

Smart Partnership and Collaboration: A case study on Multimedia University

Seminar Sub Themes: Smart Partnership between Education and Industry

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ABSTRACT

This paper aims to discuss the smart partnership between education and industry by using Multimedia University (MMU) as a focal point. Having identified various key niche areas, 25 centres of Excellence have been established in the university where academic staff and students collaborate on various research interests. To enhance research and development activities, MMU collaborates with leading international companies such as NTT, Alcatel, Fujitsu, IBM, Intel, Microsoft and many more. These companies collaborate with MMU in many ways such as joint R & D , joint venture, scholarships and scholarships .As a result, MMU was awarded the Excellence in Research and Development award at Private Education Nite 2003 by Malaysia's Ministry of Education.

KEY WORDS

Collaboration, Smart Partnerships and Research & development

INTRODUCTION

As the first Government-approved private university in Malaysia, Multimedia University (MMU) has been playing the role of MIT in Route 126 and Stanford University in Silicon Valley, to become the catalyst in Malaysia's Information Communications Technology (ICT) field. Multimedia University was established in 1996 and since then the university has progressed in leaps and bounds by providing quality education in the areas of engineering, telecommunications, multimedia, robotics, information technology, software animation, artificial intelligence, knowledge management and virtual reality. To identify itself as a leader in Malaysia's education

scene, MMU collaborates with over 100 international and local industry players including giants such as Microsoft, Nokia, Intel, Alcatel, NTT, Motorola and Fujitsu. Through this smart partnership between the industry and university, MMU has gained expertise in various fields. Basically, types of collaboration between MMU and can be divided into a few types:

1. Joint Research & Development
2. Contract Research & Development
3. Joint Research
4. Training short courses and
5. Scholarships
6. Endowment Chair
7. Sponsorship

Faculty of Engineering)	Faculty of Information Technology	Faculty of Creative Multimedia
Collaborating Partners <ol style="list-style-type: none"> 1. Lucent Technologies 2. Alcatel 3. Ericsson 4. Intel 5. NTT 6. Fujitsu 7. Motorola 8. National Semiconductor 9. MACRES 10. Nokia 11. Altera 12. Matsushita 13. JICA 14. AIC Microelectronics 15. BHN 16. Global-Tele Education 17. Finisar 18. Schneider Electric Industries 19. 	Collaborating Partners <ol style="list-style-type: none"> 1. Microsoft 2. IBM 3. Cisco Systems 4. Intel 5. Siemens 6. Sun Microsystems 7. Motorola 8. Macromedia 	Collaborating Partners <ol style="list-style-type: none"> 1. Persistence of Vision 2. Motorola University 3. Lensa Film Sdn Bhd 4. Tantalus Asia (Australia) 5. Innovite Corporation 6. Silicon Graphics (USA) 7. Alias Wafefront (Canada) 8. Vista New Media 9. Teknosif Sdn Bhd 10. AOL – Time Warner 11. Fujitsu 12. Sime Darby Systems 13. Telekom Malaysia 14. Transtel 15. Avid Technologies 16. Compaq 17. Double Vision 18. National Electronic Media Institute of South Africa

Table 1.0 MMU collaboration partners

Faculty of Engineering

Since its inception in 1997, Faculty of Engineering (FOE) has been vibrant and dynamic in research work and collaboration with key industry players. The active and extensive research work carried out in the faculty has also resulted in significant output. New knowledge and technology created has been disseminated through papers published in international journals and conferences of high standing, and patents filed. For example, the faculty achieved a publication rate of 0.8 international journal papers per lecturer and secured a total of RM3 million external

research funding for the year 2002/2003. These have been achieved with the support from the government and many companies such as NTT, Intel, Alcatel, Matsushita, Nokia, National Semiconductor, Motorola, and Ericsson. 6 Centres of excellence have been established within the faculty to carry out research, which is inline with the university's aspiration to become a world-class research university. These 6 centres of excellence are:

A) **Centre for Applied Electromagnetics (CAEM)** is established to spearhead research and innovation works in the general areas of applied electromagnetics, covering EM wave propagation, scattering, radiation and effect of electromagnetic waves. The techniques, technologies, systems and devices investigated will form the basis for high-speed digital systems, antennas, radar technology, sensor development and space science applications.

