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<td>Author(s)</td>
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CREATING A VIRTUAL UNIVERSITY:
A Practical Guide for Southeast Asia
By Andrea L. Johnson

INTRODUCTION

The use of information technology (IT) has been embraced by most governments of the world as essential to their economic survival and competitiveness. The governments of the Association of Southeast Asian Nations (ASEAN) in particular, have been among the most aggressive players in developing the infrastructure and attracting foreign investment resources to achieve the goal of becoming industrialized during the next millennium. To that end, ASEAN has several joint projects to develop interconnectivity in telecommunications. Thailand, for example, has decided to ease their foreign ownership restrictions in telecommunications to encourage U.S. firms to invest in their country. Malaysia has a Vision 2020 which proposes building a 300-mile test bed called, the Multimedia Super Corridor (MSC) to encourage innovations in information technology. Vietnam, while restricting foreign management, has a master IT plan that encourages interconnectivity of some local information networks with international networks.

Training and educating a labor force to maintain and exploit this infrastructure is viewed by ASEAN as indispensable to their self-sufficiency. The Malaysian government, for example, estimates that it will need a labor force of 37,500 new skilled and semi-skilled persons to service the MSC. Moreover, Singapore has a plan to promote foreign direct investment by focusing on skill-intensive and technology-intensive enterprises that are export-oriented and that can widen the skill base of the labor force.

Foreign exchange programs have traditionally been used to provide students with needed training. ASEAN has strategic joint initiatives with the United States to train people in math, science, business, and technology. In addition, many governments of ASEAN have pursued what may be called, “the Sovereignty at Bay perspective” where, through voluntary cooperation among neighboring states, needed capital, technology and managerial know-how is transferred to lesser developed countries by foreign multinational corporations.

This commitment to development is not without concern, however, that the consequence of foreign investment and student exchange will be a dilution of traditional cultural and religious values, which are equally important. Designing a virtual university may be an effective solution: providing access to much needed educational resources, while preserving the cultural integrity of the country. A virtual university makes a broader range of learning opportunities more accessible to citizens through information technology by eliminating the barriers of time and space.

This paper will discuss the utility of the virtual university to train the labor force in the ASEAN countries and the practical steps necessary in designing an effective program. The next section will define a virtual university and discuss different U.S. models of virtual university programs. The third section will make the case for creating a virtual university, citing the limits of
traditional exchange programs, the advantages, and the challenges of creating a virtual university, and why ASEAN should take the lead. The last section will discuss the considerations in designing a virtual university program, identifying the critical stakeholders, and defining the role of technology and curriculum design.

What is a Virtual University

A. General Observations

A "virtual university" (VU) is a process by which students learn and develop skills across time and distance via electronic interaction with content and people, and in which all administrative functions such as admissions, advising, registration, mentoring, library and bookstore facilities are handled electronically. There are more than 2,000 accredited colleges that now offer on-line graduate or undergraduate degrees. These programs vary widely and use a variety of technologies including, fax, telephone, the Internet, video conferencing, and electronic casebooks. However, most programs rely heavily on Internet technologies. With a few exceptions, virtual university programs provide asynchronous learning, meaning programs available on-line, any time and any place.

It is important to understand that a VU is not a substitute or replacement for the traditional academic institution with a campus and live, in class instruction. Instead, a virtual university can be a value-added for an existing institution; enabling it to package and distribute its resources electronically; or a solution for someone who needs or wants the information or skills, but for practical or logistical reasons, is unable to access the resources in the traditional manner. Ideally, a virtual university provides 1) the convenience in time and space without sacrificing the rigors of the curriculum; 2) quality interaction between and among faculty and students; and 3) the ability to evaluate measurable skills and competencies. A virtual university will only be effective if it is used to enhance, supplement, and improve access to instruction.

While VU programs vary widely, some general observations can be made based upon U.S. virtual university programs. Most existing VU networks are designed so that they are readily accessible to students/users, either from central locations or centers distributed throughout a region that students go to; or by students using a computer, a modem, and Internet access, from home or work. A chart of technology-based distance learning methods is attached as an appendix, showing the different technologies, the level of interaction, and the pros and cons of each technology.

