

Expanding Engineering Education Horizons through Hosting International Conferences

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ABSTRACT

Globalization in some form or the other is becoming more of a reality for most organizations. Universities, as the educator of the next generation of workforce attempt to keep pace with the issue by modifying their curriculum to include courses on globalization, global supply-chain management, cultural education, etc. Kettering University's Industrial & Manufacturing Engineering; and Business department recently hosted an international conference that brought together educators, students, and company executives from various countries to a common platform. By leveraging the WebEx communication technology, the conference provided an arena for individuals and organizations from various parts of the world to interactively participate in the conference in real-time. Undergraduate and graduate students got the opportunity to become involved in organizing the conference, in writing and presenting technical papers to an international audience, and to network with peers around the globe. The conference outcomes listed below only hint at the potential gains an Engineering program may have by becoming involved in similar activities.

- Real-time course problem/solution presentations to a global audience
- Continuous exchange of students' innovative projects and ideas
- New opportunities to collaborate with businesses
- Students' early introduction to the latest technologies

This paper outlines the general guidelines for successfully hosting an international conference and provides tips on building collaborative relationships with universities and industries around the world.

INTRODUCTION

Globalization is fast becoming a norm in most industries and higher educational institutions are taking the necessary steps to ensure that their graduating engineers are well prepared to function as global leaders who are educated in the areas of the latest technological advancements for business improvement. Like any forward thinking

university, Kettering University's engineering programs are actively pursuing avenues to educate students on topics related to globalization through classroom instruction and through direct experience. Kettering University's Industrial & Manufacturing Engineering and Business (IMEB) department is an integration of the business disciplines with the industrial engineering and manufacturing engineering disciplines so that broadly based business perspectives can be developed within and among the three degree curricula represented in the department. Curriculum changes have been made to include international business courses. Student Exchange and Study Abroad programs give students credit for studies in foreign countries. Long-distance graduate degree programs such as MS in Information Technology, MS in Manufacturing Operations, MS in Manufacturing Engineering, and MS in Operations Management reach students in North America, Europe, and Asia. Kettering University is well structured to make serious attempts to create internationally focused leaders.

THE UNIVERSITY SYNERGY PROGRAM CONFERENCE

The University Synergy Program (USP) conferences are venues for creating synergy among academic endeavors, business needs, and governments across the world. It was originated in 1997 by the Baan Brothers Foundation of the Baan Enterprise Resource Planning software fame. The conference is currently 'owned' by BeehiveFund, a non-profit organization whose mission is to nurture business and Information & Communication Technology (ICT) related knowledge and experience via bridging academic/research activities to the industrial environment. The goal of the USP conference is to facilitate the open exchange of ideas, experiences, and innovations between individuals from academic, industry, and government from all over the world.

Past hosts for USP conferences include, Hogeschool van Utrecht in The Netherlands; Technion University in Haifa, Israel; Stellenbosch University in South Africa, and Texas Tech University in USA. Each year, BeehiveFund takes proposals from Universities around the world to host future USP conferences. To be selected, the university must demonstrate: the support of the university leaders, the capability to manage the organization of a large event, the ability to attract a global audience, and genuine interest in establishing, maintaining, and advancing educational programs in the areas related to technological innovations for business improvement.

Kettering University was selected to host the 6th International USP Conference, USP 2003. The conference was held in the historical Dearborn Inn in September of 2003. The theme of the conference was, 'Collaborative Industry Supply Chain and Mobile Commerce.' The topics of the speeches and paper presentations included:

- Supply and Delivery Chain Solutions
- Logistics and Materials Movement
- Engineering Data Management in a Collaborative environment
- Wireless Applications for Mobile Business
- E-business Capabilities that Extend Applications to Suppliers, Customers, and Employees (i.e., Collaborative Business Processes)

- Transition of Business Processes into E-business Processes
- Mobilizing the Enterprise via Enterprise Information Portals (EIP)
- Evaluating Impacts and ROI of Enterprise Integration Technologies

Sponsoring organizations and Exhibitors at the USP 2003 conference included, American Production and Inventory Control Society (APICS), Sprint, Invensys, Bosch, Noaber Foundation, United Parcel Service (UPS), Electronic Data Systems (EDS), Delphi Corporation, WorldChain, PeopleSoft, WebEx, Cordys, and Riley Media.

