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JOURNAL OF INTERNATIONAL BUSINESS RESEARCH

Volume 6, Special Issue 1

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LETTER FROM THE EDITORS

It is with great pleasure that we welcome you to this issue of the *Journal of International Business Research*, a journal published by the Allied Academies to support the exchange of ideas and insights in International Business.

This issue features the best papers from those presented at the Guam 2007 International Conference on Business, Economics and Information Technology on the theme of *"Doing Business in the Global Economy: Economic, Political, Social and Cultural Environments Facing Business."* Founded on a simple idea, that there is much we can learn from each other, the conference provided a opportunity for academicians, researchers, students, and representatives from industry and government to get together and exchange ideas in the spirit of scholarship and professional growth.

We thank Alfred University's College of Business, Penn State-Altoona's Division of Business and Engineering, and the University of Guam's School of Business and Public Administration for their support of this conference and the publication of this journal issue. We are also grateful to the Allied Academies for providing us with the outlet by which we can share our scholarly efforts.

Consistent with the editorial practice of the Academy on all 17 journals it publishes, each paper in this issue has undergone a double-blind, peer-review process.

Information about the Allied Academies, the *JIBR*, and the other journals published by the Academy, as well as calls for conferences, are published on the Allied Academies website, which is constantly updated with the latest activities of the organization. Please visit that site and know that the Academy welcomes hearing from you at any time, as do we.

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LIFESTYLE CHANGES PROGRAM FOR A GUAM BUSINESS: REPORT ON THE DEVELOPMENT AND START-UP STAGES

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ABSTRACT

The Lifestyle Changes (LC) Program is an employee wellness program developed and piloted with a local Guam business (Pay-Less Markets, Inc.) for a 1-month and 3-month program. The Program, approved by the University of Guam's IRB, involves 1) overall lifestyle practices; 2) dietary changes; and 3) personal health activities. Participation is voluntarily, has no known risks, and no cost to participants. Some business costs include lost work time, incentives and administrative support.

Pay-Less's corporate health awareness initiative includes health fairs, the LC Program, an annual 5K Walk/Run and Fitness Fair, and recognition of the LC Program Team results.

Pay-Less organized the LC Program, titled "Health Smart for HEALTHY START," by enrolling teams of employees from different worksites. Two LC Program Orientation and Intake Screening sessions were conducted for 57 employees (approximately 10% of all PayLess employees). Participants were informed of their rights, signed an informed consent, and were encouraged to check with their personal physicians before starting any exercise or activity programs.

Regular attendance in the weekly training or information sessions should be relatively low as employees are employed at diverse locations and on various shifts. Following program completion, aggregate information and results will be analyzed and reported.

Presently, local awareness that such wellness programs may measurably impact employee morale, performance and health care usage is growing. It is important to partner with a local business whose executives support an employee wellness support program such as the LC Program. Without such collaboration, a wellness program will probably not succeed in assisting even a small portion of the workforce.

INTRODUCTION

Guam is an island located in the western Pacific. As a U.S. Territory, the laws and business practices employed are mostly U.S. based. The total resident population of the island at the last

census is approximately 155,000. The primary ethnic groups in the resident population according to the Guam 2000 Census conducted by the US Census Bureau are: 49% Pacific Islander; 33% Asian; 7% Caucasian; 1% African American; 1% other; and 9% mixed (two or more races reported). Wellness and location may have special implications and linkages, especially where location is closely influenced by ethnicity and culture (Holmes, Feb. 8, 2007). On the island of Guam, there is a history of physiological and health issues that may have an impact on workplace performance. Five out of the ten leading causes of death on Guam (60.8%) are caused by diseases that are linked, in part, to poor lifestyle choices (Guam Department of Public Health and Social Services, 2003). Some of these lifestyle and health issues have ethnic or cultural roots that make it difficult for employees and residents to resolve. There are also dietary challenges and lifestyle issues that are linked to the isolated location, lack of fresh food sources and food variety, and culture.

This report focuses on the processes involved in the design and initial implementation of the wellness program described below. Final data results cannot be reported at this time as the program is still in progress and data is still being collected. Those results will be reported in a follow-up article at a later date. In the following, we present a brief overview of current wellness awareness, the LC Program team and program development, the local Guam business we partnered with, and a description of the LC Program itself.

WELLNESS AWARENESS

Wellness is a topic of current interest. It is receiving interest in the popular press, local communities, and the workplace (Holmes, Feb. 8, 2007; Gurchiek, 1/25/07; Lerche, Jan. 2007; Gurchiek, 6/27/06; Edington, 2004A). This paper focuses on selected aspects of wellness as they relate to the workplace.

Wellness is a very general term that has varied implications depending on its uses. Within the workplace, namely business operations, wellness can include areas such as employee health, workplace climate or environment, cost of insurance benefits, insurance usage, and impacts on work performance (Lerche, October 2006; Edington, 2004A & 2004B). It is of particular interest to organizational executives and managers since productivity is directly linked to employee wellness. (Weatherly, December 2005; Miller, April 2006)

It has been estimated that the majority of US health care costs are the result of a very small portion of the total population (CMS, 2004; Gurchiek, 4/1/05). Linked to this, it has been reported that employees with higher and more health risk factors: 1) increase health plan costs (plan costs are being passed on to employees); 2) are absent from work more often; and 3) record decreases in productivity.

Principal Financial Group (2005) reported that health screenings have a direct impact on improving employees eating practices, exercising more and making choices in favor of healthier options more often. Reports indicate that improvements may approach the 50% mark (Principal

Financial Group, 2005; Alvarez & Soltis, January 2006; Edington, 2004B). Therefore, it is recommended that employers make health screening and information opportunities available to employees. Gurchiek (4/1/05) reports that there is a rising trend in health or wellness programs being offered by organizations. Furthermore, health screenings are effective means for achieving a number of desirable ends including: raising awareness of health issues among employees; providing some organizational support for improving employee health; and making wellness information available to employees.

There is a case for providing employers and employees with opportunities to learn about and make changes in their lifestyles so that health risks may be reduced. If this is achieved, it is expected that health care costs, especially those related to insurance use, will be reduced. (Lerche, Jan. 2007; Gurchiek, 4/1/05; Edington, 2004B)

Not only could this possibly lead to lower healthcare costs to both employers and employees, but more importantly it could reduce absenteeism, improve productivity, and curb insurance usage costs (Mochari, February 22, 2005; Lerche, Jan. 2007; Marlowe, May 2004; Robinson, Chimeto, Bush, & Papay, 2001).

LC PROGRAM TEAM & PROJECT

The Lifestyle Change (LC) Program was developed by the LC Program team. This program was developed based on the combined knowledge, experiences and expertise of the LC Program researchers. The Lifestyle Change (LC) Program research team is composed of three University of Guam professors, a trained diet-technician from Health Services of the Pacific, and a group of trained research support personnel. (None of the researchers is a physician.)

The Principal Investigator is a human resource professional, with military EMT/medic experience and training, professional human resources certification, extensive stress management related research and training, and over 30 years of practical business experience in Guam and the Pacific Region. Another researcher is also is a human resource professional, a certified CPR trainer, has professional human resources certification, and over 20 years of executive management experience in Guam and the Pacific Region. The third researcher is a licensed nutritionist and registered dietitian with over 15 years of health related research and practical experience in Guam. A certified diet-technician/health specialist from a local healthcare provider, Health Services of the Pacific, was added to the LC Program resources to measure blood sugar (glucose) levels. The support personnel are trained research assistants who are studying nutrition, nursing or human resource management at the University of Guam.

The program was reviewed and approved by the University of Guam's Committee for Human Research Subjects (CHRS) which serves as the university's Institutional Review Board (IRB).

The LC team has developed a user-friendly, non-intrusive and organizationally supported wellness program. It is very much in line with the wellness programs that are being developed and marketed on the U.S. mainland. (Lerche, October 2006; Weatherly, December 2005) Participants in the LC Program are local residents who are generally representative of the local population. These participants are employed by a local business on either a full or part-time basis. These participants are from all positions and levels within the organization.

The LC Program team will assist the participants to examine their own lifestyles and health choices. Next the team will work with the participants to plan a short-term (one to three month) change that the participant wants to undertake. Supportive training and information as well as healthy lifestyle opportunities are being offered on a weekly basis. The program is based around forming employee teams which will give each other peer support and also has the ability to win rewards.

This approach is expected to achieve measurable positive lifestyle changes in participants who follow the program for a period of one month or three months. The project team has begun implementing an LC pilot program to evaluate the efficacy of the LC Program and to identify areas or aspects that need adjustment.

The LCP pilot project involves three focal areas of: 1) overall lifestyle practices; 2) dietary changes; and 3) coping and stress management approaches. The program was designed to involve all employees who wish to enroll and participate. There was no cost to the employees. The LC Program was initiated on February 7, 2007 with an initial Orientation and Health Evaluation session.

LOCAL BUSINESS PARTNER

A local business (Pay-Less Markets, Inc.) has teamed up with the Lifestyle Change (LC) Program research team to develop and begin implementing a lifestyle change management program. Pay-Less Markets, Inc. (Pay-Less Markets) has operations at six super-markets, a warehouse, and a corporate office location around the island of Guam. The Pay-Less Markets organization employs 515 local residents on a fulltime or part-time basis. Of these, there are five employees who are under the age of 18. These employees were not included in the LC Program.

Pay-Less Markets recently sponsored two half-day health fairs on January 22 and 24, 2007. These sessions were designed to introduce employees to the need for wellness. These efforts were aimed at encouraging the employees to enroll in a one-month Pay-Less employee challenge or a three-month lifestyle change program, or both. In addition, the health fairs were designed as venues where employees could get information about a variety of programs or options that could impact their health or lifestyles.

The LC Program team was included in these two health fair events and provided preliminary initial health screening information. Approximately 49% or 253 of the 515 Pay-Less employees participated in the initial screening and information distribution effort. At the first half-day, 168

employees participated in the health fair. Another 86 employees attended the second half-day health fair which was held two days later.

It should be noted that a number of employees who participated in these initial health fairs were identified as being at risk for obesity, type 2 diabetes and hypertension. Those employees considered to be at high health risk were strongly encouraged to visit their personal physicians for examination and possible follow-up or treatment. This is very much in line with findings reported by other screening programs. (Gurchiek, 1/25/07)

Pay-Less Markets arranged to offer incentives to employees who participate in and complete the one-month or three-month LC Programs. One incentive is a 5% discount on "Health Smart" food products that are available at the Pay-Less Markets. Another incentive is supplemented membership in a local fitness center, Paradise Fitness. Successful completion of the LC Program by the individual teams will also be rewarded with recognition and prizes provided by Pay-Less Markets at the March 17, 2007 "Kick the Fat 5K Walk/Run and Fitness Fair" which Pay-Less Markets sponsors annually.

LIFESTYLE CHANGE PROGRAM

The LC Program is currently underway. This report focuses on the processes used and employee responses to date. Data related to possible changes in the health status or conditions (wellness) of the participants are not available at this time. However, in the following section, participant processing into the program is presented.

Participants are employees of Pay-Less Markets. Participation in the LC Program is entirely voluntary and all personal information, especially individual health data, remains confidential. As a result, Pay-Less Markets does not have access to individual data from the LC Program. All information that will be reported to Pay-Less Markets will be aggregated information. Each participant was assigned a participant number to ensure confidentiality for all participants.

Pay-Less employees were informed about the LC Program and invited to enroll with teams from their respective workplaces or as individuals. As of February 12, 2007, there were 56 employees on 7 teams enrolled in the one-month LC Program.

LC Program Orientation included a 30-minute orientation and initial health evaluation. At that time, each participant received a description of the LC Program *"Employees' Wellness Program: HEALTHY START to HEALTH SMART" Consent Form & Information Sheet*. The LC Principal Investigator (PI) provided the orientation for each participant and ensured that each understood the program, that participation was entirely voluntary, and that withdrawal from the LC Program could be initiated at any time without penalties. The participants were informed that all information gathered or shared would remain confidential, and that no known risks were expected. Each participant then completed a copy of the Consent Form, which was co-signed by the PI and a Pay-Less Markets representative. This signed copy was retained in a secure file by the PI.

The PI then provided each participant with a Program Record Sheet (Appendix C) to obtain demographic information. This sheet was to be completed at home and would be collected at the next session. The following information are requested from the each participant:

- *Basic personal information: date of birth, age, gender, marital status and ethnicity*
- *Self-rating of health level at different points in time while participating in the program: at the start of the program, at the end of the first month, at the end of the second month, and at the end of the program*
- *Current and past consumption of tobacco and alcoholic beverages*
- *Physical activity at work and while engaged in sports and non-sports leisure (for example, watching TV, walking and cycling)*

A 2-Day Diet Record form was provided for each participant to record her/his food and drink consumption.

Participants were also provided with an LC Program Activity Choices form which provides information and explanations about some basic choices that participants might wish to attempt during the LC Program. Each participant was asked to select at least one activity to attempt during the program. These activities are categorized into three categories, each of which includes examples of activities:

- *Dietary Practices: Meal size control, Calorie control, Meal timing (Regular meals), Food preparation changes, Health Smart Shopping (Label Reading), Others (please specify)*
- *Coping Strategies: Journal writing, Deep breathing, Meditation/Prayer, Support group (someone to talk to), Positive Visioning, Others (please specify)*
- *Exercise or Activities: Team Sports (Examples: basketball, volleyball, baseball, softball, paddling), Walking, Jogging, Running, Swimming, Aerobics, Martial Arts, Weight Training*

Participants were asked to tell the LC Program team member which activity in each category he/she will be trying. Participants were encouraged to choose an activity that is they find comfortable and that they are not required to limit their choices to the above examples.

Finally each participant received the "Healthy Start to HEALTH SMART" 4-month calendar which identifies program activity dates and locations. In the next meetings, the team member will ask each participant to evaluate each activity based on how well it is going, how effective it is, and how consistently he/she uses it.

Intake Measurements, including basic health information was gathered for each participant after the Orientation was completed. The researchers or the research assistants recorded the intake information on the Health Information Sheet.

Each participant was measured for height, weight, blood pressure, blood sugar, various body circumference measurements including waist, hip, neck, wrist, and forearm. These circumference measures will then be used to calculate percent body fat. Body mass information (BMI) will be

calculated as weigh in kg/height in m^2. Participants will then classified by BMI as normal weight ($\leq$24.9), overweight (25.0-29.9), or obese ($\geq$30.0).

In addition, the same information will be measured at the end of the LC Program. Then a comparison will be made between the baseline and the end results. It is expected that some improvements will be measurable.

The Health Information sheet was collected by the research team. The data will be entered and analyzed at a later date. These results will then be collated with the LC Program Activities each participant chose to participate in. It is expected that there will be a positive correlation between dietary, coping strategies and exercise activities and health results.

DISCUSSION OF THE LC PROGRAM START

Since the LC Program is still in progress as this report is being written, there are no final or preliminary data to work with. What can be discussed at present are the design and initial implementation stages of a wellness program such as the LC Program.

Partnering with a suitable and cooperative local business to partner appears essential to the success of a wellness program such as the LC Program. As the present program is designed as a research program, there is little if any cost to the local business regarding the development, design and testing of such a program. However, it is important to note that there are costs related to employee participation time and administrative costs that should be considered when considering any wellness program.

The timing of the LC Program was truly auspicious. Both the LC Program team and the Pay-Less Markets had a growing interest in offering a program such as the one in progress. The timeline that Pay-Less Markets wanted to follow worked well with the LC Program proposal and design that had been developed in November and December 2006.

The LC Program team was very fortunate to find such a cooperative and positive partner as Pay-Less Markets. The executive officer and her support team were extremely collaborative and supportive as the LC Program was developed and rolled out. In particular, Pay-Less Markets made special arrangements for the two half-day health fairs, as well as the program participation incentives.

It is apparent from this experience that a good partnership of wellness team and organization is necessary for the program to be implemented with a degree of success. While the present arrangement is voluntary on both sides, it appears that it would work in a commercial or professional situation where the LC Program team was contracted to provide these services for a fee.

Program Design & Implementation also must be suitable for the workplace environment and conditions. The LC Program is designed to be user-friendly for both the employee (participant) and the employer (business). Time off from work for the actual LC Program has been minimized as much as possible.

The orientation and health intake stage has taken about 20 to 30 minutes per participant. Each weekly interaction or training session is also scheduled to last approximately 30 minutes. These sessions are designed to provide maximum impact on one or two specific areas of interest and wellness. As a result, employees who are participating in the LC Program will not be excessively absent from work. Nor will employees have to sacrifice excessive amounts of precious personal time to participate in an LC Program activity after working a night shift or on a day off. An example includes the 10 minute label reading information session followed by a 15 to 20 minute supermarket walk-through where participants are able to identify healthy food choices. Another session will include a 20 minute eating and calorie information session followed by a 5-minute talk about controlled breathing exercises. Such sessions provide lifestyle planning and practice as well as coping skill development.

Beginning with the Participant Orientation, participants are being encouraged to take positive control of their health. To do this, each participant was made aware of some basic areas that could be adjusted or changed. These changes are expected to have a generally positive impact on the health states of most participants.

Awareness of potential health issues is the key to starting to make changes and improvements. During the health fairs and the Participant Orientation, the LC Program team identified four individuals who appeared to be at risk. Their risk levels were related specifically to either high blood pressure (exceeding 160/100) or exceedingly high fasting blood sugar levels (exceeding 200 mg/dl). As noted earlier, these participants were counseled to see their personal physicians as soon as possible to have their health checked for possible medical problems.

Participants have become more aware of the need for self-management of wellness. In other words, that wellness is a preventive approach to potential problems rather than a reactive process. As a result, more Pay-Less Supermarket employees are expected to be more aware of potential health risks, follow better dietary practices, develop better coping skills and alter their lifestyles in at least one area as a result of this program.

This will be identified at the end of the one-month and three month programs. It is expected that Pay-Less Markets will permit the LC Program team to follow-up with the participants at scheduled times after the completion of the program. At that time it may be possible to identify long-term impacts of a program such as this. In addition, it may be possible to identify any impact the program is having on healthcare insurance usage as well as participant lifestyles.

Participant attitudes were generally very positive about participating in the LC Program. Participants volunteered information that indicated pleasure with the support and encouragement they were receiving from Pay-Less Markets. This is the first time Pay-Less Markets has made such a concerted effort to raise employee awareness of health issues and potential wellness solutions. In addition, Pay-Less Markets made special arrangements to provide financial support to LC Program participants in the form of discounts on healthy foods and active participation in exercise programs at a local fitness facility.

During the LC Program orientation and intake measurement stage, participant morale was very positive. Most asked for information about their blood pressure and blood sugar levels. Many volunteered information regarding their health including information about medications they take or activities they are involved in which could impact these results.

It was interesting to note that a few of the participants who recorded high blood pressure readings reported having prescriptions to reduce or control their blood pressure. However, they were not taking the medication regularly or even were refusing to take the medication. It appeared that these participants were in some stage of denial about the need for health care or medical treatment.

One possible contributing factor may be that some participants do not have company provided health insurance coverage. This appears to be due to the fact that many of these employees are part-time employees rather than fulltime. Therefore, they may not seek medical care because they would have to pay out-of-pocket. This issue needs to be explored in more depth as the program results are recorded.

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CROSSING NATIONAL BORDERS FOR COMPETITIVE ADVANTAGE: TRANSNATIONAL EDUCATION THROUGH INFORMATION TECHNOLOGY

Anita Borja Enriquez, University of Guam

ABSTRACT

This paper explores the value provided by higher education institutions through information technology delivery. The digital age has enabled expedient access to information, narrowing the gap for marketing and strategy purposes. Quick response, a concept founded on the basis of efficient logistics processes for retailers, now transcends to communication flows across all industry sectors. This is critical to effectively compete across national borders. Where seemingly competing transnational education offerings can supplement or augment the home country's higher educational offerings, (transnational) partnerships should be considered to increase value and avoid a competitive disadvantage in this digital age.

INTRODUCTION

This paper explores the value provided by higher education institutions through information technology delivery. The digital age has enabled more expedient access to information, narrowing the gap towards reaching new markets. Since markets are not limited by geographic base, culture, or language (Byrne, 1992, p. 53), this poses a tremendous opportunity for revenue-seeking entities that desire growth. According to Wit (2003, ¶1), internationalization may be regarded as one specific growth strategy to allow organizations expansion beyond their home countries. Crossing borders, as posited by Wit, exists when firms export or import goods or services to and from foreign markets.

Large markets within the United States, Europe and Asia, in particular, have become the target for institutions that are able to export higher education services using this mode of delivery. A rationale for increased cross-border education relates to the attraction by the provider institution to the unmet need for higher education and training (Knight, 2006, p. 28). This can be seen as either an opportunity or threat to the home/receiving country in the form of either collaboration or competition.

Tapscott and Caston (1993, p. 90) suggested that firms who have not adopted (new) technology would eventually be at a competitive disadvantage relative to those who have adopted

it. Porter and Millar (1985, p. 157) purport that information technology has a very strong effect on competitive advantage by either lowering cost or by enhancing differentiation (Porter & Millar, p. 157; Porter, 1990, p. 37). More comprehensively, all industry sectors, including higher education, should benefit through ease of data transmissions particularly in facilitating smooth transactions. For example, Quick responses, founded on the basis of time-efficient processes by retailers in logistics management has transcended in more efficient communication flows of higher education offerings through the Internet. Seamless flows of information lead to cost savings resulting from an avoidance of transaction costs that tend to build up as a result of traditional modes of information delivery. The same can be said of for customers seeking efficient modes of education delivery using information technology.

TRANSNATIONAL EDUCATION

In his comments about knowledge workers, Ives (1992) noted they could be rotated among virtual teams beyond an organization and country's borders. This is no different from the university professor who delivers a course through information technology to reach students across national country borders. This type of offering--transnational education--is education delivered across a country's border to learners located in a different country (UNESCO, 2000). Here, virtual technology and pedagogy are used to export education services. Customers seeking efficient modes of delivery create a demand for on-line course or program offerings.

One can draw the impetus of transnational education from an understanding of the transnational enterprise. A transnational approach employed by an organization is one in which each organizational activity is performed in a location where it can be best accomplished. According to Boudreau, et al. (1998, p. 122), this type of strategy poses the greatest challenges for organizations desiring to increase global competitiveness. The researchers assert adopting a virtual organizational design that allows efficiency and responsiveness and enables the transfer of knowledge across nations. This may be accomplished through a dependence on a federation of alliances and partnerships with organizations with seamless integration of functions or services, while maintaining the core strategic functions that are difficult for competitors to replicate.

CONCERNS RELATING TO TRANSNATIONAL EDUCATION

Concerns have been raised about export education services in home countries. In "Transnational Education Project Report and Recommendations," Stephen Adam (2001, p. 7) contends that transnational education is both welcomed and feared across Europe. On the one hand, it is positively perceived as a means to improve access to higher education, widening choice, and promoting internationalization. On the other hand, the fear relates to challenging of standards, traditional educational values and consumer rights. There is a concern as well that in the midst of

exploiting market demands for profit making in developing countries, countries that have more resources may exploit the market demands. Here, Prasad (1997) states:

> *"This profit making drive of collaborative arrangements may distort the social priorities of education. In this situation the international partnership arrangements will be driven more by profit motives, favouring developed countries and allowing a few visits to foreign lands by 'educationists' of developing countries. The partnership arrangements in an unfair competitive situation may not bring any substantial benefits to learners in developing countries."* (Prasad, ¶10)

As higher educational programs continue to cross national borders using information technology, the source of expertise used to deliver on-line offerings should be also examined. This is important in light of the challenge to distinguish between providers with high and low quality (Knight, 2006, p. 28). There is a threat of inferior-sourced expertise that cannot be ignored. Ives (1992) noted that transnational firms might be required to seek out lower cost sources of expertise from elsewhere in the world due to stiff global competition.

Tadjudin (2000, p. 395) cautions that to protect the population from inferior and fraudulent offerings, national authorities should regulate transnational offerings. Along this vein, Dottore and Spencer (2007, p. 196) assert that institutions that export to foreign countries should consider harmonizing programs against regional standards and policies to best meet the needs of foreign populations. Already the General Agreement on Trade in Services (GATS), under the World Trade Organization, sets the stage for providing equal treatment related to the movement of professional and educational services across national borders of member countries (dos Santos, 2000, ¶28). Until August 2002, there had been only two countries in Latin America (Mexico and Panama) who had signed commitments with the GATS (Garcia-Guadilla, Aupetit, & Marquis, 2002, ¶60).

Another source for protection can be found through the Global Alliance for Transnational Education (GATE), a global organization of institutions of higher education, national higher education and quality assurance organizations, intergovernmental organizations and national ministries of education, and major corporations dedicated to principled advocacy of transnational education programs. More specifically, GATE addresses issues of quality, purpose and responsibility related to transnational education (Lenn, 1997, ¶1).

