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Adapting e-business to the undergraduate entrepreneurship curriculum in the new economy: Development of an e-business course with a focus on field-based projects

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ABSTRACT

Organization creation separates entrepreneurship from other disciplines. In today's rapidly growing net economy and ever-changing entrepreneurial environment, discovering the behaviors of individuals who create new organizations, and observing the behaviors or organizational personnel who exploit new market opportunities within existing organizations are the foci of the behavioral school of entrepreneurship. Business schools that adapt curricula to examine the kinds of activities entrepreneurs perform, the information they process, with whom they must work, where, and how frequently may help describe the emerging needs of the current dynamic new economy. The following paper describes the development of an e-business entrepreneurship course with field-based projects as the core outcome of the curriculum. The paper describes the background leading to the course, the student e-commerce/e-business projects, reflections and reactions of the business sector, and initial student evaluations.

INTRODUCTION

"It seems like only yesterday that we were wondering if there was such a thing as a new economy. Now we wonder what remains of the old one." - Michael Warshaw, Senior Editor of Inc. Magazine (Warshaw, 2000). To merely state that the business environment is in a state of flux would be an understatement. We are witnessing a confluence of major environmental factors influencing business. Notable are the greater availability of real-time information for decision-making, a much faster pace of change than experienced in the past, tremendous global entrepreneurship opportunities, and intensive competition both domestic and foreign. This creates the challenge of addressing a greater need for information/knowledge management skills, and cross-functional interactions couched in knowledge workers, software developers and consumers in a wider variety of cultural contexts.

In the preface to the popular *Blown to Bit*, Evans and Wurster (2000) indicate that the explosion of the digital world (e-business) presents real challenges to established but well-run firms. If the digital economy poses a significant danger to "brick-and-mortar" established businesses, how much of the change can be contributed to by entrepreneurial behavior? At present there is very little research on the digital's economy's impact on the field of entrepreneurship. Conversely, there is little research on what role the traditional entrepreneur will play in the development of the digital economy. A recent literature search on the topics of "entrepreneurship," and "e-commerce" turned up only sixteen academic articles. Most of these articles dealt with management information systems topics. However, there are 4,000 articles in popular magazines during the same period of time.

It is well known that entrepreneurial behavior is more likely to emerge or intensify in unstable socio-economic environments when it is crucial for organizations to adapt to rapid changes in that environment (Carsrud, Brockhaus, & Shaver, 1994; Carsrud & Johnson, 1989). Schumpeter (1934) is credited with attributing this entrepreneurial behavior to the process of change. He described the entrepreneur as an agent of "creative destruction." According to Schumpeter, the entrepreneur brought about this creative destructive through (1) the development of new products and/or new ways to produce an existing product, (2) the identification of new marketing and new suppliers, and (3) the creation of new organization. Later researchers have focused on entrepreneurial behavior as the exploration of opportunities (e.g., Cooper, Dunkelberg, & Woo, 1986; Carsrud, Olm & Eddy, 1986; Venkataraman, 1997). However, Kirzner (1982) has stressed that the primary function of an entrepreneur is the "identification of market opportunities." This parallels Drucker's (1998) writing within which he describes the four areas of innovative opportunities that exist within a company or industry, including unexpected occurrences, incongruities, process needs, and industry and market changes. The rise of the World Wide Web and electronic commerce has created one of the most challenging environments for product and service development required to meet needs and demands that entrepreneurs strive for "relentless innovation."

CHANGES IN THE BUSINESS SCHOOL CURRICULUM

In changing times, business school educators must innovate to offer an education that will provide students with the knowledge and skills for a complex world. To meet the current e-commerce and e-business challenge, faculty will need to shape innovative entrepreneurship curricula and use teaching methods that respond to the needs of students, entry skill demands of employers, and the academic institutions: (Lamont & Friedman, 1997, p. 31). Business schools are overhauling their curricula to include new course work, nonacademic activities, executive MBA programs with e-commerce certificates, and short course formats in response to the high-reward promise of the Net businesses. Ten graduate programs were recently cited as innovators in e-commerce to course-work emphasis or concentrations. Some schools prefer not to offer students specialities in e-business, but have expanded and centralized their e-business-related courses with independent studies and have strengthened their ties to the high-tech and venture communities.