In most programs, students are usually responsible for getting a computer, a modem, and Internet access, although some programs will provide training sessions in the technologies used. The curriculum materials vary in format from simple textbooks to multimedia, but most are packaged so that they are self-contained. Effective curriculum materials enable the student to get substantive knowledge of a subject or area, develop identifiable skills, and be evaluated on their performance through testing, certification, or some combination thereof.

Tuition costs for VU programs also vary greatly. Students may be charged tuition based upon the entire degree program; or be allowed to enroll in individual courses, which are based upon charges per credit hours of instruction. Moreover, tuition usually includes the cost of curriculum materials, and access to library resources among other services.
B. U.S. Models for a Virtual University

There are different types of virtual university programs that have been developed in the United States. Their differences are in the type of degree program or course offerings, the technology used in the program, and the type and extent of interaction among students. Some institutions, such as the California State system, use the virtual university to market existing programs that are or will be available on-line. Other institutions have specially designed curriculum with instructors and facilitators who teach electronic courses. To understand the variations, a virtual university program should be viewed on a continuum between the traditional correspondence course, which is wholly self-study and self-directed; and live, face-to-face instruction in a classroom. Consider the following virtual university programs which typify the programs generally found in the United States.

Old Dominion University in Virginia, has developed an instructional television network, TELETECHNET, to deliver upper division courses for a baccalaureate degree program to community college sites throughout the Commonwealth of Virginia. During 1996-1997 over 5,000 students were enrolled in over 20 programs, distributed through their instructional television fixed services (ITFS) network to 40 sites, which included a majority of community colleges, and hospitals, military installations and corporate sites.

Seton Hall University, a Catholic university based in South Orange, New Jersey, offers an on-line master degree programs through an Internet-based VU called “Seton Worldwide”. This program provides students with a package of materials, which may include textbooks, articles, audio and videotapes, and CD-ROMs. Corporate-sponsored students can have their program customized to focus on unique issues of their employer’s organization. While real time interaction is limited under this program, students have three face to face sessions with their professor. Developers promote what is called “electronic multimedia literacy” in learning technology use, and “cooperative learning” through small group interaction. Evaluation is through exam software and major written projects. Grading is based on written assignments, exams, and individual and small group discussions. Tuition ranges from US$23,000 -US$25,000 with installment payment plans for a 36-39 credit masters degree program in Healthcare Administration, and Executive Communication, respectively. The tuition includes course materials, room, and meals for the face to face sessions with the professor. It does not include the computer, software, Internet access, or the travel cost to attend the live sessions. Prospective students must pay for the entire program; they cannot pay for individual classes. This is intended to help students develop a sense of community. The time commitment for the programs averages between 12 to 18 hours per week.

Western Governors University (WGU) is an independent non-profit association programs comprised of governors from over 15 states. It is different from the other VU programs discussed in that it is a non teaching institution that offers competency-based degrees through course wares and programs. The programs are selected from vendors through a third party assessment and evaluation process, and then included in a virtual catalogue that is licensed to franchised centers. Programs are taught in
modules or domains which teach discreet skills or job-related functions. The role of the faculty is to plan the curriculum and advise students as mentors. There are three other staff functions: a paraprofessional who develops the curriculum; a technologist, who delivers the content over the network system, and external entities, that evaluate and assess skills proficiencies.

III. THE CASE FOR CREATING A VIRTUAL UNIVERSITY

Limits of Traditional Exchange Programs

Study abroad programs and foreign exchange programs are very popular among students of all nationalities. Such programs give students the opportunity to gain exposure to other cultures and fields of study. For the government, such programs produce students with skills that would not be readily available in their country. The economics of these programs in light of fluctuating currency exchange rates, however, can put a financial strain on families, and government which sponsor these programs.