The provider of transnational education programs, from a management perspective, should also address the issues of quality, purpose, and responsibility. Sheritt and Carbajal (2006) caution that special attention should be made towards effectively planning how transnational education programs in a foreign country will be supported. This includes ensuring ample support towards marketing and recruitment activities, as well as operational activities involving course delivery and student support services. In effect, weak support services related to these activities could diminish

the value that would otherwise be gained by both the provider and the recipient of these respective education programs.

TRANSNATIONAL EDUCATION VALUE

Most may argue that the driving force behind transnational education and internationalization in higher education is economic (Alexander & Rizvi, 1993; Dobson, 1998; Starck, 2000; Matthews, 2002; & Marginson, 2003). The pursuit of profit is a key aspect of transnational education (Feast & Bretag, 2000, p. 64). According to Sheritt and Carbajal (2006, ¶15), "Intrepid for-profit education businesses and private universities are going places where traditional institutions, constrained by restrictive policies, procedures, and provincialism, cannot." In effect, they are filling the vacuum created by traditional education institutions that won't change, and as a result are gaining large net revenue streams formerly claimed by public universities. The researchers assert that several of those who survived this path are doing very well at finding markets, establishing partnerships, and making money.

Gaining access to wider markets, particularly in Asia, poses a great opportunity for new revenue streams, which perhaps could explain the increasing presence of transnational education providers to access international students not available in one's home country. Exporting of higher education is a huge business. Together with training, it ranks among the top five service exports in the United States. Whether through distance-education courses, and programs, or branch campuses, having transnational education fill the gap of reduced traditional higher education offerings is opportune.

TRANSNATIONAL VALUE THROUGH PARTNERSHIPS

According to Sukumar (2005, ¶3), many developing countries with limited education resources are able to narrow the gap access to education and training resources in other countries as a means to complement and supplement offerings to large populations in their respective home countries. In his paper, Sukumar (2005, ¶5) hinted the urgent need for adequate number of distance education higher education institutions, due to the perceived deficient capacity to support the anticipated increase in high education seekers in India within the next decade. He also highlighted the eventuality of reduced government subsidies for higher education, with resulting savings earmarked towards expanding facilities at the primary and secondary stages of education.

One partnering arrangement enabled four developed countries to deliver training opportunities at the university level throughout Africa. Through the "African Virtual University (AVU)" project, students located in Africa participate in educational programs via satellite communications from the United States, France, Canada and Belgium. A variety of funding sources including the U.S. Trade Development Agency, African Regional Development Fund, Canadian

Trust Fund, Irish Trust Fund, European Commision, the World Bank Development Grant Facility, and other donors, provided substantial funding for this project (Ekhaguere, 1999, ¶15).

On a broader scale, The Global University Alliance is an example of a global partnership that shares value through quality product offerings and economies of scale. This alliance includes universities from Australia, the Netherlands, the United Kingdom, and the United States, created as a for-profit subsidiary of the member institutions. The value extended within its alliance is the ability to tap online courses and programs offered by each partner, as well as collaborate in course development, share software and hardware development costs, and reach a wider range of students in different countries (Penn, 2003, ¶11).

Finally, value can be realized through complementary transnational education offerings and traditional education programs offered in developing countries (Tadjudin, 2000, p. 395). In one example, Dottore and Spencer (2007, p. 196) reported how San Diego State University (SDSU), through its Interwork Institute, leverages the strengths of partnered two-year institutions to offer comprehensive student support. In this case, logistics, including marketing, recruitment, advisement, and financial aid initiatives are handled primarily through the local educational institutions. SDSU augments through external education resource tools, and delivering upper-division and graduate-level courses via distance education. Leveraged partnerships such as those with the SDSU Interwork Institute, with community colleges and other government agencies in the Western Pacific, enable a population of Pacific Islanders to access advanced degrees without leaving their respective island borders (Dottore & Spencer, 2007, p.189). The authors purport this to be a unique capacity building approach to teach, learn, and grow academic communities (p. 209).

CONCLUSION

Crossing borders using information technology is increasingly becoming the norm. For higher education institutions within a home country, the threat of being overcome by transnational or global distance educators can be avoided by strengthening the home institution's posture through leveraged partnered offerings. This is critical particularly for home country institutions that lack sufficient expertise and resource capacity to provide required quality levels of higher education offerings. Where seemingly competing transnational education offerings can supplement or augment the home country's higher educational offerings, (transnational) partnerships should be considered to increase value and avoid a competitive disadvantage in this digital age.

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THE IMPACT OF CHINA'S ADMISSION TO THE WTO ON THE INTERNATIONAL EQUITY MARKETS

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ABSTRACT

International equity diversification has been fundamental to portfolio management, but reportedly the benefits have diminished. Emerging and developed country equity markets have tracked more closely with the U.S. markets since the 1997 Asian financial crisis; however, this study suggests that the trend changed significantly following China's admission to the World Trade Organization. Using monthly return data covering the period from July 1997 through 2005, we found decreasing correlations between Asia-Pacific markets and those in the U.S. and Europe after December 2001. We also we observed significantly higher equity returns for Asian-Pacific equity markets since China entered the WTO.

INTRODUCTION

Although China's growth was impressive prior to admittance to the World Trade Organization (WTO) in December 2001, the country's recent economic performance has been nothing short of spectacular. China's exports grew by an average annual growth rate of more than 30 percent during the 2002 through 2005 period. This contrasts to a meager four percent average export growth rate for the U.S. and less than ten percent for the European Union (E.U.) countries, as measured in local currencies during the same period. While China's economy has more than doubled since joining the WTO, many of the other Asian-Pacific countries that have been supplying China with imports have also seen their economies grow impressively. Not surprisingly, the investment market performance of companies headquartered in these countries has generated strong returns for their shareholders. In this study we test the idea that the "China effect" has changed not only the balance of trade relations, but has impacted the levels and co-movements of international equity markets.

Portfolio diversification can be described simply as an investment strategy that seeks to combine assets in a portfolio with returns that are less than perfectly positively correlated in an effort to lower portfolio risk without sacrificing return. Naïve diversification goes further by suggesting a strategy whereby a portfolio manager invests randomly in a number of different assets with the expectation that the variance of the expected return on the portfolio is lowered. Following the seminal work of Markowitz (1952), Grubel (1968) applied the concepts of modern portfolio theory

to international investing and a number of subsequent empirical studies have confirmed the advantages of naïve international portfolio diversification. Levy and Sarnat (1970), Lessard (1973), Solnik (1974), and others found that the benefits of internationally diversified portfolios stem from the fact that the co-movements between different national equity markets have been relatively low with reported correlations of about 0.40. While most research focused on developed countries, Kasa (1994) studied emerging market returns and reported much more volatility than developed markets and lower correlations of about 0.20 with U.S. market returns.

Naïve international diversification has been a fundamental portfolio management strategy over the past 30 years; however, several researchers questioned the concept following the globalization trend that began in the 1990s. While earlier studies found a low degree of correlation across international stock markets, it was reported that this relationship has been changing. King, Sentana and Wadhwani (1994) found greater integration of world stock market returns in the period following the U.S. stock market crash of 1987. Campbell (1995) reported on the low correlation between returns in emerging and developed country stock markets and implied that the investors would benefit from diversification in emerging country markets. He also noted that the correlation between the emerging market returns appeared to be increasing relative to the U.S. market over time. Siegel (2002) reported a significant increase in the correlations between world equity returns after the mid-1990s. He showed stock return correlation coefficients between the United States and the developed countries in Europe, Australia, and the Far East have risen from about 0.40 in the 1970s to almost 0.80 in the late 1990s. Brooks and Del Negro (2004) found further evidence that the return relationship between U.S. and world equity markets has grown significantly stronger in the late 1990s and early 2000s with correlations of almost 0.85. More recently, Statman and Scheid (2005) found the correlation coefficient between U.S. and international stocks increased to 0.86 by 2003.

There are several possible explanations for the apparent rise in international equity market correlation. Clearly, the globalization of financial markets is a major factor with world economies becoming more integrated due to the opening of formerly closed economies and the exchange cross-listing of many equity securities. It also is possible that in integrated international equity markets, the actions of arbitrageurs have acted to ensure that stocks with similar risk are priced to offer the same return. Additionally, there is improved policy coordination across countries with better and more rapid investment information flows. Finally, the country in which a firm is headquartered apparently has become less important to investors, suggesting a decline in investors' "home bias" regarding their portfolio holdings; a finding that was reported by Tesar and Werner (1995) and Lewis (1999). Siegel suggested that it is quite likely that the globalization of equity trading will continue to cause world markets to move more synchronously than in the past. Brooks and Del Negro observed a similar increase in international correlation since the mid-1990s; however, they suggest that some of the rise may be due to temporary factors that resulted from unique global and country-specific shocks.

The Asian financial crisis, a strong global shock that started in the summer of 1997 in Thailand, adversely affected the currencies and stock markets of many Asian countries. Besides Thailand, Indonesia and South Korea were deeply affected by the crisis, while Hong Kong, Malaysia, and the Philippines were adversely impacted to a lesser degree. The Pacific Basin countries of Japan, China, Taiwan, Singapore, New Zealand, and Australia were only minimally affected by the Asian financial crisis. Like the other Asian-Pacific countries, Thailand enjoyed massive foreign capital investment inflows in the early 1990s. The Thai economy grew at an average annual rate of almost 10% during the period. Following a large sell-off of the Thai baht in 1996 by George Soros' hedge fund and lower returns on real asset investments, the Thai stock market and currency dropped by over 50% in the summer of 1997 following the move to a floating currency, which had been previously pegged to the U.S. dollar. Thailand's chronic trade and government deficits, along with rising inflationary pressures, led to a loss of investor confidence and resulted in a run on the country's financial markets. Even with substantial International Monetary Fund (IMF) intervention, the currencies and stock markets of the Philippines, Indonesia, and South Korea plunged in value shortly after the Thailand collapse in 1997.

The Asian financial crisis had an effect on international financial markets overall. After 1997, creditors and investors in the U.S. and Europe came to the realization that the Asian economies could not grow as fast as they had in the early 1990s. This resulted in an extremely cautious approach to Asian foreign investment. The other important fallout of the Asian crisis was the demise of fixed exchange rates as a system of international monetary exchange. Floating currencies and strict IMF lending restrictions became the norm in most Asian countries after 1997. This trend brought more integration of the world's economies and is likely responsible for the observed increase in international equity market correlation.

Still reeling from the 1997 crisis, the Asian-Pacific economies grew slowly during the late 1990s and early 2000s; except for China which grew by more than ten percent annually. Table 1 shows regional and key country merchandise trade balances in U.S. dollars for 2004 and the annual rate of change for exports and imports during the 2001 through 2004 period. The Asian-Pacific countries, led by the spectacular growth of the Chinese economy following entry into the WTO, saw its exports surge since the end of 2001. The primary beneficiaries of China's import growth have been the other Asian-Pacific countries that have provided the bulk of the commodity inputs required by Chinese manufacturers. Preliminary data for 2005 indicates the value of China's exports at 762 billion U.S. dollars, up 28.4 percent; while the value of Chinese imports grew by over 17 percent to 660 billion US dollars. China's 2005 trade surplus is estimated to be 102 billion US dollars, an increase of over 200 percent year-over-year.

The large increase in the price of oil significantly influenced the rate of world merchandise trade growth by region during 2003 through 2005. The large oil producing regions, such as the Middle East, Africa and the Commonwealth of Independent States (CIS), recorded above average export growth during this period. Large net importers of oil, such as the U.S., saw their imports rise

much faster than exports. Asia's export growth was sustained by strong U.S. import demand and intra-Asian trade. In 2004, China became the largest merchandise trader in Asia and the third largest exporter and importer in the world.

The U.S. recorded the weakest growth in world exports and imports of all regions during the period following China's entry into the WTO. The U.S. had a merchandise trade deficit of over $767 billion in 2005, which was equivalent to about six percent of its gross domestic product (GDP). The enlargement of the European Union (E.U.) to 25 members in May 2004 stimulated trade between the new and the old members of the E.U. Including intra-trade, the enlarged E.U. accounted for more than 40 percent of world merchandise exports in 2005.

Table 1: World merchandise trade by major region, 2001-04
(US dollars in billions and percent)

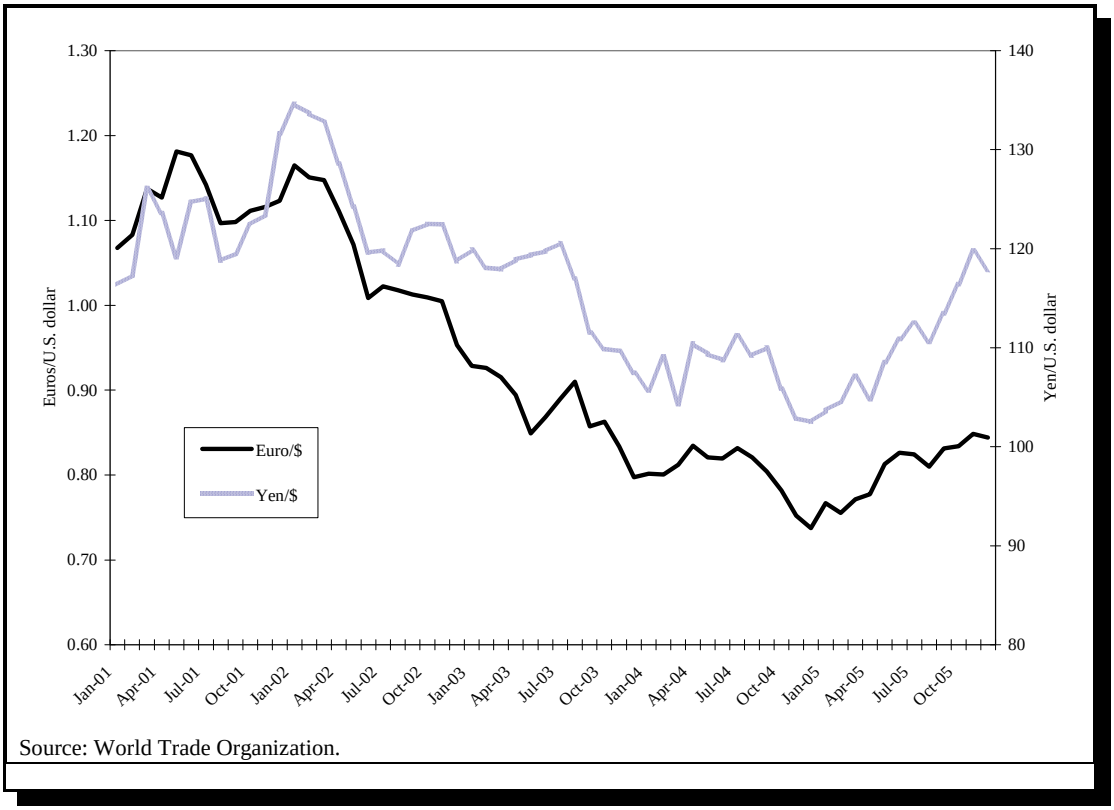
	Exports Annual Percent Change					Imports Annual Percent Change				
Region / Country	2004 Value	2001	2002	2003	2004	2004 Value	2001	2002	2003	2004
World	$8,800	-4%	5%	17%	21%	$9,215	-4%	4%	16%	21%
North America	$1,330	-6%	-4%	5%	14%	$2,010	-6%	2%	7%	16%
U.S.	$819	-6%	-5%	4%	13%	$1,526	-6%	2%	8%	17%
South and Central America	$272	-3%	0%	13%	28%	$238	-1%	-13%	5%	27%
Europe	$4,024	1%	7%	19%	19%	$4,133	-2%	5%	20%	20%
European Union	$3,708	1%	7%	19%	19%	$3,784	-1%	5%	20%	19%
CIS	$263	0%	5%	27%	35%	$171	16%	9%	27%	31%
Africa	$228	-6%	3%	23%	30%	$207	4%	1%	22%	25%
Middle East	$379	-11%	5%	21%	26%	$243	6%	4%	13%	23%
Asian-Pacific	$2,385	-9%	8%	18%	25%	$2,214	-7%	6%	19%	27%
China	$593	7%	22%	35%	35%	$561	8%	21%	40%	36%
Japan	$565	-16%	3%	13%	20%	$455	-8%	-3%	14%	19%

Source: World Trade Organization.

The E.U. and Asian trade statistics, as reported in Table 1, were benefited by the overall drop in the value of the U.S. dollar relative to Euro and Yen during the 2001 through 2005 period. Figure 1 shows the value of the U.S. dollar versus the major European and Asian currencies. The Asian currencies of China, Korea, Taiwan, Singapore and Hong Kong, which are often fixed to the U.S. dollar, saw a slight appreciation of about three percent annually during the same period. The U.S. dollar dropped, on average, by about eight percent annually relative to European currencies after

2001. Measured in euros, Europe's exports in 2005 rose over ten percent, while Asia's exports rose more than 20 percent in local Asian currencies.

Figure 1: U.S. dollar value versus the Euro and Yen, 2001–05.



Source: World Trade Organization.

Table 2 highlights Asian-Pacific world merchandise trade in U.S. dollars during the 1995 through 2004 period. Asia's average annual export growth rate for the three year period ending in 2004 increased by 17 percent compared to only four percent for the United States. Chinese exports grew by an average of 31 percent annually since their admission to the WTO at the end of 2001. India, the second faster growing Asian economy, saw its exports increase by almost 20 percent annually during the 2002 through 2004 period. While the U.S. and E.U. countries imported heavily from China and India during the past several years, the other Asian-Pacific countries saw their exports of raw materials to China and India increase substantially. In short, the major beneficiaries of the growth of China were mainly the other Asian-Pacific countries that have provided the commodities and other inputs required by Chinese manufacturers.

Table 2Asian-Pacific merchandise trade, 1995-2004 (U.S. dollars in billions and percent)							
		Exports Annual Percentage Change					
Region/Country		2004 Value	1995-01	2002	2003	2004	2002-04
World		$8,800	4%	5%	17%	21%	14%
U.S.		819	4	-5	4	13	4
Asia-Pacific		2,385	3	8	18	25	17
Japan		565	0	3	13	20	12
China		593	10	22	35	35	31
Asian Tigers*		637	2	5	15	26	15
India		73	6	14	16	27	19
ASEAN**		550	4	5	12	20	12
Australia		87	4	3	10	21	11
New Zealand		21	2	5	15	23	14
Developing Asia***		1,712	6	10	20	27	19
		Imports Annual Percentage Change					
Region/Country		2004 Value	1995-01	2002	2003	2004	2002-04
World		$9,215	4%	4%	16%	21%	14%
U.S.		1,526	8	2	8	17	9
Asia-Pacific		2,214	2	6	19	27	17
Japan		455	0	-3	14	19	10
China		561	10	21	40	36	32
Asian Tigers*		586	6	3	13	28	15
India		95	7	12	26	34	24
ASEAN**		491	0	4	10	26	13
Australia		108	4	14	23	21	19
New Zealand		22	2	5	15	23	14
Developing Asia***		1,629	5	9	21	30	20

Source: World Trade Organization
* Taiwan, Hong Kong, Singapore, South Korea
** Brunei, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam
*** All except Japan, Australia, and New Zealand

Japan's exports, which outpaced the rest of the industrial world in the 1980's, did not grow during the 1995 through 2001 period and grew by 12 percent annually during the 2002 to 2004 period. Although Japan's exports in 2003 and 2004 grew at double-digit rates, China surpassed Japan as the third largest exporting country in the world.

Table 3 shows the value in 2005 U.S. dollars of China's top import suppliers and the average import growth rate during the 2002 through 2005 period. Although historically the U.S. was the largest exporter to China, it ranked a distant fourth in terms of imports to China as of 2005. Japan, Taiwan, and South Korea saw strong average export growth rates during the 2002 through 2005 period. While Germany's exports to China are impressive, the figures are distorted by the depreciation of the U.S. dollar relative to the Euro during the period. Generally speaking, the other Asian-Pacific countries benefited greatly from China's success following WTO admission in December 2001.

Table 3: China's Top Import Suppliers ($ million)

Country	2005 Value ($ million)	2002-05 Average Growth Rate
Japan	$92,476	25.1%
South Korea	70,992	35.0
Taiwan	66,640	20.2
U.S.	47,146	12.1
Germany	28,012	21.5
Malaysia	18,202	34.3
Singapore	15,460	27.7
Australia	15,052	34.4
Russia	14,934	26.5
Thailand	12,692	35.8

Source: US-China Business Council

In this study we test the idea that this "China effect," described above, has changed not only the balance of trade relations, but also changed the levels and co-movements of international equity markets. It is the purpose of this study to investigate the recent relationship between Asian stock market returns relative to the U.S. and European markets before and after China's entry into the WTO. If there has been a recent decrease in the correlation between Asian and other international stock market returns, this would again support the diversifying properties of international equities and support the benefits of global stock diversification.

METHODOLOGY

In this paper, we investigate the return relationships between Asian and other regions using international equity indices and individual country stock market indices from July 1997 through 2005. The international equities examined include both developed and emerging market countries. Although return relationships are examined over more than eight years, our focus is on the nature of the relationships during the periods following the Asian financial crisis until China's entry into the WTO and the subsequent period. This is consistent with the general perception of the timing of the Asian crisis and the methodology used in related studies, such as Olienyk, Schweback, and Zumwalt (2000), and Krause and Kutner (2005).

It is hypothesized that the return relationships between Asian and other international equity indices was higher following the Asian financial crisis and lower after China's entry into the WTO in December 2001. To capture this phenomenon, statistical tests were employed to test for differences in the mean returns and correlation coefficients across the pre- and post-China WTO time periods.

The data for the study, which covered the period from July 1997 through December 2005, was obtained from Morgan Stanley Capital International (MSCI). The widely utilized MSCI international equity benchmarks are maintained across 23 developed and 27 emerging markets. The value-weighted MSCI benchmarks are based on monthly capital appreciation and dividend income. In addition to various developed and emerging country indices, the following regional indices were included in the study:

- The *MSCI Europe Index* is a market capitalization index designed to measure market equity of the following 16 developed market country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.
- The *MSCI US Index* represents the universe of companies in the United States equity market, including large, mid, small and micro cap companies.
- The *MSCI AC (All Country) Asia Index* includes the following 14 emerging and developed market countries: Australia, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Pakistan, Philippines, Singapore, Taiwan, and Thailand.
- The *MSCI Pacific Index* consists of the following five developed market countries including Australia, Hong Kong, Japan, New Zealand, and Singapore.
- The *MSCI Emerging Markets Asia Index* includes China, India, Indonesia, Malaysia, Pakistan, Philippines, South Korea, Taiwan, and Thailand.

Monthly rates of return were calculated and correlation coefficients were computed over 6-month non-overlapping periods for U.S. and other stock market returns. Compound mean returns and standard deviations were calculated for all indices over the various time periods studied. The degree of asynchronous movements of returns between the U.S., European, and Asian-Pacific international indices was measured by the correlation coefficient. Based on modern portfolio theory it is well known that as the correlation coefficient between international indices increases, the gains from naïve portfolio diversification are mitigated. As stated previously, it is the purpose of this research to investigate the recent relationship between U.S., European, and Asian international stocks market returns to determine if there has been decreased equity correlation after China's entry into the WTO.

DATA ANALYSIS

Table 4 presents the compound annual returns and standard deviations for the developed regions and major countries for the period July 1997 through 2005 and for the pre- and post-China WTO entry time periods. The returns are computed in U.S. dollars. Over the entire time period, the U.S. and European markets outperformed the Asian-Pacific markets, but not by a statistically significant level. However, this fact does not provide an accurate picture of performance. Prior to China's entry into the WTO, the Pacific index returns were significantly lower than those in the U.S. and Europe. Following China's entry into the WTO, however, the Asian-Pacific market returns were significantly higher than those in the United States. In fact, the U.S. equity market was the only developed country examined that had lower returns in the 2002 to 2005 period. The Asian-Pacific countries experienced the most significant return differences across sub-periods with average annual returns up over 20 percent.

The term "emerging markets" was coined by the World Bank in the early 1980s. Emerging market countries typically are in the process of industrialization and have lower gross national product per capita than more developed countries. Of the 130 countries generally considered to be emerging market countries, 27 have stock market indices monitored by Morgan Stanley Capital International. Emerging markets often experience periods of high and volatile returns especially surrounding major events. This was especially true following the 1997 Asian financial market contagion and the 1998 Russian ruble devaluation and debt default.

Table 5 presents the compound annual returns and standard deviations for Asian-Pacific emerging market countries for the period July 1997 through 2005, as well as the pre- and post-China WTO time periods. The emerging market index for Asia was significantly higher in the post-China WTO period increasing almost 19 percent annually. As anticipated, the individual emerging market Asian-Pacific countries had significantly higher returns in the post-China WTO period. Most countries experienced average compound returns 30 percent higher in the post-China WTO period. As previously observed by other researchers, the return volatility of the emerging markets was much

greater than the standard deviations computed for the returns of developed countries. Also of interest, all standard deviations for the emerging Asian countries were lower in the 2002 to 2005 period.

