OER ON THE ASIAN MEGA UNIVERSITIES: DEVELOPMENTS, MOTIVES, OPENNESS, AND SUSTAINABILITY

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ABSTRACT

The OER movement originated and integrated into ODE developments. Mega Universities (MUs) are among the most important of ODE providers worldwide should be to be the primary organizations for providing access to OER. So far, however, in-depth studies on OER developments in the Asian MUs were very limited. This study focuses on the developments, motives, openness, and sustainability of OER at the six MUs official websites in Asia. Data were collected for six months using the documentation techniques and analyzed using web content or textual analyze. Results of the study shown, that:

➢ OER developments on the Asian MUs' were an ongoing process, multiyear program, and developed into three characteristics: special projects or initiatives; uploading the existing learning resources collections on the Website; and by taken out-links to the centers of OER websites worldwide. Contents of OER are very rich, diverse in categories, forms, and organized integrally into 'One Stop Window'. The OER materials have developed by university as well as by joined with various parties of internal and external universities.

➢ OER developments are based on three motives: the altruistic motivation of sharing, ego-boost motivation, and combination of both.

➢ The OER openness for use or reuse by others can be classified into five categories: openness in the public domain; openness under provision by any license; openness under guarantee by government Laws, policies, missions or visions; openness under guarantee by universities policies, missions or visions; and openness because it was developed as a special initiative of the universities.

➢ Sustainability models that have been used by MUs to makes OER become viable, and stable for the long-term are institutional, governmental, workflow, user-centered, wiki, and social software models.

Keywords: OER, mega universities, development, motive, openness, sustainability.

INTRODUCTION

The earliest initiatives for creating, sharing and reusing open source, and encouraging and promoting the use of open licenses has conducted by three key initiatives serve as milestones for the open access movement. They are Open Source Initiative (OSI), Open Content Initiative in 1998, and Open Access Initiatives supported by Hewlett Foundation in 2001 when the Hewlett and the Andrew W. Mellon foundations jointly funded MIT OpenCourseWare (OCW), the first institution committed to making all of its course materials freely available. Since then, OpenCourseWare has launched on the Web sites by institutions or universities worldwide.

In 2002, Creative Commons (CC) was first released of a set of copyright licenses for public use (Yuan, MacNeill, & Kraan, 2008; Baker, 2008). UNESCO was first introduced and promoted the term open educational resources (OER) at a conference they hosted in 2000 in the context of providing free access to educational resources on a global scale (Yuan, et al., 2008). OER has defined as any digitizes educational resources that are openly and freely available for educators, students and self-learners to use and reuse for teaching, learning and research, without an accompanying need to ask permission, pay royalties or license fees (OECD, 2007; Kanwar & Uvalic´-Trumbic, 2011).

OER is best known as an open movement and built on the general foundation that "the world's knowledge is a public good and should be disseminated and freely accessible" (Taylor, 2007; Pena, 2009). The OER movement originated from and integrated into ODE developments, and in the wider context of a culture of open knowledge, open source, free sharing and peer collaboration, which was emerged in the late 20th century (Wikipedia, 2012a). So that, MUs—largest universities by enrollment students—are among the most important providers of ODE worldwide that should be the primary organizations for providing OER as one of their advanced eternal vectors triangle, namely "*access vector*" (Daniel, 1995; 1998; 2003). Access vector in this paper is not only limited to the ability of MUs for providing people access to education, but more important is access to educational materials. Without the support of educational materials a broad, people access to education at DE is the problematic. Providing access to instructional content is one of crucial factor at DE system to assist, bridge, reduce or even eliminate to overcome the student communication barriers of location, time, and most recently pace (Berge & Collins, 1995; Churton, 2000; Peters, 2003); and to open new channels of learner support and two-way communication (Zawacki-Richter, 2009; Willems, 2005). According to Wikipedia (2012b), there were 10 of the 51 MUs of the world are in the Asia region with a total of 8.5 millions (40.6%) students enrolled. So that, for MUs the existence of OER is the most important to expand student access to the sources and the frontiers of knowledge in changing Asian societies, and eliminate the boundaries of demographic, educational geography. Economically, it is also able to serve an equitable and accessible alternative to the rising costs (Murphy, Zhang & Perris, 2003; Ghosh & Das, 2006), increased commercialization and privatization of education (Ishii & Lutterbeck, 2001; Petrides, Nguyen, Jimes, & Karaglani, 2008). Growth of public access to internet in Asia has also very fast. According to Internet World Stats, per December 2011 number of internet users in Asia is about 44.8% with growing the penetration rate is 26.2% (http://www.internetworldstats.com/stats.htm).

