PROCEEDING
International Conference on Technology and Operations Management

- INNOVATION and NEW PRODUCT DEVELOPMENT
- MANUFACTURING and SUPPLY CHAIN TECHNOLOGIES
- MANAGEMENT OF TECHNOLOGY

Aula Barat & SBM-ITB, December 1st-2nd, 2006
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SUSTAINABLE ADMINISTRATIVE STAFF IN ACADEMIC INSTITUTION ADMINISTRATION TECHNOLOGY AS BRIDGING EXPERIENCE IN REGISTRY, UNIVERSITI SAINS MALAYSIA

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ABSTRACT

As setting based Administration has gained an advanced technology environment in sustaining contexts. Technology input has to filter before be accepted as administrative needs. Focusing on USM’s general administration works parallel/ together with academic program development framework.
Registry USM as a case study to another Higher Education Administration is a framework and to promoting Administration among University as Important field in University and Parallel with Academic Development.

Keywords: University, Administration, Technology, Sustainable.

1.0 USM’s Mission

We aspire to lead and innovate in achieving excellence at the international level through advancing and disseminating knowledge and truth, instilling qualities that stress academic excellence and professionalism, developing holistic individuals, and providing a strong commitment towards the society’s aspiration, the country’s vision and universal aspiration.

2.0 USM’s Objective

To fulfil the needs of human resources in line with national policy:

i. To improve the quality of education through the enhancement and addition of academic programmes in line with current and future needs and requirements.

ii. To become a centre for research excellence through research and development activities.

iii. To establish smart partnership with industries and agencies abroad.

iv. To produce graduates who excel in term of knowledge, behaviour and practices.

v. To develop facilities conducive to teaching and learning.

vi. To internationalise the university.

vii. To enhance the management of all main functions of the University.

3.0 Overview USM

The establishment of Universiti Sains Malaysia (USM) began with an agreement reached thought a resolution which was approved by the Penang State Legislative Assembly in 1962, which called for the establishment of a university college in the state. The acquisition of a piece of land in Sungai Ara for this purpose was then followed by the ceremonial laying of the foundation stone by the Prime Minister of
Malaysia, Y.T.M Tunku Abdul Rahman Putra Al-Haj on 7 August 1967. Taking into account the need for a larger campus more conducive ones in line with future manpower needs, the name Universiti Pulau Pinang. The establishment of USM was eventually gazetted under the Corporation Act signed by His Majesty The Yang DiPertuan Agong as provided for under the Universities and University Colleges Act 1971, and Published in the Government Gazette P.U. (A) 383/71. The management of the university is carried out through the executive power of the Board of Directors, made up of members chosen from the university, representatives from government departments and those appointed by the Board of Directors retain the right to wield power entrusted to it by the University Constitution, Statutes, Acts and Regulations.

From its humble beginning with an intake of 57 science students in 1969, USM had made great strides. Today, USM offers a wide range of courses at both undergraduate and postgraduate levels to more than 20,000 students. USM has also emerged as one of the most widely-acclaimed universities not only locally but also abroad. The success achieved in various fields especially research, including the latest through the Asian Innovation Award in which USM emerged as the only winner from this country, has placed USM on the world map.

USM’s Governance established on The Constitution of the Universiti Sains Malaysia under Universities and University Colleges ACT 1971. The Governance structure has three elements:-

Each element has own role provided by constitution of Universiti Sains Malaysia.

4.0 The Administration

The Administration of USM Governance, also known as ‘Management’ mean dealing with Human Resource, Academic Management or General Administration matters.

The Administration matters, authorised empowerment under constitution made by Statute XXI-Registrar. Under Statute XXI-established Registry Department as above, mention dealing with all the Administrative matters, (Human Resource, Academic, Asset or General Administrative matters.)

The Constitution was clarified duties and Roles of a Registrar as an Institution.
Fulltime Officer

Keeping all Record /Document/Asset.

Secretary to all University Authority

To Arrange all document conducted by the University

Performing other formation Imposed:-
- Constitution/Statue
- Vice Chancellor

The Registrar may delegate his Role to his Assistant/s

Registry Department Organization

Struktur Organisasi
Jabatan Pendaftar

[Diagram of Registry Department Organization]

Secretary to all University Authority

To Arrange all document conducted by the University

Performing other formation Imposed:-
- Constitution/Statue
- Vice Chancellor

The Registrar may delegate his Role to his Assistant/s
5.0 Registry Mission

“Registry shall lead and innovate in providing to excellent management of University’s Human Resource, Academic and central facility service through nurturing quality and professionalism of the highest order so as to achieve the University’s Mission.”