Table 4: Compound annual returns of developed world stock markets in U.S. dollars, July 1997 – December 2005 (standard deviations).

Region or Country	July 1997-2001	2002 – 2005	July 1997 - 2005
U.S.	7.74% (18.13%)	3.89% (13.80%)	5.95% (16.20%)
Europe	7.23% (20.98%)	9.21% (20.48%)	8.15% (20.65%)
All Countries Asia	-9.72% (22.61%)	15.11% (15.58%)	1.79% * (19.85%)
Pacific	-8.81% (21.74%)	15.56% (15.01%)	2.48% * (19.11%)
United Kingdom	2.99% (14.40%)	9.10% (13.81%)	5.83% (14.09%)
Germany	3.15% (23.40%)	8.90% (25.82%)	5.83% (24.45%)
Japan	-9.29% (22.42%)	14.54% (17.85%)	1.75% * (20.59%)
Hong Kong	-5.15% (36.45%)	10.81% (16.86%)	2.27% (28.93%)
Australia	0.83% (21.28%)	21.45% (13.94%)	10.39% * (18.36%)
New Zealand	-12.24% (26.96%)	26.24% (15.22%)	5.54% ** (22.77%)
South Korea	1.21% (65.10%)	26.62% (25.91%)	12.98% (50.55%)
Taiwan	-10.44% (39.32%)	5.96% (23.25%)	-2.83% (32.72%)

Significance of mean difference across sub-periods (* p<.05 ** p<.01).

Table 5. Compound annual returns of emerging Asian-Pacific countries in U.S. dollars July 1997 – December 2005 (standard deviations).

Region or Country	July 1997-2001	2002 – 2005	July 1997 - 2005
Emerging Markets - Asia	-15.62% (34.46%)	18.87% (18.75%)	0.33% * (28.46%)
Singapore	-7.31% (37.77%)	13.51% (15.44%)	2.35% (29.49%)
China	-31.33% (52.97%)	17.04% (21.77%)	-9.03% * (41.64%)
Indonesia	-46.12% (73.47%)	38.11% (31.87%)	-7.61% * (58.39%)
Malaysia	-16.83% (51.16%)	9.87% (15.26%)	-4.46% (38.71%)
Philippines	-32.68% (44.20%)	11.66% (23.77%)	-12.23% * (36.39%)
Thailand	-6.48% (53.36%)	41.63% (27.63%)	12.76% (43.06%)
India	-3.08% (33.28%)	29.17% (23.89%)	11.84% * (29.15%)
Pakistan	-15.41% (50.63%)	49.97% (31.43%)	14.62% * (43.37%)

Significance of mean difference across sub-periods (* p<.05 ** p<.01 *** p<.001).

Figure 2 shows the growth of $100 invested in equities in the U.S. and three international regional indices of developed and emerging markets over the entire study period. While the returns of the Asian-Pacific markets have been outstanding since beginning of 2002, as shown in Table 5, the long-term cumulative returns since July 1997 were slightly higher for the U.S. and European markets. The ending balance in December 2005 for the two Asian market indices were virtually at the same level as the beginning $100 investment in July 1997.

Table 6 shows the correlation matrix of the monthly returns for the various international equity indices over the entire study period and the two sub-periods. The correlations between the U.S. and European market indices increased from 74 percent in the first sub-period to almost 90 percent in the post-China WTO period. The high level of correlation between the monthly returns of the All Countries Asia and Developed Pacific indices were expected given that both were value-weighted indices. As conjectured, both indices dropped relative to the U.S. and European indices in the post-China WTO period. In contrast, the correlation coefficient for the Emerging Asia index

increased relative to the U.S. and European indices in the second period – and was slightly higher than the Asian-Pacific developed market countries.

Figure 2: Returns in international stock markets (U.S. dollars), July 1997-2005

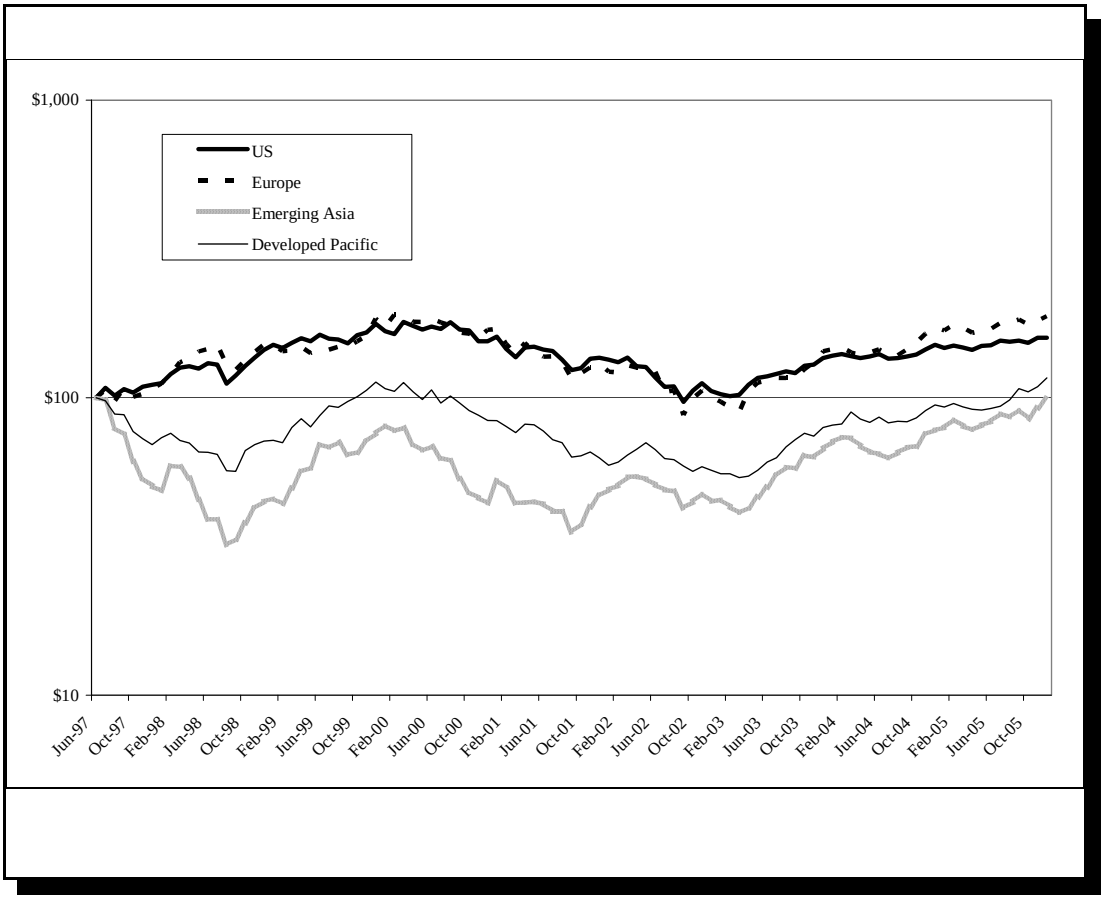


Table 7 shows the correlation coefficients for the various international and country equity indices relative to the U.S. market returns over the entire study period and the two sub-periods. Most return correlations for the Asian-Pacific countries were found to be lower in the post-China WTO period. As shown in the table, the return correlations for the European countries were higher in the 2002 to 2005 period with correlations of 90%.

Table 6: Correlation matrix of monthly returns of international market indices in U.S. dollars, July 1997 – December 2005 (standard deviations).

7/97-2001	U.S.	Europe	All Countries Pacific	Developed Pacific	Emerging Asia
U.S.	100.0%				
Europe	74.0%	100.0%			
All Countries Asia	66.5%	58.3%	100.0%		
Developed Pacific	65.2%	53.5%	99.0%	100.0%	
Emerging Asia	59.3%	46.3%	76.9%	68.6%	100.0%
2002-2005	U.S.	Europe	All Countries Pacific	Developed Pacific	Emerging Asia
U.S.	100.0%				
Europe	89.8%	100.0%			
All Countries Asia	46.2%	46.0%	100.0%		
Developed Pacific	42.2%	44.0%	98.4%	100.0%	
Emerging Asia	71.3%	67.2%	71.9%	60.3%	100.0%
Entire Period	U.S.	Europe	All Countries Pacific	Developed Pacific	Emerging Asia
U.S.	100.0%				
Europe	79.5%	100.0%			
All Countries Asia	58.4%	49.5%	100.0%		
Developed Pacific	56.2%	48.8%	98.9%	100.0%	
Emerging Asia	60.4%	50.6%	75.6%	67.1%	100.0%

Figure 3 shows the 24-month moving average correlation trend between the U.S., European, and the All Countries Asia stock returns over the entire period. The graph shows that the correlation trends over the two sub-periods were significantly different for the Asian-Pacific equity markets. The correlation between U.S. and European returns continued to increase during the entire period, while the relationship between U.S. and Asian-Pacific returns dropped significantly after China's entry into the WTO. As hypothesized, the general trend of the correlation coefficient for the post-China WTO period declined for Asian markets while the European and U.S. trend increased.

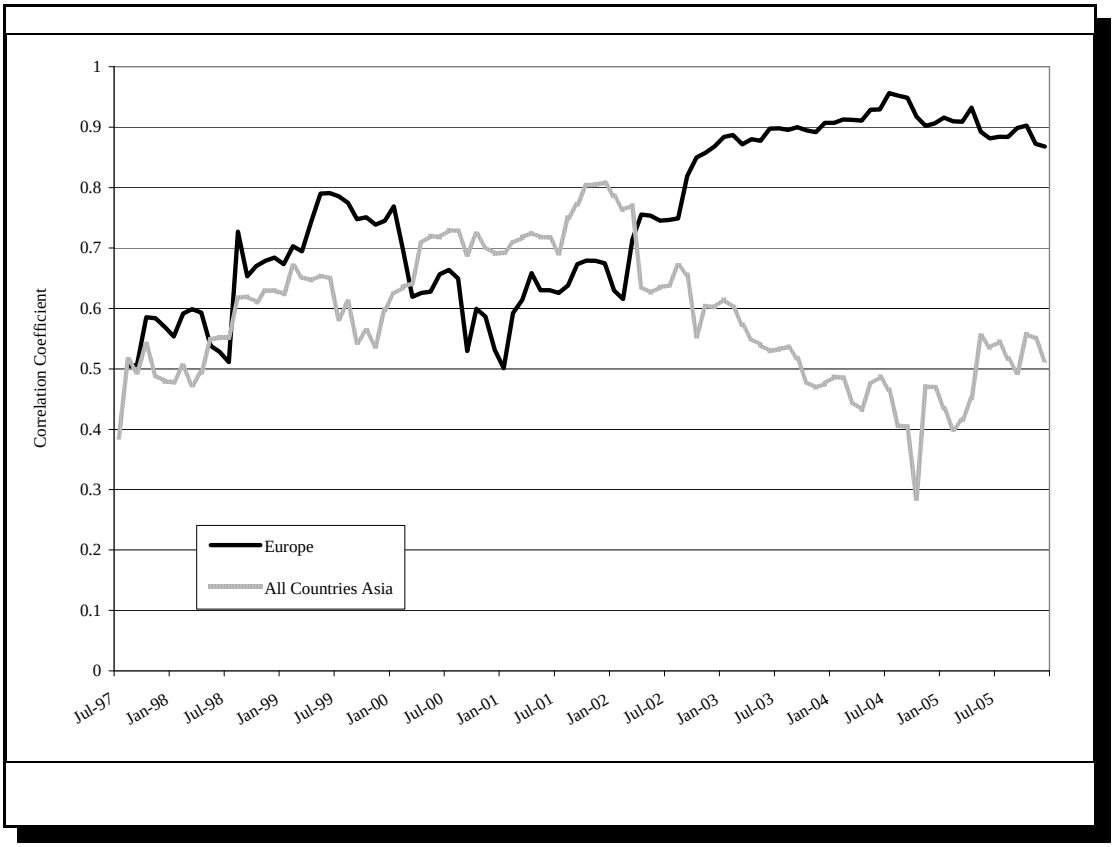
Table 7: Return correlation between U.S. and international markets in US dollars (standard deviations).			
Region or Country	July 1997-2001	2002 – 2005	July 1997 - 2005
Europe	74.0% (16.3%)	89.8% (13.8%)	79.5% (15.5%)
All Countries Asia	66.5% (22.1%)	46.2% (35.1%)	58.4% (27.0%) *
Developed - Pacific	65.2% (27.8%)	42.2% (33.8%)	56.2% (31.5) *
Emerging Markets - Asia	59.3% (20.9%)	71.2% (17.6%)	60.4% (19.0%)
United Kingdom	77.5% (17.6%)	66.0% (22.7%)	72.1% (22.7%)
Germany	64.2% (39.7%)	84.5% (30.7%)	73.8% (30.7) *
Japan	56.5% (38.5%)	30.4% (39.3%)	44.4% (39.3%) **
Hong Kong	66.9% (18.1%)	47.8% (28.1%)	57.9% (28.1%) *
Australia	53.9% (29.9%)	68.4% (24.8%)	63.4% (24.8%) *
New Zealand	50.8% (39.4%)	41.5% (21.3%)	46.2% (31.4%)
South Korea	40.7% (34.9%)	66.8% (30.1%)	56.7% (30.1%) *
Taiwan	48.2% (26.9%)	62.1% (29.3%)	54.8% (29.3%) *
Singapore	69.3% (14.6%)	48.0% (23.8%)	59.3% (23.8%)
China	49.0% (33.9%)	61.2% (31.9%)	54.77% (31.9%)
Indonesia	44.3% (31.0%)	27.1% (34.5%)	35.7% (34.5%)
Malaysia	34.0% (41.3%)	33.4% (24.6%)	35.8% (34.6%)
Philippines	58.5% (24.7%)	10.6% (40.7%)	35.8% (40.7%) **
Thailand	61.1% (25.4%)	41.8% (29.4%)	51.9% (29.4%) *
India	30.8% (39.2%)	33.3% (38.7%)	32.0% (38.7%)
Pakistan	27.4% (40.7%)	10.0% (38.4%)	19.2% (38.4)
Significance of mean difference across sub-periods (* p<.05 ** p<.01 *** p<.001)			

DISCUSSION

Since the early 1990s, the phenomenon of globalization has linked together the economies of both developed and emerging market countries around the world. This has happened for many different reasons. Multinational firms not only procure products from around the world, but they also have established manufacturing operations in various emerging market countries. New world organizations have appeared and assisted in the process, such as the World Trade Organization; and old ones, such as the World Bank and International Monetary Fund (IMF), have become more active. New trade treaties have been enacted, including the North American Free Trade Agreement

(NAFTA) and the General Agreement on Tariffs and Trade (GATT), which have effectively opened new individual country markets to the world. Coupled with this, new technologies, such as the Internet and cell phones, have contributed to the rapid integration of economies around the world.

Figure 3: 24-month average return correlations between U.S. and international market indices (U.S. dollars), July 1997 – 2005.



Consequently, the conventional wisdom which has evolved is that economies and capital markets around the world will move more closely together than they have in the past. This view has been documented recently in a number of papers which have examined many of the financial markets around the world following the 1997 Asian financial crisis. The evidence indicated that capital markets around the world moved more closely together after 1997, as measured by increasing overall return correlation coefficients. The practical implication of these findings was that naïve international portfolio diversification was not as effective as it had been previously.

This paper reconsidered whether the capital markets have continued to move more closely together. The reason for such a re-examination is China's entry into the WTO in December 2001. With over 1.3 billion people, China is and will continue to be a major influence in product and financial markets around the world. This paper examines whether there has been a significant change in equity market dynamics since December 2001.

As reported earlier in Tables 1 and 2, significant changes in world trade have taken place following China's entry into the WTO. Not only have China's imports and exports grown at a faster rate than those of the established western countries, but in addition, a number of other Asian-Pacific countries have also seen their exports grow at substantially higher rates. Thus, countries which have the capability of supplying the needs of a rapidly growing China have also benefited greatly from this new emerging economic power. This phenomenon has resulted in two groups of countries for which trade is growing at substantially different rates. This differential growth in exports presumably leads to similar differential growth rates for those specific firms providing the goods and services and should result in return differences in the appropriate equity capital markets.

In this context the equity markets in the U.S., Asia, and Europe have been examined over the two sub-periods from July 1997 to 2001 and 2002 to 2005. As indicated in Tables 4 and 5, for those countries which have benefited from China's emergence, the changes in capital market returns have been "stunning." These countries include Australia, New Zealand, Malaysia, Thailand, and others. There has clearly been a dramatic change in the level of returns for China-related supplier countries after December 2001. These higher changes in returns are substantially greater than those changes which occurred for countries which have not significantly increased their exporting to China. Moreover, the dynamics between these two groups of capital markets also has changed appreciably. This is evidenced by the return correlation coefficients between countries as reported in Tables 6 and 7. The equity market return correlation coefficients between countries in these two groups have declined significantly after December 2001.

Therefore, it appears that China's entry into the WTO has led to a partition into two groups of countries. The partition seems to be, in a natural way, those countries which are major suppliers to China versus those which have not seen increased benefits in exporting to China. How long this situation will continue is not known; nevertheless, the evidence and implications are clear. A world of increasing economic globalization does not necessarily translate into similar and co-moving capital market performance. There will still be performance differences in such a world and those differences will arise when one party has an economic advantage over the other. These advantages could be due to lower costs, higher expertise, a technological or geographic advantage, or perhaps a regulatory advantage. In any event, this paper documents fairly convincingly that a significant structural change in the world equity markets took place following China's entry into the WTO. The immediate implication is good news for equity portfolio managers seeking diversification around the world. Although numerous studies have reported a diminishing benefit from naïve international

equity diversification following the 1997 Asian financial crisis, the results reported here suggest that this may have only been a temporary phenomenon which evaporated after December 2001.

CONCLUSION

This paper found that there has been a significant change in the world equity markets following China's entry into the WTO. The findings indicate that equity capital market performance can be segmented into two different country groups. One group consists of those countries whose exports, specifically to China, have increased dramatically, and thus, have benefited from China's emergence. These are countries that appear to have some economic advantage in supplying goods and services needed by China. The other group of countries is those which have not benefited substantially in being a supplier to China since December 2001. We find that for the former, the level of equity return performance has increased rather substantially over the level performance change for those countries in the latter group. Moreover, the dynamics in these two markets has changed. Whereas prior to December 2001, the return movements across countries around the world became increasingly stronger; now after December 2001, the return movements have become less correlated. Those exporters to China who have benefited the most appear to have equity returns which move much less with those countries which have not benefited substantially from China's success.

The implication of these findings is immediate and clear. The benefits of naïve international equity diversification strategies have increased since China's entry into the WTO. This is good news for equity portfolio managers. Whether this phenomenon is temporary or long lasting remains to be seen. However, given the history and size of China both in population and geography, it would be unwise to think that what has been reported in this paper is only a temporary aberration. Future studies will almost certainly continue to examine this issue.

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LEARNER-CENTERED BUSINESS INSTRUCTION UNDER MULTI-CULTURAL ENVIRONMENT

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ABSTRACT

Following the expansion of the global economy, students of diverse cultural backgrounds bring different learning styles into the learning environment. The multi-cultural context creates new challenges to accommodate drastic differences in perspectives on time management, group interaction, learning motivation, and learning approaches. Emerging pedagogical challenges include training students to collaborate, to discover, and to solve problems through critical thinking. Engaging students in activity-based and problem-based learning provides powerful positive pedagogical tools to prepare students with adaptive learning skills for dynamic business environments. This paper reports lessons with the application of learner-centered instructional methods.

INTRODUCTION

Following the expansion of the global economy, there is a progressive mixture of students with diverse cultural backgrounds. The increasing popularity of life-long learning also sends adults and senior citizens into college campuses. The trend towards interdisciplinary learning dilutes the homogeneity of student background and interest in classes. These changes create unpredictable outcomes from instructional programs designed for narrowly targeted student groups, challenging assumptions on student motivation, preparation, ability, and learning behaviors.

The multi-cultural context requires new strategy to accommodate drastic difference in perspectives on time management, group interaction, learning motivation, and learning approaches. The broad age spectrum of students creates experience gap, expectation gap, skill gap, and social gap among students enrolling in the same course. The diverse backgrounds of students challenge the relevancy of course contents and traditional instructional approaches.

MULTI-CULTURAL CONTEXT

Students enrolling in business courses at the University of Guam came from more than 12 different ethnic backgrounds, including Black/African, Caucasian, Hispanic, Korean, Filipino, Japanese, Chinese, Yapese, Pohnepian, Chamorro, Palauan, Chuukese, and others. Students from each ethnic group exhibited different study habits, interpersonal skills, and even different concepts

of time, schedule and commitment. The multi-cultural context generated unexpected difficulties in teaching approaches such as team projects, case studies, homework assignments and tutorials. For example, students from pacific islands had great difficulties in adhering to schedules and frequently missed appointments, jeopardizing team projects. In their cultures, an appointment represented the intent to meet, but not necessarily at specific time on a specific day!

Some students were culturally trained to be passive listener and information receivers. They encountered difficulties in applying critical thinking to case studies. In their cultures, learning involved careful memorization of information provided by a superior figure, followed by the strict adherence to the instructions. As a result, they were resistant to independent thinking and critical analysis. They stopped works in the absence of specific instructions, sitting idle for a long period while waiting for explicit instructions.

Students from some cultures always worked as a group and submitted identical works for assignments intended for individual effort. For them, group consensus would be the only way to accomplish any task, and they would feel obligated to share information among the group. Plagiarism was not considered an inappropriate practice, with a vague concept of individual property. It was a great challenge to evaluate case study reports assigned as individual effort.

Independent learners from other cultures disliked instructions, and boredom arose from hearing repeated information already included in reading materials. Some preferred to work without the watching eyes of the instructor. They preferred to work at their own pace, with their own choice of location, equipment, and methodology! The expectation for individualized treatment was a big contrast in comparison with the expectation of other students for structure, predictable contents, and guidance.

EFFECTS OF SUB-CULTURES

Many business courses attracted students outside of the disciplines. In one course, non-major students accounted for over sixty percent of enrollment. These students brought along broad spectrum of sub-cultures due to differences in career interests. They generated instructional challenges in learning motivating and maintaining the focus of the students. For example, these students found difficulties in understanding business problems, organizational concepts and value generation. They were poorly prepared for oral presentation and collaborative team works. A few students experiencing “culture-shock” could take up so much time from the instructor that the progress of the entire class would be held back. On the other extreme, some students would detach themselves so much from the learning process that they challenged the relevancy of the course contents, and many ended up dropping out from classes.

EVOLVING PEDAGOGICAL APPROACHES

Instructors were keepers of knowledge in traditional pedagogical approaches. The instructors determined learning objectives, learning resources, activity schedules, learning behaviors, learning outcomes and the ultimate success of students in the course. The instructors focused their efforts in organizing course contents, and delivered the knowledge primarily through lectures, supplemented by other pedagogical methods. Students were then evaluated on their mastery of the knowledge delivered. The lecture approach was also favored for efficiency in handling large number of students.

Emerging pedagogical challenges included training students to collaborate, to discover, and to solve problems through critical thinking. Team projects and cases were introduced to foster independence and critical thinking. However, case approach could yield unpredictable learning outcomes depending on the motivation and prior experience of students. A weakness of cases was the cultural presuppositions embedded by the case writers. Students without the proper cultural background could be totally lost in some case studies, and disassociated themselves from the case learning experience. Team projects required very skillful management of the student teams, especially for team members with multi-cultural backgrounds. The presence of dominating team member could distort the measurement of student performance, even creating undesirable conflicts among the team members. Discussion and dialogues provided a much richer learning environment, but these approaches tend to be timing consuming. There was also the fallacy of the potential overemphasis on the desirable conclusions of the exercises, and students soon learned to limit their responses to expected solutions.

Simulation and real life projects were two other popular approaches. These tasks tended to be complex, and therefore only suitable for advanced students with substantial experiences and skills. These tasks also required extensive time and resources commitment, and skillful instructional management. This may accounted for the limited usage of these approaches.

There have been increasing reports of the benefits of engaging students in learner-centered pedagogical approaches that utilize activity-based and problem-based learning. These approaches provided powerful positive pedagogical tools to prepare students with adaptive learning skills for dynamic business environments. This presentation reports lessons with the application of learner-centered instructional methods.