B) **Centre for Photonics Research, Innovation and Applications (CPRIA)** is one of the centres of excellence set up under the Faculty of Engineering to spearhead research and innovation in the broad sphere of photonics technologies. The objective of the centre is to study and develop photonics systems, devices and applications which are critical with the emergence of the information technology era, where multimedia applications such as Video on Demand, Home Banking, World Wide Web, etc. would require demanding performance from the networks

C) **Centre for Multimedia Communications (CMMC)** is set up to consolidate research and innovation in the area of Wireless Communication, Mobile Communication, Multimedia and their Applications. Various coding, encryption and signal processing techniques will also be the areas of investigation.

D) **Centre for Smart Systems and Innovations (CSSI)** is set up to consolidate research and innovation in the general scope of electronics, microprocessor, new devices, image processing, smart systems and their applications. Various coding, encryption and data security techniques will also be areas of investigation.

E) **Centre for Cryptography and Information Security (CCIS)** is set up to consolidate research and innovation in the general scope of encryption and data security techniques.

F) **Centre for Electric Energy and Automation (CEEA)** is set up to focus on research and development in the areas of electric energy and automation and their applications for the benefits of humanities in general and manufacturing industries in particular.

Collaborating companies	Types of Collaboration
1. Lucent Technologies	1. Academic and research collaboration in multimedia studies - Bell Laboratories Visiting Professor Programme at MMU. 2. Joint R&D via the placement of MMU researchers at Bell Laboratories.
2. Alcatel	1. Academic and research collaboration through Alcatel Visiting Staff Programme 2. Setting up of Alcatel Multimedia Laboratory at MMU
3. Ericsson	1. Research Funding Sponsorship 2. Industrial Collaboration 3. Academic and research collaboration on Wireless Bluetooth Technology.

4. Intel	MMU as Intel Focus University 1. Equipment Grant 2. Supply of Technical Literature 3. Graduate Fellowship 4. Research Grants 5. Guest Lectures
5. NTT	1. Assignment of Visiting Professors to support academic activities of MMU. 2. On the Job Research Training for MMU staff at NTT's Laboratories in Japan. 3. Industrial training of MMU final year students. 4. Collaborative Research on IP Networks, Ipv.6 Applications, Tele-education, Community Computing and WDM technologies, Virtual Reality Telecommunication Systems (VRTS), Virtual Education Environment 5. Collaborative research by staff/students with NTT's laboratories in Japan and/or NTT-MSK 6. Scholarship donation through Multimedia Scholarship Foundation (MSF) 7. Seminars, short courses and workshops in selected areas. 8. Sponsoring of MMU annual International Symposium on Information and Communication. 9. Supporting MMU's top management to foster international relations
6. Fujitsu	1. Academic collaboration in multimedia networks, through Fujitsu Visiting Fellows at MMU.
7. Motorola	1. To collaborate research on Image and Video transmission over mobile handsets. 2. To promote and strengthen relationships between MMU and Motorola 3. To enhance R&D engineers' knowledge in DSP.
8. National Semiconductor	1. Professional Skills Development
9. MACRES	1. Research and development collaboration in the area of Microwave Remote Sensing
10. Nokia	1. To provide training to undergraduates and postgraduates on mobile GSM system. 2. To provide a platform for R&D activities in wireless and telecommunication. 3. To provide a platform for the development of Mobile Internet applications 4. To become a training facility in mobile communication systems for working engineers.
11. Altera	1. Sponsorships - research fundings and scholarships. 2. Hardware/software support 3. Industrial trainings 4. Staff trainings
12. Matsushita	1. Research and Development

