

INTERNATIONAL CONFERENCE
ON SUSTAINABLE INNOVATION
(ICOSI)



proceedings

Sustainable Innovation in Enhancing
Global Competitiveness in Asian Countries



March 19 - 21, 2012

Universitas Muhammadiyah Yogyakarta, Indonesia

Organized by:



UNIVERSITAS MUHAMMADIYAH
YOGYAKARTA

in association with:



INTERNATIONAL ISLAMIC UNIVERSITY
MALAYSIA

TU/e

TECHNISCHE UNIVERSITEIT EINDHOVEN
NETHERLAND



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OF ASIA AND THE PACIFIC

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And

International Islamic University Malaysia (IIUM), Malaysia
Technische University Eindhoven (TU/e), The Netherlands
Association Universities of Asia and The Pasific (AUAP)

Yogyakarta, March, 19th – 21th, 2012

Published by

Board of Educational, Research, and Community Development (LP3M) Muhammadiyah University of Yogyakarta
@ March 2012

KH. Mas Mansur building 2nd floor, Ringroad Selatan, Tamantirto, Kasihan, Bantul –
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MESSAGE FROM THE RECTOR

In response to global changes brought by modern civilization, some countries might have experienced artificial changes from traditional to modern faces by embracing totally new characteristics of western developed countries, while leaving aside their cultural wisdom and other inner or local characters. This is not the one that this particular conference is meant for a sustainable development in all countries of the world, in particular those of Asia. The emergence of Asian countries is deeply influenced by their dynamics in embracing innovation in science and technology from the West without putting aside their heritage and legacy. Nevertheless, enhancing competitiveness of the Asian Countries remains unchallenged, demanding sustainable innovation, a key word, which plays a significant role in contributing to the creation of global harmony in the world. Asian countries are rapidly emerging as a power house of economic growth and political issues. The International Conference on Sustainable Innovation (ICoSI) for Asian Competitiveness is aimed at exploring the idea of how sustainability of innovation development is embedded within global knowledge, interaction, competition, governance and networking of the Asian countries, taking into account their own local and national considerations. ICoSI is an extended form of International Joint Seminar III, following IJS I and II which had been held in UMY and IIUM in November 2006 and December 2009 respectively.

We wish you a pleasant and productive time during the conference.

Rector of Universitas Muhammadiyah Yogyakarta,
M. Dasron Hamid

FOREWORD

On behalf of the Scientific and Organising Committee, I am pleased to extend our warmest welcome to all of delegates to the International Conference on Sustainable Innovation (ICoSI) 2012 combined with 3rd International Joint Seminar. ICoSI 2012 is organized by Universitas Muhammadiyah Yogyakarta (UMY) in collaboration with International Islamic University Malaysia (IIUM) as co-host and Eindhoven University of Technology (TU/e), Netherlands as co-partner. This conference is also officially supported by Association of Universities of Asia and The Pacific (AUAP).

The conference of ICoSI 2012 will discuss the advances and understanding on how sustainable innovation and global competitiveness are embedded within global knowledge, production and governance networks in Asian countries, taking into account local and national considerations. ICoSI 2012 also provides a mean for academicians, researchers, governments and professionals to disseminate and exchange their ideas, reviews and research findings in the scientific environments in terms of innovation and its sustainability. The conference theme of “Sustainable Innovation in Enhancing Global Competitiveness in Asian Countries” reflects the sustainable innovation to face the challenge in global competition and can bring “transformation issues between tradition and modern” to the social and environmental equilibrium in the society. All together the conference will encompass two keynote speeches, 10 special lectures from invited speakers, and 53 papers, from 8 countries including Australia, Philippine, Indonesia, Switzerland, Malaysia, Netherlands, Taiwan R.O.C, United States of America, and participants from Indonesia, Cameroon, Philippines, R.O.C, making this conference a international one.

I would like to express our high appreciation and best gratitude to the Vice President of the Republic of Indonesia, Prof. Dr. Boediono who officiates the opening ceremony of the conference. I would also like to express my sincerest gratitude to keynote speakers, Mr. Jusuf Kalla (Former Vice President of the Republic of Indonesia) and Mr. Hatta Radjasa (Coordinating Minister of Economic), and all invited speakers in ICoSI 2012.

