Developing an Industry Partnership Model

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**ABSTRACT**

How well an undergraduate program prepares its graduates to enter the workforce is a key measure of success in the accomplishment of a program’s objectives. There are many advantages to dedicating this task to a specific person, who can consistently develop relationships with local businesses.

This paper discusses how dedicating a person to developing industry partnerships can play a vital role in the improvement of a student’s educational experience. The internship program and advisory board are managed by industry partnership manager and this has led to a beneficial symbiotic relationship. The industry partnership manager works with local government officials and interacts with the economic development board to help put the educational institutional at the center of growth. Tying all of this together is an annual technology conference to highlight new growth directions and to provide a networking environment.

**Categories and Subject Descriptors**

K.7.1 [The Computing Profession]: Occupations

**General Terms**

Economics, Management

**Keywords**Partnership, Industry

# INTRODUCTION

The University of Washington Tacoma (UWT) was founded in 1990 to meet regional needs for community college transfer students. UWT is set in downtown Tacoma’s Union Station neighborhood, a district of historic warehouses. The vision of the University is to provide access to an exceptional university education; provide an interdisciplinary approach to knowledge and discovery in the 21st century; and develop a strong and mutually supportive relationship between the campus and its

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surrounding communities. The downtown area has been revitalized by the University’s development and this growth has spread throughout the South Puget Sound Region.

In 2001, the Institute of Technology was launched on the campus with an initial cohort of 30 Computer Science students and a desire to grow into a polytechnic that would support multiple degree programs providing an educated technical work force for the South Puget Sound and the state. In order to achieve this, a position of Assistant Director of Industry Partners (AD) was created to support the efforts of the Institute.

Coordination with the development efforts for further growth and the expansion of the Institute will require careful future oversight. The campus continues to grow and has the advantage of easily building further since the current campus sits on less than a third of its planned footprint. However in order to grow both the number of students and programs at the Institute, additional funding outside of the state’s support will be required. Because of the network established by the Assistant Director of Industry Partners within the industry and community, it can actively support the initiatives and direction given by the development staff of the University of Washington, Tacoma. This suggests some entrepreneurial spirit should be an integral part of the person holding this position.

# INDUSTRY PARNTERSHIPS

The advantage of partnering educational institutions with government and industry is that it can create a syntrophy, a tendency to seek ever greater association, cooperation and awareness [1]. The traditional learning model does not provide a student with the practical experience necessary to magnify the importance of deadlines, communication, and interdisciplinary projects [2]. The idea of partnering of universities with industry is commonplace, but dedicating a person on a staff level below university level is not widespread.

The Assistant Director of Industry Partners works on several levels to accomplish the mission of the Institute of Technology. Primarily focused on the student after their arrival on campus through to their alumni status, the position holders’ relationship with industry and the community is a vital component of outreach and education to the region and state. In order for the University of Washington’s Technology Institute to succeed in producing an economic benefit to the South Sound region, it needs to engage and educate a greater number of technically skilled graduates into the work force. The AD needs to be proactive integrating into current requirements and understanding future needs.

Our industry partners must be compelled to not just recognize the Institute’s benefits but also actively invest in our combined health and success. Though internships and post-graduation student hires are easily measured, the relationships that are forged are what create these tangible benefits. Critical functions of the relationship with industry include internships, industry feedback and advice, determination of career opportunities, networking, and financial partnerships.

Ongoing visits to the campus by industry and organizational leaders in the field or interested in supporting should occur regularly. Campus visits present the opportunity for creating stronger feelings of connection and coordination of interests between the parties. Representatives from Microsoft’s’ Systems Group, Security Initiative and Government Affairs have all been on campus, as well as management from Intel, Boeing, Keyport Naval Station and many others companies, organizations, military bases and members of the community. The I-5 corridor has a unique mixture of industry and government partnership opportunities.