The changing business environments are forcing business schools to adapt to curricula for greater reliance for new realities of doing business in the next millennium and more responsiveness to business needs. It is no longer just university administrators that influence strategic curriculum changes; professors and instructors, business advisory boards, accreditation associations, and others have also come to play a vital role in setting the direction of business schools. This broadened consistency corresponds to Slater and Narver's (1990) articulation of a market-orientation, which involves anticipating customer's current and future, expressed and latent needs. Market-orientated organizations "scan the market more broadly, have a longer term focus, and are more likely to be innovative" (Slater & Narver, 1998, p. 1003). Market-oriented firms require input for both those within the immediate academic community and others outside the environment who can shed light on future needs of business school graduates (Siegel, 1999).

This market-oriented, as opposed to a customer-led, perspective is being advocated for curriculum reengineering of business programs to avoid problems associated with the narrow perspective of the students as the primary "customers." Bailey and Dangerfield (2000) indicate that a commitment to a market-oriented perspective is more likely to create long-term, superior customer values than the customer-led philosophy. Likewise, in April 1991 AACSB (the International Association for Management Education) adopted million-linked accreditation standards that have stimulated much interests, discussion, and research (Yunker, 1998). Taken together, these forces have fostered greater relevancy of business curricula, thus fortifying the bridge between the academic and business communities leading to a number of new approaches.

IMPORTANCE OF CRITICAL REASONING SKILL DEVELOPMENT IN E-BUSINESS

One of the main goals of business education in this emerging economy is to develop the ability of students to solve e-business problems. The development of critical reasoning is central to this goal. "Business people need to analyze a problem, provide a diagnosis, come up with creative solutions, evaluate them, and implement them. Without the skill to do this, I don't see how anyone can really operate successfully for a long time in the business world" (Jensen, 1966, p. 15). Critical thinking skills are important for job performance and career mobility" (McEwen, 1994) and are cultural behaviors that are rewarded in the best companies (Peak, 1997).

Bloom's taxonomy (Bloom, 1956) is often used as the foundation of discussion of critical thinking skills. According to this taxonomy, cognitive learning is demonstrated by knowledge recall and the intellectual skills; comprehensive information, organizing ideas, analyzing and synthesizing data, applying knowledge, choosing among alternatives in problem-solving and evaluating the ideas of actions. Higher-order thinking skills, analysis, synthesis, and evaluation are essential for business school graduates. Without extending themselves beyond the information gathering stage to a consideration of what that information means, how it can be applied and the consequences of application, business school graduates are ill prepared to successfully function in the business world. Business schools have developed a number of creative responses to the need for developing these skills with very favorable results for all involved. They often involve

field experience like student consulting projects, entrepreneurship research projects, and other projects resulting from business/industry partnership.

The first stage in developing a business, whether off line or online, is the specification of the business requirements as expressed in a business plan (Brawning, 1999). Fundamentally, the unique contribution of the entrepreneurship discipline within the business curriculum conveys the importance of identifying a customer needs/benefits and developing a product offering that creates greater added value for the consumer than competitive offerings at a profit by satisfying the needs of the consumers in the long-term. By their nature, entrepreneurship courses are ideal for developing students' critical reasoning skills.

In light of the new approaches for education necessitated by the dramatic technological changes in the business environment, a stand-alone entrepreneurship course dealing specifically with e-business opportunity analysis in the emerging net economy is an attractive, innovative alternative for a number of reasons. It differs from the traditional entrepreneurship research course, which is focused on small business management, because it forces entrepreneurship thinking within a complex technological environment. It goes beyond the traditional marketing course that uses the SWOT analysis framework, thus developing higher order critical reasoning skill set applied to business operations. Furthermore, it requires the development of cross-functional decision-making skills within a framework where computer science technology responses to real problems are examined. Finally, this field-based experience fosters fast, decisive responses commonly sought in business school graduates.