I would like to express my thanks to all authors for their outstanding contributions and in particular the members of the program board for their competent evaluation of the large number of submissions. Likewise I would also like to express my appreciation to the member of international advisory committee and reviewers for their support for this conference and member of scientific and organizing committee for their excellent job in organizing and managing this international event, as well as to the invited chairs for their careful preparation of the invited sessions.

I hope that his conference will generate a lot of discussions and share experiences on the sustainable innovation for recent times. I wish all participants a pleasant and memorable

deliberation and hope that you will greatly benefit from this conference and take home with you a truly intellectual and socially satisfying experience.

Conference Chairman,

Sri Atmaja P. Rosyidi, Ph.D., P.Eng.

PREFACE

All praises be to the Almighty Allah Who has enabled us to organize the first International Conference on Sustainability and Innovation (ICoSI), 19 - 21 March 2012 at *Universitas Muhammadiyah Yogyakarta* (UMY), Indonesia.

We are pleased to inform you that although we have very limited time to prepare this conference, yet we still receive substantial amount of abstracts and full papers. It is perhaps due to the main theme of the conference, namely the *sustainability* and *innovations* which are very attractive never ending, not only for certain branches of knowledge, but almost by all disciplines.

It is indeed the broad topic that might be related to any discipline of knowledge in the human life. The topic has eventually attracted wide ranges of knowledge as indicated by many different titles submitted during the process of submission and review. We are also pleased to inform that papers submitted were coming from local, national or even international contributors.

Due to above condition, we have classified all the papers submitted into four main issues, these include (1) the health related sciences, (2) science and engineering, (3) social sciences and (4) Islamic studies. The health related sciences cover the studies on medicine, dentistry, pharmacy, nursery and nutrition. The science and engineering include the agriculture, environment, mechanical, civil, architecture and so on. While the social sciences cover the accounting, business, economics, law, political science, education and languages; The Islamic studies cover anything related to Islamic issues.

As every one might be aware, a scientific conference is a medium where the scholars present and disseminate their ideas and research findings, and participants will contribute through their criticism and feedbacks, so that the study can be improved and enhanced for the benefits of the society at large. We do hope highly that this objective can be achieved effectively.

Finally, allow me to extend my thanks and sincere appreciation to all parties who have participated in this important occasion. May Allah SWT reward you the best. Amin.

Yogyakarta, 19 March 2012

Dr. Muhammad Akhyar Adnan
Editor in Chief

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SPEEDING UP MODERNIZATION AND INTERNATIONALIZATION (M&I) OF HIGHER EDUCATION INSTITUTION THROUGH (OPEN) INNOVATION

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Abstract

Pressure of competition among Higher Education Institutions (HEI) is nowadays higher than before. Especially in Indonesia, HEI is required to become more competitive. The needs of becoming competitive are driven by the competition and by competitive environment, as well as its contribution to nation competitiveness. Competitiveness in a HEI should cover both academic and non-academic aspects. In term of academic aspects there are three important roles i.e. (1) Education, (2) Research, and (3) Services. While non-academic aspects include: (1) Facilities, (2) Technology, (3) Student service, (4) Funding, (5) Brand image, (6) etc. This paper stresses a strategy to achieve HEI competitiveness by mean of Modernization and Internationalization (M&I). Furthermore, this paper elaborate further ways of speeding up M&I using the concept of (open) innovation. It is expected that this concept can also improve the effectiveness.

Keywords: *Modernization and Internationalization of Higher Education, (Open) Innovation in Higher Education.*

I. Introduction

In the world today, globalization has been exercised and adopted in many fields including but not limited to Higher Education Institution (HEI). There are many different reasons of globalization, but perhaps the similar reason is that globalization gives positive impacts. However, of course, there are also possible negative impacts brought by globalization even it can still be argued. This paper will only focus and discuss on the positive impacts of globalization in HEI. There are many areas of globalization can be explored and exercised by HEI. The major consideration is that HEI can benefit by adopting globalization especially to reduce quality gap in both academic and non-academic aspects. Furthermore, globalization can also improve understanding between HEIs that come from different background. Similarly, globalization can enrich culture due to interaction of HEIs with different cultural background.