The faculty and students of the IMEB department planned and organized the event over a one year period. The challenge was to enable the broadest possible attendance of educators, students, and government & company executives from various countries and to get support for the event within the context of a difficult world economic situation and a heightened security situation for attendees' travel. Prior synergies developed through the USP platform led to the creation of the WebEx company and product suit, that enables situations like those faced to be managed successfully. The conference focus, history, and participation, all reinforce the premise of globalization.

CONFERENCE STRUCTURE

The conference structure was established using the WebEx technology. Offsite viewing and participation was established on a prescription basis (advanced enrollment) and on a dynamic interactive basis (live broadcasts). WebEx enabled real-time viewing of speakers/speeches, live interaction between presenters and on- and off-site attendees, and recordings/delayed playback/archiving of the conference events.

Corporate, Academic, and Government viewers joined the conference either as individual participants (using a high-speed Internet connection) or via virtual centers set up by their respective organizations. Remote, virtual centers were also established at different university locations around the world. In addition to faculty and students, these virtual centers attracted individuals from local businesses.

The 130 onsite conference attendees came from different parts of the United States, Israel, Canada, South America, Asia, Europe, and Africa. The 350 web enabled attendees from 15 countries participated by viewing and joining the discussions in real time.

SPEAKER SCHEDULE ACCOMODATION

Keynote addresses were made by *Terri Takai*, Director of Information Technology, State of Michigan, and *Jane Warner*, President of Manufacturing Division, EDS and Chair of the Board of Trustees, Kettering University.

Other speakers included:

David Allen, CEO, WorldChain

Jan Baan, Chairman and Managing Partner, Vanenburg Group
Subrah Iyar, Chairman and CEO, WebEx Communications (presented via WebEx)
Raj Penkar, VP of Global Solutions, UPS
Carol Ptak, Author and VP of Industry Strategy, PeopleSoft (presented via WebEx)
Richard Ward, Executive VP, Material Handling Industry of America
Henk de Ruiter, VP of Sales and Marketing, Vanenburg Group
Paul Baan, CEO, Noaber Foundation
Andrew Lukes, President and CEO, Federation Corporation
Tony Hain, VP of Graduate Studies and Corporate Connections, Kettering University
Michael Bauer, Author and Practice Leader, North American Manufacturing Practice

The conference provided an arena for individuals and organizations from various parts of the world to interactively participate in the conference in real-time. Speakers at the USP conference had a virtual presence in two places at one time. Since all speeches were broadcast over the Internet, most speakers who attended the conference in person, had employees from their organizations join the conference via virtual centers. Mr. Subrah Iyar's speech from his office in California made an effective self reflective emphasis on global reach – the CEO of WebEx speaking of connectivity and collaboration while being connected and collaborating with the USP audience! Ms. Terri Takai shared her experiences in logistics and computer systems planning and she spoke about the future plans for Michigan's Information Technology.

CONFERENCE ORGANIZATION TEAMS

Kettering University formed an interdisciplinary team of individuals from:

- Academic disciplines -- Information Systems, Industrial Engineering, Business, Supply Chain
- Corporate Offices -- Media Relations, IT Technical staff, Asynchronous Learning Video Studio Staff, Administrative Assistants
- Students – involved in conference event management on the floor, in writing and presenting technical papers to an international audience, and in networking with peers around the globe.
- BeehiveFund/Noaber Foundation teams:
 - Handled the USP conference website
 - Oversaw the web enabled registration process
 - Provided sponsor/speaker information links
 - Provided critical funding
 - Provided participation through speakers and attendees

The teams shared responsibility through an integrated project focus.

- *Hotel Venue Project Management* was involved in organizing the guest rooms, conference halls, reception, registration, and meals.
- *Technology Support* was involved in organizing the audio, video, integration with WebEx
- *Keynote Evening Event Management* was involved in organizing the venue, setting, tours, reception, banquet, transportation, security, and technical support.