At Case Western University in Cleveland, Ohio, for example, the majority of its foreign students have their education financed either by their governments or their families. As a result of the Asian monetary crisis, most of the students sponsored by the government have had to return home. Creating a virtual university would allow these same students to continue their education from a wide range of course offerings at a fraction of the cost, without ever leaving their homes.

Many governments that have sponsored educational training for their students in the United States have also found their students frustrated by the thought of returning to their more traditional life or wanting to cast aside their national traditions for more Western values. Consider the following example.

The Wall Street Journal published an article in the United States about two brothers from Malaysia: one is an impoverished rice farmer who hunts for his food; and the other is a student in a company program that sent him to the United States to learn how to be a computer technician. The program is part of an experiment in the globalization of the work force. The success of the latter brother has been a mixed blessing. One the one hand, he has a good education, a job with good pay, and exposure to another culture. On the other hand, after his training, he did not want to leave the U.S. to return to Malaysia, even though he had left his wife and family behind. The article contrasts, for instance, the physical disparity in terms of poor infrastructure, roads, and transportation. The student had also become an outcast from others in the village, and was heavy in debt from having to repay those who helped him take advantage of the opportunity. The company that sponsored him was later bought out by another company that did not have the same commitment to the program. The student is now frustrated because there is a level of uncertainty about his future, as well as a conflict between the life he was exposed to and the life to which he returned.

This story is an example of the problems associated with enculturation; where exposure to other cultures can breed discontent of one's current circumstance. This experience is not just limited to the ASEAN community. Even in Europe, many recognize and resent the need for Western assistance. Some fear that fellow citizens are losing respect for their native cultures. In addition, there is a feeling that their national identity is being undermined by influences within the United States. Others believe that the fundamental
differences between the United States, Europe, and Southeast Asia remain despite foreign influences in attitudes and political philosophy. Whatever your belief, it seems clear from a U.S. perspective, that there is a strong need among people to understand the culture, attitudes and perceptions that influence how materials are presented. Accessing information from and studying in other countries, gives students exposure to other cultures that can only enhance a mutual understanding how information impacts our traditional values and customs. Using technology to disseminate learning materials and foster interaction among diverse cultures, are effective ways of satisfying both goals: training a labor force, and preserving one’s cultural integrity.

Advantages of the Virtual University

Creating a virtual university has two advantages: 1) cost savings; and 2) additional sources of revenue. First, VU allow students and faculty to access information from remote sites at a fraction of the cost of sending them oversees to study. To assess cost savings, comparisons must be made between the costs associated with live instruction at numerous sites, and the cost of on-campus courses. To make a fair assessment, relocation and moving costs are added to the costs of on-campus courses. Studies have shown that there are cost savings for medium to high demand courses, servicing of 100 students or more.

At Old Dominion University, for example, a recent study confirmed that there was substantial savings over sending live instructors to several off-campus sites. The study also showed savings with on-campus costs where there was a high demand course, e.g., over 200 students. As use of the system increases, it is predicted that the savings recognized through economies of scale will also increase for medium demand classes of 25-50 students. This savings has been coupled with comparable performance evaluations from students receiving live instruction. This means that a virtual university can provide value-added to an institution at a discounted rate, while allowing students to perform academically at the same level. Some may even argue that there are additional advantages from learning to use the technology in the job market.

Second, VU enables participating institutions to develop and exchange curriculum which can be distributed throughout the network, thereby creating additional sources of revenue. At WGU, for example, six potential sources of revenue have been identified: 1) from content providers through fees for listings in the catalog and system maintenance; 2) from users through tuition and fees for services; 3) from local centers through franchise fees; 4) from employers/ corporate partners through fees for assessment services and franchise fees; 5) from states through membership and networks fees; and 6) from philanthropic donors through innovations in learning and assessment tools.

Virtual universities enable some economies of scale to be achieved over time after the initial investment is made because there are several categories of potential users. Since many people get the convenience and flexibility in being able to learn anytime and anywhere, VU have value which is a win-win for all critical stakeholders.