Speakers and guest lecturers are often coordinated through the AD. Guest speakers for Computer Science and Systems (CSS), Computer Engineering and Systems (CES), Information Technology of Systems (ITS) Bachelor of Science and graduate courses, on campus seminars, end of quarter colloquiums, and information sessions have been frequent and well attended. Occasional mid-quarter guest lectures are sponsored by student organizations take place on campus, as well as the student centric end of quarter colloquiums. Additionally, coordination of speakers for community events such as the South Puget Sound Technology conference and the South Sound Entrepreneurs Weekend allow for discourse not only with students but between companies and technology leaders in the presence of those students. Students are also made aware of an encouraged to attend regional events put on by organizations such as the Washington Technology Industry Association (WTIA) of which the Assistant Director of Industry Partners is an ex-officio board member and the Technology Alliance events and annual dinner, which features industry leaders of the caliber of Steve Balmer of Microsoft and Rich Barton, CEO and co-founder of Zillow. Special interest group meetings such as the South Sound SQL Users Group, as well as organizations such as the Information Systems Audit and Control Association (ISACA) are welcome to hold meetings on campus, at which time students and faculty are better able to attend and participate.

# INTERNSHIP PROGRAM

As the industry struggles for a qualified work force and the graduating student tentatively begins the job hunt, the Assistant Director creates a fertile environment for the two parties to meet, evaluate the jobs skills for applicant fit, and make hiring determinations. The internship process is managed by the AD, but this activity is only part of the ongoing work being done. Job opportunities for alumni, identification of critical shortages of area expertise, coordination of round table discussions and an understanding of the current job environment all remain goals.

To be successful it is important that the individual demonstrate leadership and networking skills. Part of the ongoing responsibilities of the AD is to maintain a presence within the industry and community through participation in outside boards, councils, committees and events. This provides continued awareness of the deliberations and decisions being made within the community yet outside of the Institute. The concentration of the Assistant Director on efforts to support the student body includes acting as an on ramp to the working world through several channels.

*Internship*

The University of Washington, Tacoma Institute of Technology CSS, CES and ITS Internship Programs develop and promote opportunities for students to receive academic credit for degree-related, paid work experience for students who have completed their core course requirements. The program also strives to develop opportunities for non-degree-related, work experiences for all matriculated Institute students. As outlined in the process document written for students interested in internship, “The Internship program provides students with the opportunity to apply theoretical and conceptual classroom knowledge to practical work experiences, and to gain broad experience in a professional work environment.” It provides employers with the opportunity to involve students, eager to employ new skills and methodology, in selecting professional design, and implementing research projects. These students often become future employees.

The AD coordinates the process of signing up for and taking internship as a course, designated as a senior level class at the 400 level (CSS, CES and ITS 497) as well as shepherds students, faculty advisors and industry sponsors for each internship through the necessary paperwork and question answering. Part of the responsibility includes matchmaking between opportunities, coaching students unfamiliar with job hunting, setting expectations for all parties and if possible helping to create the internship opportunities themselves. Particularly important is the creation of affiliate internship mechanisms with ongoing industry partners. Internship opportunities that can be counted on to recur on an ongoing basis in a well establishing and rewarding atmosphere. This will help to establish a manageable pipeline of internship opportunities that take into consideration the changing supply and demand on a yearly basis.

Alongside the formal process the Assistant Director is in the unique position to be an unofficial conduit for job opportunities for students following graduation. Not to mention the occasional opportunity for alumni to seek future graduates looking for job opportunities.

*Interfacing with Students*

Students at the University of Washington Tacoma have several resources with which to refer to when preparing for graduation. They can visit Career Services for help on resumes and interviewing tips as well as access the job and internship site exclusive to UW students called Husky Jobs. In order to determine which program might best suit them and managing their way through prerequisite courses they have Advising services. Both are valuable to the student, but neither is close enough to industry and its needs than the Assistant Director of Industry Partnerships position. The personal link to industry and insight into the demand for entry level employees is best served through the “internship and industry” office hours that are provided several times throughout the week.