LEARNER-CENTERED INSTRUCTION

In a learner-centered approach, the teachers assume new roles as mentors and advisors, monitoring the learning experience of students (Karagiozov, 2003). The American Psychological Association identifies 14 principles pertaining to the learning process ("Learn-Centered Psy", n.d.) Successful learners would be active, goal-directed, self-regulating toward creating meaning

consistent with personal interests. The interactive role of teachers, group influences, and a nurturing classroom environment can significantly impact learning. The learner-centered model expects high interaction of students with the instructor and one another. The instructor serves as information resource and students were given choices of learning targets ("Teacher", n.d.; "What is learning", n.d.). Students learn through discovery, inquiry, and problem solving ("Student-Centered", n.d.). Collaboration between students is encouraged, but all students are expected to demonstrate the results of their learning through a task performance ('Learner-Centered Class", n.d.). The goal is to teach students how to learn, acquiring the ability to use information to assimilate knowledge (Barton, n.d.). The teacher plays a key role in creating the learner-centered environment to facilitate a meaningful learning experience for the student (Bransford, Brown & Cocking, 1999).

A PROBLEM-BASED LEARNING CASE

The Introduction of Computer course at the School of Business was initially designed for business students. The course became so popular over the years that non-major students accounted for nearly seventy percent of enrollment. Besides the diverse career interests, students came from over 12 ethnical backgrounds, with broad age range and different career experience. The broad spectrum of prior experience had created tremendous instructional challenges in assuring student success in the course without compromising the learning standards. Samples of the challenges included:

1. Adult students tended to adjust slowly to the use of computer and they felt intimidated by the pace of the course.
2. Students were spending large amount of time following detailed instructions of exercises and consumed valuable time on mundane tasks, limiting learning opportunity.
3. Students became dependent on the assistance of the instructor, fearing the potential negative effect on their grade when they made small mistake. They were only interested in obtaining the “correct” solutions, hence good grades.
4. Some students were able to “recycled” electronic files of exercises, causing a distorted measurement of their learning outcomes. This created an adversary relationship between the students and the instructor, who was cautious not to give up the solution easily.
5. The technically savvy students became bore with the basic computing exercises and they developed a negative learning attitude.
6. There were great difficulties in covering all the planned materials because of the needs to wait for students to complete key exercises.
7. Learning was not fun. There was an atmosphere of distress, frustration and fear.

A new instructional approach has been developed to enhance the speed of student learning and overall learning outcomes. The new approach recognized the potential differences in background, learning motivation, and learning ability of students. Students were allowed to work on their own pace, but were reminded that their grades would depend on their ability to successfully complete 20 challenging exercises with increasing difficulty over a 12 weeks period. Students were given multiple opportunities to learn, to experiment, to interact with other students and to repeat tasks (Uden, and Beaumont, 2006). Instead of assigning grade based on the percentage correctness of tasks completed, students must present and explain their works to the instructor face to face. Full credits were granted only for completed tasks that met all skill standards associated with the tasks. Students who failed to demonstrate mastery of all the skills expected for a task must repeat the task until achieving the standards. No credit would be given for tasks that were not completed and presented successfully by published deadlines. At the end of a semester, a student had to pass a comprehensive, task oriented hands-on computer skill test to receive a C or better grade in the class (Lynam, 2002).

The course design lessened the time pressure on students to rigidly following learning schedule, and helped them to focus their energy on generating learning outcomes. Many students were motivated by natural peer pressure among friends and acquaintances. The advanced students exerted pressure on other students working at a slower pace. However, students quickly tutored each other under the supportive supervision of the instructor. They effectively shifted their attention towards learning rather than seeking the approval of the instructor. Students enjoyed the learning experience with spontaneous interaction among themselves. The face-to-face interactive grading of the completed assignments motivated students to produced quality work to avoid the embarrassment of repeated rejection by the instructor. The interactive feedback from the instructor contributed to student learning, and many students were eager to reconstruct the exercises after reviews by the instructor. Students enjoyed controlled creativity and many included their personal touch to the tasks, knowing that they were expected to demonstrate the mastery of skills rather than creating a replicate of the standard solution.

LESSONS LEARNED

The multicultural environment was a key factor triggering the need to explore alternative instructional approach to accommodate students with different learning abilities. Other class characteristics included mixed age groups, broad mix of majors of studies, uneven prior technical capabilities and work experience, and varied access to computer technology. These lessons learned from the implementation of learner-centered instruction were relevant for 20 students class size, which were easier to stimulate student interactions.

Design for active learning:

Some traits of active learning involved discovery, inquiry and problem solving. The learner-centered course was designed to encourage collaborative learning, to permit the testing of alternative problem solving approaches, to allow repetitive experimentation, to provide feedback on the effectiveness of different solutions, and to recognize creativity and the generational of meanings for the individuals.

A special learning package was developed to encourage learning by exploration. The package concisely presented key concepts, with annotated sample exercises. The special learning package provided relevant technical notes and tips for the students, who must creatively use the recommended tools to complete the tasks. At the same time, all tasks were carefully designed to minimize mundane tasks such as keyboard entries. The package freed the instructor from the presentation of basic information, shifting class time towards interactive activities. Students were encouraged to complete tasks by exploratory use of various tools and resources, and through interaction with other students. Specially designed assignments required the students to demonstrate their solution approaches, instead of placing the emphasis on "correct" solutions. As a matter of fact, deviation from the standard solution was an expected outcome since students were encouraged to experiment with different solution methods and tools. Sometimes, students completed tasks with unexpected approaches and tools, and they were debriefed on the recommended methodology while their works would be recognized with full credit. Collaboration among the students was encouraged. However, students must individually defend their solution methods, and a comprehensive skill test was administered to ensure individual learning.

A key design consideration of learner-centered instruction recognized the different learning habits, and learning abilities of students. A flexible activity schedule allowed students to learn the materials at their own paces. This was especially effective in handling students from multiple cultural backgrounds. Adult students with heavy commitment and busy work schedule greatly appreciated the flexibility of juggling learning activities with their other schedules. Face to face evaluation of student assignments provided instance feedback to students, while allowing the detection of potential learning problems. Students were allowed to repeat their works, as long as they completed the required tasks in a given time frame. Many took advantage of the flexibility and spent extra time on skill area difficult for them to understand. Students also applied their newly acquired skill in other courses. Recognizing the continuing nature of active learning, students were allowed to inquire about difficult concepts, even those beyond the scope of the course.

This approach required special preparation from the instructor, who must be thoroughly proficient with the materials being taught; with in depth understanding of the tasks students were required to perform. Learning no longer occurred in controlled environment. The instructor must be capable of diagnosing and resolving various unexpected obstacles students encountered since

there were no prescribed procedures for completing the tasks. The learner-centered approach also created continuous learning opportunities for the instructor.

Students involving in active learning tended to spend more time in learning, paying attention to details, and exhibited less behavior problems such as absenteeism, excuses, plagiarism, and indifference. More importantly, students were relaxed while learning, with occasion bursts of excitement for tasks accomplished.

Goal-directed learning:

A feature course design was the inclusion of a set of achievable goals with increasing level of difficulties. Simple goals were set at the beginning of the course to provide ample time for students to adjust to a minimum technical competency level. The observed technical ability of the students was an important factor for determining the actual pace of the course, and the final mix of course activities. For example, when students exhibited familiarity with electronic presentation, then a brief version of the instruction on PowerPoint would be delivered, with emphasis on advance features. Otherwise, a full lecture on the topic would be delivered according to student needs. However, when students experienced difficulties on a concept, the lecture on the problematic topic would be repeated. When the students became familiar with the primary skills, additional goals would be added at more frequent intervals. A final set of challenge tasks was included with no formal instruction. At that stage, students would have to apply their problem interpretation and analytical capabilities, and complete the assignment through self-learning. The set of goals supported an elaborate statement of skill expectations that would be measured by a skill test at the end of the course.

Goal-directed learning allowed students to focus on the outcomes, and not the process, and time spent in the process. The ability to achieve multiple goals in a short period of time rewarded and motivated students to attempt greater challenges. On the other hand, there was nothing shameful about not achieving a goal, thus students were encouraged to keep trying until they mastered the learning materials. In the process, many students would have invested considerable among of time to ensure their successful achievement of the goals. This approach was effective in handling students with diverse learning motivation and interests.

Another important strategy involved setting goals related to the common knowledge and prior understanding of the students. This encouraged students to explore solutions to problems they can relate to in their personal experience. This strategy also helped to channel the attention of students towards problem solving, and not wasting energy in resolving communication problems between the students and the instructor.

Self-regulating learning:

One of the more challenging design considerations was to create an environment to encourage self-regulated learning. A learner-centered design allowed the active learning students to set goals, prioritize the goals, and determine the pace of learning, and method of learning. Thus the students were the driving forces for learning, while the instructor assumed a supportive role.

The first issue was the location of learning. The leaner-centered course made no assumption that the students must learn at the designated facility. Computer laboratory was available for the convenience of students, but students were allowed to utilize any compatible resources to complete the required tasks. Resourceful students would be able to utilize computing resources at home, at work, or at other available locations to complete their assignments. For the same reason, there was no assumption on the specific technology requirement for task completion, recognizing that alternative software could be used to complete the tasks. As a matter of fact, the instructor must be well acquainted with multiple software packages and software versions to support learner-centered learning.

Students were given the freedom to determine when to attend class, but they were required to report to the instructor on regular intervals to assure successful progress in the course, for addressing learning difficulties, and to keep students in line with the learning goals. For this purpose, occasional attendance taking, and restrictive assignment deadlines were the tools used for monitoring student learning. This also helped to spread out the workload of the instructor to assure that the instructor could always attend to individual student needs.

A flexible set of learning outcomes allowed students to miss some of the learning targets and still receive recognition of their overall achievement in the course. This adjustment to the grading system was desirable to accommodate difference in learning styles and interests. Students were evaluated on the achievement of a set of goals, thus recognizing prior learning experience, and learning occurred away from designated locations and timeframes. Thus the advanced students were allowed to skip minute details, while the beginning learners were required to repeat details to enhance their learning.

Creating meaning through learning:

Recognizing that the creation of meaning being the most powerful learning experience, the course was designed to start the beginning lessons from the common experience of the students, and challenge them to complete simple tasks with more efficiency and effectiveness. This involved redesigning lecture materials into a series of short demonstrations. The presentations were not designed to deliver information or explain concepts, but to illustrate the potential outcomes through difference methodologies. Students would end up picking the methodology that captured their individual attention and proceeded to complete tasks. They eventually learned about the best

problem solving approach either through other students, or after presenting their completed tasks to the instructor. Very often, students learned from each other, and proudly presented their successful learning outcomes to the instructor. Learning became an experience of discovery, and not a compulsory repetition of pre-designed tasks.

Brief demonstrations were often used, since they created simple mental images that could be easily assimilated into the experience of the students. The selection and timing of the presentations were coordinated with the anticipate learner abilities, through careful observation of student behaviors. The goal was to present new information when students were most likely looking for the new information. Thus learning became an extension of the current experience of students. Through the learner-centered approach, failure and inefficiency were utilized as learning experience, enriching the learning experience for the students. The learner-centered approach bridged new learning experience with past experience, promoting the linking of knowledge and allowed students to drive the learning process. Students generally found learning to be mentally challenging, and enjoyable.

Relate to personal interests through learning:

A major challenge in technical training was to ensure that students retain their newly learned skills. Although the driving demands of the instructor could temporary shape the behavior of students, deep learning was much harder to achieve. A key reason being that unmotivated students tended to spend minimum efforts on tasks.

The learner-center approach allowed students to mix learning with their personal interests. For example, students were allowed to choose any topic to create an electronic presentation. Many students came back with highly creative projects. More importantly, students committed extensive amount of time to complete tasks, and even voluntarily teaching other students to learn the tasks. The later behavior required internalization of concept and deep learning to acquire the ability to past on the knowledge to others. It also enriched their learning experience. With tasks that were related to personal interest, students had a vested interest in ensuring the successful completion of the tasks.

To encourage the development of personal interest and deep learning, the instructor resisted the temptation to restrict learning outcomes to a limited scope. The instructor ensured that students could visualize the expected outcomes, and allowed them to find rules and procedures that facilitate their task completion. Students were challenged to complete tasks with speed and professional quality. They were given the opportunity to learn at different paces, and given much control over time management. Class attendance was an incentive, not a requirement. The tasks assigned were challenging enough to require careful analysis and extensive exploration. Some students preferred to learn from each other, and some student learned through helping others. Some students demanded constant attention from the instructor, when others insisted on solving problems on their own.

FUTURE RESEARCH DIRECTIONS

While learner-centered approach has shown promise for improving learning outcome, data collection has been especially challenging due to differences in the learning capacity and motivation of individual students. There was also an ethical issue with setting aside a group of students as control group, effective compromising the learning experience of these students for the sake of data collection. The next stage of this research would evaluate the performance of students in the comprehensive skill test, using test papers from different sections of the same course taught by different instructors. A quality survey will be created to measure the satisfaction of learning experience.

CONCLUSION

Although learner-centered approach required extensive preparation time for initial setup, the extra effort was well justified for positive student feedback, improved relationship with students, promotion of active learning and deep learning, and more predictable learning achievement of students. The approach should be applicable for larger size class with the addition of properly trained tutors.

The learner-center approach was also tested in a junior level course with very positive result. Essentially, students were assigned to solve a technical problem with practically no guideline. Students were allowed to use any software tool to solve the technical problem. Each problem was designed to require students to experiment with software tools, and possibly learning new skills on their own. While the students were allowed 72 hours to solve the problems, many student teams solved the problems in less than 7 hours!

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APPLYING A VALUE-ADDED PRODUCTIVITY INDEX IN AN INTERNATIONAL CORPORATE ENVIRONMENT: AN OVERVIEW OF HOW KYOCERA CORPORATION USES HOURLY EFFICIENCY TO IMPROVE COMPANY PROFITS

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ABSTRACT

How can a company use an accounting tool to help drive profitability? According to one of Japan's most respected entrepreneurs, Kazuo Inamori, founder of the 60,000+ employee-strong technology firm Kyocera, as well as the major Japanese telecom firm DDI (now KDDI), and also the Kyoto Prizes, "The most important mission of corporate accounting is to support the corporation's profitability." Kyocera Corporation and its unique, home-grown "Amoeba Management" system are introduced. In particular the key productivity index measurement, "Hourly Efficiency," is explained and how it is used to improve profitability as well as its application outside Kyocera and Japan are discussed.

INTRODUCTION

> *"The most important mission of corporate accounting is to support the corporation's profitability."* -- Kazuo Inamori

Founded in 1959, Kyocera Corporation has grown from a small, Kyoto-based fine ceramic technology start-up to become a major diversified international enterprise with over 61,000 employees and $10 billion in sales. Fiscal 2006 group sales included ceramic components and products (27.2%), electronic devices (22%), information equipment (21.1%), telecommunications equipment (19.4%), and other products and services from optical equipment to hotels (10.3%). Moreover, the company has been profitable every year since its founding, having never recorded a net loss on an annual or quarterly basis despite fluctuations in the businesses and economies in which it operates.

Kyocera has a long history of conducting business overseas, starting in the 1960s when it began supplying ceramic packages to companies in the burgeoning U.S. semiconductor industry.

In 1969 Kyocera opened its U.S. headquarters office in Sunnyvale, California. In 1971 the company began manufacturing operations in San Diego and opened its first European office. In 1976 Kyocera issued American Depositary Receipts (ADRs) in the U.S. and its prospectus stated that 66% of its sales were from outside Japan. As of March 31, 2006 its group employees were spread around the world with 35.6% located in Japan, 28.7% in China, 15.9% in the Americas, 10.1% in Europe, and 9.4% Other Asia.

Most of the Kyocera group, particularly in Japan, operates under an internally developed management system called "Amoeba Management" by which the organization is divided into small, profit-center like units called "amoebas." The company believes that the Amoeba Management System and the corresponding Hourly Efficiency reporting system described below are key elements for sustaining and improving profitability of the company. According to the company's founder and Chairman Emeritus, Kazuo Inamori, "Using them both at Kyocera and DDI, we were thus able to achieve steady business growth without any adverse effects from the bubble economy" (Inamori, June 1999).

AMOEBA MANAGEMENT

Amoeba Management was developed around 1963 by Kyocera founder Kazuo Inamori, an engineer by training, to help manage the growing company when the company was approaching 100 employees. "The purpose of the Amoeba system is to bring the dynamism and challenge of the living marketplace into the company, by applying the same market rules in the dealing among amoebas." "Each amoeba operates as a profit center and is as active as if it were a small business of its own. Its leader, under the authorization of his or her superiors, is given the authority to plan its business, control its results, and manage its labor and other administrative affairs" (Inamori, June 1999).

Unlike traditional profit center structures, the majority of amoebas operate at the smallest level of operations within the organization. At present there are some 3,000 amoebas operating in Kyocera in Japan. Amoebas range in size from two to over 100 people. An amoeba of 20-40 people is more typical and roughly in line with Dr. Inamori's original intent to create workgroups manageable by "people who are becoming increasingly able to take charge of 20 or 30 people" (Inamori, 2006) "In most cases each product has its own amoeba. If the product is manufactured on a large scale, there may be an amoeba for each step" (Inamori, 1999). These small amoebas are then combined to form departmental, divisional and company-wide amoebas. (Inamori, 1995)

Amoebas are created on a relatively frequent basis. To form an amoeba three requirements must be met: first that revenues and expenses of the amoeba are clearly identifiable, second that the amoeba is able to stand alone as a business entity, and third that the amoeba supports the overall corporation objectives. One example of a new amoeba created during this time was that for logistics

which helped to bring down total company logistics costs although each plant had been scrutinizing its own transportation expenses (Inamori, 2006).

Because of the relatively small size of the amoeba workgroup it is easier for employees to perceive the impact of individual activities and actions. "Amoeba Management is a business system that enables all members to fully participate from their respective positions, being fully aware of individual responsibilities and goals, so that they can together self-fulfill the amoeba's goals" (Inamori, June 1999). "Moreover, all employees, even the most newly hired, would understand the goals of the amoeba they belong to…everybody would participate in the operations and management of the company" (Inamori, 1999).

HOURLY EFFICIENCY

"For a business to prosper, it must generate added value and continuously improve it."

-- Kazuo Inamori

Central to the management of an amoeba is a modified profit and loss reporting system called "Hourly Efficiency." "The Hourly Efficiency concept started from our attempt to find a way to realize this principle to 'maximize revenues and minimize expenses.'" While this may be a fundamental concept related to profitability, the emphasis at Kyocera is to decouple them and attack them separately, so that an increase in revenues does not necessarily lead to an increase in expenses. "As our revenues increased, we should also strive to maintain expenses at the same level or lower…We must be very clever, innovative, and relentless in our efforts. But, that's how profit is generated" (Inamori, June 1999).

"We came upon the idea of tracking 'added value,' which we define as the difference between the total revenues minus total non-labor expenses including a corporate services allocation. (Labor is excluded from the calculation because a key factor for labor cost, wage rates, is typically outside the control of the amoeba leader.) "We named this 'added value' because it is in fact very close to what economists call 'added value.' Further, "… I decided to make our daily work's contribution to the added value more obvious by computing the hourly added value and using it as an indicator of our productivity. We then designed an Hourly Efficiency report that the management control would produce so that every employee on the production floor could easily understand his or her contribution to our profitability." (Inamori, June 1999)

Every month each amoeba creates a plan forecasting net production, added value and Hourly Efficiency. Performance is tracked daily within the amoeba and adjustments in pricing, production or expenditures can be quickly made. Overall performance versus plan is reviewed externally on a monthly basis, at which time adjustments to the amoeba membership structure can be made. In

Japan performance of amoebas is announced or otherwise made public to all amoeba members and those of other amoebas.

Table 1: Example of a Production Amoeba's Hourly Efficiency (Inamori, June 1999)	
Item	Computation
Gross Production	A = B + C
Outside Sales	B
Inside Sales	C
Inside Purchases	D
Net Production	E = A - D
Deductions	F
Raw Materials	
Subcontractor	
…	_
Added Value	G = E - F
Total Working Hours	H
Hourly Efficiency	I = G / H

While Hourly Efficiency reports are used as a measure of performance already undertaken, their more vital role is as a daily tool to help employees and managers to take step to improve efficiency. Inamori writes, "The essence of an amoeba is that each member has an accurate and real-time grasp of financial performance, and is able to immediately take actions that are necessary to attain the goal" (Inamori, June 1999). "New employees quickly learn to use this financial consciousness through hands-on training, and if their superiors accidentally do something wasteful, they will immediately point it out and say, "We shouldn't do that—it will increase our costs" (Inamori, 1999). "The 'stars' of Amoeba Management are the groups of people who use their brains to devise a way to produce the maximum revenue with the minimum expenses. The focus is on the total 'added value' produced by the amoeba… This is in contrast to the standard cost accounting system, where the 'star' is the physical product and the focus is on the product's standard cost per individual process step" (Inamori, June 1999).

APPLYING AMOEBA MANAGEMENT AND HOURLY EFFICIENCY ELSEWHERE

Value-added productivity has been called "the most useful index" for financial diagnosis and corporate performance because it encompasses all the major issues of a business including

production, product planning, marketing, human resource management and finance, and it enables comparisons among different organizations. However the ability to generate real-time numbers needed has often been lacking. (Watanabe, 1999) "At Kyocera, the 'accounting' theory…is intimately linked to our so-called "Amoeba Management" system…They are…two pillars anchored on the foundation of Kyocera management philosophy" (Inamori, June 1999). Under Amoeba Management, required financial information is generated daily. Further Hourly Efficiency is effective in part due to the cultural mindset that has been developed at Kyocera over its history.

Teaching the Kyocera way of thinking is a vital part of employee development. According to the company's annual "Sustainability Report" attendance at Kyocera training events totaled 54,747 in fiscal 2006 (Kyocera, 2006). The company's U.S. based Kyocera International has implemented Amoeba Management and Hourly Efficiency. Kyocera is implementing Amoeba Management into the operations of Japanese companies that it has acquired such as Mita (now Kyocera Mita), Kinseki (now Kyocera Kinseki) and Toshiba Chemical Company (now Kyocera Chemical Company). Kyocera is also utilizing Amoeba Management at several of its manufacturing facilities in China where it has rapidly expanded operations over the past decade. In April 2005 the company launched the Kyocera China Management Research Institute to support education of its efforts (Kyocera, 2006).

Dr. Inamori himself warns of the challenges of applying Amoeba Management and Hourly Efficiency. "In order for Amoeba Management to function properly, we need trusting relationships between employees and the employer, as well as among employees. It is also important that every manager works from the standpoint of always doing the right thing as a human being. Otherwise, Amoeba Management would only create negative competition among employees, which could encourage unethical behavior and result in the decline of the company" (Inamori, 1999).

Given these caveats Dr. Inamori and Kyocera have carefully endeavored to establish Amoeba Management and Hourly Efficiency in organizations and situations where they are appropriate to the culture and the necessary philosophical groundwork can be undertaken. In 1984 when Inamori and Kyocera launched DDI, the competitive telecommunications company to Japan's NTT, they had no experience in the telecommunications and were at a distinct disadvantage to other competitors. By utilizing Inamori's business philosophy and management approach in the company he hoped to demonstrate that Kyocera's success was not just a function of being in the right industry at the right time. DDI maintained a "philosophy-education office" during its history as an independent company. The company became the most successful competitor to NTT and was able to go public in 1993 less than ten years from its founding. Kyocera also established Kyocera Communications Systems and Kyocera Management Consulting which have provided Amoeba Management based consulting services to hundreds of companies.

Lastly Dr. Inamori has been a leader in teaching his business philosophy outside Kyocera. He has published Japanese best-sellers on management and leadership based on his ideas and experience and several of these books have been translated into English and other languages. In

1983 in response to requests from groups of young business owners Inamori established a private management study group called Seiwajuku (which translates as growth-harmony school) for the purpose of communicating 'the management philosophy "that they should possess as a business owner" (Inamori, 2001). By early 2007 there were over 4,000 Seiwajuku members in chapters throughout Japan, as well as in Los Angeles, New York, and three cities in Brazil, studying and applying Dr. Inamori's ideas.

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ASSESSING THE COMPUTER INFORMATION SYSTEMS SECURITY: THREE CASE STUDIES OF LOCAL GOVERNMENTS IN CENTRAL PENNSYLVANIA

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ABSTRACT

Computer information systems security is critical for all organizations since security threats have become such a constant and pervasive force. Preliminary research by the authors indicates that while significant scholarly efforts have been made at the federal government level, little research has been conducted to assess the computer information systems security readiness of small local governments in the United States. Therefore, it is of great importance to properly assess the status quo of computer information systems security practices in this setting. This paper presents the results of a pilot study that evaluates the computer information systems security readiness of small local governments located in central Pennsylvania. The authors have studied three representative local governments in the region. The study serves as a first step in building a local government-specific assessment framework for a follow-up study that will use a more refined and advanced measurement model.