Challenges for the Virtual University

The biggest challenge in creating a virtual university is in educating others on what it is and is not, and its proper role in academia. The factors which
make this challenge difficult in the United States range, from fear over loss of jobs, the commercialization of higher education, general mistrust and technophobia, to the challenge of designing effective curriculum that is not boring and provides value-added to the learning process. Teachers are afraid and reluctant to embrace IT. Some teachers' unions in the United States have gone so far as to write into their labor contracts that use of technology not be mandatory for teachers. Many U.S. sponsored computer training programs for training are free or set up so that the teachers are paid to attend to encourage teacher participation. Until there is widespread acceptance by the average person of the utility of the computer and the information it provides, information technology will have to be subsided by the government and private industry.

It is particularly critical that teachers and faculties collaborate and support each other through the learning process in using technology. Teachers are the critical link to making IT available to students, who in most instances are more proficient than the teacher. Since effective virtual universities must be learner-centered, it is essential that the student and teacher have maximum opportunities to interact, electronically and otherwise.

There is also significant up-front costs to create a virtual university. WGU, for example, raised over US$6 million dollars to launch WGU: US$1.8 million was received from participating states, each giving US$100,000 on a one-time basis; US$750 was received from foundations grants; and $3.5 million was received from corporate donors in cash and like-kind services. The start-up costs include legal and other fees to establish the entity, software for the virtual catalog, developing the student support service capacity, design, development, and training of the local service center network. Recurring costs include staff personnel, technical maintenance of the systems, and quality control processes for the catalog and assessment tools. With high initial costs and skepticism based on lack of information, it is important that the planning process for a VU be all inclusive, and carefully thought through.

D. ASEAN's Role in Creating a VU

While the ASEAN governments can pursue individual strategies in creating a VU, it will likely be more cost effective and mutually beneficial in the long term to pursue joint initiatives. ASEAN, through its treaties, has institutional mechanisms in place to pursue joint initiatives to create a virtual university. The ability of ASEAN to achieved substantial goals in telecommunications has already been documented. Between 1984-1994, for example, ASEAN achieved the second fastest growth in telephone installation in the Asia-Pacific region, with three of its members, Vietnam, Indonesia and Thailand, recording the fastest. Moreover, two ASEAN countries, Singapore and Malaysia, are currently building an information infrastructure capable of supporting a virtual university. As a result, as with the Western Governors Association in the United States, ASEAN can provide a forum for the critical stakeholders to pursue a joint VU initiative. ASEAN has the commitment from member countries who become critical stakeholders in a VU, and the institutional framework in place to make it happen. First, ASEAN has a plan of action for transportation and communications, and science and technology, that will facilitate the development of the infrastructure. This will ensure the cooperation of
ASEAN governments in providing the necessary resources needed to complete a regional telecommunications network required for a virtual university. Second, ASEAN has an on-going dialogue and cooperation with the United States to exchange on-line degree programs at regional centers through the ASEAN Human Resources Development project. This will provide sources of initial content for ASEAN students. Third, ASEAN has a Program of Action on ASEAN Intellectual Property Cooperation, which will develop a regional database to facilitate registration and enforcement of intellectual property rights. This will provide assurances to content providers that intellectual property rights will be respected and enforced. Finally, ASEAN has a protocol for dispute settlements that can handle any conflicts or issues that may arise.

Design Considerations

Critical Stakeholders

Creating a VU requires a substantial commitment of resources and talent. For this reason, all entities affected by or necessary to create a UV should become critical stakeholders. This includes heads of state, legislators and regulators, top administrative persons at educational institutions, private industry providers of computer hardware and content, and instructors or professors. Most VU programs in the United States pursue a top-down approach where major decision makers at the government level, educational institutions, and corporate level are providing the leadership and vision for the program. At WGU, for example, governors from 13 states set up an independent organization to provide a non-teaching virtual university. State legislatures were also involved because each state committed to pledge $100,000 to cover the implementation of the WGU, which had to be approved by the legislatures. There are also several U.S. firms involved as sponsors or partners. WGU has partnered with corporate sponsors such as Microsoft, Apple, CICSO, and Sun Microsystems, for computer systems and services; AT&T and U.S. West, long distance and local exchange carriers; and International Thomson Publishing and Simon Schuster, content providers.

