

# On the Value of an External Relations Director in an Industry-Sponsored Capstone Program

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Directing an industrially-sponsored capstone program can be difficult for faculty members because of the multiple administrative tasks necessary to maintain effective sponsor relationships, often because of limited resources and time constraints due to other faculty responsibilities. There is a continued need for project recruiting, developing marketing and promotional programs, managing intellectual property and agreements, reviewing weekly status reports, participating in project reviews and organizing presentations and project fairs. The mechanical engineering department at Brigham Young University created a full-time external relations director position to meet these needs and effectively coordinate between industry sponsors, the students, instructors and faculty coaches or mentors. This paper describes the responsibilities of the external relations director within the BYU Capstone program. It also discusses how the external relations director benefits the students, faculty and industry sponsors by facilitating and encouraging the necessary relationships between them.

Keywords: external relations director, capstone, capstone program, industry sponsor, intellectual property (IP), status report

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## **Introduction**

There are a number of different roles and responsibilities that need to be accomplished in order for a successful industry-sponsored capstone or experiential learning program to succeed. These usually include instructors, students, industry sponsors and administrative staff.

Previous capstone design conference papers have addressed the responsibilities of the instructors and sponsors.<sup>1</sup> This paper describes the responsibilities of the external relations director and how this role can help the capstone program meet each of the stakeholders' needs. These responsibilities include capstone program marketing and promotion, project recruiting, intellectual property (IP) management, contracts and agreements, status reports, project reviews and presentations.

## **Background**

To meet the educational needs of the students, we have created a capstone, or experiential, program with external sponsors, course instructors, faculty coaches, and an external relations director. Students who experience working on an industry sponsored project gain a better understanding of the design process and are better prepared for graduation.<sup>2</sup>

The capstone program at Brigham Young University (BYU) began in 1990 and has successfully completed

673 projects. There are approximately 200 students (primarily mechanical engineering and manufacturing engineering technology majors) who go through the two-semester capstone program each year. These students are organized into approximately 32 industry sponsored project teams each year.

The industry sponsor, who may also be referred to as the liaison or liaison engineer, acts as an advocate for the company sponsoring the project. The sponsor or liaison monitors the team's progress to ensure they remain on scope during the length of the project. They also evaluate the results of the project while providing the team regular and honest feedback.

Faculty coaches are either existing full-time faculty members or experienced senior engineers hired from local industry. They usually spend four to six hours per week working with the student team while encouraging them to complete their assigned project successfully and on time.

At BYU, we also have an external relations director to help facilitate the interactions between industry sponsors, students and faculty. We have found this to be invaluable. This is a full-time professional administrative staff position (not secretarial), which requires significant experience in engineering project management and reports to the capstone director faculty member.

### **External Relations Director Responsibilities**

The major responsibilities of the external relations director are shown in **Figure 1**. Note that the responsibilities typically affect the relationships between the primary participants in Capstone. Since the external relations director works at these interfaces, the primary role could be seen as a “glue” that unifies and supports the program.

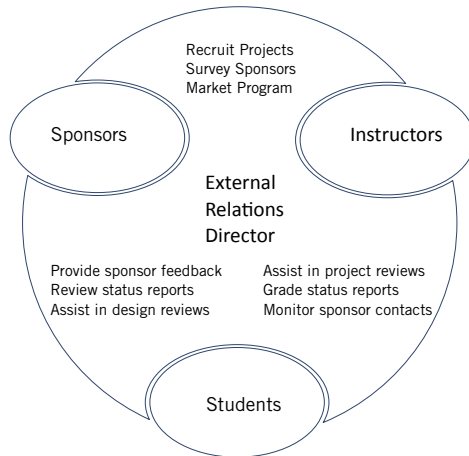


Figure 1: The responsibilities of the external relations director as they affect the relationships between students, instructors, and sponsors.

#### **Sponsor-Instructor Interactions**

The presence of industry sponsors is a great advantage to student education, as it provides a degree of realism that is very difficult to obtain otherwise. However, this realism comes at a cost. When multiple sponsors are involved, the time and effort required to coordinate the needs of the sponsors can become daunting. The external relations director assumes much of the responsibility for this coordination, thus freeing up the instructors to focus on their interactions with the students.