6.0 Key Issue In Administration

USM has identified the problems and Issues as below:

1. The Administration dedicated to physical, Infrastructure, Academic Services Management, and Human Resources development.
2. Strategic project will provide ROI to stake holder parallel to University’s Mission in core of academic and research.
4. Human Resource Development is on inflated or increasing knowledge.
5. Student Development using the ‘Multi Culturation’ approaches.
6. Conductive working / studying is embracing of ‘Kampus Sejahtera’.

7.0 Registry Administration Structure.

USM academic programme system established /introduced as ‘Broad Based School of Study’ (BBSS) since 1969. The Academic System is known as Multi Discipline courses with global acceptance offer by USM’. One of the main attractions to the international students.

The Academic System enhance with value Added to boasting USM’s programme ready competitive and sustained advantage. Value Added has been made as:- Off campus programme study (1997/72)

i. 2 term unit programme (1975/76)
ii. 4 year programme
iii. RPA (1980/81)
iv. PI (master plan) 1983-90)
v. SPU (1994/95)
vi. SPTT (1996/97)
vii. SPTT(M) & SPKET (2000/01).

Coordinated, provided, facilitate and complied the above academic programme/system for sustainable development in accordance with USM’s Mission, the Administration is intangible role and responsibility in insuring academic programme, awareness, working smoothly and according objective. The roles played by administration especially human resource, human resource development, academic matters like procedure, academic procedure & operation like Senate, examination etc and improve service with new technology in market, else the tangible service will be sink or mess working accordingly.

8.0 Administration Working Flow (AWF).

The Academic system /programme as mention earlier ‘Broad Based School of Study’ and ‘Multi Discipline’ study programme where is course offer inter school.

The school base system encourages central administration to build strong administration structure and working flow.

The Broad Based School of Study (BBSS) introduces sharing concept in Management & Administration of academic system, Whereis sharing: courses registration
Multi-Discipline programme is through major and minor programme.

Resources and facilities such as Lecture Theatres, Seminar Rooms, Lab etc. where it is controlled by Central Administration.

Academic activities such as time table scheduling, Invigilation, Examination etc.

Student Registration/ Class Registration manage by Central Administration.

Distribution Model (it is a different model framework between Centralize or Decentralize model).

The Central Administration must be support with strong Technology and Human Capital.

9.0 The Emerging New Higher Education Era.

However, the business of a university is education, but different University has a different view or idea about business outlook. The comparative Education trend and environment in global Market and emergence or Education new Market altered Higher Education to compete within contemporary environment. Dzulkifli (2006) look to ward 2020 Vision (Malaysia), where Ninth Malaysia Plan (2006-2010) and The National Mission 2006-2010 goals and objective to achieve of vision 2020.

Accordingly, Dzulkifli (DAR2006), five Key Thrusts as Outline by Government of Malaysia are as follows:
To achieve the goals & objectives of Vision 2020

1. Moving the economy up the value chain

2. Raising the capacity for knowledge and innovation and nurturing “first class mentality”

3. Addressing persistent socio-economic inequalities constructively and productively

4. Improving the standard and sustainability of the quality of life

5. Strengthening the country’s institutional & implementation capacity ~ establish a more effective implementing & monitoring mechanism
Education of Tomorrow

Staff of Tomorrow

- Student-Sensitive Continual Education
- Restructuring of Education
- School Districts
- Neighbourhood Schools
- “Little Red Schoolhouse”

Source: DAR2006 (original)
Education of tomorrow where Dzulkifli (2006) in his speech outline that University’s staff should prepare and ready with knowledge and sense to be staff of tomorrow.

10. University Management Challenges.

The second half of twenty first century is an unprecedented demand and great diversified in higher education and increase awareness of vital importance in socio cultural and economic development.

For building the future, the new and next generations will be equipped:

i. New skills
ii. New knowledge
iii. New idea
iv. New value/sense
v. Knowledge based
vi. Sustainable development

...to face challenges and competent human capitals.

The University business is Education or Higher Learning Industries, but different people have different views about output product. In view of government of Malaysia, product output expected is ‘Modal Insan’ (Human Capital) with value.

A University, however is not an industry as such where students are products and educations a commodity. Students are produced by university as a national contribution and global development but to be as agents of change (Dzulkifli – 2005).