WHAT IS E-BUSINESS?

Ask a dozen business professionals what they understand by "e-business," and you will probably get at least 13 different answers. What distinguished e-business from earlier eras is that it represents information systems solutions that extend beyond the enterprise boundaries. Electronic commerce, on the other hand, consists of using electronic information-based systems to engage in transactions or commerce online, including website purchases. E-commerce has experienced dynamic and rapid growth at the turn of the century. By the end of 1999, it was estimated that there were 97 million web users worldwide (International Data Corporation, 1999). By the year 2002, this number is expected to jump to 320 million users. In the United States alone, 9 million households shopped on-line in 1998, yielding \$7.8 billion in revenues for on-line businesses (Forester Research, 1999). By 2003, 20 million U. S. households are expected to shop on the web, and revenues from this will approach \$108 billion (Forester Research, 1999). These statistics reflect the increasing numbers of ventures that will be launched on the internet. Prospective entrepreneurs who want to capitalize on this trend will need to identify the factors necessary to successfully found and sustain this type of business.

Jeff Timmons, in his book *New Venture Creation Entrepreneurship for the 21st Century*, describes how entrepreneurs use opportunity analysis as an endeavor that creates, shapes, recognizes, and sizes opportunities. Or as he quotes Mark Twain, "I was seldom able to see an

opportunity, until it ceased to be one." A cursory review of Timmons (1999) indicates that opportunity analysis is grounded in entrepreneurship issues. Much of the assessment of business opportunities is based on considerations of potential market demand, market structure and size, margin analysis involving considerations of segmentation, targeting and positioning of issues, competitive analysis and ethical behavior and financial analysis for viability.

PILOT TEST OF THE E-BUSINESS COURSE WITH A FOCUS ON OPPORTUNITY RECOGNITION

Gartner (1988) argues that the focus of entrepreneurship research should be on what the entrepreneur does rather than on who the entrepreneur is. Further, he concludes that the entrepreneur is not "a fixed state of existence, rather . . . a role that individuals undertake to create organizations. In creating organizations, what the entrepreneur does consists of a variety of activities including identifying opportunities, securing resources, marketing products and services, producing products, building organizations, and responding to government and society (Gartner, 1985). Key dimensions in the process are thought to be innovative, risk-taking, and proactiveness which implies an active management style where the entrepreneur works directly not only with customers but also with intermediary channel members (Covin & Slevin, 1989). Within an e-business overview course, the opportunity recognition perspective permit a focus on a "deliverable" work product.

The course had been in the design stage over one year. The design commenced with the participation of fifteen CSUMB undergraduate students in the May 1998 Red Herring Market West Conference. The author approached the Red Herring Conference professional staff and asked if CSUMB undergraduate entrepreneurship students could "earn" their way into the event by providing pre-conference services, registration and conference monitoring service to the Red Herring staff. As an outcome to that successful event, the faculty member approached another organization Thunderlizard Production of Seattle, to replicate the on-site pre-conference, registration and during the conference monitoring services.

Building upon the success, the faculty provided student stipend support for twelve undergraduate students to travel to conferences in New York, Monterey, Seattle and Orlando. As a result of these professional contacts and e-commerce outreach activities, the university faculty became acquainted with industry experts and conference keynote speakers. Industry experts were invited as guest speakers to the e-commerce class. Table 1 summarized the guest speakers, the types of e-commerce and e-businesses presented by speakers and the expected student outcomes from speakers' presentations. The faculty and students came to understand the industry structure within the web design, web advertising, web marketing and newly emerging e-commerce industry. With this industry knowledge the faculty was able to approach and meet local e-business leaders. Collectively, the faculty, students, guest lecturers and local business partners have experimented with the design and delivery of MIE 321, E-Business.