INTRODUCTION

Individuals and organizations face constant security threats in today's Information Technology (IT) environment. Computer security threats can come from either within an organization or its external environment. Disruptions in productivity, stolen information, or financial losses can be the consequences of inadvertent security oversights by an organization's employees and the failure of managers to clearly understand security risks. Internally, organizations must defend against both expected and unexpected security incidents that can range from ordinary hard disk failures to natural disasters (Ryoo and Choi, 2006). Externally, organizations must also protect themselves against malicious intrusion attempts involving denial of service, viruses, worms, spyware, phishing, etc. (Cheswick et al., 2003).

One of the biggest threats that can affect the citizens of any community is the theft of personal information. Concrete examples of this threat include invasion of privacy, identity theft,

man-made disasters, etc. Local governments handle such sensitive information as tax data, social security numbers, personal home addresses, building floor plans, public works information, and information for first responders in emergencies. Therefore, it is the responsibility of the local governments to protect these sensitive data.

The threats mentioned above are real. In December 2005, Russian hackers breached a Rhode Island government web site and stole credit card information (Sarkar, 2006). Not long before this incident, a Midwestern city police force lost its radio communication for five hours due to a virus infection on the city's computer system (Krouk, 2004). As these incidents indicate, computer crimes targeting for the government sector are on the rise.

While an increasing amount of attention is being paid to the governments at the federal and state levels, little research is conducted to measure the effectiveness of the computer information systems security practices in smaller local governments. This lack of research has much to do with the reality local governments are facing. Many of them (especially, rural municipalities) lack resources and funding to sponsor research projects not to mention adequately managing their computer information systems security. This makes local governments particularly vulnerable among the various forms of government organizations. Consequently, the authors note that there is a growing need for assessing the computer information systems security readiness in small local governments. As an initial step toward this goal, the authors have completed a small-scale pilot study that limited its scope to central Pennsylvania. The study was carried out in the following four steps:

Step 1:	*Researching the structures of local governments in central Pennsylvania,*
Step 2:	*Forming an advisory board with expertise in Pennsylvania local governments,*
Step 3:	*Interviewing key individuals who have first-hand knowledge of the information systems used in local governments, and*
Step 4:	*Analyzing the interviews to discover and document what types of information technologies local governments use, security challenges they face, how they provide security for their systems, and the level of security readiness.*

The remaining parts of the paper are organized to provide: (1) a theoretical assessment framework consisting of established computer information systems security dimensions; (2) more detailed descriptions of the four research steps followed in this pilot study; (3) descriptions of the three case studies that identify the types of computer information systems security vulnerabilities in each local government based on the theoretical framework; (4) a list of survey questions for future

research, and (5) the authors' recommendations for policy construction and enforcement, accountability practices, and security training for local governments.

SPECIFIC DIMENSIONS FOR ASSESSING COMPUTER INFORMATION SYSTEMS SECURITY READINESS FOR LOCAL GOVERNMENTS

Many measurement models for computer information systems security have been developed in prior research (Ryoo et al., 2006; McConn et al., 2007; Bell and LaPadula, 1974; Biba, 1977; Swanson, 2003; NIST, 2000; APEC, 2005; The Global …, 2004; Jaquith, 2007). Depending on their scope, these measurement models can largely be categorized into those designed for assessing computer information systems security readiness in (1) individual software applications, (2) information systems in general, and (3) organizations of various sizes and types. The authors are particularly interested in measurement models that can quantify the overall computer information systems security readiness of a specific type of organization.

The measurement models for computer information systems security readiness vary significantly based on the type of industry in which an organization operates. For example, laws and regulations mandate security and privacy safeguards in the medical sector (The 104th …, 1996) and federal government agencies (Swanson, 2003; NIST, 2000). In this case, constructing a measurement model is relatively straightforward since one just needs to assess conformance to a given set of requirements mandated by the laws and regulations. However, a measurement effort must rely heavily on a core set of common dimensions essential for any attempt to measure computer information systems security in an organization when explicit security and privacy requirements are absent (Ryoo et al., 2006). Each of these dimensions, (1) Infrastructures, (2) Policies, Education, and Training, and (3) Enforcement, is described in the following sections. When deemed necessary, the authors point out specific sub-dimensions particularly relevant to local governments.

Infrastructures

This dimension addresses security-relevant resources, such as security software, physical security, human resources, and outsourcing that lay a foundation for any attempt to protect an organization from security threats.

1. Security software: an organization can purchase and use software solutions that keep attackers from inflicting damage. These include more secure versions of the existing software applications such as various operating systems (i.e., Windows 95 vs. Windows Vista), firewalls, anti-virus programs, anti-spyware, anti-adware, intrusion detection systems, intrusion prevention systems, etc.

2. Physical security: an organization can prevent physical damage to IT personnel, data, computing equipment, information systems, and the facility that houses them. Perimeter security is an example of physical security, which prevents unauthorized users from committing theft, sabotage, and misuse by limiting access to the facility.
3. Human resources: to maintain the proper level of computer information systems security in an organization, an organization can have a subset of employees designated to handle security-related tasks including planning, risk assessment, technical support, monitoring, auditing, etc. People may be fully committed to these tasks, or they are asked to perform the security roles in addition to their regular duties.
4. Outsourcing: all these sub-dimensions (security software, physical security, and human resources) of the infrastructure dimension are relevant to local governments. The authors note that many local governments lack dedicated information technology personnel, and therefore, outsource significant IT tasks including those having a grave impact on security.

Policies, Education, and Training

Another important aspect of the security readiness of an organization is whether it has a clear set of policies, procedures, standards, and guidelines that define what is allowed or prohibited. Once the rules are well defined, then the next step is to ensure that all the employees are aware of them. The more knowledgeable the employees are about the organization's information systems and its associated security implications, the more efficiently they will be able to conform to the rules. Therefore, providing education and training is very important.

Enforcement

No matter how well an organization is equipped with policies, software tools, physical security measures, and employees with high computer/security literacy, it is still vulnerable to security threats unless it enforces the rules, and its employees use the applications and equipment in a proper fashion. As a result, the most important thing to measure, when assessing security readiness, is the actual use of the existing infrastructures and policies. The authors are especially interested in assessing the local governments' enforcement of access control to information systems and accountability practices.

1. Access and authorization controls: access control limits access to information systems resources to only the authorized individuals, whereas authorization limits what users can do on the systems that they may access. One particular concern the

authors have is finding out how rigorously access and authorization control rules are developed and enforced in local government organizations.

2. Accountability practices: the authors are also interested in discovering how well the activities of authorized users are monitored and whether they are held accountable for their actions in the event of any violations.

THE FOURS STEPS USED FOR THE PILOT STUDY

The first step in this pilot study investigates the structures of local governments, which provides a necessary context for the security awareness and readiness assessment effort. The authors' research revealed that in all of the fifty states in the United States, government structures vary based on the way each state's written constitution describes how local communities are governed. For this study, the authors focus on the state of Pennsylvania, where there are a variety of types of local governments such as counties, cities, boroughs, and townships. These local governments all differ in organizational structures within their governing bodies.

Pennsylvania has fifty seven large cities including Pittsburgh and Philadelphia. These communities have dense populations and are major urban commercial centers. The state has more than nine hundred communities classified as boroughs scattered throughout the state. They are compact in area compared to the area governed by townships. About one third of the boroughs lie in the state's most developed areas and the rest are scattered across rural areas. They function as historic and commercial town centers. Boroughs vary in population from less than one hundred citizens to over thirty eight thousand citizens.

Townships typically involve a larger area and cover the outlying areas next to boroughs and cities. Townships are classified as first-class if they are more urban or second-class if they are more rural. Ninety one townships are classified as first-class and one thousand four hundred and fifty seven are classified as second-class. Second class townships contain more than ninety three percent of the state's land area (Schehr, 2005; Martin, 1997).

Due to the complex structure of each type of local government in Pennsylvania, as a second step for this research, the authors formed an advisory board that provided a continuous source of advice regarding the inner workings of small municipalities. The advisory board included local municipal officials and college faculty who are experts in Pennsylvania's local governing bodies.

METHODOLOGY

As a third research step, the authors gathered data by conducting interviews with several key informants in positions of responsibility in three small municipalities in central Pennsylvania. These individuals included a city manager, a financial officer, two clerical assistants, and a computer

consultant who provides technical support to many local small governments. Initially, the authors gathered general background information from key informants based on the following questions.

- *How is each local government organized?*
- *What types of computer applications are used?*
- *Which individuals within each organization have access to the computer systems and sensitive data? Who is responsible for information systems and security?*
- *What types of information systems security training do employees receive?*
- *What types of computer security systems are installed?*
- *Who is responsible for technical support for the information systems? Is the support provided within the organization or outsourced to an external firm?*

Drawing from the literature on general security assessment models, a comprehensive set of questions (relevant to each local government's specific aspects of security) were developed. Subsequently, a second interview with the same key informants in each municipality was performed using these questions shown in the appendix.

The following case studies describe each local government in terms of its type, size, and security readiness. Specifically, the readiness aspect of the case studies is presented using the aforementioned theoretical framework consisting of these assessment dimensions: (1) infrastructures (security software, physical security, human resources, and outsourcing); (2) policies, education, and training, and (3) enforcement (access control and accountability practices).

FINDINGS

The three small governments studied included an urban borough, a rural township, and a rural borough.

Case Study 1: An Urban Borough

The first municipality studied is an upper middle class community with a population of over five thousand citizens (Schehr, 2005). It is largely a residential suburban community adjacent to a medium-sized metropolitan area of about one hundred thousand people. It has a significant retailing business center and many blue collar jobs in the railroad industry. This municipal government is composed of a mayor and seven city council persons who do not have access to the municipality's computer systems.

The two people interviewed in this municipality are: (1) the borough manager who has responsibilities for the day-to-day functions of the municipality, and (2) the finance officer who also

serves as the network administrator. The borough manager has served for several years in many capacities including a member of a zoning board, and as a township supervisor.

The employees who have access to the information systems include the borough manager, the financial officer, thirteen police officers, five administrative staff members, and three finance office employees. Fifty-seven percent of its forty employees have access to sensitive information using nineteen personal computers. Seven computers are used at the police station, four are used by the accounting personnel, six are used for administration, and two are used at a remote location in the public works office.

Infrastructure (Security Software, Physical Security, Human Resources, and Outsourcing)

Software applications that are running on the municipality's network include MS Office, utility billing applications, and police incident reporting programs. The workstation operating systems include Windows XP and Windows 2000. The network server uses Windows NT. The network is available twenty four hours a day and seven days a week. The police department has access to the network at all hours and uses the information system for incident reports. The borough has an Internet connection using a broadband technology. However, it does not have e-government applications that allow citizens to access the network to retrieve or update community information. An informational borough web site is hosted off-site by a third party and is not connected to the borough network.

1. *Security Software:* according to the finance officer, the borough's computer network has firewall and anti-virus software that was installed, configured, and supported by a local computer consultant. Virus updates are received automatically. Anti-spyware and anti-adware programs are also utilized. The finance officer manages the sign-on IDs and passwords for employee access to the network. He indicated that there is no intrusion detection system in place and that there is no directive requiring employees to change their passwords regularly.
2. *Physical Security*: the municipality does not have individual workstation locks to secure its computers from being stolen, or surveillance cameras, or security alarm systems for avoiding break-ins. The building is secured by locking the doors after work hours, and a sprinkler system is in place against fire damage.
3. *Human Resources*: the municipality does not have an employee designated to handle security-related tasks such as security planning, risk assessment of internal and external threats, technical support, auditing other employees' unauthorized computer access practices, or monitoring for suspicious activities.
4. *Outsourcing:* The municipality uses a hired consultant to provide hardware, software and network installations, configuring and securing computer systems, very brief

initial training of the staff, and trouble-shooting problems as they occur. The consultant does not manage their network.

Policies, Education and Training

The policies in place in this borough include an access control policy that limits access to authorized personnel with different user rights. There is also a policy requiring regular data back-up and storage in a remote location. However, it neither has, nor enforces, a periodical password change policy or a policy on using strong (more complex and longer) passwords.

According to the borough manager, each department within the borough has a training budget of about two thousand dollars. However, they do not implement a required regular or on-going training program for employees other than providing one-time information handling policy training for new-hires. Employees can request the type of training that they desire, which is usually application training rather than security-specific training. Training requests must be approved by the borough manager. No specific budget is set for information security training. The borough manager also indicated that education on security is limited to what employees learn by word-of-mouth or from the news media. According to the financial director, the municipality has a security policy that holds an employee accountable for his or her actions in the event of any violations. However, there has not been an occurrence that has necessitated the enforcement of this policy.

Enforcement (Access Control and Accountability Practices)

1. Access control: this municipality collects and stores sensitive personal information such as social security numbers of employees, names and addresses of residents. Access to sensitive data files is limited to authorized personnel via password authentication.
2. Accountability practices: the management does not monitor the activities of the authorized users such as file access, web surfing, content of the e-mails, and online games. The log files are not checked to monitor unauthorized employee activities. No surveillance software is used to detect illegal activities of employees.

Case Study 2: A Rural Township

The second type of municipality studied is a township with a small retail business center and population just under four thousand (Schehr, 2005). Demographically, this community is a cross-section of professionals, business owners, and blue collar workers. Primarily it is a residential community about fifteen miles from the nearest medium sized-city. In addition, a college with enrollment of about two thousand students is located in this community.

The interviewee in this community holds the title of township clerk and is primarily responsible for utilities billing. This municipality employs eighteen people, but only three employees have access to sensitive data stored on the two computers in use. One computer is located in the utilities billing office and contains the utilities billing software and MS Office. Only the two clerks that work in this office have access to this computer. The other township computer is located in the township administrative office and is only used by the chairman of the three township supervisors for processing payrolls, purchasing, and payables for the township. The payroll application implies that sensitive employee data such as social security numbers are stored on this computer. There are two other township officials who use the administrative office, but they do not use the computer.

Infrastructure (Security Software, Physical Security, Human Resources, and Outsourcing)

According to the township clerk, the two workstations are not networked and do not have Internet access. Both PCs have Windows 2000 operating systems. The township clerk that was interviewed is also the elected real estate tax collector and performs this duty as a second job unrelated to her position as the township clerk. She has an Internet connection on the computer used at home but is not sure how the firewall is configured. She purchased tax software for this computer from a consultant who wrote it.

1. *Security Software*: the two workstations in the township have firewalls. However, no anti-virus software program, anti-spyware, anti-adware or intrusion detection and prevention systems are installed.
2. *Physical Security*: the only physical security for the township computers is that they lock the doors when they leave the office. There are no surveillance camera or alarm systems. To the best of the township clerk's knowledge, nothing is encrypted. The building does have a sprinkler system to protect against fire damage.
3. *Human Resources*: the township does not have any employees designated to handle security-related tasks. Security training is not a requirement in this municipality.
4. *Outsourcing*: the township hires a consultant for technical support. The consultant primarily installs and configures the computers and software and troubleshoots problems as they arise and supplies only minimal training.

Policies, Education, and Training

The only policy the township has and enforces is the data back-up and storage policy. Backups from the township's utility billing computer are stored in the home of one of the clerks. The interviewee was not sure how the computer in the administrative office was backed up.

According to the township clerk, there is no scheduled training for employees other than the applications training they received from the consultant who installed, configured, and supports their workstation. No budget is set for training.

Enforcement (Access Control and Accountability Practices)

1. Access control: in the utility billing office, only the two authorized clerks have access to the office and the sensitive information on the computer. However, a major vulnerability is that they do not see the need for passwords since only those two individuals have access to the room.
2. Accountability practices: the township does not have or enforce an accountability policy to hold employees accountable for their actions in the event of any information security violations. However, the staff is monitored by annual external audits of their utility billing.

As mentioned earlier, the township clerk also serves as the elected real estate tax collector. As a tax collector, she bills and collects county real estate and school taxes, and keeps the tax data on the personal computer at home. The tax data stored on this computer does not contain social security numbers. However, the names and addresses of the residents, their parcel identification data along with assessed values, and tax billing and payment data are stored in this computer. She has an Internet connection at home and is responsible for monitoring her own system. There is no supervision of this computer by either the township or the county.

Case Study 3: A Rural Borough

The third municipality studied is a very small rural, residential community, consisting of mostly blue collar population, with economic ties to the railroad and coal mining industries. Population is just under one thousand.

The interviewee in this community, who has a degree in accounting, holds the title of borough secretary-treasurer. This borough employs seven full-time and three part-time staff members. The borough secretary-treasurer and a part-time administrative staff person have access to sensitive information stored on their computer system.

Infrastructure (Security Software, Physical Security, Human Resources, and Outsourcing)

The borough has two PCs. They are mainly used for water utility billing and accounting. They also use MS Office. The computers have Windows XP and Windows 98 operating systems. One of these computers is a laptop that the secretary-treasurer can use to do work at home.

According to the interviewee, the office computer has an Internet access but no local network connection. It is primarily used for utility billing using an accounting software program that was purchased from an out-of-state vendor.

1. *Security Software*: the computers have firewalls and anti-virus programs. Anti-spyware or anti-adware programs are not utilized, and no intrusion detection and prevention systems are installed. The Internet access (through a broadband connection) is disconnected after work hours.
2. *Physical Security*: the only physical security for the computers is that they lock the doors when they leave the office. There is no surveillance camera or alarm system. The building is not secured against burglars. To protect against fire damage, they only have portable fire extinguishers.
3. *Human Resources*: the borough does not have any employees designated to handle security-related tasks.
4. *Outsourcing*: technical support is supplied by a local consultant primarily to install hardware and software, and to configure the computers.

In addition, the billing software is supported by the out-of-state vendor that has remote access to their system via the Internet for the purpose of fixing technical problems or installing updates.

Policies, Education, and Training

This borough has a data backup policy, but is vulnerable because the backups are stored on-site. Access control policy exists that limits access to authorized personnel with different user rights. They do not have periodical password change requirements, strong password policies, or a published security policy that holds employees accountable for their actions in the event of any violations. There is no scheduled training or budget assigned for training, but training is provided on a need basis.

Enforcement (Access Control and Accountability Practices)

1. Access control: in this municipality, the borough secretary-treasurer and one part-time staff member have access to the information system to handle billing for their public works. Their system is password protected. However, sensitive data may be at risk because one of their computers is a laptop and is permitted to be removed from the office.

2. Accountability practices: the local government supervisors do not monitor employee computer use and do not check the log files; nor do they use surveillance software. No published policy is available that holds an employee accountable for his or her actions in the event of any violations.

TECHNICAL SUPPORT FOR SMALL LOCAL GOVERNMENTS

The interviews from Case Studies One and Two revealed that the municipalities have hired the same consultant. The consultant provides technical support, applications installation, minimal training, and hardware to many small local governments in central PA. Therefore, the consultant was interviewed to cross-validate the responses provided in the first two case studies. His responses were consistent with the interviewees' responses. The consultant provided some insights on the security vulnerabilities in many of the small local governments that he serves. The following is a summary of his observations.

- *Many of the local governments are short on funds and are using older computers with outdated software. Most of these municipalities must apply for grants to upgrade their systems.*
- *The consultant estimates that over fifty percent of the municipalities has little or no funds budgeted for technology. When the consult makes a call for technical support, he charges by the hour. Therefore, there is little time for training. They only want him to fix the problem.*
- *The training that the consultant does provide is mostly applications training, not security training.*
- *The municipalities with larger communities like the one described in Case Study One have better funding and more sophisticated users than those described in Case Studies Two and Three.*
- *The municipalities that have utilities and the corresponding billing, have more funds available for technology purchases. However, there are many small communities that do not have this type of funding source.*

RECOMMENDATIONS

Based on the aforementioned theoretical framework, the authors make the following recommendations:

Infrastructure (Security Software, Physical Security, Human Resources, and Outsourcing)

1. *Software security*: the local government officials in this study were aware of the importance of firewalls and anti-virus software. However, they were less aware of the possibility that their information systems might have been compromised. This situation can be improved by regularly monitoring the logs of firewalls or by installing an intrusion detection system.
2. *Physical security*: physical security indeed needs to be improved. There are increasing media reports of data lost or compromised because of thefts of laptops and storage media such as CDs, external hard drives, USB drives, etc. Therefore, the authors recommend that sensitive data be encrypted, especially on back-up media and laptops. In addition, it would also be highly desirable to install locks for computing equipment, and alarm systems and surveillance cameras in the buildings, but these additional protections could be cost-prohibited due to the lack of funding.
3. *Human resources*: it is recommended that the local governments have at least one employee (full-time or not) or external consultant designated to handle risk assessment, security planning, employee monitoring, and intrusion detection/prevention.
4. *Outsourcing*: finally, the case studies in this paper show that many local governments outsource their information technology projects. More oversight is necessary to prevent outsourcing from becoming another source of security vulnerabilities.

Policies, Education, and Training

This category demands the greatest need for improvement. There seems to be a widespread lack of well-defined and well-documented computer information systems security policies. Training appears to be sparse, which in turn makes local government employees less aware of computer information systems security best practices such as the use of longer and more complex passwords with frequent changes. All the key informants in the case studies expressed an interest in more security training, but they agreed that funding is the biggest obstacle. At a minimum, the authors recommend that a carefully designed set of security policies be established to address:

- *the enforcement of strong passwords and periodic changes in them,*
- *the encryption of data, especially on back-up devices and laptops,*
- *the specification of more secure locations for back-up data storage devices, and*
- *the regular information systems security training of any employees who have access to sensitive data.*

Enforcement (Access Control and Accountability Practices)

Although finding that one local government does have limited security policies in place, this study suggests that the policy enforcement is weak because supervisors are not monitoring employees' activities relevant to computer information systems security. Local government employees must not only be better trained, but their usage of the information systems must also be monitored. Employees violating published computer information systems security policies should be held accountable.

THE SURVEY INSTRUMENT FOR FUTURE RESEARCH

One of the contributions of this pilot study is to refine and provide a survey instrument to be used in future research to study small municipalities in a larger sample. Table 1 in the Appendix provides the questions the authors developed using the theoretical framework established in the beginning of this paper. The table also summarizes the results of the computer information systems security readiness in three small municipalities interviewed.

CONCLUSION

At the onset of this research, the authors feared that local governments would especially be vulnerable to security attacks on their information systems due to the shortages of human and monetary resources. The findings of this research certainly confirm this concern.

The discoveries made from the case studies as part of this research indicate that the employees of small local governments do use information systems, but they do not appear to use them in a completely secure manner. According to the local government officials interviewed for this study, the municipalities have not adopted and enforced adequate security policies, or provided sufficient security education and training.

Most importantly, the municipal government officials do not seem to be aware of the vulnerabilities of their information systems. Specifically, there is a widespread lack of awareness on the importance of security in general, security policies and their enforcement, appropriate security safeguards, and allocating necessary human and monetary resources for improving computer information systems security.

The authors believe that this pattern of inadequate security practices will continue in their follow-up study. Moreover, they expect to witness varying degrees of security lapses, which would require a more systematic approach to accurately analyze and assess the current status of security awareness and readiness in local governments.

The key significance of this research lies in that it provides a scientific method to pinpoint deficiencies. Although the authors suggest some corrective actions that can improve the existing security practices, the primary focus of this research is on assessment rather than providing solutions.