11. Tertiary Education Administration

- The Administration key challenges and issues.

i. Increase young generation, population expected year 2006 as 26M and 2010 expected 28M.
ii. New Generation needs.
iii. Globalization & competitive advantage where is universities had to manage among their self and compete.
iv. An Ambivalent – where is academic environment always difficult to satisfy leadership roles? Their working is derived from their professional & expertise.

v. Political Dynamic where academic will be foremost, top-notch competencies. However, compliances will need to be augmented with the conceptual and human competencies.

vi. Pay attention to the character and emotional Intelligence. The Administration has to mindset, at least their core belief (1) the institution is more important than any single individual is; (2) the Leader’s job is to help other succeed and (3) first and foremost in making decisions the organization future and sustainable.

vii. Complex community/user - the Institution faces with different type of user with different background.

viii. Tertiary Education is facing unprecedented challenges. This is arising impacts from globalization, importance of knowledge, at the sometimes, new type of Institution and new term of competition including older universities change mode of operation and delivery system and take advantage of cutting edge technology in market.
ix. Expend Higher Education. The rapid growth is enrolment for period 2006-2010.

Tertiary Education Enrolment 2006-2010
Ninth Malaysia Plan (9MP)

Certificate enrolment

Diploma enrolment
First Degree enrolment

Master enrolment

PhD. enrolment
The fiscal constrained recent years have under mind financial capacity especially among involvement public tertiary. The main issue in Tertiary Education and university is growth of academic staff, especially for Doctor of Philosophy qualification. Malaysia Government in targeting 60% academic staff must be qualified with PhD at 2010.  

12. **Technology in Administration System.**

“It is impossible to make a complete education system within an appropriate and strong higher education system. I am not for a moment suggesting that primary education and secondary education are not at very essence of development [but that is] not enough for you to have centres of excellence and learning and training if you are going to advance the issue of poverty and development in developing countries. The key...is...higher education, not just on technical side, but to create people with enough WISDOM to be able to use it”.


An administration environment, where is to face new global challenges, and the appropriate technology has innovate and incorporate in administration. The Administration has to face a new global market in tertiary education and should move parallel with tertiary system for survival and sustainability.

The Administration and Technology is different thing. It is difference from our field and discipline aspect, but Administration need technology to face new market.

The Administration Environment face new a global challenge, which is the administration, has to identify an appropriate technology to innovate and incorporate in administration.

In this context, the Administration confront with parallel task to adapt technology and Administration Role. Life Cycle of Administration and Technology is difference framework itself. The administration process related is protocol, controlling, bureaucratic and maintenance; else, technology is looking for next advancement to environment and situation. However, the administration people must adapt and accept in their working element to improve administrative cycle and capable working together with tertiary environment and culture.

**What is Technology?**

The definition of technology has more than one. Management or administration context, I would prefer to define as-

“The development and application of tools machines, materials and process that help to solve human problem. As a human activity, technology predates both science and engineering. It embodies human knowledge of solving real problems in the design of standard tools, machines, materials or the process. Thus standardization of design is essential feature of Technology’.

Technology in Administration means the Administration people have to adapt and incorporate any technology in global new market into their daily work. Market demand, where is university more foremost and unprecedented future and new challenges. The administration must grow parallel or at least develops at-par initiative with to contribute in this situation;
Azman Abdullah (2006) has defined technology in five combination elements. Within Administration, the technology means, the development (any) has to involve elements (process, tool, idea, organization & human). This is difference other technology where element organization and human is excluded.

**Administration Technology defines as:**

“The process of systematic integration, instructive and complex, which involves humans, procedures, ideas, tools and organization for system, application and more instructive model design to enhance and value added for management and administration.”

Source: Ramlimehat 2006

On the other hand, administration in Registry USM has elaborate Administration Technology Roles entity:

- ✔ Human Resource
- ✔ Market and Quality Assurance
- ✔ Academic Administration
- ✔ Student Welfare
- ✔ Hospitality /Facility
- ✔ Legal
- ✔ Information Technology
Entity Discipline Of Advanced Technology Administration Role.

Science
- Study of natural facts
- Application of knowledge learned scientifically to develop product
Engineering
- Application of knowledge learned scientifically to develop product
Technology
- Used to engineer product

ATAP Development & Application:
- TOOL
- MACHINE
- MATERIALS
- PROCESS

Helps to solve human problems.

DEFENCE
EDUCATION
MEDICAL
COMMUNICATION
INFORMATION (Technology In Administration)

ADMINISTRATION

Hospitality/Facility
- Tawaran komunitas
- Penginapan Tamu
- Penelitian Kesehatan
- Penanganan Kecelakaan
- Penyuluhan Pelayan
- Pelayanan Pemasaran

Ketajaman Pelayan
- Penilaian Pelayan
- Pendanaan
- Penyelenggaraan
- Penanaman

Pemasearan & Jaminan Kuantum
- Pemasaran
- Jaminan Kuantum

Human Resource
- Manajemen Pemanfaatan
- Staff Welfare
- Human Resource Development
- Administration

Legat
- Perencanaan
- Sistem
- Evaluasi
- Data and Record Processing
- Audit

Information Technology
- Data and Record Processing
- Staff Welfare
- Human Resource Development
- Administration

ICTOM 2006 – Administration Technology as Bridging.
13. Technology Administration as Bridging?