This consortium represents a good cross-section of entities who have an interest in the design, implementation, and management of a VU system.

Administrative Considerations

There are several administrative issues that must be resolved in developing a virtual university. First, once the key stakeholders are identified, there must be some consensus on a common set of goals, obligations, expectations, and allocation of resources. Since the role and function of a VU may vary, it is critical that there be a meeting of the minds on the proper role and relation of a VU to other institutions. Part of this process includes agreement on a core set of basic skills for which courses will be developed, licensed, or highlighted. Decisions, such as whether the institution will offer college or graduate level courses, or both, must be agreed upon. In addition, thought must be given to whether the courses developed will be adaptations of existing courses, and/or new courses or programs specially designed for the VU.

Second, the key stakeholders must also identify and agree upon a set of performance standards that enable each country to measure the effectiveness of the programs, based on a core set of competencies and evaluation criteria. This may include certification through a joint, state or educational licensing authority for the region.
Third, each participating government may have existing laws, regulations, and policies that need to be reviewed, modified, or amended to define the respective obligations, entitlements, and procedures that need to be in place to ensure the success of the program. This may include policies and procedures of accrediting bodies and the agencies, and policies regarding entitlements to government subsidies or financial aid.

Fourth, there will also be intellectual property issues concerning instructional material that must be addressed. Who owns what curriculum, what entitlements to royalties, and what mechanisms should be in place to protect intellectual property rights, are among the issues that must be resolved. Finally, consideration must be given and strategies developed to identifying barriers or challenges that may be unique to the culture or region. Some mechanism must be in place to incorporate these contingencies.

Role of Technology

Technology is critical to the effectiveness of a VU since it will impact on the ease of use, access, and the nature of interaction available throughout the course or program. The key stakeholders must agree to the basic technology standards that will be utilized at all of the sites; ensuring that networks are interconnected at some levels, and interoperable, i.e., anyone with a computer can access it. Ideally, each institution should have adequate bandwidth to handle two-way voice, data, and video delivery via telephone or cable modems, or satellite.

The network will also becomes the primary medium for marketing, admissions, course delivery, and evaluation. The network must, therefore, have levels of access with firewalls for security purposes, and be capable of multitask functions Many institutions are using ISDN, ATM, and/or fiber optic lines as their distribution lines. Institutions must also consider whether the network will be integrated into other institutional or governmental networks, or set up as a dedicated network, separate from other institutional functions.

There will undoubtedly be technological glitches. For this reason, procedures need to be built-in to address the need for back-up systems or plans. Despite promotions to the contrary, some of the technology that will be used for a VU has not be consistently used and tested for handling the volume of traffic that a virtual university may be expected to handle. This is one of the problems currently being faced by users of the Internet. The Internet has grown so rapidly, that some of the hardware used to handle the flow of information is inadequate. Problems of bottlenecks, slow transmissions and interruptions in transmissions will arise if there is not adequate capacity and bandwidth. Coordination among technical and professional staff is, therefore, critical.

Role of Curriculum Design

Creating a virtual university cannot only be viewed in terms of the technology which enables remote locations to be connected. While technology has shaped the trend toward distributive learning by eliminating the barriers of time and place, technology is still secondary to the content or curriculum. A system is only as good as the content being disseminated over it. Hence, the quality of the instruction must remain constant regardless of the instructional delivery system.