Since early 2000s, initiatives to develop OER have been conducted individually by some MUs in Asia like AU-Turkey, OUC-China, IGNOU-India, UT, Indonesia, STOU-Thailand, and SHTVU-China as well as through building collaboration and partnership networks between MUs' with local universities or international consortiums/centers. For examples, the China Open Resources for Education (CORE) was established in 2003, which is inspired by the increasing internationalization of education and encouraging trends in educational resource sharing and to promote the development of open education initiatives in China; and the Pan Asia Networking Distance and Open Resource Access network (*PANdora*) was established in 2005, is cooperative program initiatives supported by the International Development Research Centre (IDRC) of Canada to promote closer interaction and open sharing of educational resources between ODE providers, especially among MUs. So far, however, in-depth studies on OER developments at MUs in Asia were very limited (Ghosh & Das, 2006; Safitri & Sukmayadi, 2011; Håklev, 2010; Abeywardena & Dhanarajan, 2012).

Along with current trends, issues and challenges have been faced DE around the worlds, this study focuses on the developments, motives, openness, and sustainability of OER on MUs' websites in the Asian region.

Development aspects were focused on content and form characteristics (OECD, 2007, Wikipedia, 2012a); development periods; collaboration or partnership, parties involved in OER developments; and the methods adopted for the creation of OERs (Downes, 2006; Yuan et al., 2008; Stacey, 2011; Kanwar, 2011).

Motives aspect are focused on the issues "*motives for anyone or institution to give away anything for free*", and "*the possible gains in doing that*" (Hylén, 2005; OECD, 2007; Yuan et al., 2008). *Openness* is related to four categories: transformative production, direct use, reuse, and transparency/consultation (Caulfield, 2009; Håklev, 2010).

This study is only focused on openness as reuse, "*when materials have to be reformatted, has different goals*" which is related to "*the level of open access of OER*" according to the guarantes, legal frameworks or licenses that used by the university, so anyone may reuse resources openly or freely without an accompanying need to ask permissions, pay royalties or license fees (Wiley, 2007; Atkins, Brown & Hammond, 2007; Kanwar & Uvalic´-Trumbic, 2011; Swan, 2012). *Sustainability* aspects were focused on the issues on the long-term viability and stability of OER (Dholakia, King, & Baraniuk, 2006; Downes, 2006; Atkins et al., 2007), or ways to continue, sustain the production, sharing, use and reuse of OER by end users (Wiley, 2007).This study expected can obtain a figure on MUs readiness to realize Daniel's (2011) idea for transforming ODE providers in Asia into 'the Open Education Resource University (OERU) that allows anyone "*find that good quality OER for all the topics they require is already on the web – they simply adapt them to their precise needs*" (p. 10). Moreover, MUs in Asia as developing countries region were set up with a specific mandate to address the needs of poor learner, and many of these still relied on traditional distance teaching methodology (Cortoos & Reynolds, 2009).

METHODS

The study has conducted to the six of ten MUs' official websites in the Asia, that are Anadolu University (AU-Turkey), Open University of China (OUC-China), Indira Gandhi National Open University (IGNOU-India), Universitas Terbuka (UT, Indonesia), Sukhothai Thammathirat Open University (STOU-Thailand), and Shanghai TV University (SHTVU-China) (Daniel, 1995, 1998, 2003; Jung, 2007). They choose as sample because their policies and high commitments in developing the DE system; the advanced technologies that used as the key element in MUs' work; and OER that available on their websites are very interesting to be studied.*Data was* consists of all OER contents *on the MUs' official websites* (UNESCO, 2006; Wikipedia, 2012a; Habler, 2009; Ortega, & Aguillo, 2009; Aguillo, Bar-Ilan, Levene & Ortega, 2010) that *collected* between December 2011 and May 2012 using documentation techniques. Data then analyzed using web' content analysis or textual analysis (Jones, 2009a) and focused on the OER developments, motives, openness, and sustainability. Analyze was conducted through:

> - c*ontent inventories* uses model adopted and modified from Veen (2002);
> - *webs' contents quality analysis* uses model adopted and modified from Leise (2007; Jones, 2009b); and
> - *descriptions* of all *contents* of six MUs' websites.

