

The Social Entrepreneurship Initiative

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Abstract

This paper examines the Social Entrepreneurship Initiative (SEI) and the Idea-to-Product® (I2P) Competition for Social Entrepreneurship as national programs created to address the needs of our society at a local and international level. The SEI has grown from the strengths of several well-established local, national, and global programs, namely Engineering Projects in Community (EPICS®), the National EPICS consortium, the EPICS Entrepreneurship Initiative (EEI), and the Global Idea-to-Product® programs.

The formal expansion of the EPICS Entrepreneurship Initiative to the Social Entrepreneurship Initiative will create a more inclusive program that addresses the need to teach social entrepreneurship. It retains the I2P® student-team focus but has additional dimensions, including: (a) entrepreneurship education for graduate students as well as undergraduate students; (b) real entrepreneurship outcomes—achieved by smoothing the pathway to disclosure, patenting, and commercialization; and (c) a global perspective via the inclusion of products that benefit the developing world as well as local non-profit agencies in the US.

Introduction

Social Entrepreneurship has made a slow and steady impact on our society for more than twenty-five years. Third-world and developing countries are embracing new technologies that enable them to create business opportunities that will improve their societies. Academic programs, non-profits, foundations, governments, and non-government organizations (NGOs) are turning their attention to social entrepreneurship as a means to empower the marginalized and poor. More attention has been shed on the subject by those considered experts in the field, such as Gregory Dees, William Drayton, and 2006 Nobel Prize winner Muhammad Yunus.

Universities, however, seem to be focusing primarily on service-learning and outreach programs. Although these programs offer hands-on educational experiences for the students, they do not focus on long-term solutions. It's time for universities to embrace social entrepreneurship as a means to provide strength and stability to programs that already exist and push the educational experience past immediate needs and on to more sustainable solutions.

Purdue University—Engineering Projects In Community Service (EPICS)

Engineering Projects in Community Service (EPICS) is an engineering design program that operates in a service-learning context.^{1,3} EPICS students earn academic credit for their participation in design teams that solve technology-based problems for not-for-profit organizations in the local community. The teams are multidisciplinary, drawing students from across engineering and around the university; vertically integrated, maintaining a mix of freshman through seniors each semester; and long-term, allowing each student the opportunity to participate in a project for up to seven semesters. Several original projects are still being improved on within the EPICS program. This process allows for the introduction of new technologies that improve the project and provides the students with hands-on experience. The continuity, technical depth, and disciplinary breadth of these teams enable delivery of projects of significant benefit to the community.

The EPICS program was established at Purdue University in 1995 by E.J. Coyle, L.H. Jamieson, and H.G. Dietz. EPICS created a complementary and meaningful experience by creating a bond between the undergraduate students and the local community.⁴ The unique structure and operation of EPICS enables products and systems of significant benefit to the community to be designed and delivered. Key features of the EPICS model include:

- **Community Partners:** Each EPICS team is matched with a not-for-profit organization in the community that is referred to as the “Project Partner.” The team and its Project Partner work together closely to identify and solve the Project Partner’s technology-based problems. The Partner’s suggestion of project ideas and constant feedback on the efficacy of the systems being developed and deployed provides the “real-world” context for each EPICS project.
- **Vertically Integrated Teams:** The teams are made up of freshmen, sophomores, juniors and seniors. In general, the seniors provide technical and organizational leadership, while the other team members maintain interaction with the Project Partner’s needs and perform the technical work.
- **Long-Term Student Participation:** An EPICS student can participate in an EPICS team for up to seven semesters, joining a team in the second semester of the freshman year and remaining with the team until graduation. This long-term relationship provides the student an opportunity to understand more fully the mission of the Project Partner.
- **Multidisciplinary Teams:** Students from all disciplines across engineering and around the university are encouraged to participate in EPICS teams. Often the teams identify the need for expertise of an individual from education, nursing, or early childhood development in order to meet the needs of their Project Partner.
- **Start-to-Finish Design Experience:** EPICS provides a start-to-finish design experience for the students. Each project begins with identification of the Project Partner’s needs and the definition of a project to meet that need. It then progresses through design, development, testing and deployment with the Project Partner to create a deliverable.

Purdue University—The National EPICS Program

The National EPICS Program was formed in 1999^{5,6} as a consortium of universities across the country, each implementing their own version of the EPICS model. Although each university may operate differently and under a unique program name, they all adhere to the basic principles of the EPICS model of engineering-based service to their local communities. These core values are identified as: (1) for-credit student participation in long-term, team-based design projects that solve technology-based problems in the community, (2) multi-year partnerships with not-for-profit Project Partners, and (3) Project Partners assisting the student teams in understanding community needs in the context of design, development, and deployment without obligation for remuneration to the EPICS program. Seventeen universities in the US and one university in New Zealand are currently participating in the National EPICS Program.