Table 1. E-Commerce/E-Business Guest Speakers

Guest Speaker	Type of Business	Nature of Presentation
Terri Powell-- Web Designer	Female serial entrepreneur comparing four separate entrepreneurial start-up experiences within the e-commerce industry.	Educational background, social environment, screening criteria, social network and mentor affiliations, team development.
Luke Archer-- Chief Technology Officer	Multi-media o-line and CD-ROM development company for the adolescent market shares its business model, commerce options, personalization systems, and traffic building activities.	Testing the validity/opportunity of a new business-to-business model providing value-added services in the third round of venture funding.
Dave Taylor-- Venture Capitalist	Successful web marketer shares his 10-year story describing the evolution of the e-commerce industry. Reviews for students how to "pitch" venture capitalists into examining their business plans.	An overall analysis of the revenue, operating and direct marketing costs and risks associated with new e-business and e-commerce developments.
Leticia Cowen-- ISP Marketing Director	Local ISP professional shares three strategies for growing the ISP, the range of marketing strategies and tactics for securing customers and its business plan.	Evaluation of opportunities focused on decreasing cost structure presented in distinctive segments in dynamic markets.
Rick Hunter Web Trends Tracker	Local entrepreneur describes the requirements for developing web tracking and general web statistics for monitoring online consumer behavior.	Component of e-commerce business models expected by informed venture capitalists.
Ann Anderson-- Founder of Quiltwoman.com	After enjoying a career in the high-technology marketing field this e-commerce entrepreneur takes her passion for quilting and develops an international community for suppliers, retail sites, and end-users.	Characteristics of a small entrepreneurial startup team and functions required to launch and grow an enterprise in a highly competitive market.
Jim Golden, Marketing Director Redshift.com	The largest internet service provider founder describes his initial vision, the milestones and strategic alliances required to grow the business to 15,000 customers.	Market structure analysis, types of businesses providing range of services, strategies for increasing market value, essential components of an internet business plan.
Wendy Sellswood Personify	Presentation of three case studies analyzing the web sites audience behavior, segmentation analysis, referrer analysis, merchandising online strategies, cross-sell opportunities, content attractiveness, and customer loyalty.	On-line business model metrics analysis and presentation of recommendations to senior management
Barry Ross Ross and Ross International	RRI provides solutions for sales, marketing and service professional and manage projects for fast-growing high-technology companies. RRI works with strategic partners and resells a variety of sales & marketing services for fiber optics, VOIP technology, wireless and vice enable companies.	"E-selling" in the 21st century, sales overview and sales process, web sales tools and WebEx demonstration, Shoreline Communications case study and entry-level skills for starting selling career in high technology.

COURSE OBJECTIVES

One objective of the course was to create an environment wherein entrepreneurship and entrepreneurial abilities could be developed within the context of e-business enterprises. The definition of entrepreneurship was accepted as the dynamic goal-oriented process whereby individuals combine creative thinking to identify marketplace needs and new opportunities with the ability to manage, secure resources, and adapt to the environment to achieve desired results while assuming some portion of risk for the venture. The course was constructed to include methods to examine e-business ideas, opportunities and ventures as a systematic search effort as cited by Vesper (1990). College students, e-business entrepreneurs, web marketing and advertising professionals and innovators abound with new ideas. However, there are far more ideas than good e-commerce business opportunities (Timmons, Muzyka, Stevenson, & Bygrave, 1987). This is because an idea is not necessarily an opportunity. Although ideas are always at the center of an opportunity, not all ideas are good opportunities because they must stand the test of the market-driven process. Opportunities are attractive, durable, and timely, and are anchored by creating value for the buyer or end-user. Currently, the emergence of the internet has created changing business circumstances, inconsistencies in traditional business models, chaos, information gaps and imperfections in the market place. The challenge of e-business entrepreneurs is to shape and create opportunities where others see little or nothing.