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Motives aspect were focused on the issues "*motives for anyone or institution to give away anything for free*", and "*the possible gains in doing that*" (Hylén, 2005; OECD, 2007; Yuan et al., 2008).

Openness aspects were focused on openness as reuse which is related to "*the level of open access of OER*" according to the guarantees, legal frameworks or licenses they used (Wiley, 2007; Atkins, Brown & Hammond, 2007; Kanwar & Uvalic´-Trumbic, 2011; Swan, 2012). The other aspects of openness in relation with transformative production, direct use, and transparency/consultation (Caulfield, 2009; Håklev, 2010) do not be studied.

Sustainability aspects were focused on the sustainability model they used for long-term OER viability and stability (Dholakia, King, & Baraniuk, 2006; Downes, 2006; Atkins et al., 2007), or ways to continue, sustain the production, sharing, use and reuse of OER by end users (Wiley, 2007).

RESULTS

OER Developments
OER Characteristics: OER developments on the MUs' Websites were combination of three characteristics as follows:

> ➢ *Learning resources were developed as OER projects or initiatives of MUs*, such as in UT-OER (OpenCourseWare, Internet TV/ITV, Dry Lab, and Online Smart Teacher/OST); AU-*Yunus Emre/*the New Age Learning portal, IGNOU-Online Journal, *eGyanKosh*, *Sakshat*, FlexiLearn, Educational Broadcast, and Virtual Class); STOU e-Library; OUC-MyEChinese, and E-Campus for free online mandarin courses materials.
> ➢ *Uploading and opening of the existing learning resource collections* on to the Website as OER (learning materials, research reports, seminar proceedings, journals, etc.). Includes of these characteristics are learning resources collection in UT-Digital Library, UT-virtual reading space, STOU-Online, OUC-CNKI/China National Knowledge Infrastructure, and SHTVU-OERJ (Open Education Research Journal).
> ➢ *Learning resources taken by out-links to the centers of OER worldwide websites* and digital journal and/or book library portals at large (provinces, national, and the worldwide). For examples are learning resources in UT-OST and Digital Library portals have provided out-links to the Curriki, TeacherTube, Khan Academy, ICT Portal for Teacher, Edutube websites, or PANdora. IGNOU has provided out-links to IGNOU's e-Resource of Experts, etc.

Development Periods
OER in all MUs has developed as an ongoing process, multiyear program, and organized integrally in '*One Stop Window*', one stop collection of OER. It was contained several OER portals that may users enable to find all learning materials they need easily. STOU-OER is available at the STOU Online Portal and developed in 2002.

AU-OER is available at *Yunus Emre, Yeni Nesil Öğrenme Portali* (the New Age Learning Portal) which has been developed in 2008 under a Creative Commons License. UT-OER is available at the six portals:

ITV, *Guru Pintar Online*, Journals, UT-OpenCourseWare, Digital Library, and Learning Object Material. It were developed since 2001.

IGNOU-OER is available at the IGNOU Online Portal, "*one stop window*" which has developed since 2008-2010. SHTVU-OER is available at the SHTVU Teaching Portal; OUC-OER is available at the OUC Open Library Portal which has been developed in 2010. The OUC-OER large-scale project is the CNKI (China National Knowledge Infrastructure /*Tsinghua Tongfang*) Series Databases as a key national e-publishing project of China.

Contents of OER

The contents of OER on MUs' websites are very rich and diverse in categories and forms, include of various learning materials such as courses, course materials, content modules, learning objects, collections, journals, or implementation resources. It also contains a set of tools or software that supports the creation, delivery, use and reuse, improvement, searching and organization of learning content, and support collaborative learning communities.

OER has developed in an integrated multimedia format as texts (doc, pdf, html/xhtml), slides, pictures, audio-video streams (flv, xms, wmv), flash (swf), sounds (MP3, 3GP, and MP4), graphics, application software, and animations. The contents of OER are not all produced by any university, but also contains resources derived from centers of OER websites from all over the world such as MIT OpenCourseWare, UK Open Learn, OpenCourseWare Consortium, Utah State OpenCourseWare, China National Knowledge Infrastructure (CNKI), SpringerLink eBooks, etc.