Although term of globalization can be defined in many different ways, one thing in common is that globalization includes interaction from different nationalities. Therefore internationalization is embedded in the globalization topic. This paper discusses internationalization of HEI by means of academic and non-academic aspects. Internationalization of HEI involves adaptation to International values and standards. Generally, adaptation to international values and standards require an open mindset of the HEI leader, especially if the adopted norms, values and standards of the HEI are not aligned or even contradict with international norms, values, and standards. One should

remember that internationalization is not replacement of existing norms, values, and standards. It is only about adaptation to general norms, values, and standards to international recognized HEI norms, values, and standards. The adaptation depends on the ability and resources of the HEI itself. For example, syllabus or curriculum as an academic aspect of HEI can be partly adapted to international recognized syllabus for the particular subject. The objective of the adaptation of syllabus or curriculum is to ensure compatibility with international HEI and to enhance the quality of academic aspects. Similarly, the adaptation can also be done also for non-academic aspects.

II. Literature Review

This paper will explore in brief the literature related to (a) Role of HEI, (b) HEI contribution to nation competitiveness, and (3) Open Innovation.

A. General Role of HEI

Generally HEI carries out three important roles i.e. (1) Education, (2) Research, and (3) (community) Services. These three roles are similar with the roles of Indonesia HEI. According to Indonesia Government Rules (PP) No. 60 Year 1999 Article 3 as follows:

- (1) HEI conducts higher education and research as well as community services.
- (2) Higher education is a process in order to produce educated people as referred in Article 3 paragraph (1).
- (3) Research is an activity according to scientific rule in order to find the truth and/or solve problems in science, technology, and/or arts.
- (4) Community service is an activity that uses science in order to contribute for the betterment of society.

These roles are also called "Tri Dharma", indicated that all HEIs in Indonesia must pursue this objective. "Tri Dharma" means that the three elements should be done as a whole, they are not separated. Therefore, all HEIs must carry out Education, Research, and Community service.

B. HEI Contribution to Nation Competitiveness

One method to identify competitiveness of a nation is by its economic situation. The economic situation is also determined by the economy strategy adopted by the nation. There are at least two economy strategies adopted by a nation i.e. (1) product based, and/or (2) knowledge based economy. Nowadays, many nations have shifted their economy from production based to knowledge based economy. The reason of shifting the economy strategy is based on its effectiveness in term of gaining economic value. It is believed that knowledge based economy gives more economic value, more effective and efficient than product based economy. However, this will not work to all economic factors.

Product based economy can be simplified as an economy system that is based on traditional trade of product, goods, and services. While knowledge based economy can be simplified as an economy that is based on trade (direct or indirect) of product, services, or other intellectual outcome. Intellectual outcome is a result of highly competitive thinking ability. The form of intellectual outcome can be products, service, concept, thinking, etc. Therefore, in knowledge based economy, requires solid competence of its people that is developed by (higher) education. This is actually the strategic role of higher education to contribute to nation competitiveness. Logically, high quality HEI will contribute to the better nation competitiveness.