**Project Recruiting** The external relations director has responsibility to recruit 32 industrially sponsored projects each year that meet the capstone programs educational objectives set by the instructors. The recruiting is accomplished by working with industry leaders throughout the world including CEO’s, company presidents and vice presidents, and senior engineering managers as well as other stakeholders including alumni, university staff and faculty.

Networking with phone calls and personal visits to sponsors, preferably at the executive level, is key to finding industry sponsors.<sup>3</sup> It has been our experience that direct contact with our capstone program’s stakeholders is critical especially during the months of April through July in order to have projects ready for the stu-

dents and faculty by the beginning of school in the fall. Usually this consists of approximately 700 hours to find 32 projects or on average about 22 hours per project. Although many of the projects are from repeat sponsors there is still much work to do in order to get the project on time, including phone calls, personal visits and emails.

It is also important that the external relations director work closely with the industry sponsors, to ensure that projects are scoped appropriately for capstone, as well as provide updated project proposals to the instructors for project approval.

**Contracts, Agreements, and Billing** The capstone program at Brigham Young University grants all intellectual property (IP) developed by the student team to the sponsoring company.<sup>4</sup> In order to make this possible, and protect the sponsor, students, and the university, appropriate agreements must be signed by the participants. This is accomplished by having all students, staff and faculty involved in the program sign a non-disclosure and ownership agreement at the beginning of the school year. Upon accepting a project proposal from industry an agreement or contract is signed between the sponsor and the university, protecting both parties throughout the process. Invoices are sent to the sponsors covering all approved project costs. The external relations director has the primary responsibility for ensuring that these agreements are developed, signed, and maintained.

**Marketing and Promotion** The external relations director constantly seeks to increase awareness of the capstone program. Time is spent marketing capstone to students, university personnel and alumni, the community, professional engineers, businesses and business leaders. This can be done by using a modern and up-to-date website, through social networking (Facebook, twitter, LinkedIn, etc.), traditional marketing techniques such as mailings, pamphlets and brochures, as well as involvement in attending conferences and workshops. Often, this will reduce the amount of time spent recruiting new projects as a result of efforts to promote the capstone program.

We are careful to focus our efforts in marketing capstone to industry segments that align well with our college, program and student interests. For example, we would not want to have 32 projects from the same industry (i.e. aerospace, biomedical, automotive, etc.) and instead be balanced in our efforts to provide meaningful industry projects for the students to work on.

With the external relations director’s strong focus on external relations, there is time available to work on

significant marketing efforts that have long-term, rather than immediate, payoff. These efforts continually increase the ability to recruit enough appropriate projects to meet our educational needs.

**Obtaining Sponsor Feedback** The external relations director surveys the sponsors each semester during the academic year. We welcome both positive and negative feedback along with encouraging sponsors to provide comments as well. The surveys ask questions that probe the effectiveness of the team and the program while also asking if they are interested in sponsoring another project. These surveys provide an early indication of the sponsor satisfaction, and provide the opportunity to intervene in the event the team is struggling to complete the project.

### **Sponsor-Student Interactions**

Sponsors are not on the campus on a daily basis. Therefore, the sponsors are limited in their ability to interact directly with the students. The external relations director is available to the students on a daily basis, and provides a means of better helping students understand the needs and desires of the sponsor. The director can also help the students better understand how to interact with the sponsor to get the information they need to succeed on the project.

**Watch Out for Sponsor Interests** Because the external relations director maintains close contact with the project sponsors throughout the course of the class, he is able to help the students understand the sponsor's ongoing concerns. This takes place primarily in weekly status reports, project reviews, and presentations.

Project reviews are held twice each semester for students to give the instructors a brief update of the team's progress and provide an opportunity for them to get help with challenges or questions about the project. The project reviews focus on the results of the project. The external relations director attends each of the teams' reviews to understand and provide feedback on the project. During these reviews the external relations director offers suggestions to the students from the sponsor's point of view. The director also offers assistance to the team when they struggle with getting needed information or resources from the sponsor.

Student teams are expected to write a brief status report each week to their industry sponsor. In addition to lists of meaningful accomplishments achieved in the current week and meaningful goals for the coming week, teams are encouraged to attach evidence of their accomplishments.