Resources or tools that available on MUs' websites do not just can be seen on the Net, but it can be accessed, used and re-used by users freely and openly. In order to display and take the OER materials, users need to be registered or create account is free. Users should also refer to the University or writer(s) for all materials they taken, used, or re-used.

Partnership in OER developments

The established cooperation or partnership for OER developments has become important and crucial aspect for MUs in Asia. The OER developments on MUs' websites are not fully as individual projects of each university, but also joined with various institutions, organizations, and universities.

Coperation or partnership among of them has conducted in various activities such as research, development and sharing of course materials, the use of ICT in education, quality assurance benchmarking, and/or making a platform of information and experience exchange among staff. MUs have also built partnerships with the national governments, telecommunication providers, corporations, RTV-Broadcasts, resource centers, colleges or universities abroad on issues of OER.

The most important event for building coperation or partnership among MUs for developing of OER is the Global Network of Mega Universities (GMU-Net) which was established in 2004.

At the Second World Summit, September 2005 in Deli (India), Participants mentioned that the most important issue of modern distance education is joint utilization of academic resources taking into account limitations set by existing laws on rights to intellectual property and regulations for usage of open resources. The GMU-Net has become the platform among MUs for information and experience exchange on issues of joint utilization of resources and strategy of innovation development of open distance education (http://www.eng.muh.ru/zarubezh_uc.htm).

Parties Involved

The development of OER in MUs' official websites has involved some parties of internal and external universities from planning to publication process. Planning, designing, production, post-production, and publication processes are generally conducted by the internal university with involved parties such as the trained and skilled in-house academic staff in the faculties, study programmes, the production centers or units, the library units, the computer centers or the RTV-studios.

The development processes are generally conducted with employed learning external experts such as experienced lecturers and teachers, instructional designers, editors, developers, animators, students from various departments, or freelance filmmakers.

MOTIVES OF OER DEVELOPMENTS

Motives in OER developments can be classified into three arguments that are: the altruistic motivation of sharing; the ego-boost motivation; and combination of two motives.

The Altruistic Motivation of Sharing

This motivation is supported by fundamental philosophy of education and traditional academic values that "*the world's knowledge is a public...and OER are the parts of that knowledge that comprise the fundamental components of education—content and tools for teaching, learning, and research*" (Atkins et al., 2007: 5).

"*Sharing knowledge is a good thing to do and also along with academic traditions*" (Hylén, 2005:5) to speed up the development of new learning resources, and stimulate internal improvement. This motive pointed out by the OA movement that openness is the breath of life for education and research.

Hylén (2005) further argued that, "*if universities do not support the open sharing of research results and educational materials, traditional academic values will be increasingly marginalized by market forces*" (p.5).

For examples, the development of OER at UT is a part of missions and goals for "*making the digital library access open to all*". For the AU, the development of OER in the *Yunus Emre* is a part of missions and goals to be "*the richest pool of learning resources*". For the STOU, the development of OER is a part of missions and goals to be '*open source university*' and building '*The Education Center*' as stated in *the Meetings Act 2521 Section 5,* and *Regulation of the President of STOU* on the Use of the Library – Act 2544. For the IGNOU, OER development was a part of the national missions and efforts to create "*an open house for knowledge all Indian peoples*" through ICT (MHRD, 2009; Moudgalya, 2009).

The Ego-Boost Motivation

This motivation based on motives to grow competitive advantage for the universities, gaining publicity or reputation within the open community; so can reaching the market more quickly, gaining the first-mover advantage; and as a show-window attracting new students. These arguments have shown at SHTVU's missions and goals to be the "*think tanker for principals, teaching assistant for teachers and helpful tool for students*", by fully utilizing Shanghai's advantages in educational resources and talents, in the spirit of deepening reform of educational system and teaching approach and enhancing the quality of educational services. For OUC, OER development is realizing their visions and goals to be a "*key national e-publishing project of China and a symbol of Chinese e-publishing industry, which greatly boosted the Chinese library systems to go digital and helped researchers with their work*".

Combination o Two Motives

Has shown on the development of OER in OUC. The development of OUC-OER is a part of missions and goals to be "*China's first-class center*" for materials on distance education, "*a foreign language modern distance education center*" (*ego-boost motivation*) also to realize "*Confucius's education without discrimination*" (*altruistic motivation of sharing*).

