An Entrepreneurship Emulation Platform

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Abstract - Inspired by IC designer’s emulation approach, an experimental entrepreneurship emulation platform is offered as a course in Engineering School with extremely encouraging results. Strong technology based Engineering School attracts many business students to team up with technical talents for new possibilities. With emphasis on realistic Business Plan and a set up of highly demanding requirements mimicking real environment, students learn how to cope with pressure and collaborate while making good use of knowledge learned. The author thus suggests that entrepreneurship training can be an effective education approach to respond to dynamically changing information era and the resulted globalization trend.

I Introduction

The world is changing in an incredible pace. What and how to train a fitting younger generation is becoming extremely challenging. Skill-oriented education approach is insufficient in this new world order. Particularly as outsourcing has become a common business practice for cost saving, any person can lose job overnight to a lower waged country. Job security has hence become a big concern for most people. When an outsourcing decision is made, layoffs usually follow like a tsunami, in no or little warning [1].

From an educator’s point of view, easy and inexpensive information access is the main driving force to modern changes. Through the invention of internet and Integrated Circuit technologies, information can be accessed with low cost almost anywhere and anytime, thus knowledge barrier is essentially nonexistent. Those formerly disadvantaged countries now have same accessibility to knowledge and can easily train skilled workers to compete in global job market.

Nevertheless, in this information age, no one has confidence in maintaining leadership [2]. Competition may pop up anytime from anywhere in the world. Hence, it is an urgent need for universities to adjust the education approaches accordingly.

Particularly, while Asia, where the author is located, has emerged into a strong economic region, many successful high-tech company executives wish that they had more business management and financial trainings. This is because most of them are from technical background and they often hit bottlenecks when company grows to a certain scale. The fact is due to Asian culture’s preference of concrete skill training and hence favor of engineering disciplines.

Observing the fact that many students admire successful entrepreneurs, the author designed an entrepreneurship training program following IC designer’s emulation concept. An emulation system is a simplified system that mimics a target design with a build-in debugging mechanism. Then usage scenarios are executed on the emulation platform for bugs finding and fixing before actual system operation. With the emulation approach, the first time success rate in real world is greatly increased. Therefore, this course is named an entrepreneurship emulation platform.

The results are extremely encouraging. First, a great number of Business School students are attracted to the entrepreneurship programs offered in Engineering School because they find concrete technologies and solid engineering talents to work with rather than primarily service-oriented virtual business ideas in Business School. Secondly, after two offerings of the course, a group of students has formally started a company in the university Incubation Center.

The following sections will explain and discuss in details of this experimental entrepreneurship program. At the end of this paper, we conclude with some forward looking remarks.

II. Building an Entrepreneurship Emulation Platform

Harvey Cox in 1973 raised a concern of information overload crisis. Basically it is observed that the amount of world information double every 20 months. And today, the amount of information is more than anyone could access in a lifetime. Being able to access information is no longer a privilege, particularly when internet has become a convenient access method. The capability of using information is an increasingly more valuable part of the information value chain.

Additionally, competitive market forces and shorter product life cycle contribute greatly to ever smaller research-product gap. As a result, university research is becoming more application oriented. Also with unrivaled research budgets allocated in wealthy big companies, universities no longer always maintain leadership in research as before. This phenomenon calls for a new education approach.

Cox also suggested that we need to realize the fact that no one can know all that need to know. Hence more importantly, we need to develop higher level thinking skills: judge the credibility and usefulness of information, besides the basic information access skill.

Following Cox’s suggestion of equipping students the
ability to learn, to collaborate, and to manage diversity, complexity, ambiguity, the author designed a special entrepreneurship program for engineering students. Nonetheless, entrepreneurship does not always mean starting up a company. Instead, it is an attitude or approach of doing things in life. By adding a little bit of training on business concept, idea and practice, engineering students can be more fitting to future needs.

Asian’s culture used to emphasize on obedience and hence was very successful in training disciplined engineers. But now it is more critical for students to learn how to understand the world of work and education and know how to explore personal capabilities and interests. Also, obeying instructions no longer guarantees job security and hence all have to understand and develop decision-making skills. Through the motivation of wanting to be entrepreneurs, we guide students to learn critical thinking capability and know how stereotyping, bias and discrimination limit choices, opportunities and achievements.

The course hence is based on a learning-by-doing approach. Teacher serves only as a mentor who helps students clear their conscious in making proper decisions.

The learning process actually starts even before the class begins. Each student has to assemble a team of at least two engineering and two non-engineering students in order to qualify enrollment for the course. This requirement is designed to force inter-disciplinary collaboration. Asian education system tends to train students in narrow, focused disciplines. Many students have no experiences in collaborating with people of different disciplines. This course on purpose forces engineering brains meet with business minds.

A key to success for this course is the emphasis of realistic business proposals. Although students are not asked to implement prototypes for idea demonstration, they have to make sure their plan is feasible in every step. Otherwise, students tend to have many fantasized and defocused ideas.

This course deliberately applies heavy weekly schedule and sets up a high demand, high pressure, and high standard environment similar to a real start-up environment. This often arouses tension and debates or arguments in students’ group meetings. As a result, most problems and weaknesses are exposed for examination. With little or no choices, students have to learn to open up to and work with each others in order to earn good team scores. At the same time, they are asked to read and write reports on books such as “Servant” [3] or “Getting to say yes” [4] which help them learn how to deal with team work issues effectively.

To be systematic, we use business plan (BP) writing as a driver throughout the whole course. Students have to hand in a section of BP every week and a five-page book report every three weeks besides regular textbook reading assignments. Weekly meeting with students allows the teacher to check on progress, to challenge assumptions and to give advices (but not decisions though).

Each team has to come up with a company name, logo and each team member needs to take a position in the company during the course. With the mandatory business cards, the author observes that almost every student becomes very serious as if is doing real businesses.

Also Asian students are in general shy to talk to senior persons. Hence executives and entrepreneurs are invited to share experiences and serve as role models to students.

By leaving major portion of course grade on final presentation to invited Venture Capitalists (VCs), students in general are very motivated to present their best as much as possible. These VCs are asked to evaluate and comment on the proposals based on the same standard as they do in real world cases.

After VC presentation, a trade show is held for each team to present their ideas to public. One important purpose of the trade show is to train students to discern and balance the boundary of public and confidential information. Then finally, a Promotion Night, combining fun and company promotion programs, ends the course with a complete emulated entrepreneurship experience.

III. Results

The author find that students usually get very excited after they finish financial projection and learn how much their companies may worth. That is the time they begin to realize the knowledge they owned are so valuable. Students normally become very motivated in learning afterward. They may not start working harder immediately, but obviously they are more conscientious in planning their career paths.

After offering the Entrepreneurship courses two times with establishments of fourteen virtual companies, the author is happy to see students are formally forming a real company in the university Incubation Center.

V. Summary and Conclusions

Although this entrepreneurship program is considered a successful project, reflecting from the course teaching experience, the author also find that creative ideas are critical elements for a successful entrepreneurship course and hence a new project called “Creative Storm Center” is under planning right now to encourage a creative culture on campus.

The entrepreneurship course is only a part of the entrepreneurship value chain. The author plans to gradually build up the whole process and report status in the future.

References