Purdue University—The EPICS Entrepreneurship Initiative (EEI)

By 2001, EPICS teams had created several hundred useful products for their non-profit partners. These products, if commercialized, could also be of benefit to other non-profits and communities, and thus be of benefit to society at-large. The creation of these products provided a compelling context for the EPICS teams that created them to learn about entrepreneurship and commercialization. The EPICS Entrepreneurship Initiative (EEI) was formed to provide the EPICS students with this learning opportunity.^{7,8}

The goals the EEI set out to achieve were:

- Create opportunities for EPICS students to learn about and experience entrepreneurship.
- Enable EPICS teams and their Project Partners to identify, protect, and benefit from the intellectual property they create together.
- Spread the benefits of EPICS products to all communities.
- Develop a model of entrepreneurship that can be emulated by other institutions.
- Provide a venue for students to present their products, receive feedback on its potential, and win funds to help propel the project forward.

The EEI program was housed in Purdue’s Discovery Park, a multidisciplinary research initiative created to bring faculty, staff, and students together to collaborate on projects at the cutting edge of academic research. The Burton D. Morgan Center for Entrepreneurship addresses the pre-commercialization need of the research done at Purdue University and in Discovery Park.⁹ Because of the multidisciplinary nature of EPICS teams and the potential

commercial application of their products, the program fit perfectly within the mission of Discovery Park. The inclusion of the EEI and its focus on the non-profit sector brought a broader perspective to both the Burton D. Morgan Center and Discovery Park by introducing the concept of social entrepreneurship.

Because the EEI is not a mandatory part of the EPICS experience, it draws only the students who have a real desire to learn more about entrepreneurship. These students are highly motivated, believe deeply in their Project Partner's mission, and understand how the commercialization of their product can spread its benefits to other communities.

University of Texas at Austin—The Idea-to-Product® (I2P®) Competition

In 2001, Professors Steven P. Nichols and John N. Doggett created a product feasibility competition they called the Idea-to-Product Competition.¹⁰ This program differed from the typical business plan competition because it focused on products at a very early stage of development. It encouraged entry of the types of products that were innovative but had not clearly defined their markets or other financials necessary to create a competitive business plan. The I2P model placed more value on the technology of the product when it is in the Imagine, Incubate and Demonstrate stages than in the Promote and Sustain stages of a business plan. To maintain the integrity of the program, the University of Texas applied for and received a registered trademark for the program. The intent has always been to allow the Idea-to-Product model to be used by other programs interested in the early stages of the innovation process.

The EEI and I2P® Collaboration

The EEI received permission from the University of Texas to incorporate an I2P Competition into its operation, thereby providing EPICS students with a venue for and guidelines to follow for the demonstration their new-product ideas. Because of the EEI's association with the non-profit sector, the guidelines for the I2P were modified to include the identification of the Project Partner's mission and the explanation of how the project and its product were consistent with that mission.

The first competition was held in 2003 and was titled the "EPICS Idea-to-Product Competition." From the results of this initial offering, it was apparent that the EPICS students needed significant help if they were to learn the process of commercialization. We thus created skill sessions for the EPICS students on the topics of intellectual property (IP), patents and copyrights, and tools and techniques for conducting effective patent searches. These sessions were made available to all EPICS students and their advisors. We also invited an attorney with expertise in patent law to provide annual lectures on IP protection and to mentor students as they progressed through the process of obtaining protection for their products.

Having identified the students' needs, we set out to find expertise within the Purdue community that could meet these needs. Working in conjunction with the Purdue Libraries, three additional skill sessions were offered to EPICS students:

- A patent search seminar, coordinated with the Engineering Library, was created by Library faculty to familiarize the students with US Patent and Trademark Office databases and to assist them with advanced prior art searches.
- The Management Library offered an EPICS-specific skill session on market research that provided valuable information on how to conduct studies of market demographics and corporate information.
- The Digital Learning Collaboratory, a collaborative effort between the Undergraduate Library and the Information Technology Department at Purdue, provided the students with tips on developing professional media presentation and the creation of effective PowerPoint presentation.

Taken together, these three skill sessions provided the knowledge the EPICS teams needed to understand the commercialization process, how it applied to their product, and how to incorporate it into an effective presentation for the EPICS Idea-to-Product Competition.