OER Openness as Reuse

The openness in term of "*reuse*" is closely related to the legal frameworks, licenses or guarantees that used by the MUs, so anyone may reuse resources openly or freely without an accompanying need to ask permissions, pay royalties or license fees. OER openness as reuse on MUs' websites can be classified into five categories according to the level of legal frameworks, licenses or guarantees that used.

Learning Resources

In the public domain which allow users to use or reuse for any purpose openly/freely without restriction under copyright laws. It is can be found in all MUs' websites, and consist of: general information, *comments, news reporting, or* teaching *guidelines,* facts, numbers, university catalogues, management policies, ideas, tools or software that supports the creation, delivery, use and reuse learning content.

Learning resources under provision by any license (e.g. creative commons licenses)

In this case, the MUs have been used some set of copyright licenses for public use as follows. AU Yunus Emre or New Age Learning has used CC BY-NC-SA 2.0 license. UT ICDE 2011 Online Proceedings, STOU e-Library, IGNO DEP-SSA Wiki, and IGNOU online journals (Indian Journal of Open Learning) has used CC BY-NC-ND 3.0 license. IGNOU Community Forums have used Media Wiki Commons under Creative Commons - the GNU General Public License (GPL).

Learning Resources Released Under Guarantee
Of Free Public Use By Government Laws, Policies, Missions Or Visions

In Chinese (OUC and SHTVU) OER was guaranteed by Chinese Constitution, Copyright Laws and Education Law (Cheifet, 2011). In Indonesia (UT), it was guaranteed by Copyright Laws No. 19/2002. OER in IGNOU-Online, especially in English version such as in the *Sakshat*, Education Broadcast, FlexiLearn, Virtual Class, and *eGyanKosh* is guaranteed by the national mission of the MHRD of India (2009; Moudgalya, 2009) in relation with the national efforts to create an open house for knowledge through ICT.

"Open access should be the key philosophy" (p.67), so that, "*[b] all the services available through the content delivery portal Sakshat should be free, and [c] freely available material on the web should be used so as to avoid reinventing the wheel*" (pp. 9-10).

Learning Resources Developed As Universities' OER Projects o Special Initiatives

These resources are protected by copy rights under the university and without provision by any license. It was can be found in UT-OER (ITV, OST, OpenCourseWare); SHTVU-Open Education Research Journal; OUC-CNKI; OUC-MyEChinese and E-Campus.

Learning Resources Under Guarantee For Free Public Use
By Universities Policies, Missions o Visions

These resources can be found in UT-Digital Library (e.g. *BMP*-Virtual, Journals, research reports, theses, dissertation) are based on the university policy for "*making library access open to all*". Resources in the STOU-Online (e-Learning, TV-Online, Radio-Online, Media on Demand, m-Learning, e-Tutorial, Learning Object Module, and e-Training) were openness for reused according to the "*Regulation of President of IGNOU on the Use of the Library-ct 2544*".

OER Sustainability

One common and critical issue on OER at the present time is sustainability, which is defined as the long-term viability and stability of the OER program in relation with "*the scarce financial resources available*" (Dholakia, King, & Baraniuk, 2006; Downes, 2006; Wiley, 2007; Atkins et al., 2007). For many of the OER projects worldwide, the external funding is may be crucial in OER development and sustainability for the future as "*...but sustainability is about incentives generally, not financial resources specifically...money is not the only incentive sufficient to engage users in open educational resource projects*" (Wiley, 2007: 5, 7-8). Based on Wiley's "sustainability model" for OER, this study explores sustainability models which have been used by MUs in Asia to makes their web-based OER become viable, and stable for the long-term.

Institutional Model

Which assumes that the universities are solely responsible for its development. This model was consists of two aspects, namely funding, and human resource management (professional staff and faculty members) (Yuan, et al., 2008; Atkins, et al., 2007; Wiley, 2007). For the aspect of funding, this model has been used by UT (OST, OCW, ITV, Digital Library, and BMP-Virtual), and for the aspect of human resource management has been used by all MUs.