- *Media Relations* was involved in generating and distributing print, video, and electronic articles through collaboration with the regional press, organizational networking, e-media announcements, and society meeting presentations.
- *Conference Program Management* was involved in collecting and organizing presentations, overseeing the article review process, and overseeing the article judging process.
- *Conference Materials Management* was responsible for obtaining materials such as registration packages, preparing gifts and prizes, and printing the Conference Proceedings CDs.
- *Sponsor/Speaker/Exhibitor Management* was responsible for seeking and collecting sponsorship funds and materials, communicating with sponsors and speakers, and arranging the exhibit hall.

CONFERENCE OUTCOMES

The outcomes of USP 2003 listed below only hint at the potential gains an Engineering Program may have, along with its integrated partners – business program and technical staff, by becoming involved in similar activities.

- **Technology Award:** As a direct result of communications between Kettering University and Cordys Corporation in the months leading up to the conference, Kettering University recently became a recipient of the first University Partnership Award of the full Cordys product suite and licensed training valued at \$1 Million. Cordys allows a seamless collaboration between people, systems, and organizations despite different enterprise integrations systems (e.g. SAP, PeopleSoft, Baan) within the collaborating entities. The offshoot of this award is that a new Global Supply Chain Management course based on Cordys is in the making. This course along with other logistics and material movement related courses will involve Engineering and Business students to collaborate in a virtual supply chain environment through the global Cordys Solution.
- **Real-time course problem/solution presentations to a global audience:** As the name, University Synergy Program signifies, a clear synergistic effort among Kettering University (the host), WebEx Communications, Inc. (industry partner), and BeehiveFund (synergy facilitator) resulted in the birth of a unique concept called ‘Global Classmates’. Global Classmates is a virtual community that will enable the ‘globalization’ of engineering education through the sharing of in-class assignments, problems and solutions, and projects between Kettering University and its newly formed European University partners.
- **Continuous exchange of ideas:** The relationships built during the conference have enabled the continuous exchange of students’ innovative projects and ideas between Kettering University and other Universities around the world. They have also allowed Kettering University to directly present such ideas to businesses.
- **New opportunities to collaborate with businesses:**
 - Kettering University is currently in the preliminary development stages on two major collaboration endeavors aimed at the global connectivity and integration issues faced by engineers today.

- As a result of discussions related to and during the USP Conference, Kettering University has an agreement in principle to develop collaboration based events with an international professional society.
- The \$1M award from Cordys has resulted in an opportunity for Kettering University to participate in and academically lead the development of a new web-centric product suite that enables supply chain and distribution chain integration
- Students' early introduction to the latest technologies:
 - Kettering University students were involved in WebEx sessions during the conference participants, as conference event managers, and as virtual center managers.
 - Kettering University students will be involved in developing classroom applications for the Cordys product suite and in using those applications in case study and independent projects.

CONFERENCE ENABLERS

The general conditions that enabled the USP 2003 International Conference to be successfully hosted by Kettering University included:

- Top level Support – The University President and the senior staff provided complete support from the very beginning when Kettering University applied to host the conference. Support came in the form of guidance, communication, participation, and sponsorship
- BeehiveFund/Noaber Foundation – The originators of the conference provided the vision and commitment, especially in the face of economic and security issues specific to international travel.
- Effective Team Leadership and Participation – the success of the conference was mainly due to shared leadership, a collaborative conference design effort, flexibility of ideas, a healthy sense of urgency, commitment and stamina, professional demeanor of the organizers, and the willingness to discuss the 'elephant in the room' when needed.
- Conference Siting
 - Location, location, location – USP 2003, focused on mobility, supply chain, collaboration, etc. was located at The Historic Dearborn Inn which is the first hotel built specifically for mobile travelers at the location of the first commercial airport, built to use the Ford Tri-motor 'airliner' when it debuted. In addition, the keynote event was held at The Henry Ford Museum in front of the newly announced Heroes of the Air Collection of Aviation History – on the eve of the 100th anniversary of Aviation.
 - Timing, Timing, Timing – USP 2003 was held in the Fall, a timing that followed an economic period when many technology conferences were cancelled. Consideration for timing the opening of the conference was given to international travelers, their typical arrival, and typical travel parameters. Timing for the transportation to and from events, and the duration of event activities was critical because of unplanned for delays between activities.