As mention above, the technology and administration have two different things. The differentiation is characteristic of technology and Administration. Normally, character of technology is to looking, thinking and view about contemporary and future challenges. However, administration mostly controlling, maintaining, bureaucratic and procedure for had broken less by clients.

In Technology Market, where Technology developed is not means or designs or develops special for administrative needs. However, most times, develop for business or military etc. On that manner, Administration has to adapt the open technology and develop within administration environment.

For purpose of Administration, the technology that consider as High Impact and Administration as classical manner, have to moderate between 2 or more standardization communication layer to balance between different signal/frequency. Normally the concept frequency filtering in to balance end output in which would receive proper packet/signalling.

In this concept of Administration Technology action as filtering document to administrator/Administration staff/people, accept clear technology’s characteristic into their environment/working. It is meaning all mess or an unneeded technology will be removed from their environment.

Administration technology is a clear technology / without mess for Administration people.
14. Technology Acceptance Issue

Development Technology or system is two types of revolution by technical people are too powerful for humanity to trust and accept it as part or full of human life. Among common people, amazing technology cannot be trusted and sometime make it fear to accept without regard for the social consequences.


The revolution of science and technology has reacted and influenced to social acceptance. TAM is an illness/sickness to social or institution, as:-

- Technophobia – is fear or intense dislike, for technology. It involve with negative emotions, such as anxiety, stress, incompetence or nervousness.
- Technophile - is people love of or enthusiasm for technology especially computer base equipment or technology based.
- Techno stress – is feeling for people involve with technologies especially growing technology faster then development or disturbing people or society.
- Néo-Ludisme - is perceived as a modern movement of categorical opposition to technology, both in particular and in general.

- Technophobes - is person who like technology but avoid from technology. Sometime he shows as love and happy with technology but never use it.

The phobia is good or bad but it is interfered development of social need and organization and act to slow development in social especially future.

Note: The case of study will be presented in session 21

15. Managing For Sustained Competitive Advantage.

The academic culture and The Administration Culture does not mixed and match together. The academic culture looks forward, foremost and changing agent to institution and country, while the administration mostly consider about controlling, procedure and regulation. However the Culture of Administration is contributing to sustaining, smooth and healthy to institution and country. In other word, avoid social and institution deep to mess. Looking forward how does an administration play role together in development institution and academic activities?

The organization has to build Own In-house Model:

First: Competitive advantage - an advantage from competitors to gain by offering client/customer with better value/ benefit. Basic type competitive advantage (1) cost Advantage or value, (2) differentiation Advantage. The administration do offer a superior value/ benefit cliental. [Michael Porter 1998].

Second: Competitive Force Model - the Interaction of External Influences, specifically Opportunities, affecting organization strongly and ability to compete.
Third: The Administration Department has to create, develop and enhance own technology based known as Administration Technology. Registry USM has been introducing Administration Technology Agenda. (Advanced Technology Administration Programmed –ATAP).

Fourth: Knowledge Based Organization Bridging Program - In Administration Particularly procedure/ internal regulation was running as implicit or tacit. Registry USM has encouraged management to compile all regulation/procedure in simple documentation under KBO-WFD project since November 2005.

Fifth: Coaching - for purpose of internal program known ‘promoter’ has been establish to coach all administrative staff to use application/software for own needs.

Sixth: Advance Technology Administration ATA - we develop the agenda for Administration using technology for our needs and avoid carrying IT agenda where IT agenda is to build IT needs while ATA more to administration need and purpose.

Seventh: Grooming the Model and conceptual of Agenda or activities or successful story should promote to client, Top Management and own staff. This is to alert all parties aware about development.

Ninth: Paradigm shift - The internal staff/administrative staff must be educated them to accept technology as part of their responsibility and helping them in working environment.

16. Conclusion
The Administration In higher Education has played important roles and responsibility to boosting and promoting administration among academician and teaching people also student and professional staff. The challenges are attributing and job description to complete with contemporary needs in academic institution. Challengers are expended critical technology to capture. However, technology is important in administration. The Bridging Model should introduce to balance between technology and administration to successfully support Institution for future.

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