Governmental Model

*B*y funding is directly come from government Agencies (Yuan, et al., 2008; Wiley, 2007). This model has been used by IGNOU (*Sakshat*, Education Broadcast, FlexiLearn, Virtual Class, and *eGyanKosh*) by funded and Grant-in-aid from the MHRD of India (MHRD, 2009; Moudgalya, 2009). OER in AU, STOU, SHTVU, and OUC's Websites have also used this model supported by the governments with allocate a large amount of the budget (Prudtikul, 1998; Ozkul, 2001; Håklev, 2010). The most impressive of this model is the CNKI project—a key national project of China to knowledge sharing throughout China and the world—which approved by the Press and Publications Administration of PRC and backed by Tsinghua University. OER in OUC-MyEChinese and E-Campus portal approved by the State Information Office and the Ministry of Education under textbooks construction projects and backed by the OUC.

Workflow Model

Which the university provides support to others interested in developing web-based learning resources; guides users in uploading or publishing materials process into the Website; controlling to quality and scrubbing the content clean of intellectual property (IP) infringements (Atkins, et al., 2007). This model has used by IGNOU Broadcast Archive to develop and sustain of Audio/Video Broadcast Archive—*Kanal egyankosh* on YouTube, and uploading or publishing materials process into the Website based on Terms of Service specified by YouTube policy.

User-Centered Model

Through building and engaging the users/members community registered (Yuan, et al., 2008). This model has used by IGNOU for the Indian Journal of Open Learning (IJOL), *India* and *Pan African e-Network* sub-communities; Education Broadcast (*Gyandarshan I & II, and Gyanvaani*); and IGNOU e-Resource of Experts. This model has also used in ITV-UT portal through involving students, faculty members, or every one who interested to upload materials on the Web.

Wiki-Model

By engaging voluntary users to create contents. This model has used by IGNOU for developing *DEP-SSA* (The Distance Education Programme-*Sarva Shiksha Abhiyan*) *Wiki* portal for all IGNOU Schools/Divisions/Centers; and for *eGyanKoshWiki* as a collaborative platform for curriculum based e-content generator and dissemination are welcome for teachers, students, researchers, NGO's and all those involved in education field. This model has also used by all MUs' for building learning community portals.

Social Software Model

By capturing and structuring user commentaries on the material (Atkins, et al., 2007:25). This model has used by IGNOU *EGyanKosh Blog* and UT-OST in which may anyone can entries their commentaries regularly to materials or contents within.

DISCUSSIONS

Discussion will be focused on three important and crucial aspects in developing of OER on mega universities' websites that are:

> ➤ visions and goals on the OER development;
> ➤ sustainability of OER; and
> ➤ cooperation in OER development.

Visions and Goals on the OER Development

Based on the OECD's theoretical framework (2007; cf. Yuan, et al., 2008; Hylén, 2005) on five motives for institution individually to become engaged in OER developments, can be concluded that the development of OER on mega universities' websites based on three arguments that are: the altruistic motivation of sharing; the ego-boost motivation; and combination of two motives.

The Altruistic Motivation Of Sharing

This motivation is supported by traditional academic values. Sharing knowledge is a good thing to do and also along with academic traditions, to speed up the development of new learning resources, and stimulate internal improvement.

This motive pointed out by the OA movement that openness is the breath of life for education and research. Hylén (2005) argued that, "*if universities do not support the open sharing of research results and educational materials, traditional academic values will be increasingly marginalized by market forces*" (p.5). This argument has shown at UT, AU, and STOU's visions and goals. For the UT, the development of OER as part of mission for making the Digital Library Portal *access open to all* for improving and expanding access to information and learning resources openly and freely. For the AU, the development of OER as a part of their mission to become the *Yunus Emre* or New Age Learning Portal as the richest pool of learning resources which allows anyone who want to learn, study, lectures, and self development can benefit from those courses freely and openly. For the STOU, the development of OER as a part of their mission and goal to be '*open source university*' and building '*The Education Center*', a regional organization serving libraries in the network (as stated in *the Meetings Act 2521 Section 5,* and [Regulation of the President of IGNOU *on the Use of the Library*](#) – Act 2544).

The Ego-Boost Motivation

This motivation based on motives to grow competitive advantage for the universities, gaining publicity or reputation within the open community; so can reaching the market more quickly, gaining the first-mover advantage; and as a show-window attracting new students. This argument has shown at SHTVU and OUC's visions and goals. The ego-boost motivation at SHTVU can be seen in their mission and goal to be the "*think tanker for principals, teaching assistant for teachers and helpful tool for students*", by fully utilizing Shanghai's advantages in educational resources and talents, in the spirit of deepening reform of educational system and teaching approach and enhancing the quality of educational services. The China National Knowledge Infrastructure (CNKI) as a "key national e-publishing project of China and a symbol of Chinese e-publishing industry, which greatly boosted the Chinese library systems to go digital and helped researchers with their work" ([www.global.cnki.net/grid20/Aboutcnki/ Introduction.htm](http://www.global.cnki.net/grid20/Aboutcnki/Introduction.htm)).