The curriculum must be developed by a team of specialists, including teachers/professors, technicians, librarians, and administrative staff. Each
professional has unique skills and perspectives that enable the institution to maximize the efficiency and utility of the network supporting the VU. This can be done either by integrating the virtual university into other institutional or governmental networks, or setting it up as a dedicated network, separate from other institutional functions. The curriculum must be learner-centered, meaning that the learning environment should have small teacher to student ratios; student centered advising, and is course specific. It is critical that designers go beyond the traditional correspondence course, which is passive and linear. The key to an effective virtual university program is the nature and quality of interaction between and among students and teachers, and the quality of the performance evaluators in assessing measurable skills. The technology and access to the Internet must facilitate interaction that enables a dynamic learning environment. The need for interactivity must be carefully weighed against the convenience of allowing students to access the materials at any time. A virtual university enables students to be trained to be creative problem solvers, self-motivated to think and reason, rather than simply to memorize and recite. Designers of curriculum have used modules or lessons, in developing courses. The "modular approach to learning" has proven effective in curriculum for electronic mediums to integrate skills in the learning process. WGU, among other VU programs, use modules for instruction. The "modular approach to learning" or distributive learning, means that substantive material is provided in some context, which enables students to understand not only the substantive principles, concepts or formulas, but also how to apply what is learned to solve a problem. In legal education, a module may integrate a fact pattern or case study that becomes the basis for discussing legal and business issues, role playing, negotiation and consideration of resolutions that may not be strictly based upon the law. This pedagogy is built on the premise that law is interdisciplinary and impacted by as many causes as there are solutions. Alternatively, in math or science, a module may include a set of facts or known assumptions that become the context for the problems. Several variables may be introduced which the student must evaluate to arrive at a desired outcome. By using the modular approach, students are able to learn and practice discreet skills. This helps students bridge the gap between lessons in school, and the skills they will need to compete in the job market. CONCLUSION Creating a VU can provide significant opportunities for institutions and governments to expand access to information and learning. ASEAN is in an excellent position to take advantage of the relationships developed and the common interests among countries to pursue a joint initiative to create a virtual university. There are many existing models for a VU that can be followed. However, it is critical that all stakeholders share the same vision, understand the parameters of the project and are willing to make the commitment necessary to make it happen. The cost savings, additional sources of revenue, and providing necessary skills are all persuasive arguments for creating a VU. The planning and implementation is critical, but can be handled with assistance from a variety of sources. ASEAN should embrace the VU concept as a way of helping participating countries to be competitive into the next millenium.
## OVERVIEW OF TECHNOLOGY-BASED DISTRIBUTIVE LEARNING METHODS

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<th>INTERACTIVITY</th>
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<td>Audio-graphic teleconferencing: 2 or more sites earn and can exchange graphics and text via PC and modem</td>
<td>Telephones, PCs, scanners, printers, video cameras, data lines</td>
<td>Voice interaction and exchange of visuals (text or graphics)</td>
<td>Real-time voice/data communications. Relatively inexpensive and easy to use</td>
<td>No live video of instructor. Need a phone system that supports equipment</td>
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<td>One-way satellite/cable network: (public) high quality video of instructor and class aids transmitted to subscribers. Used in schools</td>
<td>TV monitors, satellite/microwave, cable hook-up, telephones</td>
<td>Small level of interactivity by students calling facilitators with questions after viewing the instruction</td>
<td>Allows broadcast to many students of course materials with good video quality. Satellites allow broad area coverage</td>
<td>Less interactivity. Subject to curricular and schedules of content providers. Two-way video is not an option so teachers cannot see students. Large number of students per class; and no local control</td>
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<td>Microwave networks (private): private microwave network. TV monitors, satellite/microwave, cable hook-up, telephones</td>
<td>Small level of interactivity by students calling facilitators with questions after viewing the instruction</td>
<td>Good video quality, and curricula controlled locally. Low teacher/student ratio</td>
<td>Geographic limits. Expansion is expensive</td>
<td>Microwave networks (private): private microwave network. TV monitors, satellite/microwave, cable hook-up, telephones</td>
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<tr>
<td>Full-motion video using analog or digital fiber: 2 or more sites connected into 2-way, full motion videoconference</td>
<td>Camera can transmit visual aid. Video converters for analog transmission/reception, monitors for classroom. Video codecs for digital transmission/reception, monitors for classroom</td>
<td>Good interaction of students and teachers. Point to point or point to multi-point through switches. High quality audio and video in “real time”. All sites can see and hear each other</td>
<td>Good video quality, easy interaction. Can transmit voice, data and video. Analog is good for video only at limited distance; data transmission is complex</td>
<td>For digital fiber, need to install fiber. Transmission costs may be high, depending upon the carrier. System maintenance required</td>
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Professor of Law, California Western School of Law, Harvard Law School, J.D. 1981. Professor Johnson is Director of the Center for Telecommunication and Intellectual Property at her law school and has spoken, and written about distance learning. She has reviewed and evaluated technology grant proposals for the U.S. Department of Education and the U.S. Department of Agriculture. She created a modular approach to integrating technology into curriculum which she actively uses to teach Administrative Law, Corporations, Antitrust, and Telecommunications. The modular approach was also used as the template for a web-based program called “Aeronauts 2000”, developed under a grant from National Aeronautics Space Administration (NASA) for middle and high school students in math and science. She served on Mayor Susan
Golding’s Advisory Committee on the City of the Future, which was evaluated proposals to develop a regional telecommunication network and on President Clinton’s Transition Team for Science, Space and Technology.