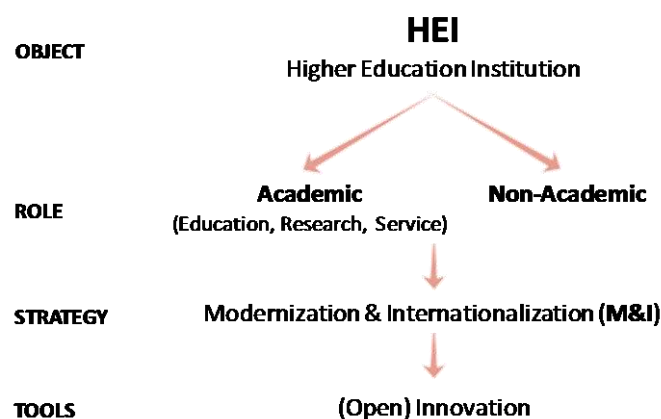
C. (Open) Innovation

Open innovation can be simplified as a method to innovate an organization where the capability is sourced from outside the organization. In this definition, therefore open innovation of HEI is an effort to improve the quality of HEI by the capability sourced from outside the HEI. This effort is done with the objective to speed up the process. Usually, open innovation is done when a HEI has limited internal capabilities while it needs faster improvement. However, there are also possible drawbacks of open innovation in HEI. For example, fast improvement may be difficult to sustain because it is not easy to change the culture in a short period. Furthermore, open innovation may not address to the system inside HEI. If it addresses the system then it may not stable yet. Furthermore, open innovation is also requires strong financial capability.

III. Discussion

3.1. General Discussion

There are two important strategic leadership decisions of those who lead a HEI i.e. (1) unchanged/as-is, or (2) changed/reform. If the policy is taken to change or “reform” of the HEI then the question is what and how to reform?. From leadership point of view, decision to reform can open room of opportunity for further improvement. It is because the principle of leadership is about managing change. In the competitive environment nowadays, HEIs are challenged to reform themselves so that they can become competitive. This paper suggests, especially for Indonesia HEI, to consider reformation of HEI by establishing a Modernization and Inter-nationalization as a strategy. The objective to establish Modernization of HEI is broad, among others is to ensure that HEI can adopt technology that support academic and non-academic activities so that students, lecturer, and HEI personnel can update their knowledge and the working methods more effective and efficient. Furthermore, technology can help accelerate academic excellence by performing academic activities such as (distance) lecture or research, up-to-date reference, access to academic sources from anywhere, etc. While objective of Inter-nationalization is for instance to ensure HEIs can enrich their



norms, values, and standards and even culture as a whole. However, it is important to note that culture is perhaps among difficult aspects to change because of its resistance. In negative aspect, culture can slow down or even become obstacle in the success of M&I strategy. Therefore, cultural aspect in HEI must be carefully managed prior, during, and after M&I implementation.

3.2. Cases Discussion

The Modernization & Internationalization, whether they come together or separately, are actually not a new strategy for HEI especially in developed country. Since the signing of Bologna Process in 1999, HEI in European countries starts to ensure compatibility standards in term of academic and quality among EU HEI. It is expected that the Bologna Process will ensure (1) Academic mobility across Europe, (2) Attract non-EU academicians to study and work in EU, (3) Advance Knowledge Based (Economy) in Europe, (4) etc. In academic aspects, Bologna Process adopts three cycles of academic qualification i.e. bachelor, master, and doctorate. The academic qualification is defined based on European Credit Transfer and Accumulation System (ECTS) credits. Under the Bologna process, in the year 2000 several EU HEIs started collectively a "TUNING" pilot project. The TUNING project, phase-1 in 2000-2002, contributed to the realization of Bologna action lines. Specifically the TUNING project aimed at identifying points of reference for generic and subject-specific competences (Tuning, 2002). The term "competence" was a reference point of curriculum (design and evaluation). However, this project provided not only flexibility and autonomy in the construction of curricula but also a common language for describing what curricula was aiming at (Tuning, 2002). This project continued to the second phase in 2003-2004 with widened participants. The second phase consolidated all findings in the first phase with all stakeholders that include professional associations, employers, quality assurance agencies etc. In short, the TUNING was actually an effort of EU HEIs to Modernize themselves in order to always align with community development. Furthermore, the Bologna process ensures readiness EU HEI roles to support EU countries leading in knowledge based economy and society (Christina Suci et al., 2011).

Modernization was also became a priority for HEI in other country, for example US HEIs innovating themselves in such a way that they can improve quality, productivity, and try to control overall cost as well (Cota, 2011). In his study, Cota (2011), examined that US HEIs were also trying to reduce nonproductive credits because the credits were considered in excess for a particular degree. This study also indicated that modernization was done in particular to aspects on non-physical such as management practices, research, academic credits, academic instruction, services, policy, etc. In overall, HEIs needs to increase productivity and advance the reforms because of the global and international practice of education.

