Extra-Curricular Student Entrepreneurship at Hangzhou Dianzi University

An Interactive Qualifying Project
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Report Submitted to:

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Abstract

Hangzhou Dianzi University (HDU) hopes to grow entrepreneurship activities at their university. It is our goal to help increase the quality of these activities at HDU. To achieve this, we survey students, conduct focus groups and interviews, and research the clubs, organizations, competitions, and collaborative spaces at both United States and Chinese universities. We utilize our findings to evaluate such activities at comparable universities in both China and the United States. With this information, we recommend that entrepreneurship clubs at HDU increase their advertising, increase co-hosting of events, and diversify club entrepreneurship activities. These recommendations aim to help HDU increase participation in entrepreneurship activities at the university.

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Executive Summary

Hangzhou Dianzi University (HDU) hopes to grow their entrepreneurial activities. This project investigates the entrepreneurial activities at several universities in the United States and China and recommends improvements to these activities at HDU. Focusing on universities in the United States and China, our project consists of a side-by-side analysis of each university's entrepreneurial activities by examining student and faculty involvement, clubs, competitions, classes, collaborative spaces, and presentations.

Through surveys, focus groups, online research, and interviews we measure student satisfaction of these activities at United States and Chinese universities. This examination allows us to investigate practical steps HDU can take to enhance their entrepreneurial program. To accomplish this, we organize our research following these three objectives:

- Objective 1: Investigate entrepreneurial activities in the United States, focusing on Massachusetts Institute of Technology (MIT), University of Massachusetts Amherst (UMass Amherst), and Worcester Polytechnic Institute (WPI).
- Objective 2: Investigate entrepreneurial activities in China, focusing on HDU, Zhejiang University (ZJU), and Zhejiang University of Media and Communication (ZUMC).
- Objective 3: Relate and analyze entrepreneurial activities at universities in the United States and China.

Conclusions & Recommendations

Our findings are that the HDU students require interconnectivity among themselves and the university. The collaborative spaces at HDU have a large influence on the entrepreneurial students. We conclude that collaborative spaces, specifically HD-Park, and guest speaker events satisfy the needs of the students. We believe that there is a lack of communication between entrepreneurship clubs at HDU. We present three recommendations that will help increase the awareness of club activities at HDU, while also promoting club interconnectivity and collaboration.

Recommendation #1: Increase advertising

We believe that table sitting in front of the university's Student Activities Building is not the only effective means of advertising on campus. Therefore, we recommend online platforms and more creative forms of paper media as alternate form of advertising.

Recommendation #2: Increase co-hosting of social events

To promote student awareness of HDU entrepreneurial clubs, we recommend that these clubs co-host social events. We believe that if entrepreneurial clubs work together to co-host events, this could increase inter-club communication. An increase in club communication will therefore lead to an increase in awareness of entrepreneurial clubs and events within the HDU community.

Recommendation #3: Diversify activities in entrepreneurship clubs

We recommend that HDU entrepreneurial clubs move towards a model similar to the MIT's E-Club. The E-Club hosts a networking event, which connects members to professionals who provide resources in the form of guidance, investment, and future partnerships. This club promotes innovative thinking by encouraging its members to participate in creative activities, such as improvisation exercises and by entering innovation competitions. The purpose of this model is to enhance presentation skills, create networking opportunities, and promote innovative thinking.

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Table 1: Table of common acronyms

Full Names:	Acronyms:
Entrepreneurs Club (at MIT)	E-Club
Entrepreneurship Club (at UMass Amherst)	EC
Hangzhou Dianzi University	HDU
Lund University	LU
Massachusetts Institute of Technology	MIT
Omicron Delta Kappa (at WPI)	ODK
Tech Entrepreneurs (at WPI)	Tech-E
University of Massachusetts Amherst	UMass Amherst
Worcester Polytechnic Institute	WPI
Zhejiang University	ZJU
Zhejiang University of Media and Communication	ZUMC

1   Introduction

Hangzhou Dianzi University (HDU) hopes to improve entrepreneurship activities at their university. To advance this entrepreneurial growth and recognition, universities in Hangzhou provide students with entrepreneurial resources including classes, clubs, competitions, and other entrepreneurial activities.

In China, HDU, Zhejiang University of Media and Communication (ZUMC), and Zhejiang University (ZJU) encourage innovation through participation by providing collaborative spaces for students to share ideas and host competitions. These universities also offer various club activities that help students improve their leadership skills and learn about entrepreneurship.

In the United States, Worcester Polytechnic Institute (WPI), the University of Massachusetts Amherst (UMass Amherst), and the Massachusetts Institute of Technology (MIT) all offer entrepreneurship and innovation programs. WPI, for example, offers an Entrepreneurship minor and also maintains a hands-on training program which assists university students in creating and implementing their own businesses. Similarly, MIT has an Entrepreneurship and Innovation track as part of its MBA program within the Sloan School of Management.

In addition to each university's academic entrepreneurship offerings, these three schools endorse opportunities for entrepreneurship in the form of extracurricular student activities. Through clubs, speakers, and competitions, students are able to interact not only with each other but also with professional entrepreneurs. These interactions allow students to cultivate and craft their ideas into a polished product. An example of a platform that cultivates innovative ideas is the annual competition at WPI called Hack@WPI (2016). Hack@WPI is a three-day workshop where students are taught by their more experienced peers how to turn their business ideas into a reality. Students present their final business plans to a panel of judges, who decide the winners of each category.

MIT is a university with many entrepreneurial resources, most notable of which being the Martin Trust Center. The center is a collaborative space that connects aspiring student entrepreneurs by creating an environment in which they can communicate and succeed (MIT, 2016). As a result of MIT's many offerings in both the academic and extracurricular form, the school serves as a strong, successful example of an entrepreneurial university.

The goal of this project is to examine and compare entrepreneurial activities at select universities in the United States and China. These universities are WPI, MIT, UMass Amherst, ZJU, ZUMC, and HDU. We focus on side-by-side analysis of these universities' entrepreneurial activities by examining student and faculty involvement, competitions, and club offerings. This examination allows us to investigate practical steps HDU can take to enhance their entrepreneurial program. We gather our information using online research, surveys, interviews, club observations, and focus groups. Our final report suggests improvements that can be made within student entrepreneurial activities HDU offers.

2   Background

Entrepreneurship and innovation are common phrases in the startup business community because of their association with economic and job growth (Binder, 2013). Universities worldwide encourage entrepreneurial activities in order to promote innovative and independent thinking among students (National Center on Education, 2008). This section summarizes the entrepreneurial activities at the following universities in the United States and China: WPI, UMass, MIT, ZUMC, ZJU, and HDU.

2.1   Steps of Becoming an Entrepreneur

"*Entrepreneurship – The capacity and willingness to develop, organize, and manage a business venture, along with any of its risks, in order to make a profit*" (The Business Dictionary, n.d.).

Many associate entrepreneurship with innovation and success. Using this definition, Iversen et al. (2008) define the steps of becoming a successful entrepreneur (Figure 1). These steps revolve around the existence of a personal or company vision (Gatewood, Shaver, & Gartner, 1995). Through having a vision, according to Iverson et al. (2008), a team will then gain a direction. This direction leads to well thought-out business ideas and the successful implementation of these ideas reveal a positive customer response.
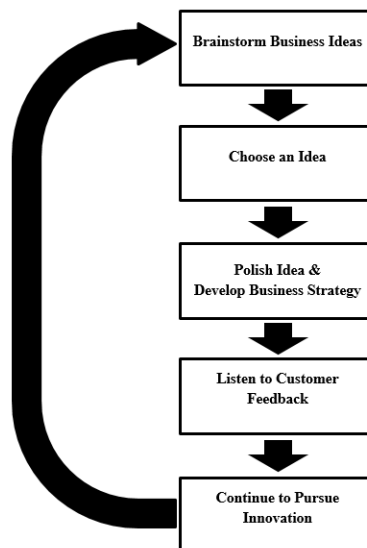

Figure 1: Entrepreneurship innovation process

In the flowchart above, the first step to becoming an entrepreneur, as mentioned by Zahra et al. (2006), is to brainstorm business ideas. The second step is to choose an idea, which is then

polished and expanded upon in the third step. The third step includes the creation of a system to find manufacturers, hire sales personnel, and meet the demands of the customer. Once a product is brought to market, the fourth step must then be executed: listening to customer feedback. The fifth and final step emphasizes the importance of the ongoing pursuit of innovation.

2.2   Entrepreneurial Activities in United States Universities

The table in <u>Appendix Q</u> contains the universities we examine in the United States with information regarding university size and entrepreneurial activities. The three universities we investigate in-depth are WPI, MIT, and UMass Amherst. This data shows that five out of 20 United States universities host over 15 entrepreneurship clubs on campus. Four of these five have a total undergraduate population of less than 25,000 students.

2.2.1   Worcester Polytechnic Institute

WPI is located in Worcester, Massachusetts with approximately 4,300 undergraduate students. WPI offers many entrepreneurial activities on campus in the form of clubs, organizations, and competitions. CollabLab, Tech Entrepreneurs (Tech-E), Omicron Delta Kappa (ODK), and Hack@WPI are a few examples of events and organizations that promote leadership skills, collaboration, and innovation on the WPI campus.

CollabLab, for example, is a student-run makerspace that provides members the tools, workspace, storage, and training they need to help cultivate ideas in a project of their choice. Topics surrounding these projects include robotics, computer science, electronics, and woodworking. In contrast, Tech-E assists students with an interest in entrepreneurship by hosting educational workshops and inviting guest speakers to talk to the students. The organization also hosts and organizes the annual startup career fair which is open to all WPI students. At this fair, students have the opportunity to connect with startup companies in New England to secure an internship, which in some cases results in a full-time job.