The ASEAN countries consists of nine countries in Southeast Asia: Brunei Darussalam, the Republic of Indonesia, Malaysia, the Republic of the Philippines, the Republic of Singapore, the Kingdom of Thailand, and the Socialist Republic of Vietnam. Laos and Mynanmar were admitted into ASEAN on July 23, 1997. See e.g., Terence P. Steward and Margaret L.H. Png, “The Growth Triangle of Singapore, Malaysia and Indonesia” 23 Ga. J. Int’l & Comp. L. 1 (1993); “Integrated Implementation Programme for the ASEAN Plan of Action in Transport and Communications (1997)”, <http://www.asean.or.id/economic/patac97.htm>

See e.g. ASEAN Plan of Action in Transport and Communications and ASEAN Framework Agreement on Services proposes several projects related to telecommunications. See e.g. ASEAN Plan of Action in Transport and Communications and ASEAN Framework Agreement on Services proposes several projects related to telecommunications.


“Memorandum of Understanding Between the Government of the United States of America and the Governments of ASEAN- December 1990”, <http://www.asean.or.id/dialog/mouus90.htm>


Interview with Edward D. Goldberg, Executive Director of The Global Institute, <mailto:GoldbeEd@shu.edu> (April 24, 1998)
See “Community College Recommendations in Regard to the Commonwealth Virtual University—December 12, 1997”, HYPERLINK "http://www.uky.edu/LCC/HIS/DistanceLearning1.html#issues3" (visited on February 3, 1998)

See Seton Hall University, Seton Worldwid- FAQ, HYPERLINK "http://www.setonworld.net/faqs.html" (visited April 24, 1998)

See “Miami-Dade Community College, Virtual College-FAQ” HYPERLINK "http://www.mdcc.edu/vcollege/frequent.html" (visited February 3, 1997)

Seton Hall has customized graduate degree and graduate certificate programs that allows curriculum to be customized to the organizational needs of the sponsoring organization. See Customizing an Online Degree Program, HYPERLINK "http://www.setonworld.net/customize..html" (visited April 24, 1998)

Western Governors University (GU) does not have a teaching faculty, but instead brokers programs and courses and provides competency-based degrees. “What’s Unique About WGU? HYPERLINK "http://www.westgov.org/smart/vu/sld003.htm" (visited April 24, 1998)

University of Kentucky Community College System charges US$125/credit hour or about US$13,500 for a college degree program. See HYPERLINK "http://bsd-server.nc.edu/virtcol/info/tuition.html" (visited on February 3, 1998)

In September of 1997, CU launched a website that linked students to 65 existing campuses throughout California to enroll in over 500 online courses. Justine Kavanaugh-Brown, “California Launches Its Virtual U” HYPERLINK "http://www.govtech.net/gtmag/1998/feb/education/education.shtm" (visited on April 24, 1998). California University System (CU), whose Governor Pete Wilson is a member of the Western Governors Association, opted not to join the WGU. Instead, Governor Wilson decided that California needed to use the VU to market the existing resources of its accredited colleges and universities. The governor has proposed a $6.1 million plan, under which the 107 schools in the California System, many of which are community colleges, would receive US$1 million dollars in matching grants to develop on-line courses for the CVU. Donald E. Coleman, “Wilson Pushes Cyber Education in Budget” The Fresno Bee (January 9, 1998) The plan also calls for US$1 million for financial assistance to students for Internet access, hardware and software; US$4 million to expand the use of instructional technology, and US$3 million for digital access to University of California libraries.