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APPENDIX

Table 1. Assessment of Computer Information Systems Security Readiness in Small Local Governments			
	Borough 1	Township	Borough 2
Demographic Questions			
Total number of employees	40	18	10
Number employees who have access to sensitive information	22	3	2
Infrastructures			
Operating systems in computers	PC	PC	PC
Number of computers with each OS	19	2	2
Have a network	Yes	No	No
Connected to the Internet	Yes	No	Yes
Security software			
Firewalls	Yes	Yes	Yes
Anti-virus programs	Yes	No	Yes
Anti-spyware	Yes	No	No
Anti-adware	Yes	No	Don't Know
Intrusion detection systems	No	No	No
Intrusion prevention systems	Don't Know	No	No
Physical security			
Have locks to secure computers from being stolen	No	No	No
Have surveillance camera(s)	No	No	No
Have a security alarm system for break-ins	No	No	No
Building secured against burglars	Doors Locked	Doors Locked	Doors Locked
Building secured against fire	Sprinkler	Sprinkler	Fire extinguisher
Human resources			
Have employees designated to handle security-related			
• Security planning	No	No	No
• Risk assessment of internal (i.e., employees stealing sensitive information for financial gains) and external threats (i.e., botnets, Trojan horse)	No	No	No
• Technical support	No	No	No
• Monitoring for suspicious activiites on computers (i.e., slowliness, freezing, web browser pop-ups)	No	No	No
• Auditing employees' unauthorized computer access practices	No	No	No

Table 1. Assessment of Computer Information Systems Security Readiness in Small Local Governments			
	Borough 1	Township	Borough 2
Are the security-related tasks the employee(s)' only responsibility (skip)	No	skip	skip
Are employees asked to perform the security-related tasks in addition to their regular duties (skip)	No	skip	skip
Outsourcing			
Does your organization outsource (hire) a consultant to:			
● Develop a software	Yes	Yes	Yes
● Install networks	Yes	No	No
● Manage networks	No	No	No
● Configuring computers	Yes	Yes	Yes
● Securing computer systems	Yes	No	Don't know
● Other	-	-	-
● Do not hire outside consultants	-	-	-
Policies, education, and training			
Have the following computer information systems security			
● Periodical password update policy	No	No	No
● Policy on using strong passwords	No	No	No
● Access control policy that limits access to authorized personnel with different user rights	Yes	No	Yes
● Data back-up and storage policy	Yes	Yes	Yes
● Other	-	-	-
Provide training for:			
● Updating passwords periodically	No	No	No
● Using strong passwords	No	No	No
● Backing-up and storing data	Yes	No	No
● Scanning for virus periodically	No	No	No
● Surfing the web safely	No	No	No
● Deleting e-mail attachments from unknown sources	No	No	No
Have any budget for information security training	No	No	No
Have a security policy that hold an employee accountable for actions in the event of any violations	Yes	No	No
Enforcement (implementation of security measures)			
How often does your organization require:			
● Update your passwords	Never	Never	N/A
● Update definition files	Daily	N/A	N/A

Table 1. Assessment of Computer Information Systems Security Readiness in Small Local Governments			
	Borough 1	Township	Borough 2
• Backing-up data	Daily	Daily	Weekly
• Scanning for viruses	Daily	N/A	Daily
Require employees to delete e-mail attachments from from unknown sources	No	N/A	No
Require employees to use strong passwords	No	N/A	No
Practice any of the following security related activities:			
• Security planning	No	No	No
• Risk assessment of internal (i.e., employees stealing sensitive information for financial gains) and external threats (i.e., botnets, Trojan horse)	No	No	No
• Monitoring for suspicious activities on computers (i.e., slowliness, freezing, web browser pop-ups)	No	No	No
• Auditing employees' unauthorized computer access practices	No	No	No
Access control practices			
Collect and store sensitive personal information such as social security numbers, names and addresses of residents	Yes	Yes	Yes
Limit access to sensitive data files by only the authorized personnel	Yes	Yes	Yes
Accountability practices			
Check the log files to monitor unauthorized employee	No	No	No
How regularly do you monitor the following activities of the authorized users:			
• File access	Never	N/A	Never
• Web surfing activities	Never	N/A	Never
• Content of the e-mails	Never	N/A	Never
• Online games	Never	N/A	Never
Use surveillance software to detect illegal activities of employees	No	No	No
Enforce a security policy that hold an employee accountable for actions in the event of any violations	No	N/A	No

A CROSS-CULTURAL ANALYSIS OF THE GLOBAL AWARENESS OF U.S. AND CHINESE FUTURE BUSINESS PROFESSIONALS

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ABSTRACT

This paper assesses the global awareness of undergraduate business school students who will become the business professionals in the future. In addition, it measures cultural differences in the global awareness between business school students in the U.S. and China. A two-part survey provided the basis for this study. The first part is J. Nathan Corbitt's Global Awareness Profile Test ("GAP Test"), which consists of 120-multiple choice questions in the broad context areas of Environment, Politics, Geography, Religion, Socioeconomics, and Culture, and on the regional geographic areas of Asia, Africa, North America, South America, the Middle East, and Europe, plus general global questions. The second part is based on a geography test ("MAP test") whereby respondents were asked to identify a number of countries from maps of Europe, South America, Asia and Africa. Respondents were two groups of future business professionals: Business students in a university in the U.S. and in a university in China.

INTRODUCTION

In today's business environment that has become increasingly globalized over time, global competency of business professionals is an essential skill for business success. This competency is true, not only for those in international businesses, but also for domestic businesses. One cannot overstate the importance of being globally competent as one engages in today's business world. Surveys summarized by Harris, Moran and Moran (2004, pages 257-258) suggest that a successful business leader must be globally competent. For instance, Wilson Learning Corporation's global competency model identified a number of themes related to global leadership, of which "understanding the business from a global perspective", "driving change based on global strategy", and "communication in an effective manger cross-culturally" are all related or components of being globally competent. Moran and Riesenberger identified twelve competencies of a global leader, the first of which is to possess a global mind-set. Similarly, Goldsmith, Greenburg, Robertson, and Hu-Chan identified five leadership factors, with "think globally" and "appreciate cultural diversity" as

the first two factors. Wild, Wild and Han (2008) provided readers with "Keys to International Success", which include emphasizing global awareness, especially with regard to current and future customers' markets (page 8). Like other authors, they also recommended that "businesspeople do away completely with ethnocentric thinking" and instead create a global mindset (page 51).

The importance of global competency is also highlighted in surveys of CEOs and other business executives. The survey by Beamish and Calof (1989) of 122 executives in Canadian corporations suggests that business executives pay attention to international business education. Using the scale of 1 to 4, with 4 indicating a response that strongly agrees with the survey statement, Beamish and Calof (taken from Table 1 on page 558) found the following (in parentheses are the average scores):

- *International business education is more effective after experience (3.29)*
- *Executive skills needs to include expertise in international business (3.24)*
- *Prefer to hire international business expertise combined with functional or technical skills at post-experience level (3.21)*
- *International awareness among recruits is important (3.03)*
- *Combination of international business studies and language is attractive (2.90)*
- *Growing need for Canadians to manage our international operations (2.89)*
- *Foreign language ability is important hiring criteria (2.54)*

A survey by Ball and McCulloch (1993) of 66 CEOs of U.S. multinational corporations confirms some of the findings by Beamish and Calof. In particular, Ball and McCulloch found that (pages 387-388):

- *78% of the CEOs agreed with the statement "employees will learn the international aspects of business on the job" 79% of the CEOs agreed with the statement that "some business people and educators believe an Introduction to International Business course should be required of all business major"*
- *Expertise in the following areas is important when hiring college graduates: business, cross-cultural or political relations beyond the U.S. (74% agreed); international investment, lending, trade or related activities (69% agreed); foreign languages (71% agreed)*
- *Does your firm consider the international qualifications of people when making hiring, promotion or transfer decisions for people with responsibilities in international markets? (49% replied "Yes", 41% replied "Sometimes").*

The importance of global competency is also reflected in operational and curricular changes in business schools around the world. In the U.S., the Association to Advance Collegiate Schools

of Business-International (AACSB-I), the main accrediting agency in the Business discipline, began focusing on the importance of internationalizing business schools in late 1970s, although it was aware of this need as early as 1959 (Thanopoulos and Vernon, 1987). Since then, business schools in the U.S. have incorporated some component of global education in their schools' mission statements, strategic plans, curricula as well as in the composition of the faculty. Kwok and Arpan (2002) surveyed 151 business schools, consisting of 102 in the U.S., 29 in Western Europe, 20 from Canada, Latin America, Japan and other countries. They found that 83.6% of them include an international business reference in their mission statements and 77% of them include global education in their strategic planning.

It is interesting to note that global competence, although recognizably important, has been difficult to define. Hunter (2004, pages 10-11) provided an excellent review of the literature on the evolution of this concept. Since the Council on International Education Exchange published what is often referred to as the "Magna Carta" on the concept of global competence in 1988, there continues to be a lack of consensus on what is meant by "global competence" or what it encompasses. Lambert (1996) defined global competence as having knowledge of current event, being able to empathize with others, maintaining a positive attitude and having some level of foreign language competence and task performance. In a private interview in 2003, Brustein defined global competence as "the ability to communicate effectively across cultural and linguistic boundaries and to focus on issues that transcend cultures and continents." Brustein included "knowledge of global organizations and business activities" as one of a number of dimensions that contribute to global competence. In the Global Competency Report 2002 of the Swiss Consulting Group, it viewed global competency in the context of managers having the ability to "parachute into any country and get the job done while respecting cultural pathways". Olson and Kroeger (2001) described a globally competent person as "one who has enough substantial knowledge, perceptual understanding, and intercultural communication skills to interact effectively in our globally interdependent world". Curran (2003) viewed global competence to mean a developed appreciation of other cultures and the ability to interact with people from foreign lands.

Easier than reaching a consensus on the meaning of global competency is recognizing that it requires, at a minimum, an awareness of global issues or "global concerns", according to Corbitt (1998, 2005), the author of the assessment instrument on which the survey reported in this paper is based. In essence, it is a starting point or the first step in the progression toward global competency. Ideally, "awareness" will be followed by or develop into "understanding" then subsequently "expertise" or "competency". As Kwok and Arpan (2002) found in their survey, business schools in the U.S. and other countries include an internationalization objective where "awareness was more frequent at the bachelor level that at the master level and doctoral level, while "understanding" and "expertise" objectives were more frequent at the master level" (page 572).

Corbitt defines global awareness as involving

> *"… a recognition and appreciation of the size, complexity, and diversity of the earth conceived as a single entity. It is literally the recognition of a worldview. It enables us to perceive the vastness of the world, its dynamic complexity, and the diversity of its peoples, cultures, and environment."*

The Graduate School of Business at Stanford University aims toward global awareness of its students, as reflected in the following statement:

> *A key to succeeding in the global economy is knowing what it takes to be a world-class organization and how to build one that spans multiple countries, cultures, and economic or political systems. We want to ensure that all our graduates clearly understand the significance of the globalization of the world's economies, are attuned to the challenges of operating businesses in this atmosphere, and are prepared to lead their organizations to success in the international environment.*

Hence, global competency of business professionals, even at its lowest level, requires that, in addition to being knowledgeable in one's functional business area(s), one must also have a working knowledge of basic social science, which includes political science, law, economics, geography, and behavioral sciences such as anthropology, sociology and psychology (Daniels, Radebaugh and Sullivan, 2007, pages 21-22). These social science disciplines provide the business manager with explanations for why business environments differ from one country to another. These differences in business environments affect the managers' objectives, strategy and means toward business success.

A good starting point to our inquiry of how globally competent future business professionals will be is to assess current business students' global awareness. Assessing global awareness is the main objective of this paper. Assessment is based on a survey of global awareness administered to undergraduate business students in a university in the U.S and in a university in China. In doing so, this survey also allows us to study any cross-cultural differences in global awareness.

THE SURVEY

The survey consisted of two-parts. The first part was a Global Awareness Profile test (GAP Test, henceforth) written by J. Nathan Corbitt. Corbitt notes that this test "does not measure your intelligence, but rather, it provides you with a picture of your awareness of global concerns (Corbitt, 1998)." "It is an effective inventory to gauge one's awareness of the world in which we live" (Corbitt, "Bridging the World…").

The Global Awareness Profile Test is written by J. Nathan Corbitt in 1998 and revised in 2005. It consists of 120 multiple choice questions in each of the thirteen areas:

- *Six regional geographic areas: Asia, Africa, North America, South America, the Middle East, and Europe*
- *Six broad context areas: Environment, Politics, Geography, Religion, Socioeconomics, and Culture*
- *One general global section*

The second part of the survey is based on a geography test (MAP test, henceforth) whereby respondents were provided regional maps from which they were asked to identify a number of countries. The regions are Europe, South America, Asia and Africa. For each region, respondents were asked to identify five countries. For their reference, respondents were given the list of countries located in each region.

The two-part survey was administered to undergraduate students in an Introductory International Business course in the U.S. and in China. These students represent some of the future business professionals. U.S. students, 23 in number, were full-time students at a small, private university in the southwestern part of New York state. Chinese students, 33 in number, were full-time students at a large, national university in the Hubei province of China (the university is directly under the Chinese Ministry of Education). The survey was administered to the two groups during the academic year 2006-2007. U.S. students completed the first part within 75 minutes and the second part within 30 minutes. These time "limits" were adequate as all respondents were able to complete both parts of the survey on time. The exact, same survey, written in English, was administered to Chinese students who were given unlimited time during which to complete the two-part survey, as well as access to an English-Chinese dictionary.

THE RESULTS

The GAP Test

The statistics reported in Table 1 are telling in that, not only do they show that the mean and median scores of U.S. students are higher than those of Chinese students, that the standard deviation and range of scores of U.S. students are smaller than those of Chinese students. A test of the means also yielded that the mean score of U.S. students is statistically significantly higher than that of Chinese students.

The mean score of U.S. students at this small, private university in upstate New York is consistent with the average reported by Corbitt in his survey of students in Eastern University ("Bridging the World…"), which yielded an average of 65 points for undergraduate students.

Table 1: Selected Statistics on the GAP Test		
STATISTICS	U.S.	China
Number of Respondents	23	33
Total Points Possible	120	120
Mean Score	66.3	51.42
Median Score	67	54
Standard Deviation	10.25	12.4
Maximum Score	79	80
Minimum Score	45	25

A further look into possible areas of relative strength or weakness between U.S. and Chinese students yielded other interesting results. Table 2 reports the average of the percent of students who correctly answered questions in each context area. Obviously, the higher mean score of U.S. students above reported is largely due to a larger percentage of U.S. students taking the test who correctly answered the questions on the test. For this reason, it is not surprising that in all areas, except one, the figures are higher for the U.S. than for China, representing a higher percentage of U.S. students providing correct answers to questions in each category. The one exception is in Geography, where proportionately more Chinese students correctly answered the questions in this context area. This result is consistent with the results from the second part of this survey, the MAP Test (more on this in a later section). Also interesting to note is that the gap in the averages is smallest in Politics.

Table 2: Average Percentage of Students Correctly Answering Questions in Each Context Area		
Context Area	U.S.	China
Environment	55.6525	47.2720
Politics	45.4355	40.9085
Geography	41.5220	42.5750
Religion	52.1740	26.5135
Socio-Econ	50.4833	36.1933
Culture	60.6272	44.7806
Global	61.2317	44.9492

Of the 120 questions that comprise the GAP test, there were only 37 questions on which a proportionately higher number of Chinese students answered correctly. Among these 37 questions, there were 22 questions on which the difference between the percent of Chinese students who answered correctly and the percent of U.S. students who answered correctly is significant (defined here as at least a ten-percentage point difference). A breakdown of these 22 questions according to the context area and to the region, provided in Table 3, might identify areas of relative strength by Chinese students. In terms of context area, Geography came first, Politics second, and Environment and Socio-Economic tied at third. In terms of region, Europe, Middle East and Africa are all tied at first.

Table 3: 22 Questions on Which Percent of Chinese Students Answering Correctly "Significantly" Exceeded Percent of U.S. Students Answering Correctly (Number of Questions in Parentheses)

By Context Area	By Region
Geography (6)	Europe (4)
Politics (5)	Middle East (4)
Environment (3)	Africa (4)
Socio-Economic (3)	Asia (3)
Culture (2)	North America (3)
Global (2)	South America (2)
Religion (1)	Global (2)

The balance of the 120 questions, i.e., 83 questions, represents the number of questions in the GAP test on which a proportionately higher number of U.S. students answered correctly. Similarly, focus will be given to 62 questions on which the percent of U.S. students who answered correctly is more than ten-percentage points than the percent of Chinese students who answered correctly. Table 4 provides information on how these 62 questions are classified according to the context area and to the region in an attempt to identify areas of relative strength by U.S. students. In terms of context area, Religion came first, with Culture and Socio-Economic tied in the second place. In terms of region, South America came first, followed by North America, then Asia.

Table 4: 62 Questions on Which Percent of U.S. Students Answering Correctly "Significantly" Exceeded Percent of Chinese Students Answering Correctly (Number of Questions in Parentheses)	
By Context Area	By Region
Religion (13)	South America (12)
Culture (10)	North America (11)
Socio-Economic (10)	Asia (10)
Environment (8)	Africa (8)
Geography (7)	Europe (7)
Global (7)	Middle East (7)
Politics (7)	Global (7)

Other ways of looking at each group's relative strength and weakness is to look at questions on which a significantly high (low) proportion of the group answered correctly. Again, for purposes of this study, high proportion was defined to be where at least 80% of the group answered a question correctly while low proportion was defined as 20% or less of the group answered a question correctly. Using these definitions, at least 80% of U.S. students answered each of 26 questions correctly compared to 14 questions that at least 80% of Chinese students answered correctly. Details on the context area and region of these questions are reported in Table 5. Areas of potential strength for U.S. students are Environment, Culture and Religion (in terms of context areas) and South America, North America and Middle East (in terms of regional geographic areas). For Chinese students, the context area of potential strength is Environment. There is no clear pattern of strength in terms of regional geographic areas.

Table 5: Questions on which at least 80% of U.S. and Chinese Students Provided the Correct Answer			
U.S. (26 questions) By Context Area	China (14 questions) By Region	By Context Area	By Region
Environment (6)	South America (7)	Environment (5)	Global (3)
Culture (5)	North America (6)	Global (3)	Asia (3)
Religion (5)	Middle East (5)	Geography (2)	Europe (2)

Table 5: Questions on which at least 80% of U.S. and Chinese Students Provided the Correct Answer			
U.S. (26 questions) By Context Area	China (14 questions) By Region	By Context Area	By Region
Global (3)	Asia (4)	Politics (2)	North America (2)
Politics (3)	Global (3)	Culture (1)	South America (2)
Geography (2)	Africa (1)	Socio-Economic (1)	Middle East (2)
Socio-Economic (2)	Europe (0)	Religion (0)	Africa (0)

It is noteworthy that of the 26 questions on which U.S. students did well, six of them represent questions that all (or 100%) of U.S. students answered correctly. Interestingly, one cannot discern any pattern of strength in terms of context area or region among these six questions. These six questions are as follows:

Question 38 (Politics, North America): In 1838 a forced march of over fifteen thousand Cherokee Native americans from the State of Georgia to "Indian Territory" in what is now Oklahoma was called A. Wounded Knee, B. Broken Horse, C. Trail of Tears, D. none of the above
Question 46 (Geography, South America): Which of the following is the longest river in South America? A. Amazon River, B. Parana River, C. Orinoco River, D. Sao Francisco River

Question 68 (Religion, Middle East): Which city is considered holy by Christians, Jews, and Muslims? A. Rome, B. Cairo, C. Jerusalem, D. Carthage

Question 84 (Global, Global): English is the first language for what percent of the world's population?A. 49, B. 70, C. 6, D. 19

Question 100 (Socio-Economic, South America): Farmers who raise coca for the production of cocaine consider it to be A. a cash crop, B. harmless, C. cattle fodder, D. a source to supply their habit

Question 109 (Culture, Asia): Historically, the competitive success of Japanese businesses can be partially attributed to which of the following? A. there is little else to do but work in Japan, B. people enjoy getting out of their overcrowded homes, C.

the Japanese have a strong work ethic, D. people are punished if they don't work hard enough

As a measure of weakness, we look at the number of questions that 20% or less of each group answered correctly. This applied to 13 questions for U.S. students and 17 questions for Chinese students. Details on the breakdown of these questions according to context area and region are reported in Table 6. For U.S. students, potential areas of weakness might be in geography, which is not surprising (see next section) and surprisingly Europe. For Chinese students, this area of weakness is Religion, which is not surprising given a large atheist population in China.

Table 6: Questions on which 20% or less of U.S. and Chinese Students Provided the Correct Answer

U.S. (13 questions) By Context Area	China (17 questions) By Region	By Context Area	By Region
Geography (3)	Europe (5)	Religion (5)	Global (3)
Culture (2)	Africa (3)	Global (3)	Africa (3)
Environment (2)	Middle East (2)	Culture (2)	Asia (3)
Religion (2)	Asia (1)	Environment (2)	Europe (3)
Socio-Economic (2)	South America (1)	Politics (2)	South America (3)
Global (1)	Global (1)	Socio-Economic (2)	North America (1)
Politics (1)	North America (0)	Geography (1)	Middle East (1)

In addition, the worst performance among Chinese students is on one question that only one out of 33 Chinese students answered correctly (Question 79 (Religion, Africa)):

Most traditional Africa religions teach that death is A. the end of life, B. the transition to the spirit world, C. the beginning of life in heaven, D. the beginning of life as a god

In comparison, U.S. students performed worse in that none of the 23 students surveyed identified the correct answer to Question 102 (Socio-Economic, Europe):

Because of the especially large numbers of small, family-owned farms in this country, the farmers have sought to negotiate a balanced and regulated global market with the WTO: A. Netherlands, B. Germany, C. Spain, D. France

There were three questions that only one student answered correctly, one of which is the same question on which Chinese students performed worst (Question 79, see above). The other two questions are

Question 54 (Geography, Middle East): The Sinai Desert is flanked by which two bodies of water? A. Arabian (Persian) Gulf and the Red Sea, B. Mediterranean Sea and the Persian Gulf, C. Gulf of Suez and the Gulf of 'Aqaba, D. Gulf of Oman and the Red Sea

Question 114 (Culture, Europe): Which of the following is a common Teutonic language? A. Italian, B. German, C. Arabic, D. Spanish

The MAP Test

The MAP test entails that students look at four regional maps (Europe, South America, Asia and Africa) and, for each region, to identify five countries whose outline was identified. As reported in Table 7, average scores of Chinese students were higher than those of U.S. students. This is true for the overall average, which is out of 20 possible points, and for each of the four regions. Also suggested by results in Table 7 is the greater familiarity of U.S. students with the geography of Europe (where their average was highest among the four regions), followed by South America, Asia and lastly Africa. In comparison, Chinese students tend to be almost equally familiar with all four regions. This is shown by the closeness of their averages in each of the four regions, although one could test statistically to find out whether the average score for Africa is significantly below the average for the other three regions.

Table 7: Average Scores in the MAP Test

	U.S.	China
Overall average (out of 20 possible points)	6.6364	13.6970
Average per region (out of 5 possible points per region)		
Europe	2.2121	3.4848
South America	1.8182	3.5455
Africa	1.1818	3.1515
Asia	1.4242	3.5152

Our results in the geography subject category of the GAP test and the MAP test are consistent with what Hise et al. (2004) found in their cross-cultural study of geographical knowledge about foreign countries. Their study was based on a survey of 686 business students from five countries (U.S., Ireland, Israel, Mexico and South Korea; note that China was not in their sample.). The Hise et al. survey was similar in nature to the MAP test above reported in that students were asked to examine six regional maps of the world and identify 168 countries whose outlines were included in the map. They found that U.S. students, on average, correctly identified 16.4% of all 168 countries. This is the lowest compared to average scores from other countries (Ireland, 17.8%; Israel, 18.6%; South Korea, 16.6%; and Mexico, 23.7%).

The Hise et al. paper also provided insights as to why U.S. business students had a lower average than those of other countries. In the same study and in conjunction with the same survey, they also compiled data on the respondents' profile, with particular interest in the following variables that they hypothesized have an impact on geographical knowledge as follows:

- *Gender: male students tend to outperform females*
- *College major: non-marketing, business majors tend to outperform marketing majors*
- *Age: older students, i.e., age 22 or older, tend to outperform younger students*
- *International travel: students with some international travel experience tend to outperform students with no international travel experience*
- *Work experience: students with some full-time work experience tend to outperform students with no full-time work experience*
- *International course work: students who had previously taken one or more international courses tend to outperform students who had not previously taken an international course*

A review of the respondents' profile (reported in Table 1 in Hise et al., page 14) shows that the lower U.S. average score could have been predicted. Compared to other countries, the U.S. sample was made up of the highest percentage of female respondents, aged younger than 22 years, and marketing majors; the second highest percentage of students with no full-time work experience (Ireland had the highest); and the third highest percentage of students with no international travel experience (Israel had the highest, Mexico was second highest). Only one variable, the percentage of student respondents who had not previously taken an international course, would have contributed favorably to U.S. students' performance on the survey, except that the impact of this variable is in fact the smallest. Specifically, Table 9 in Hise et al., page 22, shows that, among U.S. students, those who had previously taken one or more international course correctly identified 20.93% of the countries in the survey compared to 20.22% identified by U.S. students who had not previously taken an international course.

The relative poor performance of U.S. students on the geography test in our study and those in Hise, et al. raises concerns. As the President of the National Geographic Society, John Fahey put it, "If our young people can't find places on a map and lack awareness of current events, how can they understand the world's cultural, economic, and natural resource issues that confront us?" (Killian, 2002)

CONCLUSION

The GAP Test not only shows that the mean and median scores of U.S. students are higher than those of Chinese students, but also that the standard deviation and range of scores of U.S. students are smaller than those of Chinese students. However, there are cultural differences in the strength of responses to particular questions. For Chinese students, in terms of context area, Geography came first, Politics second, and Environment and Socio-Economic tied at third. In terms of region, Europe, Middle East and Africa are all tied at first. However, for U.S. students, in terms of context area, Religion came first, with Culture and Socio-Economic tied in the second place. In terms of region, South America came first, followed by North America, then Asia. The research results in the geography subject category of the GAP test and the MAP test support research conducted by Hise et al. (2004) in their cross-cultural study of geographical knowledge about foreign countries.