The first three (2003-05) EPICS Idea-to-Product Competitions focused exclusively on products developed by EPICS teams at Purdue and the National EPICS consortium. However, more and more technology-oriented,

service-learning projects were being identified and were interested in participating in the competition. Because of that interest, the 2005 I2P Competition invited a technology-focused project team from the Purdue School of Technology to “showcase” their technology. This showcase invitation provided non-EPICS teams the opportunity to present their projects in a public forum, gain valuable feedback from the judges and receive a small monetary award to help promote their product. The showcase team was asked to follow the same criteria required by the I2P requirements, which included identifying the mission of the partnering non-profit organization.

The Purdue-EPICS IP/Royalty Agreement and Social Entrepreneurship

Because of the federal funding sources that helped launch and expand the EPICS program—the US Dept. of Education and the National Science Foundation (NSF)—the intellectual property created in the EPICS labs belonged to Purdue University. This was set in place as a result of the Bayh-Dole Act of 1980.¹¹ As stewards of the IP, Purdue University had the right to grant exclusive rights and establish policies for the distribution of income generated by university-owned licensing agreements.

At the urging of the EEI, Purdue’s Office of Technology Commercialization (OTC) entered into a unique agreement with the Purdue EPICS program to help promote the commercialization of the IP generated in the EPICS labs. The OTC also acknowledged the essential role the Project Partners played in the creation of this IP.

In a Memorandum of Understanding (MOU) signed on October 14, 2005 by Joseph B. Hornett, Senior Vice President of the Purdue Research Foundation (PRF), and Edward J. Coyle, Director of the EPICS Entrepreneurship Initiative, a detailed outline was established to address the issues unique to EPICS products in regard to intellectual property and revenue sharing. The MOU addressed three topics: the EPICS students, the community partnership, and the IP ownership and company startup opportunities. EPICS—Community Partner Engagement Terms, states that “If Purdue generates revenue from the commercialization of the technology developed by EPICS teams, it will share all such revenue equally with the community partner.” (PRF 2005) EPICS—Student Engagement Terms identifies the portion of the Purdue revenue stream that will be shared with the students. The Intellectual Property Guidelines for EPICS Students, Advisors and Project Partners for Start-UP Opportunities and Opportunities for New Venture Creations defines a very favorable licensing agreement for any EPICS student who might be interested in licensing this technology. EPICS students are also given the first chance to license the intellectual property they have developed and to then start companies with the product produced for their Project Partners. If the students are not interested in creating a company, the Office of Technology Commercialization will actively search for a company interested in licensing the IP.

Because of this royalty distribution model, Purdue University’s Engineering Projects In Community Service program advanced into the realm of social entrepreneurship. This technology commercialization and community service partnership fits the definition of social entrepreneurship; that is, the act of pursuing a “double bottom line” by maximizing the financial and social returns on investment. The income generated by the commercialization of EPICS products will provide their non-profit Project Partner with added financial support in addition to helping the organization meet their stated mission.

Including and Fostering Social Entrepreneurship

In 2006 the EEI expanded the EPICS Idea-to-Product competition to include invited non-EPICS social entrepreneurship teams as showcase projects. The name was changed to the National Idea-to-Product Competition for EPICS and Social Entrepreneurship to reflect the change. The I2P competition also began traveling to different host universities in order to: (1) increase the awareness of social entrepreneurship and to help identify programs in this area in different parts of the US; (2) increase attention to the social issues the student teams addressed; and (3) create a multi-university community of students and faculty dedicated to social entrepreneurship. Due to the source, nature, and amount of funding available within the EEI, the showcase teams did not compete for prize money but were given participation awards to cover their travel costs and to help advance their programs.

The 2006 competition at San José State University attracted a total of eleven teams from six universities and one high school. The EPICS teams represented were from Butler University, the University of California at San Diego, the Illinois Institute of Technology, the Pennsylvania State University, Purdue University, San José State University, and Bedford North Lawrence High School. In addition, teams from three universities showcased their products. The

showcase teams represented the University of California at Berkeley, the California Institute of the Arts, and the IDEAS program at the Massachusetts Institute of Technology.

At the end of the competition the students and their advisors were asked to fill out evaluations to determine the effectiveness of the process and how the event met the goals established by the EEI. The Evaluation for 2006 National Idea to Product Competition for EPICS and Social Entrepreneurship focused on how well the competition succeeded in: (1) teaching students the professional skills needed to be entrepreneurs; (2) developing their understanding of the commercialization process; and (3) increasing their understanding of the concepts and process of social entrepreneurship.

The 2007 National Idea to Product Competition for EPICS and Social Entrepreneurship was hosted by Princeton University. It maintained the same structure as the previous year, but incorporated improvements suggested by the students and judges who participated in 2006. The National EPICS teams competed and the non-EPICS teams again showcased their projects. A more formal process in which teams applied to participate as showcase teams was implemented – a Request for Information (RFI) form was used to collect information that enabled individuals to screen the teams that applied in a blind-review process. The goal was to select the teams with the most compelling projects according to the criteria of the competition. The event was publicized more widely in order to increase the number of attendees and provide greater coverage by the press.