Table 1.1 Faculty of Engineering (FOE) collaboration partners

Faculty of Information Technology

The faculty is active in research and attracts substantial external grants. There are four Centres of Excellence aimed to assist the faculty in achieving and maintaining a leading edge in research and innovation in IT and multimedia technologies through collaboration with industries and government agencies. The Centres are:

- Centre for Artificial Intelligence and Intelligent Computing
- Centre for Virtual Reality and Computer Graphics
- Centre for Mathematical Modeling and Computational Science
- Centre for Multimedia Computing

Collaboration Partners	Types of Collaboration
1. Microsoft	1. Microsoft Visiting Fellow at FIT 2. Microsoft .NET and Microsoft Software Engineering Lab Internship at Microsoft Malaysia 3. Sponsorship of Microsoft Software 4. Training program for Microsoft Software 5. Microsoft Research Fellowship at Microsoft Research Asia, Beijing 6. Microsoft .NET Academic Grant 7. Microsoft Gold and Silver Medals for best students in software engineering 8. Microsoft technology seminars 9. MSDN Academic Alliance Program -Microsoft .NET Final Year Projects
2. IBM	1. Lotus Professor at FIT 2. IBM-MMU Programming Competition 3. Internship at IBM Malaysia 4. Sponsorship of IBM Software and Hardware 5. Training program for IBM software -IBM technology seminars 6. R&D collaboration with IBM Watson Research Center, USA 7. IBM Award for best final year project 8. IBM Final Year Projects
3. Cisco Systems	1. Cisco Regional Networking Academy 2. Internship at CISCO Malaysia 3. Cisco Technology Seminars 4. Cisco-MMU Convergent IP Technologies Innovation Center 5. Sponsorship of Cisco equipment 6. Cisco Final Year Projects
4. Intel	1. Intel Research Grants 2. Intel technology seminars 3. Internship at Intel Malaysia MMU is one of Intel Malaysia Focus University and Intel IXA Universities
5. Siemens	Siemens We Surpass Development Center 1. Training Program for Siemens Technologies 2. Siemens Final Year Projects

	3. Internship at Siemens Malaysia 4.Siemens Student Exchange Program with Technical University of Munich, Germany
6.Sun Microsystems	1.Sun Java Forte Programming Competition 2.Training Program for SUN Java Forte
7.Motorola	1.Motorola Research Grant 2.Motorola Final Year Project
8.Macromedia	1.Sponsorship of Cold Fusion software 2.Training program for Cold Fusion 3.Internship at Intranesis / RQNet

Table 1.2 Faculty of Information Technology (FIT) collaboration partners

Faculty of Creative Multimedia

Faculty of Creative Multimedia (FCM) aims to be a centre of Creative Excellence in the usage of Digital Media Technology through innovation.. The presence of experts in the respective areas, industrial involvement, video and film shows and academic visits further enrich the learning process in MMU. 3 centres of excellence were established within FCM to enable the faculty to become the premier research and innovation centre for multimedia content development in the world. These centres are namely

- a) **Centre for Interpretation and Expression (CIE)** is established to carry out research and development that focuses on Content Development. This includes Special Project, 3-Dimensional, Sound, Interactive Media and Post-production.
- b) **Centre for Innovative Education (CINE)** focuses on research and development through innovation in teaching and learning multimedia.
- c) **Centre for Virtual Reality and Immersive Technology (CVRIT)** is established to spearhead research and innovation work in the application of these technologies to telecommunication and education.