SUGGESTIONS FOR FUTURE RESEARCH

It will be interesting to attempt to measure the extent to which Chinese respondents might have been put at a disadvantage by the language in which the survey was written (i.e., English)? Equivalently, might the performance of Chinese students be higher had the survey instrument been translated to the Chinese language? There is some reason to expect the issue of language to have resulted in a lower average for the Chinese respondents, even though Chinese students were provided as much time as they needed to complete the survey instruments. In Corbitt's survey of Eastern University students, he found that non-U.S. born student-respondents scored higher than U.S. born student-respondents (averages of 96 vs. 83).

Continuing to conduct the survey to more students in the U.S., China and other countries will offer more opportunities to confirm the results of the smaller survey we conducted in this study. It will also allow a more in-depth cross-cultural analysis.

One could also expand on the Hise et al. study and incorporate the six variables that affect geographical knowledge (gender, college major, age, international travel, work experience and international course work). A starting point will be to supplement the two-part survey instrument used in this study with questions about the respondent's profile, which will include the six variables above listed.

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THE DISRUPTIVE POTENTIAL OF CULTURAL BACKGROUND KNOWLEDGE IN CROSS-CULTURAL COMMUNICATION: AN ANALYSIS OF SAMPLE JAPANESE AND AMERICAN BUSINESS CONVERSATIONS

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ABSTRACT

This paper analyzes how culture-specific background knowledge can affect cross-cultural communication in a business context between Japanese and Americans. Americans and Japanese have a unique set of cultural values and norms that go unrecognized in conversation often resulting in misunderstandings or negative first impressions which affect future relationships. Sample cross-cultural conversations from business meetings along with data collected from Japanese and American respondents, are compared and analyzed highlighting culture-specific background knowledge. This work underscores the importance of, first, becoming more mindful of how our own culture affects how we communicate and, second, becoming more open to how people from other cultures prefer to communicate.

INTRODUCTION

In order to improve cross-cultural adaptation with the ultimate goal of increasing efficiently and productivity, US multinational corporations spend an enormous amount of time and energy on foreign language and culture training for those chosen to live and work outside of the US. A rough estimate for the average overseas assignment ranges between $50,000 and $200,000 for each expatriate family relocation (Hammer 2000:173). Yet, it has also been reported (Hammer 2000:173) that 30% of these US multinational corporate expatriate placements were unsuccessful to due to cross-cultural adjustment problems. Further, the main reason for expatriates failed intercultural experience was not due to a lack of local technical expertise but rather the sojourner's inability to adjust to the other culture experience. Many of the American expatriates chosen for foreign countries assignments are simply not aware of their own culture's influence on their communication tendencies. Thus, they are not able to recognize the differences between their own cultural assumptions and that of their host culture. Yet, little attention has been given to the affect of the speaker's own cultural background knowledge on the communication context. It is this culture-specific knowledge of how we assume everyone else communicates that often causes

misunderstandings, ethnocentric interpretations and potentially lasting negative impressions of "the other" speaker. More importantly, these negative interpretations are often erroneous because they go unrecognized by one or both interlocutors affecting future interaction.

Acquiring cultural competence is not as straightforward as addressing language competence because "culture" is not apparent in our daily lives. To complicate matters, Americans, in particular, tend to resist the notion that they have a "national culture" and that it affects their communication behavior (Bennett 1998:4). Another way to address this problem might be by asking, "How do our shared norms and values affect the way we communicate and reach decisions?" In a mono-cultural setting, the common bond of a single culture goes unnoticed and generally smoothes and facilitates the decision making process. Cultural values and norms, or what we regard as "right/wrong" and "good/bad", are very similar and, therefore, go unrecognized by those in communication with each other. This is partly because speakers from the same culture, although unique as individuals, have similar cultural values, draw off very similar set of communicative background knowledge and, generally, know what to expect from their communication partner. The context of communication also plays a significant role in shaping how interlocutors will achieve their communicative goals. For example, in a business meeting, Western English speakers are expected to have an opinion and be able to articulate this directly to their colleagues to show that they are being attentive and participative. In data collected by the author (Ryan 2006) in Table 1, American and Japanese university students were asked how they would approach their first meeting at their new job after graduating.

Table 1: Situation	
You have just graduated from college, have a new job, and are attending your first meeting. There are about 15 other co-workers in the room. What actions would you probably do?	
a) [ ] I would introduce myself to everyone.	J: 32.1% A: 51.1%
b) [ ] I wouldn't say anything.	J: 5.7% A: 4.3%
c) [ ] I would try to occasionally contribute to the meeting by making relevant comments.	**J: 4.3% A: 57.4%**
d) [ ] I would wait until I was spoken to before saying anything.	J:16.4% A:21.3%
e) [ ] I would keep quiet and only listen to everyone attentively.	**J: 44.3% A:19.1%**
f) [ ] I would try to ask as many relevant questions as possible.	**J:12.1% A:29.8%**
g) [ ] I don't know/ other:	J: 4.3% A:8.5
J=Japanese respondents average A=American respondents average	

Statistically significant differences (c, e, f) are shown in bold. As the data in Table 1 indicates, in an American workplace context, silence and ambiguity are not desirable and, indeed, may even imply incompetence or untrustworthiness to fellow native English speakers. Openness and explicitness, on the other hand, are highly valued and expected. While both speakers may not

necessarily agree, if they can understand the other's position, they feel more comfortable. To those from another culture (e.g Japan), however, this directness and openness may be interpreted as "immature" or "insensitive." Why is this so? How can two people experience the same communicative event and come away with a different, potentially harmful, interpretation of the other?

This paper aims to explore these two questions by presenting some of the core communicative values and norms that underpin Japanese and English speakers' communication culture in a business context. Cross-cultural conversations adapted from Storti's *Cross-Cultural Dialogues* (1994) will be analyzed to show how culture-specific knowledge can potentially affect communication.

CULTURE

Culture is a process of acquiring values, norms and learned behaviors that a group of people share. Yet, "no one member of a culture knows all aspects of the culture, and all the members of a culture have a unique view of culture" (Gudykunst & Kim 2003:16). An individual may have an infinite number of individualistic values and norms; but only a relatively small number of these that do not belong to their larger cultural norms (e.g. country, region, city, school etc). It is from these groups that we learn what to regard as right and wrong or normal and strange. In fact, although there are an infinite number of possibilities, this "cultural conditioning" results in a very limited number of group-learned experiences (Singer 1998:4). Group members belong to one of these cultural groups will often share a similar pattern of perception and interpretation of events. For example, in the US, someone who has a firm handshake and good eye contact is generally perceived as "confident" and "trustworthy" in American culture. This sharing of norms, values and perceptions makes communication smoother and simpler – and unconscious or unrecognized. Thus, a major supposition of intercultural theory is that people raised in Culture A can communicate more easily with people in Culture A than in Culture B. What about when we carry our own cultural values into a cross-cultural context? Will we adjust to compensate for the new culture or carry on using our own background cultural knowledge? One recent study (Fisman and Miguel 2006) compared UN diplomats in New York from countries whose governments were rated as being more corrupt than others (using the Transparency International Corruption Index). It was found that UN diplomats from countries who are known for having the more corrupt governments are the ones who habitually tend to break the traffic and parking laws in New York. Diplomats from countries not regarded as corrupt tended to follow the law even though their diplomatic status protected them from prosecution. This type of evidence indicates that people do indeed transfer their native cultural norms to the cross-cultural context. In other words, although we may be able to "get by" for a short period of time in a foreign culture, we cannot quickly or easily shed a lifetime of acquired learned values and norms despite the context anymore than we can "unacquire" our native language.

The terms "cultural background knowledge" specifically refers to the culture specific information that we do not consciously recognize because it has become subsumed into our cultural identity. Cross-culture refers to a specific comparison of two cultures whereas intercultural shall refer to the comparison of cultures in general.

THE FOCUS OF INTERCULTURAL COMMUNICATION

Intercultural Communication (IC) research focuses on face-to-face interaction as opposed to comparing the same phenomenon across cultures (Bennett 1998:9). Recognizing how and why particular cultures tend to communicate the way they do is central to the IC field (see Ting-Toomey & Chung 2005, Gudykunst & Kim 2003, Gudykunst 2005). However, it is more important to first understand and recognize our own cultural communication tendencies. People take for granted their norms and values based upon the centralizing tendencies of their larger national culture. For instance, because of the strong value of individuality, Americans are even reluctant to acknowledge the existence, much less influence, of a national culture on their communication.

"U.S. Americans are particularly resistant to recognizing their national culture. Despite the fact that nearly everyone else in the world immediately recognizes them as Americans, many of them still insist on labelling themselves as "just individuals" or "a mixture of cultures." Of course, the very commonality of this tendency is an example of U.S. American national culture; no other people in the world but U.S. Americans are so quick to disavow their cultural affiliation" (Bennett 1998:4-5).

This makes cross-cultural training and education at times a challenge because Americans tend to assume that "we are all basically the same." Thus, one of the keys for interculturalists is to have extensive knowledge and awareness of their own cultural tendencies.

ETHNOCENTRISM

…we can adduce good reasons for any cultural norm

(Trompenaars & Hampden-Turner 1998:73)

One of the concerns with focusing on cultural tendencies at the national level is that it can lead to ethnocentric value judgements of "the other" speaker or culture. This is indeed a legitimate concern and one that we must be constantly self-aware of because what feels natural in cross-cultural communication is often a cultural singularity. Considering how another culture prefers to communicate involves addressing potentially stereotypical information. However, with a good understanding of our own cultural communication tendencies, we are better prepared to compare subjective information about another. For example, imagine that you are about to embark on a

business trip to the country being described below using two types of information. Which type of information, A or B, would you find most useful in your stay in this country?

Table 2 – Information types	
Read the two types of information about a country. Which type was most useful to you?	
Type A	Type B
Population: 9 million	They speak English very well
Constitutional Monarchy	They are logical and restrained in their behavior
450,000 sq. km.	People tend to be shy and not so talkative
Mixture of socialism, capitalism and entrepreneurialism	A lot of people have blond hair and blue eyes
Average temperature in summer is 17C and in winter -2.8C	Sensitive subjects should be avoided in conversation (e.g. sex, religion)
Large middle class	Gestures and physical contact are not approved of
They learn to speak English as a Second Language in school	The public and private sector services tend to run efficiently
Religion: 80% Evangelical Lutheran	Humor is not as important as in some countries
Life expectancy: 78 men, 82 women	Teamwork is common and appreciated

We can see from Table 2.0 that there are two types of information given about a particular country. The left side lists objective information and the right subjective information. Most readers will probably recognize that the country being described is Sweden. If you were about to embark on a business trip there, which type of information would you judge to be more useful? Most people would agree that the *subjective* information can tell us more how the people living there may view us and the world around them as well as their preferred way communicating. Yet, almost all of this information is ethnocentric in nature. The point being made is that, when we try to understand something as complex as culture, subjective information is more useful to the sojourner or international business traveler. Why is this so? In short, all humans need to stereotype because it makes things easier for us to understand. For example, if you ask Americans what comes to mind when they think of the state of Arizona, most will say, "Hot" or "Desert." While there is desert and hot weather in Arizona, there are also lots of mountains and snow and very cold weather. Yet, the simpler image helps us understand this region because it would be confusing to say it is "hot", "cold", "desert" and "mountains." Most of the time these generalized deductions cause no harm and achieve their intended purpose, especially in a mono-cultural context. However, in cross-cultural contexts, they are often erroneous because they are underpinned with norms and values that are different from the person's behavior being observed. By projecting our own cultural view on to "the

other", we are filtering what we regard as important information so that we can understand it more easily and make the "correct" decision.

HIGH AND LOW CONTEXT CULTURE

High Context (HC) communication cultures (e.g. Japan) and Low Context communication cultures (e.g. US) approach communication and decision-making differently. HC is characterized by nonverbal communication, meanings that are shared implicitly by speaker/listener which are highly dependent on the context. A high context system is one in which information and interaction are constantly shared by all members of the group thus building up and maintaining a high level of context. The emphasis is not so much on the direct meaning of each utterance but how and by whom it is uttered because there is meaning associated with the context in which it is spoken. A Low Context (LC) culture values explicit communication between speaker/listener; the context is less important that what was actually said. LC cultures place more value on the individual's content of the message in order to "better predict listener's behavior in direct communication" (Gudykunst & Nishida 1993:151). High context cultures typically value their relationship to the group more than low context cultures. Cross-cultural conversations presented in Section 4 shall be analyzed using this theory.

BASIC JAPANESE CULTURE-BASED COMMUNICATION CONCEPTS

The cultural concepts below are a result of the author's research and data collected and synthesized from both American and Japanese university students as well as relevant literature that discuss Japanese communication (e.g. De Mente 1993, Yamada 1997, Donahue 1998, Matsumoto 2002, Davies & Ikeno 2002, Sugimoto 2003). Although it has been argued that Japanese societal norms are in a state of rapid transition (see Matsumoto 2002), the traditional nature of these values determined by those in "transition" (i.e. young Japanese university students) suggest that dominant cultural values of Japan remain relatively stable taking time to change as each generation faces new challenges. Long term personal experience of living in Japan would suggest the following theory: Younger Japanese are indeed in a stage of rapid transition. However, when they are forced to join the world of adults and earning a living, they "reacquire" their traditional cultural norms of modern Japan or else risk being shunned from their new group (i.e. company life).

Table 3 lists data resulted from "young" Japanese university students when asked to list the words they associate with "traditional Japanese culture." Their responses were divided into 10 categories with the use of past Intercultural Communication theory.

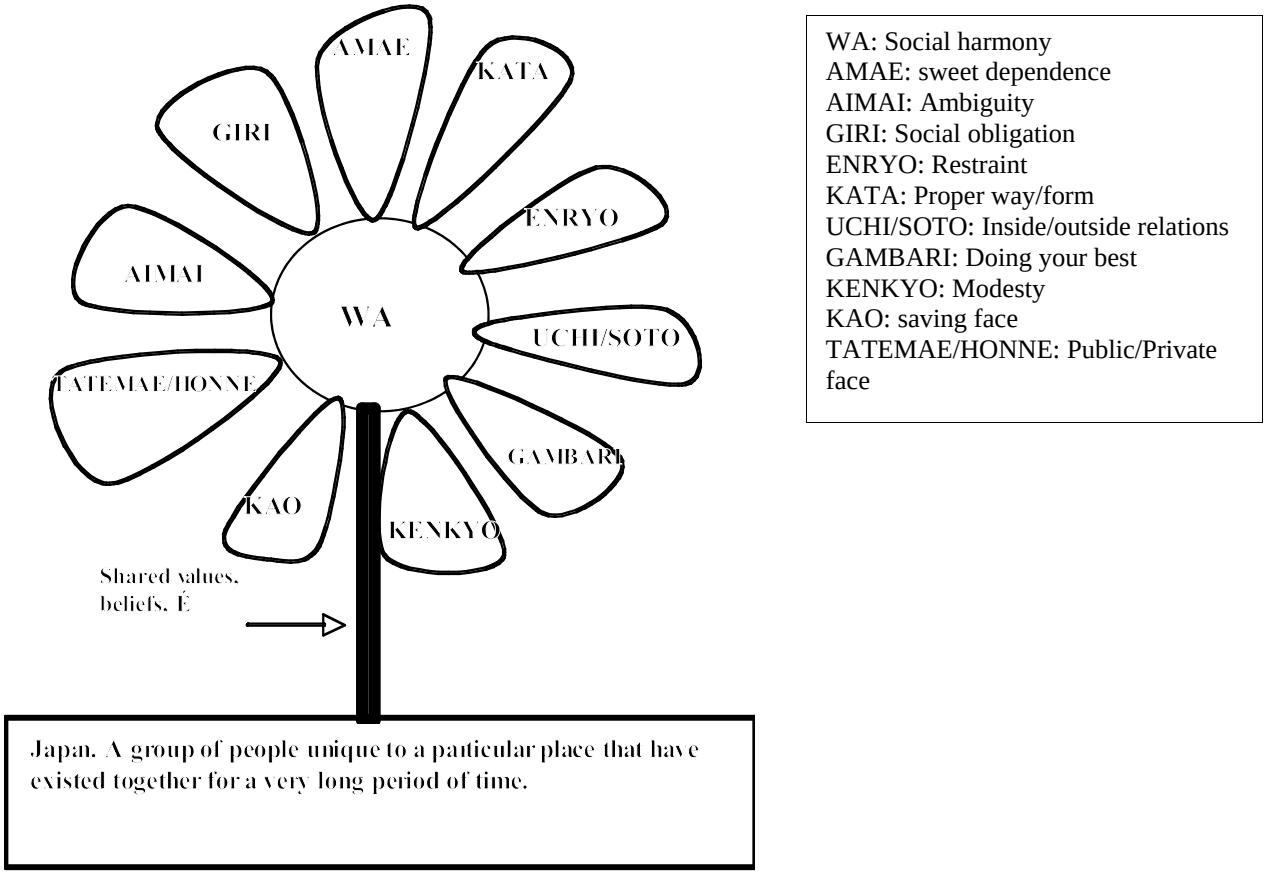
Table 3: Traditional Japanese Communication Values
Modesty
Politeness
Ambiguity
Harmony
Obligation
Simplicity
Diligence/thoroughness
Interdependence
Participation
Social Hierarchy

At the very core of Japanese communication is, WA, or the concept of social or relational harmony. Relational harmony, as well as the other concepts, are so prevalent in Japanese communication that it goes unrecognized much the same way that individuality is stressed in the US. In most cases, the Japanese core value of social harmony can be directly or indirectly attributed to a variety of other Japanese communication values and norms such as: ambiguity, politeness, and indirectness. Saying that the Japanese speaker values relational harmony is not the same thing as saying that they are not individualistic or do not like to behave independently. Rather, because communication is done in groups and it is the shared group norms of Japanese society that value communication in a more interdependent and harmonious way.

The concept of AMAE or interdependence is also crucial to understanding Japanese communication. AMAE has been defined as, "…depending on the benevolence of others" (Doi 1973:17). A quick investigation into contemporary Japanese TV can reveal some of these cultural concepts. Popular nationally televised TV shows are often a barometer of what a society values albeit in an empirical way. Japanese TV is rife with quiz-game show programming that gives the audience and participants a high level of information (high context) and then requires them to give an answer while considering what the other participants may say. Unlike in the US, where quiz/game shows typically tend to have individuals competing against one another, in Japan, they are almost always made up of panels or a group of individuals charged with solving a riddle or "MONDAI" (lit. problem). One nationally televised program had participants drawing pictures of a word that the host held up. The goal of the game was to try and draw the same picture as the other participants. In other words, participants wanted to have the same interpretation as the members of their group or they would "lose." This thinking may seem strange to western native English speakers who were brought up on the concepts of individuals or teams competing against each other distinguish themselves from

others. Most likely, if this quiz show were in the US, the participants who would have given a different answer from the others would be the "winners" and those who had similar answers to the others would be the "losers." One reason accounting for this kind of disparity is because, in interdependent cultures like Japan, one's self-identity is already at least partially defined by group affiliation. The emphasis is on fitting in with others and being connected to the group. This has been described as the interdependent construal of self (Ting-Toomey and Chung 2005:77). Individualistic cultures like the US, on the other hand, regard one's self-identity as something you are continually trying to define. People in independent self construal cultures tend to "use their own abilities and ideas as motivational bases rather than thoughts and feelings of others" (Ting-Toomey and Chung 2005:77) That is, for American style communication, the glass is half-empty and there is a continual need for explicitness in language use so that it can be "filled-up." The following is an excerpt from a Japanese university student journal (items are parentheses are added by the author for readability):

Diagram 1: Model of Japanese Core Communication Values



WA: Social harmony
AMAE: sweet dependence
AIMAI: Ambiguity
GIRI: Social obligation
ENRYO: Restraint
KATA: Proper way/form
UCHI/SOTO: Inside/outside relations
GAMBARI: Doing your best
KENKYO: Modesty
KAO: saving face
TATEMAE/HONNE: Public/Private face

AMAE (dependence) in Japanese means depending on the benevolence of others. AMAE is basis for maintaining harmonious relationships (such as) children who depend on their parents, younger people rely on their elders, grandparents depend on their adult children and so on. Japanese have a tendency to make a group. They don't want to behave individually. So, the group make in-and-out (UCHI/SOTO), and in the group they want (to) depend on someone.

Another concept crucial to the intercultural dyad is AIMAI or ambiguity. "Ambiguity is one of the biggest problems in communication between Japan and other nations today, resulting in a great deal of friction and misunderstanding" (Davies and Ikeno 2002:13-14). However, for Japanese it is also an indispensable communication tool vital to maintaining harmony in daily Japanese life. The following Japanese student journal excerpt describes AIMAI from a Japanese perspective:

Japanese tend to speak indirectly. We think AIMAI is indispensable for maintaining harmony. Japanese think that when you disagree with the speaker, it is impolite to say so directly. If quarrels arise, they do affect people's relationship. If you go against someone and create a bad atmosphere, your relationship may break off completely. People tend to react emotionally, and most are afraid of being excluded from the group. They want to avoid conflict especially with people in the same group. They don't want to have a bad reputation in the group.

The other concepts listed in Diagram 1 will not be discussed further due to space limitations.

BASIC AMERICAN CULTURE-BASED COMMUNICATION CONCEPTS

Table 4 introduces the top culture-derived communication concepts for Americans. These concepts, like the Japanese ones in section 2.0, came from both background literature (e.g. Stewart and Bennett 1991) and raw data collected and categorized from American university students.

Table 4: Traditional American Communication Values
Independence
Pragmatism
Achievement
Privacy
Informality
Individuality
Social Equality
Directness/Assertiveness

At the core of the American value set is personal "independence" and "individuality." You can see that many of these concepts are very different, if not opposite in some cases, from the Japanese ones listed in section 2.0. These norms and values greatly affect how Americans communicate and make decisions and have a significant impact on cross-cultural interactions with Japanese and others. It is important to recognize that these differences should only be interpreted as simply different and not "wrong" or "strange" when compared to another cultures preferred way of communicating. These values will be used to analyze the sample conversations in section 4.

One way of highlighting a society's cultural values would be to consider someone who is thought to be a cultural "hero" or "icon" in that country. For example, in the US, Kit Carson, a legendary trapper, scout and soldier of the 19th century, was and still is an American cultural icon. He portrayed many of the qualities that Americans continue to admire most: self-reliance, independence, rugged individualism, an explicit and direct way of talking, a man of action, loyal and honest. This correlates with the author's on-going research utilizing cross-cultural data between Japanese and Americans (Appendix A), respondents where asked to freely associate words (using Associative Group Analysis) with "communication." Results indicated that the Japanese respondents views "communication" in a more attributive, *process-oriented* way by answering with words such as "important", "difficult", "exciting" and "friends." The American respondents, on the other hand, preferred a more *action-oriented* interpretation by using words such as, "talking", "listening" and "writing."

SAMPLE CROSS-CULTURAL CONVERSATION ANALYSES

Sample conversations and subsequent analyses have been adapted from Storti's Cross-Cultural Dialogues (1994). These conversations will be analyzed using cultural terms briefly introduced in sections 2 and 3 to illustrate how cultural background knowledge can affect cross-cultural interaction.

Table 5: Cross-cultural Conversation #1

Mr. Chapman:	We can offer a bulk discount of $15.00 per unit if you order up to 50,000 units.
Mr. Shibata:	That's a good price, Mr. Chapman.
Mr. Chapman:	So, do you accept the price?
Mr. Shibata:	It's very good.
Mr. Chapman:	Great! Let's talk about a delivery schedule then.

In this business meeting context between Mr. Shibata and Mr. Chapman, we can see that they are negotiating a price for their two companies. Mr. Chapman, as the producer, has made an explicit

offer of $15 per unit. Mr. Shibata, the buyer, has responded positively but implicitly as he does not say if this is an acceptable price or not. Because Mr. Chapman expects an explicit reply, he tries to clarify this remark by directly asking, "Do you accept the price?" Mr. Shibata again answers positively but ambiguously. He is also expecting Mr. Chapman to interpret his utterance appropriately. That is, he is using an implicit communicative style by avoiding any directly negative reply (i.e. saying "no") and, therefore, *depending* on Mr. Chapman to interpret his utterance as, "this is a good start, I'm listening, but let's keep discussing this further." Unfortunately, Mr. Chapman's cultural background knowledge emphasizes explicitness and he mistakenly interprets Mr. Shibata's remark to mean "yes" (e.g. Great!..). Mr. Chapman assumes that Mr. Shibata will directly say this is acceptable or not and interprets, "it is very good" to mean "yes." Mr. Shibata, on the other hand, has been put into a difficult position since we expects Mr. Chapman to interpret his response, "It's very good" as "we are moving in the right direction, but lets keep discussing this further." Japanese communication is characterized by putting the responsibility on the *listener* to interpret the speaker's true intention without a loss of face. Conversely, American or Western communication is characterized by the responsibility resting on the *speaker* to make him or herself understood. We can see that Mr. Chapman has several unrecognized cultural values that Mr. Shibata does not.