Kimberly Beatty from the blog Jobfully did some investigation into the often sited claim that most jobs are found through networking:

“According to the U.S. Bureau of Labor Statistics, 70 percent of all jobs **are** found through networking [5].  If you want to play it safe and avoid statistics, you can always go with this quote from the Winter 2004-05 Occupational Outlook Quarterly, “Employers fill the majority of job openings through the unadvertised, or hidden, job market.” [6]

It is in these office hours with the Industry Partners position that networking really begins. What started as a once a week, ninety minute time slot for students to drop by and talk jobs and internships has grown today to include three days a week, with morning and afternoon slots that are consistently filled with five to six students on average in attendance. These students come in and sit with the others who have come by because often the conversation is of benefit to all.

Students are given advice on how to rework there resume (started with help from Career Services), worked with to determine their greatest interests in occupation and then given models for how to go about searching for that position. Often they are given assignments and next steps to complete. Many come into the internship and job search thinking that it is a simple act of pulling one from off a shelf of predetermined hires, but like any paid position, it is an active pursuit. The least amount of effort they can put forward is a resume submission. The most effort should be directed toward networking, which is provided through personal introductions, organized events such as campus visits, invited speakers and the South Sound Technology Conference.

Additionally, an ongoing presentation titled “Life After Graduation is now conducted two to three times a year with Professor Donald Chinn from the Computer Science and Systems program. The presentation provides students with information and guidance toward the move to industry or the move on within education.

*Monitoring Progress*

These office hours also provide insight into the progress students are making toward finding an internship or job after graduation. Whether a student is dropping by at the onset of their junior year to discuss preparations for internships with notable companies such as Microsoft, Amazon and Boeing, or seniors who have waiting until three weeks before graduation to begin seeking employment, it is rarely a one-time visit.

A common trajectory with a student looking to gain internship or employment would be as follows:

1. A visit to go over resume
2. A second visit to go over revised resume
3. A discussion as to how to go about searching for an opportunity including moving the search through defined stages.
4. A visit to talk about phone interviewing or in person interviews
5. Advice on how to negotiate salary or in some cases, choose between competing offers
6. A visit to say thank you.

*Hiring rate after internships and hires in general*

We have found that the majority of students who engage in longer term internships have a much greater chance of being hired on following their time as a student worker. Though full time summer internships are often sought after, two quarter internships, especially taken toward the end of the educational degree program, have a greater chance of converting into a permanent hire.

Companies that intern UWT students such as Weyerhaeuser, Boeing and Pierce County Information Technology group offer six to nine month internships with up to 85% of students being hired on after their term. The remainder of the students who are not hired on either may not have been a good fit, or are taking positions elsewhere.

Information provided by the University of Washington’s alumni administration provides some insight into where the students go, but it is not enough. With the advent of social media and a list of graduates it has become much more effective to find information through social networks such as Facebook or LinkedIn. The LinkedIn information often includes positions and advancement that the individual has achieved and is easily searched on through the education section. Facebook offers an opportunity to join a specific group, such as was set up by our Information and Technology Systems students for both alumni and students alike. As of May 2013 ITS group now boasts over 100 members. It is not uncommon to see job postings and recruitment going on, as well as support for the students still in the process of earning their degrees.

# ADVISORY BOARD, ECONOMIC DEVELOPMENT BOARD

The Institute of Technology Advisory Board (ITAB) provides a concrete collaborative structure for realizing the State of Washington and UWT vision for the Institute of Technology. The ITAB meetings and subsequent actions and reports lay a foundation for assessment and development of the Institute. The Advisory Board was conceived and initiated as a way to generate meaningful feedback and to identify strategies and directions. The board meets quarterly on a scheduled basis and may add additional meetings based on special topics or immediate action items. The discussion at these meetings and well as assignments taken on voluntarily by its members often provide insight and analyses, including recommendations that carry the weight of industry stake holder import, are available to be shared by the Director of the Institute with the UWT Chancellor and appropriate Vice Chancellors. As proposed by the original Director of the Institute of Technology Dr. Larry Crum [7] in an informal document outlining the formation of an Advisory Board, was designed to create a board that would work…:

* **As a** resource**, the Board generates ideas and provides expert consultation, advice and investment in support of the mission of the Institute of Technology.**
* **As a** center of influence**, the Board advocates on behalf of the Institute of Technology and its priorities as established by the Chancellor and the Director of the Institute.**
* As an **advocate** in legislative matters, the ITAB serves as a strong voice for the Institute in its relations with local, state and federal entities.
* **As a** community builder**, the Board helps the Institute to develop contacts throughout the region to raise friends as well as funds for programmatic enhancements, scholarships, curriculum development, community outreach and other key priorities for which state funding is not available.**

Members of the ITAB also, as appropriate, provide active collaborative leadership in development of the Institute. This was pivotal as the Institute was in its formative stage and remains important in a different sense as the number of student Full Time Equivalents (FTEs) grow dramatically year to year (approximately 20% from 2012 to 2013).

As in any traditional board development, one goal is to find a balance of “wisdom, work and wealth” within the assembled group. It was determined up front when forming the Advisory board that membership should be broad. This consisted of approaching public and private candidates who were “persons of high accomplishment and distinction who can bring their considerable talents, experience and wisdom to bear on the difficult issues facing the Institute.”

When assembling the initial board the following table was used as a model for what make up was desired after formation:

*Board members - desirable attributes*

The following were not intended to be absolute needs, but more to build a profile of the sort of individual that will be helpful to the group and guidance of the Institute (Table 1). Even with this matrix in place, other general factors were discussed between the Director, stake holders and the AD, including topics such as overall size, balance of representation between public, private and academic bodies and importantly, how many were drawn from traditional technology businesses.

A maximum of 20 members was discussed, with the potential for an executive body of 6 to 8. In reality, the board has fluctuated between 15 to 20 members with an occasional subcommittee being formed to tackle specific issues and recommendations. In the end we determined that at least 50% of membership, but no more than 75% of membership would be drawn from business. We also were hoping for at least 33% of the membership and preferably 50% of the membership to have access to a strong local network in Tacoma and the South Puget Sound. Many would also have state wide and even nationally active networks, which would allow us to reach decision makers and influencers in those networks.

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| --- | --- | --- |
| **Attribute** | **Ideal** | **Minimum** |
| Board Meeting attendance | 100% | 33% |
| Email responsiveness | 100% within 24 hours | 50% within 3 days |
| South Sound network | 50+ valuable contacts | 10 valuable contacts |
| Technology knowledge | Recognized industry leader | Well informed user |
| Route to graduate employment? | Hiring authority | Knows hiring managers |
| Other Board experience | Three plus years | One year |
| Leadership/innovation | Recognized thought or business leader | Written papers on business or technology topics |
| Education experience | Three plus years in teaching or administration at a US higher ed. establishment | Four year Bachelor’s degree |
| Team style | Works seamlessly as a member of a board team with no reference to other status | Recognizes need to be a team member but sometimes constrained by other factors |

Table 1. Industrial Board Attributes

Even with this matrix in place, other general factors were discussed between the Director, stake holders and the Assistant Director of Industry Partners position, including topics such as overall size, balance of representation between public, private and academic bodies and importantly, how many were drawn from traditional technology businesses. Even as a newly formed Institute with a limited history but big goals, board members came from companies such as Microsoft, Boeing, Intel, Hewlett Packard and Cisco Systems among others, several of whom travel as far as from out of state to participate on the board.

*Donations, Scholarships and Grants*

Donations are gifts are handled by Advancement, Scholarships are managed by committees and run through the accounting department of the University and grants for research are driven by the faculty and researchers who are solving problems and answering questions. In all these cases, an Industry Partners position helps to make those introductions and create connections. Examples can be found at different points in the growth of the Institute of Technology in both size and impact.

Intel in Dupont, interested in seeing a growing pool of computer engineers made a substantial contribution to the labs for the Institute at its inception. The Economic Development Board of Tacoma Pierce County which provided funding to do an economic development impact study on the Institute and the area. By providing a third party evaluation of what potential was brought by introducing hundreds of computer scientists, computer engineers and information technologists to the area, it became easier to meet and form relationships with businesses interested in the success of our program’s growth. The Assistant Director worked with the third party consultant group to make introductions and arrange visits and interviews.