ODK is a national leadership honor society that recognizes students in leadership positions both inside the classroom and within the community. The vision of ODK at WPI is to "foster leadership, promote inclusiveness of students and faculty, and embrace diversity of its member's leadership interests" (Omicron Delta Kappa, 2016). To accomplish this, there are three facilities open for students to use the Career Center, Internship Center, and Mentoring Center (WPI Student Organizations, n.d.). ODK membership also includes internship and job

opportunities, scholarships, grants, and discounts on services such as conferences and workshops.

Hack@WPI is a three-day workshop where students are taught by their more experienced peers how to turn their business ideas into a reality. On the last day of the hackathon, students present their final products and business plans to a panel of judges, who decide the teams which receive awards for their efforts.

2.2.2 Massachusetts Institute of Technology

MIT is located in Cambridge, Massachusetts and has approximately 4,527 undergraduate students (MIT Facts, 2016). Students at MIT participate in competitions, along with, entrepreneurship and innovation club activities. The MIT Sloan School of Management has over 16 clubs dedicated to building the entrepreneurship, leadership, and management skills of the students involved. Of these clubs, four include the Investment Management Club, Entrepreneurship and Innovation Club, MIT Entrepreneurs Club (E-Club), and the Venture Capital and Private Equity Club (Student Organizations, n.d.).

In the Investment Management Club, students share their ideas and business plans with successful entrepreneurs via panels and question and answer sessions. These sessions help students improve by providing feedback from professionals and peers. Students also form relationships with alumni to build connections for future investment needs.

The Entrepreneurship and Innovation Club allows students to share their business ideas through participation in several competitions such as the MIT Pitchathon and MIT Hackathon, similar to Hack@WPI. Additionally, the club hosts workshops that teach young entrepreneurs how to recruit partners and employees.

The MIT E-Club has been in in existence for 28 years. This club provides services to students and faculty from MIT, Harvard University, and Wellesley College. Some services include: improving presentation skills, networking, funding business ventures, and conflict resolution within teams. This club also hosts the annual MIT 100K Competition, where teams use their business ideas to compete for investment. These resources prepare individuals to be entrepreneurs by providing access to mentoring, training, and networking with potential investors. The Venture Capital and Private Equity Club enables members to interact with professional investors and business executives, as well as learn first-hand about the venture

capital and private equity industries through speaker series, training courses, networking events, and collaboration with startups (MIT VCPE, n.d.).

2.2.3   University of Massachusetts Amherst

UMass Amherst is a public university with approximately 22,000 undergraduate students (UMass Amherst, n.d.). UMass Amherst offers entrepreneurial activities in the form of clubs, collaborative spaces, and competitions. The Entrepreneurship Club (EC), the M5 Makerspace, and the UMass Innovation Challenge are all examples of these activities.

EC forms relationships with other University of Massachusetts colleges to create an entrepreneurial community (UMass BE, n.d.). EC hosts a competition every semester and invites guest speakers to help students develop their business ideas. The M5 Makerspace caters to students in Computer Systems Engineering and Electrical Engineering. The club's space contains circuit boards, soldering stations, and electronic parts. The Berthiaume Center for Entrepreneurship hosts the UMass Innovation Challenge. It is a series of competitions that help students develop their business ideas into a marketable product. There are five parts to the Innovation Challenge: two public competitions, two closed-door sessions, and one workshop. In the final competition, students compete to win up to $65,000 in prizes (Isenberg Management, n.d.).

2.3   Entrepreneurial Activities in Chinese Universities

China encourages foreign students to start their own businesses and join startups in various business development zones that supply incubator spaces specifically for startup businesses (Yongqi, 2016). These spaces contain offices, technology parks, and professional legal help for new entrepreneurs developing their business. Students in individual universities are also making changes to further the entrepreneurial atmosphere on their respective campuses.

2.3.1   Hangzhou Dianzi University

HDU is located in the Zhejiang Province. HDU has approximately 25,000 undergraduate students and prides itself on its academic exchange and cooperation with prestigious universities, enterprises, and research institutions in many countries (Hangzhou Dianzi University, n.d.). To foster student creativity, HDU has five clubs dedicated to entrepreneurship, as well as innovation labs, competitions, training sessions, and technology parks located in the surrounding Hangzhou

area. Three of these clubs are the Business Alliance, the Future Entrepreneurs Association, and Enactus.

The Business Alliance consists of executive members from several other clubs on campus. The purpose of the Business Alliance is to foster communication and collaboration within the HDU community. In addition to this goal, the club also hosts conferences every other week with guest speakers who are alumni in the entrepreneurship field. The Future Entrepreneurs Association is similar to the entrepreneurship clubs in the United States that help students polish their business ideas. The organization also manages a workspace in the center of campus where students pay to use their resources.

The slogan for Enactus is "Entrepreneurial action for others creates a better world for us all" (Enactus, n.d.). Operating under this goal, the club teaches student entrepreneurs how to use their skills to improve the city of Hangzhou. It is a branch of an organization that spans over 36 countries, with over 69,000 student participants worldwide (Enactus, n.d.). HDU also hosts several competitions: The Challenge Cup, Hello World, HDU Entrepreneurship Competition, and the preliminary round for the Internet+ Competition. All of these competitions give student entrepreneurs the chance to meet with other entrepreneurs and share ideas. These competitions give students the opportunity to present their business ideas to judges and investors for the chance of funding, free workspaces, and/or mentorship.

2.3.2 Zhejiang University of Media and Communication

ZUMC is also located in the Zhejiang province, approximately a 10-minute walk from HDU. It is one of the two universities in China specializing in the broadcasting industry in addition to radio and film (Zhejiang University of Media and Communication, 2014). In order for students to be able to research, practice, and be collaborative, there are more than 21 student facilities and makerspaces located in the university's library (Zhejiang University of Media & Communications, 2014).

The university's website provides information about several student clubs, one of which being the Media and Communications Club (MACC) (Zhejiang University of Media & Communications, 2014). The primary focus of the club is to polish the communications skills of its members and to host networking events to connect students with professionals in the field of media and communications.

2.3.3   Zhejiang University

ZJU is one of the oldest and prestigious research universities in China. ZJU has 46,000 students and 12 major branches of education (Zhejiang University, 2012). This university offers many programs that relate to entrepreneurship, including a partnership with Lund University (LU) in the form of a collaboration center.

The ZJU-LU Joint Centre of Innovation and Entrepreneurship (JCIE) promotes collaboration between the cities of Lund and Hangzhou (Zhejiang University & Lund University, n.d.). The mission of JCIE is to supply a "network for researchers, students, the industry and other stakeholders to establish and participate in win-win projects" (Zhejiang University & Lund University, n.d.). The university also has a series of research facilities dedicated to entrepreneurs such as the Academy of Global Zhejiang Entrepreneurs and the Zhejiang University Global Entrepreneurship Research Center. They also have a study abroad program with the graduate school, Global Entrepreneurship Program (Em-Lyon Business School, n.d.). This program is run by two universities with leading business programs: Em-Lyon Business School and Pace University, in collaboration with ZJU. Students in this program spend four months in Europe, Asia, and the United States to learn about the global aspect of entrepreneurship in society.

3   Methodology

Our project goal is to investigate the entrepreneurial activities among college students and recommend improvements regarding student entrepreneurial activities at HDU. Student entrepreneurial activities consist of clubs, competitions, classes, collaborative spaces, and guest speaker presentations. Through surveys, focus groups, online research, and interviews, we measure student satisfaction of these activities in United States and Chinese universities. To understand extracurricular entrepreneurial activities, our team examines the programs available at each respective school via online research. To accomplish this, we organize our research following these three objectives:

- Objective 1: Investigate entrepreneurial activities in the United States, focusing on MIT, UMass Amherst, and WPI.
- Objective 2: Investigate entrepreneurial activities in China, focusing on HDU, ZJU, and ZUMC.
- Objective 3: Relate and analyze entrepreneurial activities at universities in the United States and China.

3.1   United States

To understand entrepreneurship activities at MIT, UMass Amherst, and WPI, we conduct our research through the following methods: surveys, interviews, and online research.

3.1.1   Survey undergraduate students

Our United States surveys question students from WPI who are a part of entrepreneurial organizations. We ask these students questions via Qualtrics (2016), an online survey platform (Appendix E). Each student maintains anonymity and may only submit one survey response. Qualtrics is beneficial because it provides us with unique data by eliminating multiple submissions from one student. Our survey results also provide us with quantitative data pertaining to student satisfaction of entrepreneurial activities, which we represent in the form of graphs and tables. Interpretation of these visuals allow us to draw conclusions concerning student satisfaction, which later guide our recommendations.

3.1.2 Interviews

Interviews occur in-person, with members of our team present to take notes. We use interviews to gather information that a general survey would not provide. This form of data collection also allows the respondents to elaborate on specific details. In the United States, we interview Jon McIntyre, the President of WPI Tech-E, to learn about the club's goals, structure, and events the club hosts. These interviews give us qualitative data that help guide our recommendations later on.

3.1.3 Online research

Online research is our primary means of gathering information about MIT, WPI, and UMass Amherst. We use this research to learn about the size of each school and the amount of entrepreneurial resources each university offers. These resources include the number of entrepreneurial clubs, collaborative spaces, and competitions undergraduate students utilize.

3.2 China

In China, entrepreneurship education is present at ZJU, ZUMC, and HDU. Similar to our methods in the United States, we utilize surveys, interviews, focus groups, and online research as a means of data collection.

3.2.1 Survey

Similar to the United States, at HDU we survey students who have an interest in entrepreneurial activities. Some questions include "What club, organization or activity are you a part of?," "Are you satisfied with entrepreneurial activities on campus?," and "What entrepreneurship activity has influenced you the most?." From these questions, we learn which activities students are satisfied with and which activities have the most influence. This helps us draw a conclusion as to what activities would benefit the most from improvement. Due to the language barrier, these questions are broader than the questions in the United States survey. A continuation of the HDU survey questions can be seen in Appendix D.