"TELETECHNET-Summary", HYPERLINK "http://www.calstate.edu/special_projects/mediated_instr/teletech/TnetSu m.html"
A ITFS system is a subscriber based wireless broadcast system that provides programming throughout a private network. It is generally one-way audio and video. See the appendix.

Id.

"SETONWORLDWIDE-Learning Experience", HYPERLINK "http://www.setonworldwide.net/experience.html" (visited on April 24, 1998)

Interview with Edward D. Goldberg, PhD. HYPERLINK "mailto:GoldbeEd@shu.edu" (April 24, 1998)

Id;

Interview with Randolph Hollingsworth HYPERLINK "mailto:dolph@pop.uky.edu" (April 25, 1998)

Id.

Id.

"SETONWORLDWIDE-Learning Experience", HYPERLINK "http://www.setonworldwide.net/experience.html" (visited on April 24, 1998)


"A Prospectus for the Western Virtual University" HYPERLINK "http://www.westgov.org/smart/vuprosp.htm" (visited April 24, 1998)

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Based upon a January 5, 1998 CWRU survey including statistics on sources of funding for foreign students, 54 of 58 Malaysian students have their education financed by the government, 71 of 98 students from Korea have their education financed by their families, 58 of 99 students from Thailand have their education financed by the government; 39 of 65 Japanese students have their education financed by their families; and 26 of 34 Indonesian students have their education financed by their families.


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February 1976", • HYPERLINK
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Governors' Goals for a Western Virtual University

See "Community College Recommendations in Regard to the Commonwealth Virtual University-December 12, 1997", HYPERLINK "http://www.uky.edu/LCC/HIS/DistanceLearning1.html#issues3" (visited on February 3, 1998)
FOR MORE INFORMATION

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CREATING A VIRTUAL UNIVERSITY

Professor Andrea L. Johnson
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GOALS AND OBJECTIVES

- Integrate IT into education
- Educate a workforce to support IT
- Preserve national and cultural identity
- Use ASEAN to pursue joint initiatives
PROPOSED SOLUTIONS

- Create a VU network that links strategic ASEAN partners
- Allow VU to eliminate time and space restrictions on existing institutions
- Package existing courses to distribute throughout VU network
- Create a clearinghouse through ASEAN to license educational course materials
CHALLENGES IN CREATING A VU

- Educating decision makers
- Eliminating teacher fear & technophobia
- High initial start-up costs
- Standards for Infrastructure reliability
- Ensure the network is user-friendly
VU DESIGN CONSIDERATIONS

Collaboration among stakeholders
Consensus on goals, obligations, expectations and allocation of resources
Identify and resolve intellectual property issues
Self-contained program developed within existing or new regulatory framework
THE MODULAR APPROACH

- Curriculum integrated into a story line
- Problem presented and tasks to be completed
- Focus on practical skills, i.e., problem solving and applied reasoning
- Interactive and dynamic learning process
OUTCOMES

- Support for collective IT goals
- Trained IT labor force
- Empowered nations competing globally
- Foreign investment in IT
- Integrated & expandable infrastructure
- Win-win for all ASEAN governments
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MAKING THE CASE FOR A VU

Limits of Exchange Programs
- rising costs of room and board
- cultural conflicts
- reluctance to return home after studying abroad

Access to IT
- project collaboration
- target unique skills
- produces win-win solutions

Need to Broaden
- exchange ideas
ADVANTAGES OF VU

- Eliminate time and space restrictions
- Cost savings through economies of scale
- Revenue potential by expanding markets
- Encourages foreign investment
- Comparable scholastic performance
CHALLENGES IN CREATING A VU

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