Though many scholarships are available to the students, some are the direct result of relationships built between the industry and the academic units as fostered by this position. In the Winter quarter of 2013, Internet Identity, a growing cybersecurity company founded in the city of Tacoma, announced a targeted scholarship for recruitment of students graduating from high school and interested in information assurance and cybersecurity to come to the Institute of Technology. This $60,000 scholarship commitment is spread over three years and is meant to help the programs and the university attract the kind of students who will graduate into the jobs that Internet Identity is creating.

*Working with local and national public officials*

One of the advantages of having someone within the core of the Institute who has a great depth of experience in industry is that by consequence they are often well connected to the public sector as well. Involvement with economic development, whether on the board of directors of a small company or running a larger enterprise, usually requires knowledge of and relationship with representatives in the community. For a city of the size of Tacoma, where the Institute of Technology at the University of Washington Tacoma is located, it is possible to maintain contact with City Council representatives, County Council representatives, the Mayor and state legislators.

In 2001, it was in one of the courses being taught on campus in the Computer Science program that then Governor Gary Locke, announced the legislation, State Bill 6153, which he proposed and was passed by the Legislature, which established the Institute of Technology at the UWT to address the growing demand and to spread the prosperity of the high-tech economy to more residents of Washington. The class was taught by the Assistant Director of Industry Partners, who also served on the Governor’s Council on the Internet. UWT raised nearly $5 million from private donors and local government to help create the Institute. The state matched that with $5 million in state funds.

The South Sound Technology Conference, discussed in more detail later, was cofounded with Congressman Adam Smith, representative from the Ninth District of Washington State with local businessman Bill Andrews from Battele. Since that inaugural year, Congressmen Norm Dicks and Adam Smith have acted as honorary co-chairs for the conference and kick off the event either in person or by proxy. This year, newly elected Congressman Derek Kilmer who won Norm Dicks vacated seat took over the role.

With a growing focus on Information Assurance and Cybersecurity in research and instruction, we have welcomed Senate and Congressional representatives to the campus to discuss the role that government service can play in creating a hub of research, industry and programmatic support for our efforts in economic development and instruction. The Assistant Director of Industry Partners is in a unique position to gather public and private stakeholders into the conversation, bridging academic and commercial interests.

# SOUTH SOUND TECHNOLOGY CONFERECE

The annual South Sound Technology Conference (SST), which is hosted by the Institute of Technology at the UWT, is the technology showcase for Tacoma and the South Puget Sound [9]. Since 2000 it has brought together leaders from industry, education and government from around the state to discuss and demonstrate technological innovations and their ongoing applications. The Assistant Director of Industry Partners at the Institute has acted as Co-Chair for the event since 2001 and as Chair since 2004. By having executive direction of the conference and in working with a steering committee built from public and private interests from the area, the Institute has become the host of the conference on the grounds of the University Campus and the event now also functions as a showcase for the programs and students of our campus, as well as an opportunity to bring students in academic programs from other campuses here for collaborations and sharing of information.

Panel and keynote presentations - including networking opportunities - provide a venue to discuss, explore, understand and deploy technology as a solution, an opportunity and as an advantage. Sessions planned for the South Sound Technology Conference have included discussions on mobile application development, energy and sustainability, information technology as a driver of infrastructure in the South Sound and an open breakout forum designed to create a common

Throughout the day, graduate and undergraduate students from the Institute of Technology showcase their work through poster sessions and demonstrations in the Gallery area. Students get to interact with members of industry and industry participants can observe potential employees in a relaxed atmosphere. The SST Conference uses themes and breakout sessions to explore and accentuate activities and research that are pursued or emerging as areas of interest at the University and the Institute as well as in industry itself.

# CONCLUSIONS

The industry partner position has become an integral part of the Institute of Technology’s increasing role in supporting the community. Dedicating a person to industry partnerships helps to integrate the internship program, maintain contact with the advisory board, and provide focus and longevity to the creation of scholarships and donations. Tying all of these parts together through an annual technology conference helps to solidify the University as the centerpiece for economic growth in the region. The industry partner position is an essential part for continued success in maintaining contact with the local community.

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