3.2.2 Interviews and focus group

To gather information not found in a general survey, our team conducts interviews with knowledgeable members of the entrepreneurial community. To attract participants, we go to entrepreneurial spots on campus such as classes, clubs, and collaborative spaces to ask student

groups to participate. These interviews are a crucial part of establishing connections with other entrepreneurial organizations. An example is the Business Alliance, an organization comprising of executives from other entrepreneurial clubs. Interviews with the president and vice president of the Business Alliance provide us with connections to other entrepreneurial organizations at HDU. This type of data collection provides us with a new perspective from different clubs on campus, which helps us cater our recommendations to the HDU entrepreneurship community. We also conduct an interview with Maker, the president of the collaborative space HD-Park, who supplies us with in-depth information about the space itself.

Holding focus groups is beneficial because it allows us to participate in the interview process as facilitators. Our minimal participation makes students feel more comfortable, giving them the illusion of speaking among their peers instead of a formal one-on-one interview. The focus groups at ZUMC and HDU allow us to gauge the student's interest in entrepreneurship. From this experience, we learn that participants are more willing to elaborate in-person rather than through a survey. This interaction also allows for us to observe body language or nonverbal cues. Due to the language barrier, these additional cues improve our understanding of the interviewee's responses. Questions from the ZUMC session can be seen in Appendix C.

3.2.3   Online research

Online research is our final means of data collection in China. Research of this type allows us to gather background information about ZUMC and ZJU. This method helps us understand how Chinese universities function and illustrates a more complete picture of HDU in terms of entrepreneurial offerings. The majority of our background information stems from online research. As a result, the information we collect is not as reliable as using multiple mediums for data collection. Once we gather the data we need using the methods above, we compare these university offerings to that of HDU and make recommendations accordingly.

4   Results & Analysis

In this section, we compare our findings of several universities in the United States and China, however, in order to collect measurable data from surveys and first-hand accounts from interviews with students, we analyze student entrepreneurial activities at HDU and WPI. We have 147 responses on the SoJump (2016) platform, which is our primary means of survey collection in China. In the United States, we use the Qualtrics platform and receive 21 responses from WPI students. In addition to surveys, we also acquire information about these schools through interview responses, online research, and personal observations.

In order to determine the effectiveness of entrepreneurial activities at HDU, we ask students about their satisfaction with the activities (Figure 2) and the influence certain activities have on their future as entrepreneurs (Figure 3).
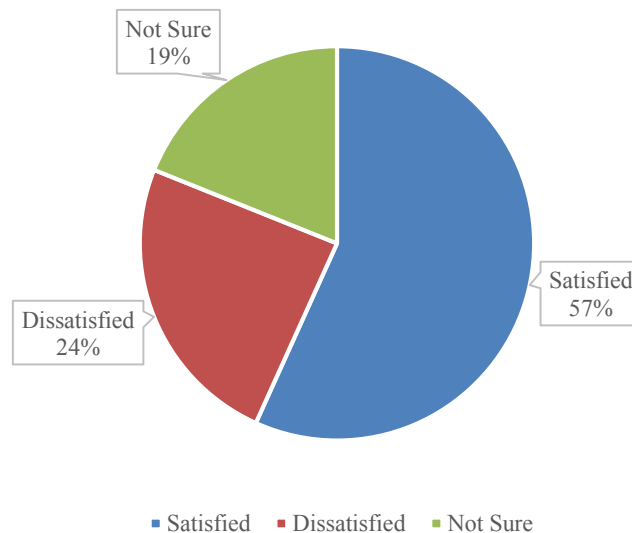
Figure 2: Student satisfaction of entrepreneurial activities at HDU

Figure 2 illustrates student responses when they are asked the question "Are you satisfied with your university's entrepreneurial activities?." These responses reveal that 57% of HDU students are satisfied with entrepreneurial activities, 24% are dissatisfied, and that 19% are not sure. We realize "Not Sure" is a neutral response, however, using feedback from English-speaking Chinese students and observations of club meetings, we interpret this to mean students' entrepreneurial needs are not being met. With this interpretation, we combine the responses of "Not Sure" (19%), with the responses of "Dissatisfied" (24%) to equal 43%. This percentage indicates that almost half of respondents are not satisfied with entrepreneurial activities at HDU.

For further clarity regarding student satisfaction, our survey also asks students to choose an entrepreneurial activity at HDU that is the most influential.

Figure 3: Most influential activity from students interested in entrepreneurship at HDU

Figure 3 shows student responses at HDU to the question "What activities are the most influential in assisting your understanding of entrepreneurship?." Asking students which activity is the most influential, meaning positive influence, gives us an idea of which activities students find the most significant. According to Figure 3, "Competitions" and "Speakers" are two of the most influential entrepreneurship activities.

Shown in Figure 3, the activities not listed as having the most influence are "Clubs," "Courses," "Other," and "None." Responses of "Courses," "Other," and "None" however, are outside the scope of our project, so the remaining answers of "Clubs," "Speakers," and collaborative spaces (representing "HD-Park" and "Incubator") are the primary topics of this section. Only 3% of respondents select clubs as being the most influential, demonstrating what we interpret to be student dissatisfaction. This means that club activities can be improved in some way to cater to student respondents who regard guest speakers or entrepreneurial competitions as the most influential.
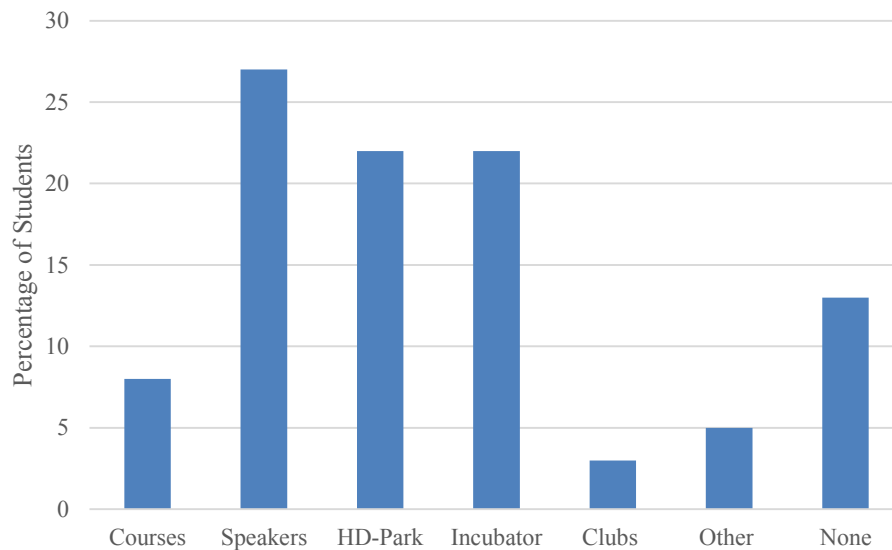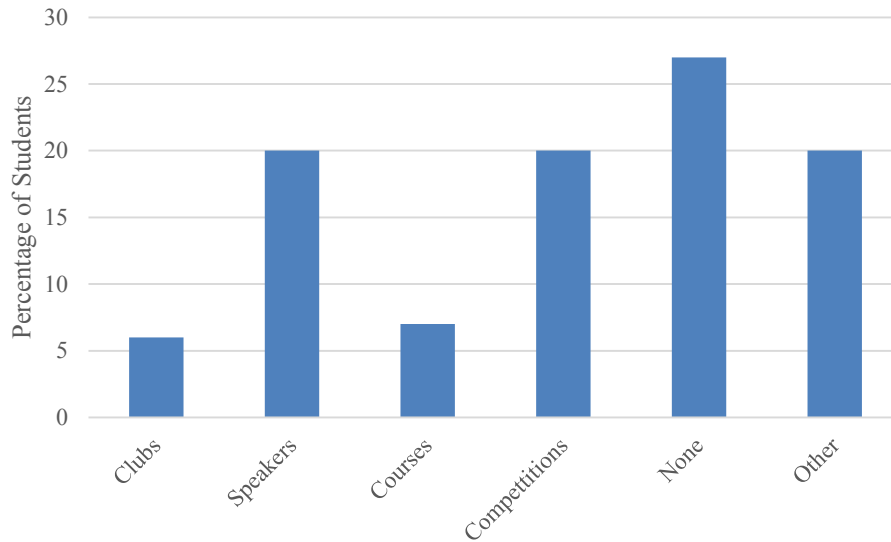
Figure 4: Most influential activity from students interested in entrepreneurship at WPI

Figure 4 shows student responses at WPI to the question "What entrepreneurship activity has influenced you the most at your university?." Asking students which activity is the most influential, meaning positive influence, gives us an idea of which activities students find the most significant. In order to determine the effectiveness of entrepreneurial activities at WPI, we survey students about what activities have the most influence on them. We only focus on the responses relating to "Clubs" and "Speakers," as the other activities: "Competitions," "Courses," "None," and "Other" are outside the scope of this project. According to our results, 22% of student respondents consider speakers to be the most influential, while 6% of student respondents consider clubs to be the most influential. This is similar to the data we found at HDU regarding student satisfaction of entrepreneurial activities.

Shown in Figure 3, the activity with the most influence on HDU student respondents is guest speakers (27%), indicating that a large percentage of students are satisfied with guest speakers. In Figure 4, the activity with the most influence on WPI student respondents is also "Speakers," indicating a parallel between the significance of speakers at both universities. This chapter examines student feedback in ascending order from the "Clubs," the activity with the lowest percentage of students influenced, to "Speakers," the activity many students find the most influential. Note that because of the confusing nature of this question and our limited amount of time, this data serves as a starting point. We are aware that a lower percentage does not

necessarily correspond to the least effective club, as the respondents only indicate which club is the most influential.

There are limitations in the HDU survey as most respondents are from the HD-Park and the Business Alliance guest speaker conference. According to the results, a majority of respondents believe guest speakers or HD-Park is the most influential activity. Instead, the survey should be given out to more entrepreneurial clubs, resulting in more diverse responses and less bias results. A further aspect to examine regarding influential activities would be a question asking students what qualities of activities they find the most influential. Some examples of these qualities include relevance, time, size, topic, and inter-university relations. A question of this nature will strengthen our recommendations. Another limitation arises in that we did not receive enough responses to compare what entrepreneurial activities are the most influential at other United States universities, especially WPI. As a result, we cannot directly compare the entrepreneurship trends of HDU and other universities.