USEFUL TIPS

Based on the experience gained from organizing, hosting, and the follow-up activities of the USP 2003 conference, the following tips on building collaborative relationships with universities and industries around the world may be useful to Universities interested in starting similar activities.

- **Identify Common Themes** – It is recommended that the theme selection should be motivated its attractiveness to the intended audience and the hosting university. The reason for the choice of the theme for USP 2003 was twofold; the university's expertise in the areas of global mobility, supply chain, and e-enabled business, and these topics being current 'hot topics'.
- **Provide effective means for connecting and collaborating** – It is important to make the most of the event by reaching as large an audience as possible. Searching for and attempting to build relationships with companies who offer collaborative and communication technologies will allow the event to reach audiences beyond those physically present at the venue of the conference. USP 2003 team members' contacts with WebEx and the company's ongoing sponsorship of USP conferences were important factors in the success and magnificent broadcast of the conference worldwide.
- **Respect social, cultural, economic, governmental situations that may enable or inhibit different forms of collaboration** – Accommodating for special situations may be necessary. In a previous USP conference, a paper presenter who was unable to travel due to security restrictions following the 9/11 tragedy made his presentation via a telephone/speaker system while a USP organizer synchronized his slide show to the live audience. A potential paper presenter for USP 2003 from Uganda could not afford the airfare. Using WebEx to broadcast his presentation was out of the question due to the unavailability of a high-speed Internet connection in the country! The USP 2003 team attempted to accommodate him by seeking sponsorship for his travel costs.
- **Rapid Follow-up with interested parties on topics of mutual interest** – The aftermath of an international conference such as USP is highly beneficial to a University, especially to faculty who are searching for private sector research funds. A rapid follow-up is necessary to benefit from the momentum created from hosting a conference.
- **Internal support** – obtaining internal monetary and resource support in the early stages are highly recommended. The USP 2003 team failed to get any monetary support from the university and was therefore forced to ask BeehiveFund to provide the necessary financial support.
- **Marketing Activities** – Personal contacts with companies produce better results than spending time and money in public announcements/advertising or any other formal marketing activities. Most of the sponsorship commitments were obtained through telephone conversations and even personal visits to the company when necessary. A prompt response to interested attendees and paper presenters is also highly recommended.
- **Feed off of past participation** – BeehiveFund provided the contact information for past sponsors and participants. Most past attendees were excited to hear of the

upcoming conference since to some of them it meant meeting up with old friends. About 25 percent of the participation was from repeat attendees.

- Selecting the location and venue – A typical university does not have the facilities to accommodate for such a large conference. Therefore selecting the correct venue is a critical factor in attracting new sponsors and attendees. After the USP 2003 event, the organizing team was convinced that choosing Dearborn as the conference location, with all good intensions of its international attractiveness, might have caused both General Motors (GM) and Ford to hesitate in directly supporting the conference. Kettering University with its historical ties to GM, hosting the conference in Ford's backyard, so to speak, might have caused them both to shy away.

CLOSING REMARKS

Because the USP international conference is dedicated to specific communities with unique objectives, it does not depend on profiting from registration fees and direct item sales to the participants. The bulk of the conference costs are covered by sponsorships through organizations that have proven experiences in gaining financial and market benefits by attending the conference year after year.

Playing a lead role in the organization of USP 2003, opened several doors for the growth of Kettering University's students and engineering programs. Universities involved in similar ventures will benefit in many ways: exposure to organizations around the world resulting in collaborative projects, real experience for students organizing a large international event, introduction of students to prospective employers world-wide, and many other similar outcome.

It is inevitable that today's graduating engineering students will be working in an environment where they will have to interact and collaborate with colleagues in different countries much more than ever before. As the educators of tomorrow's graduates, it is the responsibility of Universities to ensure that their students are prepared for the world ahead. Getting involved in an event such as the USP conference is a sure way to get started in the right direction.

To view information on past USP conferences, visit www.beehivefund.org. To apply to host a future USP conference or for more information, send an email to contact@beehivefund.org