For IGNOU, the development of OER as a part of their mission and goal for strengthening the development of the National Resource Centre as a proactive role model for high-quality and learner-centric open and distance learning system.

Combination of two motives shown on the development of OER in OUC, that the development of OER beside as a part of their mission and goal to be *China's first-class center* for materials on distance education, also to realize Confucius's "*education without discrimination*".

Sustainability of OER

Whatever motive of mega universities to become engaged in developing OER, the study shown, that they have a clear visions and goals to develop a wide range of OER for years and for these worthy of respect. The contents of OER on their websites are very rich and diverse in categories and forms. It provides not only learning materials as courses, course materials, content modules, learning objects, collections, or implementation resources, but also provides a set of tools or software that supports the creation, delivery, use and reuse, improvement, searching and organization of learning content, and support collaborative learning communities. So the study was not fully justified to *the* Frits Pannekoek's *opinion* "*that open educational resources (OER) is limited because the governments and universities are not consider it important*" (Kompas.com, October 5, 2011).

Although the government supports in term of funding are important, but for mega universities as UT and STOU, it does not have much effect. In UT and STOU, OER contents are uploading of learning resources that exist and have been used to student learning process. Except in the AU, OUC, SHTVU, and IGNOU websites, the development of OER is a special project or initiative of the universities. Relating to this, the major source of income of UT, AU, and IGNOU are generated internally, and so far can be analyzed on their websites, the government supports in term of funding does not have much effect to their motives for development and sustainability of OER. Otherwise, at the STOU, SHTVU, and OUC, the governments have allocated a large amount of the budget to supports of universities, and their web-based OER has also developed and sustained (Ozkul, 2001; Håklev, 2010).

In the case on mega universities studied, the role of government is more attention on preparing the ICT infrastucture to expand public accessibility to web-based resources, as supporting to build the Ministry of National Education's Intranet system (INHERENT) in the case of UT (Baggaley, Belawati, & Malik, 2007). In the STOU, for other example, government allocated a budget to expand their ODI's library automation system so able to link, serve and provide more effective and efficient library services to various STOU systems, and the national and international institutions of higher learning (Prudtikul, 1998, p. 4).

For many of the open educational resource projects worlwide, the external funding is may be crusial for development and sustainability of OER for the future, in terms of production, sharing, and the use and reuse of OER. The external funding as "*a concern naturally arises about the future of the university-based open educational resource projects*" (Wiley, 2007, p. 5). But I think, a clear vision and goal, strong motive and commitment are also important factors for development and sustainability of OER, beside need a redefinition of the meaning of sustainability. Wiley (2007) suggested that "*sustainability is about incentives generally, not financial resources specifically*" (p. 7). Giving more attention on understanding what its user community wants or on improving the OER's value for various user communities may more important than too much attention on the "product" (Dholakia, King, & Baraniuk, 2006).

In other words, "*unless the OER site is able to first gain and maintain a critical mass of active, engaged users, and provide substantial and differentiated value to them in its start-up and growth phases, then none of the available and/or chosen revenue models will be likely to work for the OER in the long run.*" (p. 24-25). So, "*money is not the only incentive sufficient to engage users in open educational resource projects*". (Wiley, 2007, p. 8). In relation with model, Atkins, Brown and Hammond (2007) have been summarized six additional approaches to develop and sustain of OER, and three of them are appropriate for developing countries that are:

> ➢ explore roles for students in creating, enhancing, and adopting OER,
> ➢ consider a voluntary (or mix of voluntary and paid) wiki-like model, and
> ➢ examine ways that social software can be used to capture and structure user commentaries on the material.

These approaches used to IGNOU *e*GyanKoshWiki and Video Archive (YouTube), ITV-UT, and all learning community portals and software on mega universities' websites.