4.1 Clubs

Overall, few HDU student respondents consider clubs to be the most influential entrepreneurial activity. According to our interviews with members of the Business Alliance, HDU has five entrepreneurial clubs. Each club is responsible for a different aspect of the entrepreneurial learning experience. For example, the Future Entrepreneurs Association and the Business Alliance both host workspaces, contract assistance for startup businesses, and plan extra-curricular entrepreneurial activities at HDU. Enactus, however, focuses on how entrepreneurship affects the city of Hangzhou and inspires students to start community service-related businesses. Similarly, WPI has Tech Entrepreneurs, the WPI Investment Association, and other clubs that provide students with guidance in starting their own businesses and promote entrepreneurial exploration.
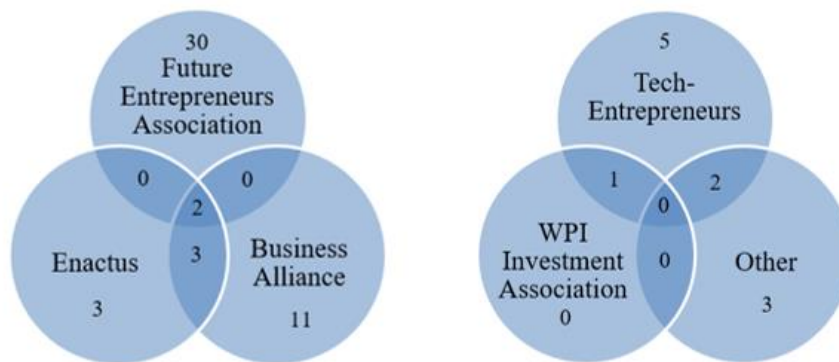
Figure 5: Comparison between HDU (left) and WPI (right) organization participation

Figure 5 is a Venn diagram illustrating student-club involvement at HDU and WPI. Student responses at HDU show that a majority of participants are involved in the Future Entrepreneurs Association and the Business Alliance. Responses at WPI indicate that the Tech-Entrepreneurs Association has the highest attendance of the survey choices. Totals in Figure 4 represent responses only of students who are in entrepreneurial clubs, not responses overall.

There is limited information regarding the Future Entrepreneurs Association, Enactus, and the WPI Investment Association. The following sections examine the HDU Business Alliance and the WPI Tech Entrepreneurs (Tech-E). This section first introduces each club, then compares the club using the information we gather from surveys and online research, as well as an interview with Mike Zhou (Appendix L), president of the Business Alliance, and Jon McIntyre (Appendix N), president of Tech-E.

4.1.1   The Business Alliance

From online research, we find that the HDU Business Alliance strives to provide students with guidance and resources to start their own businesses. To satisfy this goal, they host a mentorship program which connects students to tutors with experience. This club also hosts a yearly competition which connects members to professional entrepreneurs who can help polish business ideas. Additional information about the Business Alliance can be found in Appendix P.

We acknowledge that information taken from university websites can be biased. To confirm or deny this information, we survey HDU students specifically about the Business Alliance and ask them: "What is the most important thing you have learned from being in an entrepreneurship club?" (Question #10 Appendix D) Survey data shows that 55% of student answers pertain to management skills and team building, restricting our focus to the Business

Alliance. From this, our team can only infer that the Business Alliance is helpful to students regarding team building skill development. From our participation in a group conference, we notice that the organization's primary activities consist of presentations given by guest speakers. These meetings also offer question and answer sessions that members use to communicate with each other on difficulties they face in the process of becoming an entrepreneur. In these sessions, all participants may ask questions that can be answered by anyone in attendance, including guest speakers and other peers. It appears that students enjoy these sessions due to the large number of hands raised as well as the eagerness of students to help each other solve business problems.

Limitations to our data collection exist because we do not possess any information about non-entrepreneurial clubs at HDU. From our observations, we are aware that the Business Alliance meets twice a week, once for a general body meeting and a second time to plan or execute their guest speaker presentation. Though this is viable data, we do not have sufficient information from other clubs to compare the amount and frequency of meetings that these clubs host at HDU.

4.1.2   WPI Tech Entrepreneurs Club

The objective of WPI Tech-E is to promote the entrepreneurial mindset through guest speakers, educational meetings, and entrepreneurial events. According to the responses of the WPI survey (Questions 13 and 14 Appendix E), specifically Tech-E members, 38% of students attest to furthering their knowledge through team building exercises. This style of entrepreneurial education appears to be prevalent in many of the club's activities. Our team member has personal experience regarding the type of workshops that the Tech-E club hosts. The most notable is the club's elevator pitch workshop, where students draft an idea and present it to an audience in under a minute. Events of this kind further the student's experience with pursuing an idea in the real world, as well as, build student's confidence through practice. The clubs host at least 10 events of this type annually and hope to expand their activity offerings within the next year.

4.1.3   MIT's Entrepreneurs Club (E-Club)

The objective of the MIT E-Club is to promote innovation by improving presentation skills, offering networking opportunities, and hosting competitions. To improve presentation skills the club hosts weekly meetings giving students a space to practice presenting in front of their peers. E-Club's largest competition is the MIT 100K international event that attracts

investors and entrepreneurs from around the world (MIT 100K, n.d.). More information on the E-Club can be found in <u>Section 2.2.2</u>.

4.1.4 Comparison of United States university clubs and the HDU Business Alliance

HDU's Business Alliance is comparable to both WPI's Tech-E Club and MIT's E-Club, each of which educates students on areas of entrepreneurship including finance, design, and brand. All three clubs meet at least once a week, with roughly 20 students in attendance. These clubs use seminars, guest speakers, workshops, and weekly meetings to teach students about entrepreneurship. Of the clubs, we observe that E-Club has the most diverse activities for its members, while the Business Alliance only focuses on guest speaker presentations. Tech-E and E-Club also host entrepreneurial competitions, however, the only entrepreneurship club at HDU that hosts a competition as a club activity is the Business Alliance. In comparing activities, some questions for consideration include "Are there more students in clubs that host competitions?" and "Do more students go to competitions than regular club activities and meetings?" These questions aid our understanding of entrepreneurship at HDU.

Limitations also exist in our findings because of the limited number of survey responses from WPI in comparison to HDU. We have 147 responses from HDU, however, WPI totals only 21 student survey responses. With roughly 25,000 undergraduates at HDU and roughly 4,000 undergraduates at WPI we are mindful of the proportions of our results. We also do not know how many students consider themselves to be entrepreneurs, so to our knowledge the population of student entrepreneurs is unknown. Therefore, we focus more on interviews, personal experience, and online research to gather the bulk of our data.

4.2 Collaborative Spaces

At HDU there are five collaborative spaces; the two most notable being the Business Alliance location and the Future Entrepreneurs Association location. The Business Alliance is responsible for HD-Park, an open workspace with desk stations, printers, conference rooms, office spaces, a presentation area, and a café. This workspace can cater up to 190 students at a time and offers eight separate conference rooms. To gain admittance, a student fills out an application and pays an annual fee, depending on the space. Multiple visits to the space show that, despite ample available space, facility use is low during peak hours. According to our interview with the Business Alliance, HDU students claim that a collaborative space similar to

the space at ZJU would be more beneficial. Through interviews with the president of the Business Alliance, we discover that students think the ZJU space is more advantageous in terms of location, resources, and size.

According to our interviews, the ZJU collaborative space is capable of catering to about 300 occupants and offers services that are not found at HDU. These services include business advice and contracting, meaning students have more options to further their ideas. Limitations exist in these results because our team is unable to visit the ZJU facility, meaning all of our information second-hand. Also, the use of a translator gives us an incomplete understanding of the ZJU's space and how it compares to the collaborative space at HDU.

The United States collaborative spaces, however, offer other useful benefits such as rapid prototyping tools and more faculty involvement, comparing to HDU and ZJU. An example of a United States space is the UMass M5 makerspace that caters to students from electrical engineering backgrounds. This collaborative space hosts lab courses, meetings, trainings, and workshops. This space also contains prototyping boards and temperature-controlled soldering stations in a separate lab area. To use this facility, the only requirement is that the individual must be an undergraduate student enrolled at UMass. Although this space's resources are for computer systems engineering and electrical engineering, any student may use the space at no cost.

4.3   Speakers

According to our survey responses, several students regard guest speakers as being an influential entrepreneurial activity for HDU students who have an interest in being an entrepreneur. At the Business Alliance's conference, all 54 students were attentive to the presentations from the guest speaker (Appendix M). The Business Alliance's largest annual guest speaker event consists of several presentations to an audience of approximately 600 students. According to our interview with Jon McIntyre (Appendix N), at WPI's Tech-E's weekly presentation, attendance is roughly 100 students. These events are very popular among students at WPI, both members and non-members of the Tech-E Club, according to McIntyre. Overall, both the Business Alliance and Tech-E events are similar in terms of their attendance and alumni speaker relationship to the university. Visiting the events both at the Business Alliance and Tech-E Club, our observation is that there is no significant difference between these two events.

4.4   Additional Points

Student interest and faculty involvement also play a role in our research of student entrepreneurial activities. We examine student interest in these activities as a basis for our recommendations in Section 5: Conclusions & Recommendations. This section focuses primarily on minor factors which affect the entrepreneurial environment on campus.

4.4.1   Student entrepreneurial interest in China

We observe that a majority of the participants in our focus group at ZUMC have an interest in entrepreneurship and starting their own business (Appendix G). We find that 58% of students state that they already have ideas about their future market and 80% of students plan to raise capital through their family or investors. Almost 80% of students also claim they learn valuable entrepreneurial skills from classes at ZUMC. These skills consist of how to turn an idea into a viable product and how to utilize professional skills to operate their own business.