Collaboration Partner	Type of collaboration
1. Persistence of Vision	Joint Venture 1.Short Form Animation · Episodic short form (5 to 12 minutes) · TV Commercials (15 to 60 seconds) 2.Long Form Animation · Episodic long form for TV series (15 to 25 minutes) · Special long form for TV features (60 to 90 minutes) 3.Special visual effects for film and TV 4.High-end post production for film, TV and TVCs 5.Special format features e.g. Imax, Iwerks and motion simulators 6.Special projects locally or regionally for corporate, educational and other institutional (e.g. architectural, museum) clients 7.Entertainment projects - e.g. Virtual Host
2.Motorola University	Research and development in the area of Knowledge Management A Chair for Knowledge Management funded by Motorola University

	for USD150,000 per annum for 3 years will be established at Cyberjaya Campus.
3.Lensa Film Sdn Bhd	<p>Joint Venture</p> <p>1. To set-up an MSC status company, i.e. Lensa MMU JV Sdn. Bhd. that will be based on a multimedia production set-up</p> <p>Product Achieved</p> <p>1.Post-production of Mann Spider Movie (feature film production, 80 minutes).</p> <p>2.Student's involvement in Westport Commercial Production (30 and 60 seconds TVC).</p> <p>3.Corporate VCD and web design for Telekom Malaysia MSC Division.</p>
4.Innotive Corporation (Korea)	<p>Joint R&D and sponsorship</p> <p>To develop multimedia archive software and content</p>
5.National Electronic Institute of South Africa	Joint R&D, training and short courses

Table 1.3 Faculty of Creative Multimedia (FCM) collaboration partners

The collaboration between industry and university has exposed the students to the latest cutting-edge technologies, thus making MMU students winning many awards in international competition. Visiting lecturers from the industry and research grants sponsored to the university have benefited both parties making MMU students more marketable in the job market. Awards bagged by MMU students can be a testimony that the collaboration between industry and university has shifted the university to greater heights. MMU has bagged Best of Education Applications at 2001 Asia Pacific ICT Award and Best of Smart Learning Applications. Asia Pacific Multimedia Super Corridor Information Technology and Telecommunications Award 2001. T

INTERNATIONAL

2000	Asia Pacific Digital Art Animation Competition and Asian Television Technical & Creative Award (ComGraph)	Singapore	2 Best Animation Video (student category) finalist
2001	International Film and Video Awards Chicago, USA	Chicago	Silver Screen Award(in collaboration with Lensa Films)
2002	Malaysian Video Awards		Malaysia Best show award Best Experimental Video (Amateur) Best Experimental Animation (Amateur)
2002	Thai Short Film & Video International Festival	Thailand	Best International Short Film
2002	APICTA Asia Pacific ICT Awards Malaysia		Merit Award
2002	Asia Pacific Digital Art Animation Competition and Asian Television Technical & Creative Award (ComGraph)	Singapore	Gold Award, Student Category 3 Merit awards
2002	Brisbane International Animation Festival	Australia	Finalist / Screening

2003	26th New York Asian American International Film Festival	New York	Finalist / Screening
2003	Cork Film Festival	Ireland, UK	Finalist / Screening
2004	Siggraph	USA	13 screenings of which 10 are finalist
2004	8th Pulcinella Awards International TV Cartoons Competition	Positano, Italy	Best Program of the Year Best TV Series for Teenagers and Adults(in collaboration with POV)
2004	Asia Pacific Digital Art Animation Competition and Asian Television Technical & Creative Award (ComGraph)	Singapore	Silver Award (Open Category Animation)Bronze Award (Student Category)2 Honorable Mention
2004	Understanding (Interactive Art) Workshop: 2nd Asia-Europe Art Camp	Tokyo, Japan	Workshop

Table 1.4 Award Lists by Faculty of Creative Multimedia (FCM)

CONCLUSION

Multimedia University (MMU) has successfully secured various collaborations with multinational corporate giants namely Microsoft, NTT, Ericsson, Sun Microsystems, Intel and Fujitsu to foster international research network. All these parties have aggressively engaged in projects to prepare a solid foundation not only for generating profits, but also in research and development activities .The benefits of collaboration will not be viewed not only to serve profitable and commercial purposes but in other fields as well.

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