In China, the roles of universities in Chinese National Innovation System (NIS) such as in talent training, scientific research and technology transfer is important. Wang Haiyan and Zhou Yuan (2008) indicated four phases of evolution in HEI system in China. The evolution mainly seeks an effective relationship between government, University, Enterprise, and Research Institution. The reformation has changed the policy from "government ruling" to "government guiding". Nowadays, the HEIs in China are focused on the support of knowledge based society that required more active diffusion of knowledge. Therefore, HEIs has greater support from government to increase the effectiveness. On the other word, the government is the strong supporter of (science and technology) research in China. This is possible because several universities have merged to become comprehensive and effective universities so that the quantity is decreasing while the quality increasing. Reformation was also done to extend some academic and non-academic right of HEI. Similarly, the modernization was also done in Physical aspects of HEI.

IV. Conclusion

M&I is a strategy choice for HEI to accelerate their achievement of competitiveness both in academic and non-academic aspects. In the implementation of M&I there are obstacles that can slowdown and methods that can improve the effectiveness and efficiency. The considered major and important obstacle is about the “culture” inside HEI. Therefore, it must be sure that this cultural aspects must be properly managed before, during, and prior implementation of M&I strategy.

Meanwhile, there are also methods that can be adopted to improve the effectiveness of the M&I strategy. One possible method that can be used is “open innovation”. Open innovation, if properly managed, provides opportunity of improvement with less cost and much faster result. However, to be able to make use of open innovation there must be better information of (global) sourcing and details aspects that will be adopted. Furthermore, it must be clear that (open) innovation should not be done on all aspects of HEI. Especially, for aspects that related to HEI “uniqueness”, it is suggested to handle with internal capability. Otherwise, HEI may lose its character and uniqueness if too many aspects come from outside.

V. References

- Bloom B. S., 1956, *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*, New York: David McKay Co Inc. (1956)
- Bughin *et.al.*, 2008, *The Next Step in Open Innovation*, The McKinsey Quaterly
- The Dakar Framework for Action: *Education for All*, World Edu. Forum, 2000
- Baskoro G., 2011, *Toward Modernization and Internationalization (M&I) of Higher Education Institution*, Jurnal Teknik Industri, Vol. 13, No. 2, Desember 2011, 1-8, ISSN 1411-2485 print / ISSN 2087-7439 online
- Baskoro G., 2011, *Modernisasi Perguruan Tinggi Guna Pemantapan Jati Diri Bangsa Dalam Rangka Pembangunan Nasional, Kertas Karya Perorangan (Taskap)*, Program Pendidikan Reguler Angkatan (PPRA) XLVI/2011, Lembaga Ketahanan Nasional (Lemhannas) RI, Desember 2011.
- Baskoro G., 2009, *Quality Matter for (Indonesia) Private Higher Education Institution*, Journal Teknik Industri, Universitas Kristen Petra, ISSN 1411-2485
- Christina Suci *et. al.*, 2011, *Universities’ Role In Knowledge-Based Economy And Society Implications For Romanian Economics Higher Education*, Amfiteatru Economic Vol. XIII • No. 30
- Cota *et. Al.*, 2011, *Boosting productivity in US higher education*, McKinsey Quaterly.
- Indonesia Government Rules (PP) No. 60 Year 1999 Article 3
- Unesco, *Learning The Treasure Within: education for the 21st century*, 1996
- Wang Haiyan and Zhou Yuan, 2008, *The Evolving Role of Universities in the Chinese National Innovation System*, National Research Center for S&T for Development, Ministry of S&T, PRC.
- -----, 2002, *Tuning Educational Structures In Europe: A pilot project supported by the European Commission in the framework of the Socrates programme.*
- -----, 2006, *An Introduction to Tuning Educational Structures In Europe: Universities’ contribution to the Bologna Processes.*
- -----, 2011, *Innovating US higher education: Arizona State University’s Michael Crow*, Mc.Kinsey Quaterly.