Similarly, at HDU, students show an interest in entrepreneurship and business creation. However, we observe that students prefer "active learning" and group discussions that primarily take place in environments such as entrepreneurial clubs and competitions. This structure is different from how students behave in a lecture setting. For example, participating in one HDU finance class, we observe that eight of the 23 students are distracted by their phones, peers, and other sources (Appendix H). Many students do not take notes or answer the instructor's questions pertaining to the topic. These attributes are also a common theme in the entrepreneurship class we attend at ZUMC.

Conversations and formal interviews show that a few students from these classes at both universities have a desire to create their own businesses. There are a few limitations regarding our understanding of class structure at ZUMC and HDU.

4.4.2   Faculty involvement comparison

In comparison to students, HDU faculty primarily participate in large events, such as the Internet+ competition and the Hangzhou Challenge Cup. For example, once a year, 600 students attend the Business Alliance's annual conference, along with several guest speakers and investors. This event has an average student-teacher ratio of 160:1. At a different, small-scale Business Alliance conference, there are no HDU faculty present among the 54 student attendees. WPI, however, differs in the amount of faculty involvement in their entrepreneurial activities.

The Hack@WPI event, for example, has about 150 students in attendance and averages about 4 faculty members a year. This means that the faculty-to-student ratio is about 38:1. Therefore, WPI students interact with event faculty members more than at HDU students at respective events.

At WPI, each club has a faculty advisor who possesses an interest in the organization's mission. This mentor assists the club by offering guidance, as well as, acting as a well-connected resource. At other universities in the United States, faculty advisors also assist with the funding aspect of clubs on campus, offering guidance on how to acquire and allocate funding.

5   Conclusions & Recommendations

The purpose of our time in China is to gather information about student entrepreneurship involvement at the university level and compare it to our understanding of student entrepreneurship at universities in United States. From this comparison, we are able to formulate conclusions and recommendations in order to assist HDU in improving their entrepreneurship offerings. Our findings are that the HDU students require interconnectivity amongst themselves and the university. Through our recommendations we hope to improve the entrepreneurial atmosphere and encourage students to embody a more entrepreneurial mindset. This section states the conclusions we draw from Section 4: Results & Analysis in five parts including collaborative spaces, guest speakers, clubs, influence of clubs, and the diversity of club activities.

5.1   Collaborative Spaces are Satisfactory to Students

The collaborative spaces at HDU have a large influence on the HDU entrepreneurial students. According to Section 4: Results & Analysis, 44% of students regard "HD-Park" or "Incubators" as the most influential entrepreneurial activities at HDU. Our visits to HD-Park reveal that the students are working and making use of the project space. Although ZJU has the best collaborative space in Hangzhou, according to our interviews with Maker, HD-Park is still influential to HDU entrepreneurial students. We recognize some students are currently unable to raise the funds to acquire an office space at HD-Park, however, the university attempts to overcome this obstacle by paying the annual subscription fee if the team wins the Hangzhou Challenge Cup. Therefore, we conclude that HD-Park satisfies the needs of the students.

5.2   Guest Speakers are Beneficial to Students

According to our analysis, 27% of students regard guest speakers to be the most influential entrepreneurial activity according to the respondents of the HDU survey. The current guest speakers are alumni from the surrounding universities who are now successful entrepreneurs. Attending the guest speaker sessions, our group is aware that the events have excellent attendance and are a forum that students enjoy. The Business Alliance hosts an annual guest speaker event with an audience of around 600 students (Section 4.3). From our interviews, the Business Alliance's only request is to increase faculty member attendance in order to greet honored guest speakers. In conclusion, students are satisfied with the guest speaker events and an

addition to the current model is to assign a faculty member to greet the guest speakers as they arrive.

5.3 Students are Unaware of Entrepreneurship Clubs

Interviews with students from the Business Alliance (Appendix L) demonstrate that respondents are unaware of other entrepreneurship clubs. Therefore, we believe that there is a lack of communication between entrepreneurship clubs at HDU. This communication issue isolates clubs and limits activities involving club collaboration, such as team building exercises and the co-hosting of events. We present two recommendations that will help increase the awareness of club activities at HDU, while also promoting club interconnectivity and collaboration.

Recommendation #1: Increase advertising

Currently, the primary means of advertising at HDU is table sitting in front of the university's Student Activities Building. We believe that this is not the only effective means of advertising on campus and therefore we recommend two additional advertising options. A lack in advertising may not be the primary reason for the communication issue between clubs, but our team believes that increasing advertising is one step in solving this problem.

The first approach is for students to advertise through an online platform. Utilizing social media platforms, such as WeChat and Weibo, to advertise club meetings and events could potentially reach a wider audience, along with the current table sitting method. To improve club member awareness of activities, we recommend each club member is assigned a day to document and post about entrepreneurship events. This encourages participation from all club members and is an opportunity to improve student's advertising skills.

The second approach is to utilize more creative forms of paper media, such as weekly paper bookmarks, posters, fliers, and QR codes around the university. HDU students currently advertise in the form of posters and fliers, however, we recommend increasing the number of locations on campus where students advertise. These locations may include the academic buildings, dormitories, and restrooms, similar to what is done at WPI. We also recommend creating bookmarks for the library with QR codes of relevant events pertaining to entrepreneurship. In addition to bookmarks, club members may also distribute fliers at multiple locations throughout the university. The higher frequency of exposure to entrepreneurial

advertisement at HDU raises awareness about the events that students could potentially have an interest in attending.

The implementation of the options above are feasible since students already use WeChat and Weibo for personal use. This digital advertising, along with the fact that posters distribution and table sitting already occur near the Student Activities Building, means that both are a plausible and practical means of advertisement for club activities. Funding may be the limiting factor for the club due to the cost of advertising through paper media. However, our experience at WPI leads us to believe that both of these advertisement forms are an effective means of informing students.

Recommendation #2: Increase co-hosting of social events

To promote student awareness of HDU entrepreneurial clubs, we recommend that these clubs co-host social events, similar to what is done at WPI. At Hack@WPI, roughly 10 clubs work together to plan, attend, and operate the event (Section 2.2.1). We believe that if entrepreneurial clubs work together to co-host events, this could potentially increase inter-club communication. We also recommend that members of the Business Alliance make use of their meetings to discuss the hosting of events, as their members are a compilation of the club leaders at HDU. An increase in club communication will therefore lead to an increase the awareness of entrepreneurial clubs and events within the HDU community.

5.4   Entrepreneurship Club Activities are Not the Most Influential

As mentioned in Section 4: Results & Analysis, over 60% of the entrepreneurial students are satisfied with the collaborative spaces and guest speakers at HDU. According to our analysis, 3% of students believe that club activities are the most influential source of entrepreneurship. The current activities of the Business Alliance, for example, are limited to planning for guest speakers and attending club presentations. Entrepreneurship clubs in the United States, notably the E-Club at MIT, have a greater degree of diversity and activities (Section 4.1.4). We conclude that the increase in the diversity of activities may lead to club activities becoming more significant to students.

Recommendation #3: Diversify activities in entrepreneurship clubs

We recommend that HDU entrepreneurial clubs move towards a model similar to the MIT's E-Club. An example of the model's meeting is as follows, each member will deliver a

business proposal, in the form of a speech, from a randomly selected prompt. For example, a participant is given a cup of coffee and delivers a pitch in order to sell his/her cup of coffee to the audience (Entrepreneurs Club, n.d.). The club also hosts a networking event, which connects members to professionals who provide resources in the form of guidance, investment, and future partnerships. This club promotes innovative thinking by encouraging its members to participate in creative activities, such as improvisation exercises and by entering innovation competitions. The purpose of this model is to enhance presentation skills, create networking opportunities, and promote innovative thinking.

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Appendix A: Sponsor Description

Hangzhou is a large sub-provincial city with a population of about 9 million citizens. It is the capital of Zhejiang Province and is the most populous of the sub-provincial cities in that area. Located within this expansive city is Hangzhou Dianzi University (HDU, 杭州电子科技大学). Founded in 1965, HDU is the second public university to be created within the Zhejiang Province. Like many public universities within China, HDU is administered by Ministry of Industry and Information Technology, as well as the local provincial government. Known as the "Cradle of Entrepreneurs," ("Hangzhou Normal University," 2015) the University maintains a heavy entrepreneurial presence in Zhejiang Province.

HDU is putting emphasis on entrepreneurship by creating entrepreneurship education centers, advisory committees, and other student organizations related to innovation and entrepreneurship. They have formed a "Three-in-One" entrepreneurship model which combines and reforms the education models of Ningbo University, Zhejiang Normal University and Zhejiang University of Technology. This model operates from a basic level to an operational level, and an institutional level in order to foster innovative and entrepreneurial thinking (Figure 5).
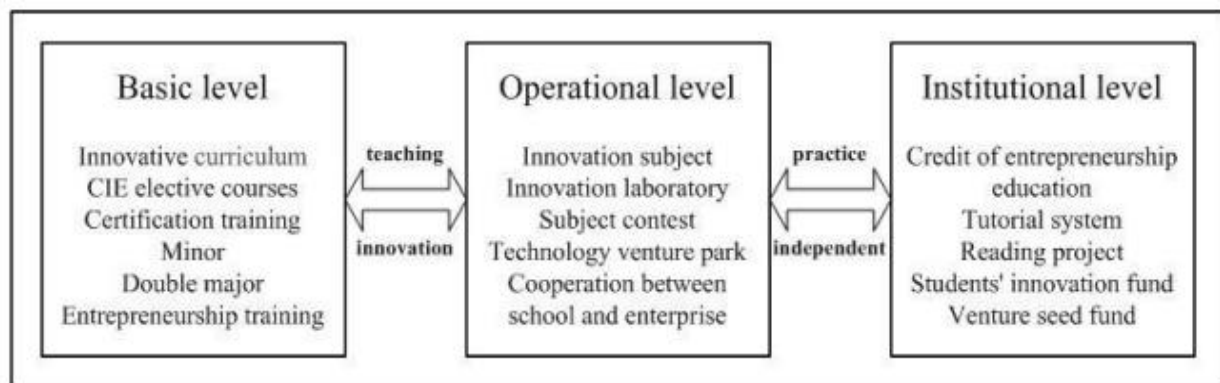
Figure 6: Three-in-One entrepreneurship model

The basic level includes workshops where the students encounter theoretical problems that are linked with other disciplines and current news to help promote interactive teaching and learning for both the student and professor. These courses deal with innovation, creativity and entrepreneurship, and are designed to push the teachers to regularly update their lesson plans, incorporating these themes into the curriculum. This basic level also includes a multitude of design training classes to promote student competitiveness in the job markets, and to improve

autonomous learning. Examples of these training programs like "Start and Improve your business" (SIYB) and "Know about Business" (KAB) are used to help students become aware of and master their entrepreneurship skills.