Partnerships in Developing OER

The study results shown, that the established cooperation with others for developing of OER has become important and crucial aspect for mega universities. The OER development processes in all mega universities are not only developed within individual universities but also involved some parties of internal and external universities since the planning up to publication stages. They have been also building and encouraging inter-university cooperation through regional and international.Collaboration and partnerships in terms of their purpose, content, and funding at national, regional or international level are a key aspect in developing of OER. So far, cooperation in term of funding is a common phenomenon and is one the key drivers and enabler for the OER well-known projects worldwide such as MIT OpenCourseWare, UK OpenLearn, USU OpenCourseWare, RU Connexions, CMU Open Learning, CSU MERLOT to produces and shares resources sustainable (Downes, 2006; Yuan, MacNeill, & Kraan, 2008; Stacey, 2011). Even, Kanwar (2011) emphasis, that the stakeholder—cooperation and partnerships—rather than on technology and on process rather than product in the OER movement can help DE institutions for transforming education and enabling to harness the wealth of tacit knowledge across the globe to address the great development challenges of our time. Because the *network-making power* operates on the basis of two mechanisms:

> ➢ the ability to constitute, program and reprogram networks and
> ➢ the ability to connect and ensure cooperation (Castells, 2009).

Furthermore, Castells (2009) suggested:

> *....there is a fundamental form of exercising power that is common to all networks; exclusion from the network....However, because the key, strategic networks are global, there is one form of exclusion—thus, of power—that is pervasive...: to include everything valuable in the global while excluding the devalued local (p.50).*

Based on the arguments, collaboration and partnerships for mega universities in the Asia regions become very important caused some factors such as lack of training opportunities for new and practicing professionals constitutes, inequalities of institutions from the resource-poor communities have had a limited role in the OER movement, or to gain engineering and technology infrastucture support to expand access to OER widely. Therefore, mega universities have been building collaboration and partnership networks with a number of regional and international organizations as follows:

> ➢ the *South-East Asian Ministers of Education Organization* (SEAMEO) and *Regional Open Learning Center* (SEAMOLEC) in 1965 to promote cooperation in education, science and culture in the Southeast Asian region
> ➢ the *Asian Association of Open Universities* (AAOU) in 1987 to widen the educational opportunities available to all the people of the region and to improve the cost of member institutions by exchanging management information, teaching materials and research.
> ➢ the *UniTwin* (University Twinning and Networking Programme) in 1992 to advance research, training and programme development in all of UNESCO's fields of competence by building university networks and encouraging inter-university cooperation through the transfer of knowledge across borders.

- the *Greater Mekong Sub-region Virtual University* (GMS-VU) in 2001 under the initiative of UNESCO Project in collaboration with STOU and SEAMEO Regional Centre for Higher Education and Development (RIHED) to establish a Virtual University to offer distance learning programmes, preferably on-line courses using advanced ICT, to students in all the six countries in the Greater Mekong Sub-region.
- the *Global Mega-University Network* (GMU-Net) in 2003 to promotes intellectual cooperation through twining and other linking arrangements among institutions of higher learning and academics throughout the world to permit access, knowledge sharing within and across borders.
- the *China Open Resources for Education* (CORE) in 2003 to coordinate use of open courseware from MIT and other universities within China; enhance the quality of education in China; and offer Chinese open courseware for sharing globally.
- the *PAN Asia Networking Distance and Open Resources Access* (PANdora), in 2005 supported by the International Development Research Centre (IDRC) to develop practices and policies enhancing the use of distance learning technologies (DLT) in Asia.

CONCLUSIONS

The OER developments on MUs' websites are a multiyear program and an ongoing process of special projects or initiatives of universities, also are uploading printed or non-printed learning resources of the existed university collections on to their Website. Contents of OER are very rich and diverse in categories and forms, and organized integrally into '*One Stop Window*'. The OER developments are not fully handled by university alone but also joined with various institutions, organizations, and universities.The development processes have also involved some parties of internal and external universities, from planning to publication stages. Engaging of MUs in OER developments are based on three motives: the altruistic motivation of sharing, ego-boost motivation, and combination of both. Openness for reuse of learning resources on MUs' websites is closely related to the legal frameworks, guarantees or licenses they used. This study has been identified four levels of openness that are: in the public domain; under provision by license; under guarantee by government Laws, policies, missions or visions; and openness under guarantee by universities policies, missions or visions. To makes OER become sustainable, viable and stable for the long-term, MUs have been used some revenue models according to the university characteristics and policies such as institutional, governmental, workflow, user-centered, wiki, and social software model.

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