1) He will be *direct*: explicitly agree or disagree
2) He will act *independently*: He will not depend on me to interpret his utterance, be able to decide at this point in time whether his company will take the offer
3) be *individualistic*: be able to make the decision himself without checking with the higher ups in the company.

Mr. Shibata, on the other hand, assumes that Mr. Chapman will more or less follow the following Japanese communicative values :

1) be more *participative and interdependent*: allow more time for him to decide, be sensitive to the implicit meanings
2) *ambiguity/politeness*: be less explicit allowing him to save face by being able to say "yes" or "no" more overtly
3) *social hierarchy*: Mr. Shibata probably assumes that Mr. Chapman knows that he alone cannot make this decision without extensive consultation with this company president or others involved in the group.

One of the main underlying values for American business people is the value of "time is money" which requires that language use be efficient and explicit. Of course, Japanese business people also value "time is money" but to a lesser degree because relationship building and maintenance (i.e. social harmony) take precedence. Therefore, business decisions may take more

time for Japanese (but get implemented more quickly) than their American counterparts because everyone is in agreement. Americans prefer quicker decision-making but then the implementation often still requires some adjusting to accommodate everyone. The process of a Bill becoming law in the US Congress would be an example of this. The decision to introduce a public Bill before Congress to become law, which can have a great affect everyone, can easily and quickly be introduced by any individual. However, before this Bill can become law, it will certainly be modified through numerous congressional committee actions and "mark ups" before it can come before both houses of Congress to be approved or disapproved via majority vote. This (LC) process is similar to the way Americans prefer to communicate. In Japan, topics tend to be more or less agreed upon before being formally introduced via behind the scenes informal consultations or NEMAWASHI in Japanese. NEMAWASHI literally means to "tie the roots up" meaning to secure everyone's opinion before deciding publicly. This style avoids unnecessary loss of face and maintains relational harmony.

Another difference in culture affecting decision-making between Japanese and American business people, is the way each learns leadership and management skills. Here is an excerpt from one of a large number of popular "how-to" or "self-help" books that permeate American culture. This excerpt describes how to be a good manager in the US (the italics are provided by this author for cultural emphasis).

> "If you're a manager, you would want to expound upon *how you feel individuals* should be managed. Show flexibility and *avoid using "participative management*." Participative management is interpreted by many as *group decision making*. Instead, you may want to say your philosophy of management is to be managed in a fair manner, to be trained and supervised appropriately, to have your work criticized from an improvement standpoint, and *to be acknowledged for a job well done*. "
>
> (Stuenkel 2002)

This management approach would be problematic if applied in cross-cultural context particularly in a high context cultures where participative management is indeed highly desirable. In addition, group decision-making is a core Japanese value and few Japanese would ever want to be singled out for a job well done in front of other team or group members. Modesty is another core Japanese value.

Because American and Japanese cultures value "leadership" differently, there is a difference in what is considered "good" and "bad" management. In the data collected by the author (Ryan 2006) in the table below, 47 Japanese and American university students were asked to qualify what makes a "good leader."

Table 6: What are some qualities that make up a good leader?	
Japanese	American
understands others' thinking (28)	knowledgeable/intelligent/resourceful (19)
charisma (19)	good communication skills (17)
good leader (17)	decisive/confident/forceful/outgoing (16)
made a good effort/work hard (9)	respected by peers/responsible (11)
	empathetic/fair/open-minded (11)

We can see that the American respondents applied their cultural value of individuality and speaker explicitness (e.g "resourceful and good communication skill") while the Japanese respondents applied their cultural value of relational harmony and interdependence to answer, "understands others' thinking." These respective values then become cultural background knowledge for both speakers which they may transfer or "map on" to the cross-cultural context.

CROSS-CULTURAL CONVERSATION #2

In the cross-cultural conversation in Table 7, Mr. Browning and Mr. Otomo are just about to finish a business meeting when Mr. Browning suddenly brings up the topic of Yamada Distributors.

Table 7: Cross-cultural Conversation #2	
Mr. Browning:	Since we have a few minutes left in our meeting, I'd like to bring up the subject of Yamada distributors.
Mr. Otomo:	Yamada? What about them?
Mr. Browning:	Well, I don't think any of us are that pleased with their services. I think we should find a new distributor. I've heard that Inoue Company is quite good.
Mr. Otomo:	I wonder what others think. Have you discussed this with anyone else?
Mr. Browning:	Not really. That's why I'm bringing it up now, to get your opinions.
Mr. Otomo:	Yes, we should get people's opinions before we decide.
Mr. Browning:	Good so what do you think, Otomo-san?
Mr. Otomo:	I couldn't really say.
	(Storti 1994:93)

Mr. Browning probably feels it is a good time to check other's opinion since they are all together at one time, and fails to see any difficulty with everyone voicing their opinion on the matter. Mr. Browning has assumed the following American or Western cultural values:

1) *Direct/explicit* talk, "time is money" value, say your true feelings so a good decision can be made
2) *Achievement oriented*: Meetings are for the purpose of voicing individual opinions so that we can talk out the problem and come to a logical agreement
3) *Independence*: Mr. Browning is showing his "good" management skills by showing independence and individuality and by taking the initiative on the Yamada issue.
4) *Pragmatism*: Since we are all together why not go ahead and decide on another topic to same time and energy for the future.
5) *Social equality*: Because Mr. Browning probably feels equal socially (i.e. we are all successful business professionals), he probably sees no harm in asking a sensitive business related question since no one has anything to lose.

Mr. Otomo, on the other hand, seems surprised at Mr. Browning's sudden decision to bring up such an important topic. He is then put on the spot in front of colleagues, those in his in-group, with a potential face-losing question. To deal with this dilemma that Mr. Browning as unwittingly created, he falls back on his culture-based communication strategy to deal with the problem. Rather than respond with his direct opinion, he shows restraint (*enryo*) because he is socially obligated (*giri*) to his group (i.e. his company). Mr. Otomo also seems to apply the Japanese communication concept called *tatemae*. "In Japan, individuals are expected to behave on the basis of *tatemae* (e.g., what is expected of them), not *honne* (e.g., what they want to do)" (Gudykunst & Kim 2003:58). Thus, Mr. Otomo uses ambiguity (*aimai*) with the Japanese concept of *tatemae,* or public face, in his encounter with the straight-talking Mr. Browning to save face since he unsure of the other's opinion of Yamada distributors. Because communication is generally high context in Japan, Mr. Otomo would have probably conferred privately (*nemawashi*) with his colleagues in an informal way to seek a consensus before showing his own opinion. Japanese instinctively switch between public (tatemae) and private (honne) face in order to maintain a sense of relational harmony. In sum, Mr. Otomo appears to use the following Japanese cultural values in the cross-cultural context in Table 6:

1) Social *Obligation*: Mr. Otomo shows obligation and restraint to the other members in his group by not voicing his opinion on the matter until he knows what others are thinking.
2) *Harmony*: Mr. Otomo instinctively seeks to maintain harmony by showing his social obligation to finding others opinions and not make decisions independently. In

addition, his company may have a long history and deep relationship with people in Yamada Distributors. This would make it more difficult to suddenly cut ties since social harmony built up over the years would be damaged thereby reflecting badly on his own company in the eyes of others.

3) *Interdependence*: Mr. Otomo is dependent on other's opinion of Yamada distributors thus showing his social obligation and harmony, "I wonder what other's think."
4) *Ambiguity*: "I couldn't really say", saves face but probably confuses Mr. Browning.
5) *Social hierarchy*: It is also possible that Mr. Otomo is not in the position to say his opinion on Yamada because he does not know his bosses' opinion or older colleagues views.

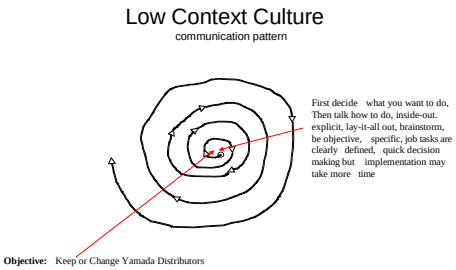
Both Mr. Browning, for being so blunt, and Mr. Otomo, for being ambiguous, may have slightly negative impressions of each other because of the way their respective culture values communication. Had one or both been aware of the others cultural communication preference, this conversation would most likely have been smoother.

If we analyze this conversation from Hall's High-Low context model (1989), we can see that Mr. Browning starts with the most specific topic, Yamada Distributors, and seeks to build context around it (see Diagram 1).

The flow of communication runs from specific to general. In LC cultures, speakers are expected to say their opinions or "put it all out on the table" so that this context can be built up so that a timely and informed decision can be made after considering each individual's opinion.

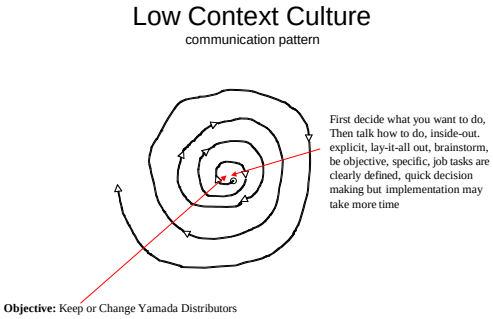
HC cultures, on the other hand, prefer to decision-making from the outside-in. That is, HC cultures prefer to build context around the central point before actually broaching the subject in order to "feel out" other's opinions so that relational harmony can be maintained (see Diagram 2).

Diagram 2



(chart adapted from Trompenaars and Hampden-Turner 1998:91)

Diagram 3



Mr. Otomo needs to know what others are thinking so that he can make an informed decision or compromise. No one loses face and all contingencies are considered before the actual decision is made.

Both communication styles have advantages and disadvantages. The HC communication style results in decision making being rather laborious and time consuming but implementation relatively quick. The LC style results in quicker decision-making because of explicit communication but may take much more time to implement to "work out all the details."

DISCUSSION

This paper presented Japanese and American cultural values that can significantly affect cross-cultural communication in a business context. It also presented an indirect case for the need for cross-cultural training - particularly in consequential contexts such as international business. It was argued that it is necessary to make use of subjective information to help us understand the viewpoint of someone from another culture if we have a good understanding of our own culture's communication tendencies. Finally, if we are able to recognize the merits and demerits of *both* cultural communicative norms, we can better adapt to form successful business relationships paving the way for smoother future interactions at less human and organizational cost.

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Appendix A (see Ryan 2006)			
Scored responses to stimulus word "communication"			
American respondents		Japanese respondents	
Talk(ing)	84	Conversation/chatting	54
Tele(phone)	48	Difficult/hard/complicated	48
Speech	43	Friends/make friends	38
Speak	24	Eye contact/eye	23
Writing	24	Interesting/exciting	22
TV	22	Important/necessary	17
Listen(ing)	22	International/world	12
Internet	21	English/English conversation	11
Language	19	Interpersonal/person	10
Radio	16	Skinship/contact	10
2-way/sharing/exchanging ideas	16	Shaking hands/hands	8
email	14	email	8
Getting point across message relaying	11		
Sign	10		
Touch(ing)	9		
Important	9		
Hearing	8		
Letter	8		
Hard	8		
Sign Language	7		
Body Language	7		
Verbal	7		
Gesture/nonverbal	7		
Conversation	6		
Feelings/emotional	5		
Total Salience	455		2

THE REAL TIME ORGANIZATION: ONLINE BUDGET AND FINANCIAL APPLICATIONS AND MANAGEMENT CHANGE

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ABSTRACT

Over the last thirty years businesses and other major organizations have been implementing computer based online, real time financial applications. These applications radically reduce the time with which detailed and summary business information is available while they also radically increase the range of places that information is available. This study presents an investigation into how organizational management evolves when such applications are implemented. The study is based on extended interviews with fourteen chief business officers of different educational institutions that have each successfully implemented such an application. Over a period of years, chief business officers have actively utilized the functionality available in online, real time applications to more widely share institutional responsibility for financial accountability and fiscal integrity. Based on the findings of this study, those studying organizations utilizing this kind of application would expect to find in these organizations a greater sharing of overall managerial responsibility.

INTRODUCTION

The development of online, real time business transaction processing applications began in the late 1970's. By the mid 1990's, applications with these features had become the standard for business management around the world. They bypass cumbersome physical transfer of data to keypunch operators, use of batch entry procedures, and multiple manual edit steps before transaction acceptance. Instead online, real-time applications allow for immediate entry, edit, and recording of business transactions at the point where the transactions occur. Once accepted, transactions are posted automatically and immediately summarized. This allows financial information to be accessible across an organization, wherever an online terminal is available. As computer technology developed, even more edits and updates on each transaction were possible as well as immediate inquiry about the business impact of larger groups of transactions. This study develops a formal understanding of how the use of such online, real time technology affects organizational

management. Higher education institutions were the specific focus of the study and parallels are drawn to other kinds of organizations and business cultures.

Online, real time applications utilize the development of computer terminals and terminal controllers; transaction processing software such as IBM's Customer Information Control System (CICS); high capacity hard disks capable of storing and providing direct access to millions of transactions; and high performance computers that link to multiple terminals or personal computers. Software applications were now online because business transactions were entered at terminals or PC's linked to a common application run on a central computer. These applications were real time because editing and acceptance happened at the very time and place where the business transaction occurred (Fisher, McKie, & Mancke, 1983). Once a transaction was accepted, subsequent online inquiry and financial reports reflected the business impact of the transaction.

Use of online, real time applications markedly enhanced the speed with which business information became available, in detail or summary form. Business information became widely available across multiple layers of management. The only requirement was access to a network link. Clerks now had the same access to information as senior managers. While such applications are heavily dependent on technology for their functionality, the fundamental challenge of these applications is to the organizational culture of the entities in which they were implemented.

REVIEW OF THE LITERATURE

Many studies have been published in a variety of business cultures on how computer technologies affect organizations but systematic study of the management implications of online, real time applications has been sparse. Efforts to understand the interaction between computer technology and organizations surfaced soon after the technology emerged and continued through the present. With the exception of one early study (Whistler 1970), none of the studies looked at more than one or two entities. Most of the studies reported inconclusive or contradictory outcomes. The review of selected literature revealed little information on how the use of online, real time transaction processing applications, with their instantaneous and widely available business information, affected how people in organizations functioned. (Leavitt & Whisler, 1958; Franz, Robey, & Koeblitz, 1986; Whisler, 1970; Attewell & Rule, 1984; Lee, Barua, & Whinston, 1997; Baroudi & Orlikowski, 1989; Brynjolfsson, Malone, Gurbaxani, & Kambil, 1994)

FURTHER MIS DEVELOPMENTS

While the previous studies were being carried out, ongoing changes in the ways business applications were being developed and implemented provided new opportunities to expand such investigations. When computers were first used for business purposes, personnel employed by the business developed the initial applications. Application design was limited by the technology of the

time and was closely coupled to the specific business practices and the managerial approach of the businesses for which they were developed. The ability to generalize from such studies was limited. This becomes one explanation of the variety of outcomes found in previous studies.

The development of even more sophisticated technology helped even major company managements realize their businesses no longer had ready access to the financial and intellectual resources for developing their own business applications. Further, in the administrative areas of accounting and finance, external entities such as the Financial Accounting Standards Board (FASB) and the American Institute of Certified Public Accountants (AICPA) promulgated reporting standards, making possible a common approach to the business needs of different organizations. A number of software consulting firms seized the opportunity to develop and aggressively market financial applications.

In a typical pattern, a consulting firm initially developed a complex application for a large, client with the resources to pay for the new product. The consulting firm subsequently generalized the application and marketed it to other companies within the same industry. This pattern occurred among the banking, utility, and insurance industries, and any others where the presence of many large and medium sized organizations provided the market necessary to support the effort. In the attempt to be competitive, a consulting firm would provide its applications with comprehensive functionality to support a variety of management styles. The nature of the marketing process meant such applications quickly became so "feature rich" one company would likely not use all the functionality available. This residue of features now leaves a functional base to support subsequent managerial evolution at a company. Continued use of the product over time provided the opportunity to use residual functions. Often juxtaposed with expanded use of these functions was the evolution of management thinking. Intriguingly, the commonality of an application across organizations of the same type can be seen to support generalized conclusions about changes in management style in an industry, and can also serve as a base for extrapolating to other industries.

THE HIGHER EDUCATION INDUSTRY

Higher education was one industry where several independent software vendors developed and marketed generalized, online, real time business applications. Beginning in the 1980's, administrative and academic officers began to use new computer technology for online, real time processing of transactions found in higher education. Consulting firms developed applications to support student registration, student record keeping, payroll and personnel needs, and financial and budget management. These applications offered an opportunity to change how employees worked and even how information flowed across an entire institution.

ACTIVITY OF THE AUTHOR DURING THE TIME PERIOD

Between 1979 and 1991, during the time online, real time transaction processing applications were becoming more widely used, the author of this study was closely involved with the development and implementation of a particular online, real time budget and financial application at over forty higher education institutions. Those efforts were carried out first as an employee of a state university system, then as an employee of a major consulting company, and finally as an independent consultant. Most of the effort was with the online, real time, high volume, financial transaction processing application developed and sold by the consulting company.

The basic elements of a formal study were thus linked together: (a) an unexamined topic: how the management of organizations in a major industry – higher education – evolved when using online, real time applications; (b) an investigator with extensive experience in the topic area; (c) a significant list of subjects to serve as the base for such a study; (d) and finally the further development of the qualitative research paradigm as an effective way to examine the phenomena under investigation.

QUALITATIVE RESEARCH METHODOLOGY

Within the qualitative paradigm, theorists identify several formal study methodologies. Grounded theory was chosen as the methodology for this study. Grounded theory is used in focused areas of inquiry. This study would focus on (a) a specific topic, online, real time transaction processing applications; (b) a specific computer application from a specific vendor; (c) a specific organization type; (d) an interest in developing a generalized theory about the phenomena being studied; (e) and multiple data points that exceeded the variables of interest. These parameters supported the use of grounded theory methodology (Glaser & Strauss, 1967; Strauss & Corbin, 1990; Glaser, 1992; Glaser, 1978).

Grounded theory studies use inductive analysis of a set of related data to construct a theory or generalized description explaining the latent patterns within the data (Darkenwald, 1980). Typically the data consists of extended, “elite” or “purposeful” interviews with people actively involved in the phenomena under investigation. The process proceeds in three steps, (1) from initial categorization of the concepts in the data in a step called “open coding”, (2) through generalization of the categories in a step called axial coding, and (3) the final linking of the categories into a theory explaining the data (Creswell, 1994; Creswell, 1997; Yin, 1994; Marshall & Rossman, 1995; Lee, 1999).

COLLECTING THE DATA

For this study 14 managers from 13 different institutions were individually interviewed. The participant chosen for the interview at each institution was the chief business officer because they have high-level responsibility for all aspects of business office operations including supporting computer applications related to business operations. Also they are responsible for relationships between the business office and all other units, including academic departments. Typically these people have a title such as Vice President or Vice Chancellor for Business and Finance or Chief Business Officer. These institutions and these interviewees represented a homogenous population with a similar set of relationships to the situation and the setting studied. This provided the commonality from which the theory was developed (Patton, 1990).

Each of the separate interviews was immediately transcribed and entered into NVivo, a text management software tool supporting the analysis of qualitative data. Toward the end of the eleventh interviews, it became apparent there was a growing level of repetition in what was being said. Based on this, data collection was concluded after the fourteenth interview (Glaser et al., 1967; Strauss & Corbin, 1998).

ANALYSIS AND RESULTS

Basic Concepts in the Data - Open Coding

The initial review of the data identified six common topics discussed by the business officers in each of the interviews:

(1) The scope of responsibility of the business officer and the business office.
(2) The status of business office operations before implementation of the online, real time application.
(3) The ways the business office began to us online, real time information after it was available.
(4) The impact on the business office of the ability to process financial transactions of all types at the time when and the location where the transaction took place.
(5) How the wide availability of online, real time financial information changed the way the institution developed its budget and financial plans.
(6) How the new online, real time application changed the way institutions carried out budget control and financial resource control. Those wanting a more complete discussion of this step in a grounded theory investigation may go to http://www.online-realtime.org/.

Axial Coding: the Themes in the Data

After the identification of the primary topics covered, the second step in the development of a grounded theory is axial coding, a deeper search of the data for a common themes that cross and link topics. Such themes represent the more complete dimension of meaning brought out in the interviews (Glaser et al., 1967; Strauss et al., 1990; Strauss et al., 1998). Five themes were identified in the interviews:

(1) *Breakdown in Fiscal Integrity*: Prior to implementation of the new application, internal and external sources reportedly prevented the higher education institutions in the data set from effectively managing their financial resources. Mentioned were:
- (a). Fragmented budget and financial information resulting from the lack of a comprehensive general ledger application.
- (b). The inability of the business office to keep up with institutional growth and a corresponding increase in the number of financial transactions.
- (c). The inability of the institution to track budget balances by each department and subsequently inform users of those balances.
- (d). A lack of sound data to support institutional planning.
- (e). An increase in demand for information from federal and state agencies and auditors.

(2) *Upgrade of the Management Tools*: In an effort to deal with the breakdown, administrative personnel at each institution chose to purchase and implement a comprehensive budget and financial application. Three key new functions were available with the new application:
- (a). Online, real time entry and update of budget and financial transactions.
- (b). A comprehensive general ledger that could create accounting entries for all budget and financial situations.
- (c). Online, real time access to detailed and summary budget and financial information.

(3) *The Dream*: Chief business officers expressed a number of significant expectations for the implementation of the new application. They wanted it to become:
- (a). A way to effectively respond to increased demands on Business Office personnel.
- (b). A way the business office could meet new reporting and auditing requirements.
- (c). A way to support the budget development process and help all departments manage their budget allocations.

(4) *Limitations*: Full use of the new budget and financial application often was limited due to:

(a). The time needed to establish a technological base allowing more complete use of the application. This included development of a common network linking terminals and personal computers across an institution, and training of personnel in how to access and use the network.;

(b). A perception among end-users such applications were not 'user friendly;'

(c). The time needed to train administrative and technical personnel in using a budget and financial application and integrate thinking about finances into the ongoing institutional culture.

(5) *Changes in Management Style*: Despite limitations, business officers used the online, real time features of the new application to promote greater sharing of financial accountability across each institution. This was shown by:

(a). Use of the online, real time features to provide information throughout each institution as a way of enhancing budget control;

(b). Use of the online, real time features to provide timely answers to vendor inquiries. Initially this activity was a responsibility of the business office. As networks were expanded, personnel in all user departments were taught how to respond to such questions;

(c). The delegation of responsibility for online entry of budget and financial transactions as networks were expanded;

(d) The development of bureaucratic procedures rewarding effective financial management and punishing the ineffective. One such method was allowing budget balances or deficits to roll over from fiscal year to fiscal year.

The Grounded Theory

Given the outcomes from the axial coding and the related linkages identified, it was clear that business officers were unanimously expressing a desire for their institutions to more effectively manage available resources. These concerns were expressed as (1) financial accountability – staying within budget and financial parameters set up for a fiscal year; and (2) fiscal integrity – creating managerial processes and a managerial culture that could support operation within available financial and material resources. Axial analysis identified what had been happening. Chief business officers employed the new online budget and financial applications in ways beyond upgrading business office operation. They encouraged others in the institution to become more involved in the processes leading to financial accountability and fiscal integrity. This was illustrated by a key quotation from one of the interviews:

> ”One of the reasons we wanted the system was to … give the cost center managers the opportunity to know what we knew on a daily basis.”

Together, these elements may be summarized into the grounded theory that has been the object of this investigation:

> College and university business officers use the functionality of online, real time budget and financial applications to more widely share responsibility for financial accountability and fiscal integrity.

What the articulation of the grounded theory makes clear is that at institutions using online, real time budget and financial applications, financial accountability and fiscal integrity are evolving processes. Access to online, real time financial applications is being used to encourage participation of a wider group of institutional personnel in fundamental business responsibilities. The new technology is making possible fundamental changes in the ways organizations are managed.

IMPLICATIONS FOR RESEARCH AND PRACTICE

The analysis of data gathered for this study has led to the development of a grounded theory that posits an ongoing change in how financial responsibility and financial integrity are being achieved at colleges and universities. This change results in a greater sharing of fiscal and financial responsibility across these institutions. This is related to the activity of chief business officers using the functions of the new online, real time budget and financial applications available to them. Based on this analysis, organizations implementing online, real time applications may anticipate project outcomes that include a greater sharing of management responsibility. Further, extension of this kind of study to other kinds of organizations and different organizational cultures will yield useful insights into similarities and differences in the management of different organization types.

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