On the operational level, HDU is working to help the students explore their autonomy and diversity practices. In order for this to happen, there are many activities including labs and academic competitions that the students can participate in to help them in different areas. These activities are meant to promote research, encourage student participation in independent research, spark student imagination, and strengthen school-enterprise cooperation.

On an institutional level, HDU is focused on the quality of the student's education and improvements that can be made in the curriculum. To do this, entrepreneurship class credit will include reading and innovation credits to help expand the student's knowledge. Academic tutors will be available to help students when needed, a reading project will be implemented to help the student's cultural literacy, and there will be a Student Innovation Fund, which will help support these changes.

Similar things have been and are being implemented in other universities in the Zhejiang province of Hangzhou. Ningbo University, Zhejiang Normal University and Zhejiang University of Technology are all adding entrepreneurship education into their curriculums school-wide, and are letting the students participate in contests related to innovation and business planning. Hangzhou is home to "3.4 time as many entrepreneurs as Shanghai," ("HANGZHOU," 2015) and this statistic is continuing to grow steadily.

Appendix B: Interview Questions

1. How would you define entrepreneurship?
2. What characteristics do you think an entrepreneur should embody to be successful?
3. How does the university prepare students to become entrepreneurs?
4. In your opinion, what is the most common problem entrepreneurs have after leaving the university?
5. How do you prepare students for the possibility of failure?
6. Would you say people are more successful when innovating to create something new or improving upon a pre-existing business model to make it their own?
7. Do you believe the enforcement of intellectual property rights are too constricting in the United States?
8. What teaching method(s) do you believe is best for your students?
9. What is your opinion of makerspaces, incubators, and high tech parks?
10. What is a major mistake you see entrepreneurs make?
11. Are there any business leaders that you look up to? Do you incorporate them into your teachings?
12. What is one lesson you want your students to take with them into the future?
13. Which entrepreneurs are poor role models for your students?
14. Have you had a failing business? If you did, how did you work past it?
15. Describe the ideal student you would like before they enter your program?
16. Describe the ideal graduate?
17. Do you stay connected with your graduates?
    a. Would any graduates be interested in interviewing with us?

Appendix C: Focus Group Protocol

1. Are you planning to be entrepreneurs? Why?
2. Who inspires you to be an entrepreneur?
3. What is the most valuable thing you have learned so far in entrepreneurship?
4. Do you currently have any business plans after you graduate?
5. How do you plan to raise capital?
6. How do you plan to hire employees?
7. Do you have any plans to handle competition?
8. What do you expect to get from your university?
9. Are there any businesses that you would like to distance yourself from?
10. Are there any options you are considering other than making your own business?
11. Do you feel more prepared now than you did before entering college?
12. Would you recommend this school to others?
13. What is your opinion of innovation?
14. How do you feel about finding a business model and refining it?
15. Why do you aspire to own your own business?
16. At what point will you call yourself successful?
17. What are you willing to put on the line for success?
18. What qualifications do you have to create and run a business?

Appendix D: HDU Survey

Student Entrepreneurship (大学生创业调查问卷)

1. Are you a student at HDU? [单选题] [**必答**题]

○ Yes

○ No

提示：你是杭电学生吗?

2. What year are you in school? [**多选**题] [**必答**题]

☐ 1st

☐ 2nd

☐ 3rd

☐ 4th

☐ 5th

☐ > 5th

提示：你大几了?

3. What is your major? [**填空**题] [**必答**题]

_____

提示：你什么专业?

4. Are you an entrepreneur? [单选题] [**必答**题]

○ Yes

○ No

○ Unsure

○ Want to be

提示：你正在自主创业么?

5. Which of the following clubs/organizations/activities are you involved in? [**多选**题] [**必答**题]

☐ Future Entrepreneurs Association (未来企业家协会)

☐ Business Alliance (创业联盟)

☐ Enactus (创行)

☐ Other _____

☐ Case Analysis Competition (案例分析大赛)

☐ Chuangqingchun Entrepreneurship Competition ("创青春"全国大学生创业大赛)

☐ "Challenge Cup" National College Student Business Plan Competition
"挑战杯"全国大学生创业计划大赛

提示：你参加了哪些偏商业类的社团或组织?

6. What kind of business would you like to create? (你想要成立什么类型的公司？) [单选题] [必答题]

○ Retail (零售业)
例如: Haircare Products (理发店), Convenience Store (便利店)

○ eCommerce (电子商务)
例如: Online Shopping (淘宝等网购店)

○ Services (服务业)
例如: Taxies(出租车公司), Hotels(酒店) , Consulting(咨询公司)

○ Food/Restaurant (餐饮业)
例如: Coffee Shop (咖啡厅)

提示：你想要成立什么类型的公司?

7. What is the most important thing about being an entrepreneur? [填空题]

_____

提示：你认为作为一名企业家，什么最重要?

8. Do you think it is better to create a new product or improve upon something that is already made? [单选题] [必答题]

○ Create a new product
(设计生产新产品)

○ Improve upon existing product
(商品改良)

提示：设计生产一款全新的产品，改进原有产品、优化原有的产业结构，你更倾向 于哪种创业模式?

9. Are you satisfied with entrepreneurial activities on campus? [单选题]

○ Yes

○ No

○ Maybe _____ *

提示：学校举办的创业相关活动、创办的创业类社团，你对它们感到满意吗？

10. What is the most important thing you have learned from being in an entrepreneurship club? [填空题]

_____

提示：你在创业类社团中学习到了什么创业技能？

11. What entrepreneurship skills have you learned that you would not have learned in class? [填空题]

_____

提示：哪些创业技能是你在课堂之外学习到的？

12. How could entrepreneurial activities be improved on campus? (你认为当如何促进高校的创业氛围？) [填空题]

_____

提示：(i.e. clubs, courses, speakers, etc.) (可以从社团活动，课程安排，座谈会等方面考虑)

13. What entrepreneurship activity has influenced you the most at HDU? [单选题] [必答题]

○ Courses (创业相关课程)

○ Speakers (座谈会)

○ We-Link Space [HD-Park] (众创空间)

○ Business Incubator (创业孵化器)

○ Clubs _____ *

○ Other _____ *

○ None

提示：杭电举办过创业相关活动中，哪一个让你觉得受益匪浅？

Appendix E: WPI Survey

WPI - Student Entrepreneurship

Your participation in this survey is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear on the questionnaires or in any of the project reports or publications. Thank you.

Q1 Are you a Student at WPI?
- ○ Yes (1)
- ○ No (2)

Q2 What is your grade level?
- ○ Freshman (1st) (1)
- ○ Sophomore (2nd) (2)
- ○ Junior (3rd) (3)
- ○ Senior (4th) (4)
- ○ > 4 Years (5)

Q3 What is your field of study?

Q4 Would you consider yourself an entrepreneur?
- ○ Yes (1)
- ○ No (2)
- ○ Aspiring (3)
- ○ Unsure (4)

Q5 Which of the following clubs/organizations are you involved in on campus?
- ❑ Genius Entrepreneurship Club (3)
- ❑ Tech Entrepreneurs (8)
- ❑ CollabLab (9)
- ❑ Rotaract Club, WPI (5)
- ❑ WPI Investing Association (10)
- ❑ Other(s) (7)
- ❑ None (12)

Q6 What "other" club/organization are you involved in?

Q7 Would you like to create a business?
○ Yes (1)
○ No (2)
○ Maybe (3)

Q8 What kind of business would you like to create? (i.e. retail, eCommerce, services, restaurant, etc.)

Q9 Why not?
○ Not interested (1)
○ Not enough time (2)
○ Not enough experience (3)
○ Unsure (4)
○ Other (5)

Q10 What is the most important thing about being an entrepreneur?

Q11 Do you think it is more important to create a new product or improve on something already made? (Disruptive vs. continuous innovation)
○ Create New (Disruptive) (1)
○ Improve Pre-Existing (Continuous) (2)

Q12 How could entrepreneurial activities be improved on campus?