The external relations director reads these reports each week. The director encourages the team to make corrections when their update is lacking professionalism and compliments them when they are doing an outstanding job of communicating.<sup>5</sup>

At the end of each semester the capstone program invites the sponsors to come watch their teams present their work. These are formal presentations given by the student teams and open to the entire university community and public. The external relations director provides advice to the students on how their presentations might best meet the needs of both the sponsors and the university.

**Assist with IP Concerns** The external relations director coordinates closely with the sponsor, faculty coach and student team to ensure that information shared, both sponsor supplied and Capstone developed, is approved prior to presenting in open forums and written transferable documents. Student teams are helped to understand the importance of receiving, developing and protecting IP. This ensures ongoing relationships with industry sponsors including compliance with all legal requirements while maintaining a positive reputation with the university, college, faculty and students. Sometimes it becomes necessary to require that an NDA is signed by audience members prior to the teams presenting because the IP the team developed is being considered for a patent. The director is also consistently available to help remind students to protect IP and to help answer student and/or sponsor questions about the steps that should be taken to protect Capstone-developed IP.

**Facilitate Communication Issues** The external relations director has a strong relationship with both the sponsor and the students. This allows him to provide help to either the sponsor or the students when communication issues arise. Effective facilitation helps keep small issues from derailing the project and ensures strong sponsor-student relationships.

### **Instructor-Student Interactions**

As part of the educational process, students must be taught about appropriate communications with the sponsors. This teaching takes place both in large-group settings that teach general principles and practices, and in small-group settings that focus on individual team performance. Because the external relations director is continually aware of the sponsor-student interaction, the director can help the instructors understand both specific and general educational needs of the students.

**Grade Status Reports** The external relations director reviews and grades each of the team's weekly status

reports. This is an opportunity to help the students learn excellent professional communications. It is also a great way to keep the instructors informed of specific challenges the teams face, as well as general issues in status reports that can indicate weakness in student understanding.

**Assisting in Project Reviews** The external relations director is keenly aware of both the sponsor's feelings about the project and the team's status as reported to the sponsor. This input is vital in preparation for design reviews, as it provides a sense of some less-visible areas that may need to be probed. Furthermore, with the close connection between the director and the sponsor, the director's feedback is highly valued by the students during reviews.

**Monitor Sponsor Contact** One common sign of difficulty with a project is a decrease in communication with the project sponsor. Teams can be hesitant to share bad news, which causes the communication with the sponsor to become superficial. By consistently monitoring and evaluating the sponsor contract, the external relations director can alert the instructors to developing situations that need extra attention in the education process.

### **The Value of the External Relations Director**

The external relations director represents a real cost to the Capstone program. The director's salary and benefits must be paid. In BYU's case, this payment comes from the educational grants provided by project sponsors. It might be thought that it would be better to save the added expense. However, we have found that the external relations director provides value to the students, instructors, and sponsors.

Students benefit from having an external relations director by receiving feedback during project reviews, weekly status updates and presentations. They are taught the importance of soft skills, as they become professional engineers. The students receive experience on how to protect IP and they also become grateful when the external relations director helps them with challenging sponsor issues.

Faculty quickly experience the benefits of having a full time external relations director because they no longer need to spend large amounts of time recruiting new projects and negotiating agreements and contracts. This frees the instructors to focus more on the educational processes surrounding the Capstone course, as well as providing time for other faculty responsibilities, such as research. Furthermore, faculty can lean on the external relations director during end of semester

presentations and times when the sponsor may be experiencing challenges with the student team.

The external relations director's efforts to define well-scoped industry sponsored projects align the students' learning experience and the sponsor's project outcomes for success.

Sponsors benefit from having an external relations director as they experience communication or project scope challenges with the team and need help internally. They also look to the external relations director as their constant "eyes" and "ears" at BYU for the project. There might also be concerns over IP and agreements that the external relations director helps resolve.

### **Conclusion and Recommendations**

Having a full time external relations director is beneficial for the students, faculty and sponsors of the BYU capstone program.

Because of these benefits to all involved in the program, we strongly recommend that industry-sponsored capstone programs with relatively large numbers of students should include an external relations director. Sponsorship fees should be adjusted as necessary to allow such a position.

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