AC 2011-934: IPHONE ENTREPRENEURSHIP CLASS: BRIDGING THE GAP BETWEEN ENGINEERING AND BUSINESS TO CREATE AN ENTREPRENEURIAL CULTURE

Gerald Nelson, Mississippi State University

Gerald Nelson is an Industrial Engineering graduate of Mississippi State University who later went on to receive his MBA. Nelson’s career includes former positions as Plant Manager, Trinity Industries; President and Chief Operating Officer of the Wear Resistance Group of Thermadyne Industries, Inc.; Executive Vice President of Operations, Viasystems Group, Inc.; and Chief Operating Officer of Deka Medical, Inc. In 2006, Nelson assumed responsibility as Director for the Thad Cochran Endowment for Entrepreneurship, which fosters funds and nurtures new business entities involving MSU technology, with student and faculty involvement. Nelson is also the director of Jack Hatcher Engineering Entrepreneurship Program which provides an entrepreneurship certificate to engineering students. Both programs fit hand and glove with other efforts at MSU for the creation of a culture of entrepreneurship.

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Dr. Robert S. Moore (PhD, University of Connecticut) is a Professor of Marketing at Mississippi State University. He is a MSU Grisham Master Teacher Award recipient and has been recognized as the "Paul B. Murphy" Notable Scholar (2008 -2010) & the "Richard C. Adkerson” Notable Scholar (2009-2010) for the College of Business. Dr. Moore was also recently honored as the “John and Ann Hairston” MSU StatePride Outstanding Faculty Honoree (2010).


Allison Pearson, Mississippi State University

Dr. Pearson is the Giles Distinguished Professor of Management in the College of Business at Mississippi State University. She serves on the advisory board of the MSU Entrepreneurship Center, providing support to high-tech, engineering-driven, entrepreneurial start-up companies. Dr. Pearson teaches courses in management and entrepreneurship.

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Discovering ways to engineer innovation, creativity, and entrepreneurship in a university setting is a constant focus of many entrepreneurial-focused researchers. The Entrepreneurship Center at Mississippi State University (MSU) seeks to create an entrepreneurial ecosystem by creating an atmosphere of entrepreneurial education and research, providing support for start-up companies, and promoting entrepreneurship among students and faculty members from varying disciplines. In order to effectively create an entrepreneurial culture, faculty members are a key component in driving change in the current culture of the University. The Entrepreneurship Center, directed by the director of the Jack Hatcher Engineering Entrepreneurship Certificate Program at MSU, partnered with four faculty members from the College of Business, in order to lead a change among other faculty and students by adding an academic curriculum component to enhance the entrepreneurial ecosystem.

The new curriculum is a Field Study in Entrepreneurship course, which provides students with the opportunity to combine innovation with entrepreneurship by developing a product and selling it, not just in the United States but also in many countries worldwide. The Field Study in Entrepreneurship Course, all known as the iPhone Entrepreneurship Course, is designed for students to learn, implement, and demonstrate entrepreneurship, innovation, and creativity by developing iPhone, iPad, and iPod touch applications and marketing the applications through the Apple App Store. The objectives for the course require that students learn, implement, & demonstrate the following:

- General entrepreneurship
- Innovation & creativity
- Product team formation & governance issues
- Product team management & scheduling
- Market analysis, including identifying a target market demographics, psychographics, etc.
- Product design, testing, & focus groups
- Branding & connecting with target customers
- Legal and ethical issues of entrepreneurship, including the Apple Developer Agreement
- Dynamic product pitches
- Capital acquisition and ownership issues

The course is team-taught by five faculty members at the University, including Gerald Nelson, director of the MSU Entrepreneurship Center; Dr. Rodney Pearson, Professor and Head of Management & Information Systems; Dr. Allison Pearson, Professor of Management; Dr. Melissa Moore, Professor of Marketing; and Dr. Robert Moore, Professor of Marketing. The diverse group of teachers allow for the class to cross disciplines providing hands-on experience using various skills including business, marketing, communication, technical, organizational, and managerial skills.

This unique course provides the ability to draw students from all across campus in various majors. For example, the founding class included the following majors: Business Administration, Computer Science, Information Systems, Graphic Design, and Engineering (biological,
chemical, electrical, and industrial). Students select their team members, create their governance structure, assess the market, design & create an application, conduct a focus group, market the application, prepare written business plan components, present oral team progress reports, & finalize their application for submission for review by Apple. Throughout the course, students partner their skill-sets together in order to effectively develop and market an app. It is critical for each team to have a group of students with diverse skill sets. For example, each team is in need of the following skills:

- Technical expertise: an Objective C Programmer to write code for the app;
- Marketing expertise: an individual with understanding of consumer needs and wants, the ability to conduct market analysis and focus groups, the ability to guide product design - including visual design, branding, and so forth;
- Business expertise: a student able to identify and anticipate market trends based on sales growth and industry patterns, conduct sales projections, provide project schedule oversight and coordination of team activities; and
- Communication expertise: an individual with knowledge of public relations, graphic design, and the ability to prepare and deliver quality presentations.