Q13 What entrepreneurship activity has influenced you the most at your university?
○ Courses (1)
○ Speakers (2)
○ Entrepreneurship Competitions (3)
○ Incubator Space (4)
○ Clubs (5)
○ Other (6)
○ None (7)

Q14 Please explain how this activity has influenced you:

Appendix F: Class Observation Sheet

Class Time and Name
> Monday 10/31/16 18:30-20:30, Financial class

Teaching methods
- Could not really tell how often there was interaction
- Lecturing and asking whole class questions
- There was a one-on-one interaction with a student and teacher during lecture
- Primarily uses PowerPoint and small use of chalkboard
- Teacher uses podium built-in microphone and possible class capture

PPT
- Hard to follow when she pointed to certain parts of the text
- Used different colors to indicate sections/heading
- Slides are usually text intensive, animations (drop-down text), distracting/irrelevant graphics ("4-3="), a couple charts scarcely through presentation, little time spent on graphics,
- Percentages to make points
- Went point by point on slide

Teacher Questions: (16)
- Open ended (majority)
- Rhetorical
- Did you know…?
- Is it this…or this? (3)

Student Answers: (4)
- A few students
- One student
- Nonverbal (head nods, grunts ~4)

Classroom Setting
- Warm temperature, unfinished walls, ceiling fans, 2 A/C units, clean floors, 2 sets of lights (little light control), windows with drapes, other windows to view hallway
- Room has an echo effect, two sets of speakers, annoying beeping sound, class bell, moped alarms, plate above teacher's head (probably for sound amplification)
- Camera in the center, countdown clock with camera in the front, and motion sensors by the doors.
- 2 Person desk, foldable seats, small book carrier below the top of the desk, not built for people taller than 6'

Teacher Mannerisms
- Generally happy and interested in the topic
- Small hand gestures and generally focused on looking at the class
- Unfazed by the distracted students
- Seemed comfortable and confident

Students
- 23 Students in casual attire and no laptops out
- At least 2/3 wear glasses, but glasses wearers typically sat further back.
- Sleeping (~2)
- Headphones (~2)
- During the quiz, there was low talking and cell phone use
- At least 8 students had used their cellphone
- Little note taking, if at all
- Pictures taken of presentation and board
- Class couple, few distracted by our presence,
- Looking through textbooks for another class (~1)
- Brought food/drink (~8)
- Bathroom (1)

Appendix G: First Interview with HDU Management

1. (Mr. Qian) entrepreneurship is a relationship between technology and people
2. (All) Challenging, adventurous, innovative, do not fear failure, and ability to manage
3. (All) 1. Host competition then provide winners with resources. 2 steps for producing companies at HDU. Step 1 is to give resources to help develop the idea and step 2 is help the company become independent.
   a. (Maker) 14 projects in step 1. In step 1 the quality of the projects is investigated. The next part is to present the project in front of investors.
4. (Mostly Wang) 5 problems hard for one person to start a company and finding the right partners. It is too expensive to start a business or find a location. Students have trouble following laws and regulations. Students do not know how to appeal their business. Their ideas may get stolen.
5. (Dean and Mr. Qian) a company can be successful by doing either one.
6. (Everything changes meeting is explained as a meeting to organize a schedule for upcoming weeks)

Appendix H: Second Interview with HDU Management

Transcript compiled by HDU Volunteer Luvian

DEFINITION OF ENTREPRENEURSHIP

- Mr. Qian：Be innovative, adventurous and not afraid of failure
- Stanly: Never be defeated (It is a success if one doesn't kill himself after a bankrupt), be perseverant, have a goal, and revise it when necessary
- Mr. Wang: Be a good entrepreneur and manager, establish a cohesive team, be thankful and willing to take one's social responsibility

EXAMPLES OF SUCCESSFUL ENTREPRENEURS

- Jack Ma: He is the Founder of Ali-Baba, who was once an English teacher in HDU and failed several times before creating his business empire, China's first and biggest e-commerce company, hugely changing the lifestyle of us.
- Zhao Hongyi (graduate): He is CEO of Uni-Ubi, a company that develops and produces smart robots and Face recognition technology, and has won ten thousand million yuan as financial capital
- Sun Haitao (graduate): He is CEO of KE'en Network Technology Co., Ltd, who donated 10,000 yuan to HDU last month. He established several companies but failed once, including EDUSHI (providing electronic maps), u51 (credit card). The first version of EDUSHI could not earn him any money. Recently he won one hundred million Yuan as financial capital.
- Du Yuan (current student): He established a local portal of his hometown as a middle student, and has been operating WeChat official account KOUDAIHANGDIAN and KODAIGAOXIAO for three years. He established his own company, Zhejiang Zacong Network Technology Co., Ltd.
- Jiang Wei (current student): She and her team developed a system of automatic washing machine used in every dormitory in HDU
- Wangyuan: Her program YIMIYUNYIN won the first place of Provincial Entrepreneurship and Innovation Competition. YIMIYUNYIN is mainly about file printing and share and got its help in HD-Park.

Appendix I: Focus Group with HDU Students

Date: October 31, 2016

Attendance: 3 students

#1, 2, 3, 4, 11, 16 (Appendix C: Focus Group Protocol)

Question #1

- Open a workout chain. Street workout is his dream. Gym for the people
- Plan, not a specific start. He has an idea but hasn't started yet
- Interior designer. In class

Question #2

- Lots of people misunderstand how to work out. Bad eating habits. Wants to change those bad habits
- He likes being the leader. Wants to have his own business. Make an impact
- No good Chinese decoration in Hangzhou right now. Her childhood dream to improve that by looking at Japanese design and learn from it

Question #3

- Passionate about it. (Knew right away)
- Partnership & teamwork. Getting the right partner. Perseverance
- Teamwork & passion

Question #4

- More specific purpose, direction
- University helps him want to become entrepreneurship tells him what direction to go
- From being in college, helped her become more specific (same reason as other 2)

Question #11

- Both mental and spirit. Healthy economy
- Wants to satisfy him and family in both mental and material (is the 1st step he thinks)
- Be independent. Do what she wants. Builds self-esteem.

Body language overall:

- majority is comfortable
- helped each other
- leaning/standing and then sitting

Appendix J: Focus Group with ZJU Students

ZHEJIANG UNIVERSITY INTERVIEW

Q&A (# 3, 4, 5, 6, 7, 8, 10, 11, 13, 14) (Appendix C: Focus Group Protocol)

Each bullet represents a person

3. Who inspires you to be an entrepreneur?

- Meeting people with the same goals as me, people who want to start their own businesses.
- My family, who supports me.
- I can work together with my friends.
- Because we can kill time, do something meaningful and interesting and enrich ourselves. It also provides better choices for products. And manual design conforms with our majors.
- I am interested in it and actually I do not know what kind of career I would like.
- Yes, for money, a better life, and my original dream.
- I'm unsuited for my current major. I do not want a "stable" life. I like challenge and different unique fresh things.
- Life.
- Mainly from my family. Because my family is engaged in real estate. So I am doing decoration because it came to my head.
- Because it is my long-time hobby. I also get some achievements in doing pioneering work.

4. What is the most valuable thing you have learned so far in entrepreneurship?

- Without the class, I tried to start my business on my own, but the class gave me more professional methods, which was valuable.
- After taking the class, open-minded teachers and students inspired me to start my own business.
- Before the class, I only had an idea about starting a business, now I know the means to making it happen and making my dream come true.
- About intellectual property experience.
- Perseverance.
- How to make ideas come true.
- The world I going to face with is much wider and wonderful, or maybe more difficult to find my fay than I can imagine.
- Persistence.
- I have many experiences. I know how hard it is to start a business.

5. Do you currently have any business plans after you graduate?
- Her business is handmade decoration. Want to expand and sell to different campus cities.
- She wants her brand to be more professional (the skin care products). Wants to bring out a new product each month.
- Grow organic plants and export them abroad.
- Our goal is to promote in the country.
- No.
- Goals.
- Clear entrepreneurial goals.
- It depends on the quantity and quality of the movies we made.
- Yes, I have. Concentrate on decoration.
- Yes.
- Clear entrepreneurial goals.
- Found a "BSD Doll" atelier (working area/personal company). Made "BSD Doll" market stable in 3 years.

6. How do you plan to raise capital?
- Used her pocket money to start her business, then asked investors. Now wants to use her own money along with her clients because it is easier to control.
- Family support.
- Our capital account for the most percentage
- Venture capital.
- Company helps us.
- Accumulating my initial capital, including my own deposit and the venture fund.
- To apply for a venture fund for college students and manage to get the support of the government.
- Investment.
- Mainly from my family. But I have to rely on my family, so I'm looking for investors.
- Made money from my own work. My family also supports me.

7. How do you plan to hire employees?
- 2 rules: Cannot take your reality relative to your company (no brother or sister or anything in your personal life to affect your work life). And employees cannot fall in love.
- Will ask customers to be her employee. (cosmetic girl). She has a steady flow of customer and they are knowledgeable and like the product.
- Now it is still at the register, we haven't employ any staff.
- Part time employees, employees selling. We also award someone do more work and punish someone do few work by reducing their wages.

- No rules. We just have the same interests.
- Colleagues with the same goal and dream, and relatives, schoolmates and friends will not be involved to escape some unnecessary problems. What's more, a workplace romance is not allowed
- No relatives. Do not fall in love with employees.
- All is needed except salesman.
- First is to have true skill and genuine knowledge. Second, you cannot ask your relatives to take part in your company decisions.
- To have professional knowledge.

8. Do you have any plans to handle competition?
- N/A

10. Are there any businesses that you would like to distance yourself from?
- Comic book industry. It's her major and she hates it.
- Computer programming- too difficult and don't want to sit all day long.
- Game and Fashion.
- To find the related and complementary business with us.
- 2D animator.
- Competing businesses.
- I don't want to take a job like civil servants. I believe that's boring.
- Designer. It seems that I will be a designer until it makes me crazy.
- Graphic artist designer. Because it was my original major. I don't like it much because it's too difficult.

11. Are there any options you are considering other than making your own business?
- People connecting is more important than starting business
- Graduating successfully
- Improve new industrial
- Try all possibilities
- Programmer
- Health

13. Would you recommend this school to other?
- All guys recommend for media area of study. Has a very strong program.
- Yes
- Yes, the field is very hard
- Yes, I will recommend those who have the same major with me.

14. What is your opinion on innovation?
- Innovation is important. Need money to push you to start a business.
- Starting a business must have some connection or do some research on the previous /past businesses first.
- 2 important things: demand of the people, improving the business (do better than others).
- A space suited for working. I need time and steady team to create new things.
- Focus, new discovery and attitudes.
- Do not refuse innovative and new things.
- Innovation, capital, technologies including new ones and proven ones.
- To be a good and honest person.
- Innovation is creating new things. Using a traditional style combined with innovation is not really called innovation.
- Technology fund, brainstorm.

Appendix K: First Interview at HD-Park

Members: 50

Competition: (open to all students) given a problem then show design with a presentation and companies can buy ideas.

A professor and a student?