The 2007 competition included a more unique mix of products and partnerships. There were the traditional EPICS teams that worked with local project partners in such areas as assistive technologies to improve the quality of life for individuals with disabilities and teaching English as a second language using new software programs. There were a significant number of teams that had participated in programs that took on a global focus. A team from the Illinois Institute of Technology created a tool that would provide economic development assistance for a small town in India. Lafayette College partnered with Engineers Without Borders to create sanitation infrastructure for villages in South America. Penn State University created the Sustainable Windmill Company that would supply electrical power to a remote area in Africa. San José State University attacked the pollution problem in China with a Zero Emissions Vehicle.

The Inclusive Social Entrepreneurship Initiative

Based on trends in society and economics, it became clear that it was time for the EEI to become a more inclusive program. The program needed to grow outside the EPICS consortium and provide a means for other programs to compete for prizes that could help propel their projects into the marketplace. The non-EPICS projects within Purdue, as well as across the nation needed to be allowed to compete as equal programs along side the EPICS teams. To formalize and reflect this change the EPICS Entrepreneurship Initiative changed its name to the Social Entrepreneurship Initiative (SEI).

In 2008 the competition will simplify its name and be known as the Idea-to-Product Competition for Social Entrepreneurship. It will provide an exciting opportunity for all teams to: (1) learn through healthy competition, (2) improve their products based on the judge's comments and recommendations, (3) identify the products that are the most innovative, and (4) understand the needs of their Project Partner by addressing the organization's social mission.

The criteria for participation in the 2008 Idea-to-Product Competition for Social Entrepreneurship include:

- Partnership with a local, national, or international non-profit organization.
- Clear identification of the benefits the product provides in keeping with the social mission of the Project Partner.
- Clear description the technology and its status.
- Identification of opportunities for entrepreneurship and the process of developing products for the commercial market.
- Evidence of an initial market and the scalability of the product.
- Identification of the potential to protect the intellectual property embodied in the products they created.

- Demonstration of the completion of any prior art search to ensure the new product does not infringe on other protected IP.
- Identification of any barriers to entry.

The Sustainability of SEI

The main focus of the inclusive SEI program is to tap into existing service-learning, engagement, and outreach programs. These programs are already well established in individual schools and departments. The SEI will give these existing programs a new avenue to explore with their students—that of social entrepreneurship. By participating in the competition, students will be required to address how their projects contribute to the mission and sustainability of the program. This social and economic return of investment is commonly referred to as the “double bottom line.”

The National Idea-to-Product Competition for Social Entrepreneurship will continue to be funded from generous donors at a philanthropic level with aspirations to obtain an endowed gift that will continue it on in perpetuity.

Conclusion

The Social Entrepreneurship Initiative is an evolving program that addresses the needs of the marginalized or poor. The SEI program has been built on a solid foundation that includes several successful university programs. It has also been instrumental in the creation of a very unique IP, commercialization, and royalty agreement that addresses and encourages social entrepreneurship activities at Purdue.

Because SEI has incorporated the I2P Competition into its format, we are able to provide a venue for technology-oriented student programs to present and receive feedback that will improve their products. In the process of preparing for and attending the competition, students learn and interact with others in the area of social entrepreneurship. It is hoped that this interaction will begin the process of building a community and connections that all of the participants will carry forward into their careers.

The expanded scope of the Social Entrepreneurship Initiative as a multi-university community of students and faculty will provide all participants with a better understanding of the social problems we face both locally and globally. The program will try to harness the creativity and energy of these social entrepreneurship communities to develop sustainable approaches to social problems, and will establish a network to support the next generation of social entrepreneurs.

The program is accomplishing its goals, as is evident in the following statement. In responding to the final question on the 2007 student evaluation form, a young man from the Penn State University team stated, “I found the competition to be very empowering and inspirational.”

References

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Professors Steven P. Nichols and John N. Doggett of UT Austin created the product feasibility competition known as the Idea-to-Product[®] competition in 2001. For more information, please see: <http://www.ideatoproduct.org/ut/index.cfm>.

Purdue University Libraries:

Prof. C. Erdmann – Siegesmund Engineering Library

<http://gemini.lib.purdue.edu/ENGRdatabases/index.cfm>

Prof. H. Kirkwood – Management and Economic Library

<http://www.lib.purdue.edu/mel/>

Prof. J. Sharkey – Hicks Undergraduate Library and the Digital Learning Collaboratory

<http://dlc.purdue.edu/>