and 10 per cent from the entrepreneurial enterprise of the University, that is, from income earned each year by different units within the University.
- That normally the University will take responsibility for the capital needs of the University and use its reserves for this purpose. In other words, the reserves of the University will not be used to meet shortfalls in recurrent expenditure or provide support for areas not approved by the Government, but used solely for the capital needs of the University. In this regard the University could fund some capital needs directly from interest earned from investment, or by leveraging these resources by going to the market for the needed financing or providing matching funding from grants from agencies and companies.
- That in circumstances where the Government wishes the University to introduce programmes which market forces will not ensure there feasibility, for example, Forensic Science, the Government will provide directly both the capital and financial means to mount such programmes.

The combination of the internal review by the University and obtaining a Memorandum of Understanding, containing the elements identified should provide Council with a more stable, reliable and systematic basis for financing the University in the next Septennial period..

CONCLUDING COMMENT

There can be no question that the University of Technology, Jamaica has made a sound start on its journey as a university. In its first decade it has convincingly confirmed the University status that was conferred on it in 1995. Given this evidence, it is reasonable to be optimistic that in its second decade it will undoubtedly become that type of university that is designated a “university of technology” producing technologists of international repute.

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