The student teams have realized that the success of their App depends upon the quality of each team member in these areas. One student stated, “I enjoyed working with other individuals who had backgrounds different than mine. This allowed us to split the tasks based on each person’s strengths. As a group, we discussed each task to determine who would be best suited to take on that portion of our project. That person would then take the lead and the rest of the group would help out wherever and whenever necessary. I believe it aided in the success of our project.” If a team is lacking in any of the needed skills, they are allowed to seek out assistance from students outside of the course. For example, if a team is in need of an Objective C Programmer, they can find a student willing to help them for free in exchange for some other type of assistance the student may need.

The students are assessed by two exams throughout the semester, homework, and a final presentation at the end of the semester. The final presentation is known as the “Product Preview Showcase and Demonstration.” Held in a 300-seat theatre-style auditorium, the student teams present their completed Apps to a live audience. The Showcase acts as their “product premier and public launch.”

Other universities around the nation are offering similar classes in iPhone App development; however, their focus is more on the development of a good App not the development of an App for a business with an entrepreneurial focus. The Field Study in Entrepreneurship course is using iPhone App development as a tool to teach students entrepreneurship. The focus of the course is not programming, although MSU does offer two other iPhone App programming courses. The focus of the course is to provide students with the opportunity to combine innovation with entrepreneurship. This program is designed to be an introduction to entrepreneurship, therefore, it does not include all of the aspects of a product based business rather only those aspects that are applicable to an App-based business. One of the attributes of this class over other teaching
methodologies is that the student has the opportunity to create an actual business. Revenue from the App provides instant feedback to the students. The students also learn how effective their marketing methods are almost instantaneously. Thus the competition is not about who can create the best App, but rather who can create and launch the best business in just one semester.

iKnowMe, an App created in the fall 2009 class, is marketed towards teenagers and is a one-stop location where teens can find several “what kind of person am I?” quizzes. The creators of iKnowMe used unique marketing strategies such as a contest where users submit entries showing as many iKnowMe users in one photo as possible. The winners of the contest received iKnowMe t-shirts as their prize. Another innovative App, iRoster, supplied users with the names, jersey numbers, positions, and basic information about college basketball players. Other Apps from the fall 2009 semester include: iFalldown2, a fast paced maze game; iPlan2Study, a study aid for college students to organize their notes, lecture videos, etc.; and Equater, a math skill-building game.

The course, offered each fall, lays the groundwork for the students to compete in the University’s Innovation Challenge held each spring semester. The Innovation Challenge is open to University students, faculty, and staff members. Each competitor may submit up to one free app and up to one paid app to the standard Apple App Store review process. Upon approval by Apple, apps will be available to customers around the world via the standard App Store process. Download data and sales data for each app are recorded using itunesconnect, the App Store’s standard reporting system. At the end of the spring semester, six prizes are awarded in two categories: sales dollars and downloads. The three apps with the greatest sales dollar revenues through the App Store will win $2500, $1500, and $500. The three apps with the greatest number of original downloads through the App Store will win $2500, $1500, and $500. In addition to these six prizes, a $1000 Bulldogs’ Choice award is presented to the most innovative app, as determined by user votes via the Innovation Challenge web site.

The course has offered an exciting, innovative, learning experience for all those involved. Students have not been able to say enough about the value the course has to offer them. As one student put it, “I am amazed that this class has allowed me to share something that I helped create with more than 2,200 people in over 41 countries around the globe in the first two weeks it was in the store. That is just absolutely incredible.” Another student stated, “Using Apps as a
business development model in class is a great idea because there is such a wide range of people to design and market toward. The iTunes App Store is a portal to the world, and the possibilities are endless.”\(^1\) The course has also introduced many students to an entrepreneurial mindset. Three students from the fall 2009 course had plans to start their careers in the corporate world, but quickly changed their minds after taking the Field Study in Entrepreneurship course stating, “This class changed my life.”\(^2\) The course has received media attention from local TV & newspapers, the university paper, the college’s alumni magazine, and one well-known educational magazine. The benefit to students and the college for this type of positive exposure is priceless.

All students of the class have the opportunity to evaluate the course at the end of the semester. Thus far, the evaluations have been extremely good. The comments from students about the course have been tremendously complementary of the course and teachers:

- “The class was one of the most beneficial I have ever taken in college. It opened my eyes to so many things. I strongly recommend the course as well as the professors to anyone interested in being successful in any field.”
- “This was an extremely enjoyable class. The process of creating, marketing, and selling a product were explained in the most advantageous way using hands-on application.”
- “Please teach this class again. It taught me about working and trusting strangers with ideas. It also gave me an avenue to think way outside the box. It would be a shame if other students did not get the opportunity to experience this class.”

However, not all feedback from the students was positive. Some students complained that the course was “extremely time consuming” and “stressful.” Although all students did not enjoy the course as much as some, they all rated the class highly and walked away learning a great deal about business. As one student stated, “The course was not quite my thing, but it was a great learning experience.”

In conclusion, the course capitalizes on the evolving market place and makes learning interactive and tangible. It is a class that students look forward to and one that is highly anticipated each fall.\(^3\) A regional carrier, Cellular South, has recently engaged with the program and has agreed to fund a $10,000 competition for Google Andriod Apps in the coming school year. Thus, this course has not only engaged students but also corporate partners that the Entrepreneurship Center hopes will fund a multi-year program in the years to come. The course is the first in the nation and has enabled students from all different majors to receive hands-on experience in creating innovative products and launching them all over the world. In just two semesters of the course being taught, it has made a significant impact on the entrepreneurial culture among the students in both the college of business and engineering.

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