E-BUSINESS ENTREPRENEURIAL CONCEPTS

Vesper (1990) has categorized the entrepreneurial venture criteria as behaviors which introduce new goods, introduction of new methods of productions, the opening of new markets, the sourcing of new sources of supply and the reorganization of industrial processes. After being introduced to entrepreneurial e-commerce concepts students in the class listed over 100 ideas. "screened" ideas down to approximately 25 business concepts. Students proposed "25 potential e-commerce projects" to attract other students to their startup team. The purpose of this exercise was to screen initial concepts based upon the attractiveness of the market segment, durability of the technology, length of time to product launch, and perceived value to a recognized customer base. With the help of an e-business entrepreneur with 19 years experience "shaped" the "concept" proposals to several business models. This element proved to be the course's most remarkable and instructive application of e-commerce principles and tools. At the conclusion of the course before thirty business executives and e-commerce marketing directors students presented their final project outcomes.

EXPECTED CLASS LEARNING OUTCOMES

The course was designed with two broad objectives or outcomes. The first was to develop an understanding of the business models that are evolving through the use of information technology. Further, we proposed to provide insight into how information technology has enabled larger enterprises to encroach into competitive arenas once held by small and medium sized enterprises

(SMEs). As an outcome, students considering small or medium sized ventures gain insight into structuring responses and initiatives to satisfy and serve customers. The second objective was to encourage the development of e-commerce entrepreneurial abilities of undergraduate students. We proposed to draw upon the opportunity recognition literature and develop a classroom model to apply concepts proven successful in stimulating opportunity recognition, building and managing entrepreneurial teams and teamwork, and presenting e-business proposals or ventures to venture capitalists.

The course was divided into two tiers. The first tier focused upon the acquisition of e-business concepts, principles and case studies. Presentations, quizzes and an "idea" journal constituted the "deliverables" for outcome assessment. The second tier permitted students to select the option of applying first-hand experience using and creating e-business technologies by designing and executing an e-business enterprise. If a student successfully executed real-world e-cash transactions from customers outside the class, not including their family members, or cohort groups, given accumulated points from both tiers students could qualify to earn consideration for an exceptional or exemplary grade of an "A."

As expected, the business model proposals fit within the generic seven business models framed within the course syllabus. Two online purchasing ideas were proposed. One group proposed selling eucalyptus based products online targeting the organic product and alternative/herbal medicine consumer and ingredient manufacturing markets. Few niches have generated as much attention from internet startups and venture capitalists as the health-care businesses, an industry bigger than books and music in sales such as PlantRX.com Inc., MotherNature.com, eNutrition.com and Drugstore.com. Another group crafted an alliance with a local reptile cage manufacturer and designed a website to market and distribute reptile cages to the general public. Pet products and services generated \$23 billion in sales alone in the U.S. last year. PetSmart.com and Petopia.com are category leaders. Two auction ideas, which were quite similar, were proposed. One group proposed an online student garage sale for the purpose of auctioning off used textbooks, housing furniture and fixtures, and student goods. A competitive group proposed to develop an auction site for CSUMB to include used books, couches, TVs, washers/dryers, bicycles, and various furniture items. One business process model idea was proposed. Priceline.com, eBay.com, FirstAuction.com and MetalSite.com are examples. Yet another group established a relationship with a local agricultural subsidiary of an overseas parent company. The group had been requested to develop a three-phase web e-commerce site to include an Extranet for distributing marketing materials nationally to company employees and food brokers, expanding to retail customers and ultimately household consumers.

COURSE STRUCTURE AND SCHEDULE

By the second week of class each student had generated 15 "e-commerce business ideas." Between week two and three, students met outside of class to determine which "ideas" to present to a venture capitalist appearing on-campus to "listen to idea pitches." In week three, the outside e-business venture capitalists convened public reviews of the "ideas" for the purpose of assisting