- Park belongs to school and run the park

- professor and leaders in companies

- Students are going to start business

- Café in 1st floor

- Helps student business owners solve their problems

- Far away

- Poor communication between teams

- No funding, just the space

- HDU does not pay attention to park, empty offices, decline in use from 3 years ago

3-5 Entrepreneurship Clubs

HD-Park

- 60 members

- Cafe is run by them

- Alumni/professors come to speak

- Don't need any help

- More important people

- Agent between the company and the students

Appendix L: Second Interview at HD-Park

Second Meeting – December 1st, 2016

Activities:

- The Alumni Association
- Experience sharing

Competitions:

- Entrepreneurship Competition
  - 100 students
- Challenge Cup
  - 400 students
- Hello World
  - 300 students
- Internet Plus
  - 200 students
- Incite all of the graduate students in Hangzhou
  - 14 colleges take part
- HDU in about 100 projects

Speakers:

- Important people come to the competitions to speak

Three Problems:

- Government restrictions
- Motivated by the government
- "Lack of skills, money, resources"

3 Entrepreneurship Clubs:

- Each has 40-50
- IT
- Train students
- Guidance for students

Appendix M: Business Alliance Conference

Lectures bi-weekly at HEDA training camp

HDU Entrepreneurship Union Meeting:

Collaborate with the company Arcturus

Faculty involvement: NONE

- 1 month later there will be an HDU event for 600 students from Hangzhou universities
- Zhejiang University partnership
- 168 clubs
- 54 people present including 11 club heads, 1 guest speaker, 1 host, and 3 photographers
- From HDU about half of people who signed up went
- 3 hours of lecture with 1 hour of questioning

Guest Speaker:

- Presenting style overall good. He was comfortable, small gestures, slideshow, clicker, laser
- Alumni responsibilities, senior responsibilities to freshmen
- 4 steps to creating an entrepreneurship atmosphere
    - o 1. Classes
    - o 2. Club, activity, competition
    - o 3. Communication between students
    - o 4. International aspect – going abroad
- Characteristics of a good entrepreneur
    - o Perseverance
    - o Solving problems – to look at demand and supply
    - o Having a good team – Investors, product has to be sufficient
    - o Need to be a good manager
- A club activity should…
    - o Have members
    - o Should impact the community & school
    - o The experiences members should mentor and help the freshman

- "An Entrepreneur should use his/her ideas and understanding of the world and utilize commercial rules to convince people to buy their product as the solution to their problem"
- "Golden Age of society"
- West Lake Makerspace (3D printer)
- How to find people with ability, be more formal as students
- **Broaden student's views, student space is too isolated,**
- Club is the place to practice and improve abilities
- **Imitation (inherent) vs innovation**
- Instill professional knowledge into younger students
- Open platform for companies to universities
- Online tools, resources, money
- Starting a business
    - New thoughts
    - Collect thoughts
    - Business model (forming)
- Contact unions and companies
- **Students need active thinking**
- Collect resources such as partnerships, encourage teamwork
- Some clubs are limited by faculty involvement
- Students should have their own project
    - Broad view of society
    - Brainstorming
    - Innovation
- Persevere, do not let the outside world control you
- **Finance, produce, and organize**
- Find likeminded individuals and improve project
- 40-minute presentation from Zhejiang University industry major alumni

White board guy, 1993 HDU alumni
- 20-minute challenge and standup if you said this common answer

- Communication helps solve problems, make friends, and make things better

- WeChat mass meeting/questions, passive studying vs active studying

- Club leaders vs club dictators

- Better communication network between clubs

- Self-help is the only way to improve

- Source of problems

    o What is it?

    o Describe it. Who can help? If you find 1 then you can find a team.

    o Solve it. Use communications and report.

- 30-minute presentation

Mike Zhou

- 1 year old club

- 4 years not enough for entrepreneurship school

- HDU lacks communication, especially between universities

- Club rules

Entrepreneurship union cannot help students with:

- Finding a partner

- Investor

- Resources

Their purpose is to learn about entrepreneurship and show others what you learned. They would rather host several small intimate events like this one and have a bigger effect on people than have a huge event with a big impact that may not be helpful to individuals.

- They want to collaborate with other universities to get that depth

- Motivate, work together, and make the club like a second home

- Students are too shy

- Too much bureaucracy

- Cooperation not leadership brings happiness

- **Leaders should encourage people not force task upon people**

- Internet causes students to be more passive

- As ability goes up fear goes down

- Letters to each member weekly basis plan... Builds relationships

- Do not know how to choose a club or find good students for clubs

- Listen to winners

General

- Modern room, 1 projector, good lighting, and clean

Improvements and/ or problems they are facing now

- Problem 1: Clubs are not a part of a social community. This hinders them from being good entre.
    - Solution 1: Host activities that include the whole university, not just entrepreneurship students.
        - Ex: ECE society has BBQ's cookouts at the beg and end of the year
- Problem 2: Clubs only post their news on their private pages so no one else knows about it
    - Solution 2: More advertising- WeChat, QQ, fliers, pamphlets. Back to the idea of a BBQ or cookout, Media (pictures)
    - Solution 2: 2 accounts? Make one account public and keep the private one for other uses.
- Problem 3: Students don't communicate with outside community- surrounding city or other universities.
    - Solution 3:
- Problem 4: Students/new members have no way to contact anyone to get information about the club or club leaders
    - Solution 4: Database, online summary or club page with contact information (WeChat, Email, Phone number) of club heads and leader or other important people to contact

Appendix N: Interview with Tech-E

Jon McIntyre (Former Project Manager)

Tech-E

- Presentations come from alumni support (Jim Baum)
    - Business prompts
    - Team Building/Picking teams
    - Identifying what people have to offer
    - How to Startup a business
    - Pricing
- Workshops
    - Collaboration
    - Pricing
    - Marketing
    - Finding clients
    - Legality
- Plans to combine 30-minute presentation with 60minute workshop
- Holds about 2-3 events a term
- Startup Career fair (5 startups came for CS and RBE students)
    - Help students get employed and learn about startups
    - Primary source of income for the club
    - Income is for pitch contest and guest speakers
- Looks up to **Allan Mullay**
    - Big change CEO
    - Led Boeing through 9/11 crisis
    - Led Ford through the 2007 recession
- Tech-E tries to be the connector of professional clubs such as Toastmasters
- The club hopes to hold its first pitch contest this year

Appendix O: Description of Entrepreneurship Clubs in China

HDU Challenge Cup

The HDU Challenge Cup is an annual competition hosted in HDU's Science and Technology Center. The competition consists of about 400 students, competing for three prizes. The objective of the competition is to create the most innovative idea surrounding technology development in China. The primary majors present from HDU are electrical engineering, accounting, and computer science. Interviews show that English, law, and life science majors also participate, which cultivates diverse and creative ideas. According to our translators, participation in the Challenge Cup counts for two credits of "innovation." The Challenge Cup competition is an opportunity to complete an innovation credit, thereby entices students to participate.

HDU Hello World

HDU's Hello World competition is a programming-based competition, held in the university's computer science building. The event is an opportunity for students interested in computer science to work in teams to complete a challenge. Teams must create an idea and design a process that accomplishes the goal of this idea. There are prizes for the teams that create noteworthy products.

HDU "Entrepreneurship Competition"

The HDU Entrepreneurship Competition is a yearly competition hosted by the Business Alliance. On average 70 teams enter, with an average of 3-5 students per team. There are three phases of the competition, a preliminary, intermediate, and final stage. There are prizes of 1,000 RMB ($161) for the preliminary round and 2,000 RMB ($322) for the intermediate round. 12 teams compete in the final round, where professionals identify the best business model and reward the winning team with 3,000 RMB ($483). This competition connects students with successful entrepreneurs to help them polish their business models, products, and services.

Internet+

China's Internet+ is a 2-year-old national competition that approximately 200 HDU students participate in annually. The competition is broken into a series of categories, such as industry, eCommerce, public service, and retail. Each group registers as a startup, "creative", or

"growth" organization. Similar to the HDU Hello World event, Internet+ is a computer science competition, involving students from a variety of universities who have an interest in programming. In the final round of the competition 600 teams compete against one another to receive financial backing.

Appendix P: Description of Competitions in the United States

MIT 100K Competition

As stated in <u>Section 2: Background</u>, 100K competitions are world-renowned. Universities such as Stanford, MIT, and Tufts all host 100K events. MIT's, however, is the most well-known and is attended by participants from universities worldwide. The MIT 100K competition requires at least one of the participants of the team to be a student at MIT. This competition has been held annually since 1990. The competition is separated into three different events, beginning with an Elevator Pitch Contest, followed by the prototype (Accelerate) Contest, and the Business Plan Contest. The criterions for this competition are uniqueness, management ability, longevity, and social impact.

UMass Innovation Challenge

The UMass Innovation Challenge awards up to $65,000 in prizes. The teams are comprised of students from the university. Each team presents their pitch to a board of professionals. Similar to the ABC show Sharktank, the judges select the winning teams according the fulfillment of the competition's criteria ("ABC," 2016). Winners of the competition receive financial backing and assistance towards their businesses.

Appendix Q: Entrepreneurial Universities in the United States

Table 2: Entrepreneurial universities in the United States

University	# of Undergrad	# of Clubs	# of Entr. Clubs
Babson College	2,141	150	6
Baylor University	14,189	330	90
Brigham Young University	30,221	250	7
Massachusetts Institute of Technology	4,527	450	16
Miami University	8,544	400	15
Northeastern University	17,990	340	15
Syracuse University	15,196	300	17
Temple University	28,609	200	7
University of Dayton	7,896	200	13
University of Houston	34,716	400	9
University of Iowa	28,494	500	4
University of Maryland	27,443	800	11
University of Massachusetts Amherst	22,000	200	17
University of Michigan - Ann Arbor	28,312	1,300	37
University of North Carolina at Chapel Hill	18,415	842	8
University of Oklahoma	22,132	400	9
University of Utah	23,794	400	8
University of Washington	36,840	800	10
Washington University	7,504	450	15
Worcester Polytechnic Institute	4,299	200	8