A Business Educator's Guide To Transitioning To A Digital Curriculum

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ABSTRACT

The authors, representing three key digital media business disciplines, present a case for how business curriculum could be updated to include a strong digital element without recreating the entire business school enterprise or spending millions on new faculty and technology. The three key disciplines are technology, law, and marketing.

Keywords: Digital Media Business Curriculum; Transitioning to a Digital Business Curriculum

INTRODUCTION

With the advent of the second decade of the 21st century it is becoming increasingly clear that the so-called "digital revolution" is not a passing event but more of an on-going process. As the Internet and all manner of digital delivery increasingly impact virtually every facet of most academic disciplines, including especially those arising from the business environment, educators and administrators are faced with the question of whether to include courses dealing with digital subject matter as part of their course offerings and or degree plans. Ten years ago such questions were arguably not fully ripe for consideration, but with the apparent acceleration of the global adoption of all things digital (Anderson and Rainie 2010), such a wait and see strategy is not only an expensive luxury, but very likely a doomed and self fulfilling prophecy.

However, the relative youth of any and all fields dealing with digital issues makes it unlikely that business academics and especially administrators are in a position to truly assess the merits of undertaking changes to traditional curricula that could possibly address this phenomenon. This paper will assist those recognizing the need to at least contemplate such changes and provides not only a rationale justifying such a review, but suggestions that could be used to design a practical roadmap should changes be desired.

The proposals appearing below are the direct result of very real issues and dilemmas faced, along with solutions realized, by the authors in the creation and maintenance of a digital media management business program launched in 2005.[1] Therefore, the paper is written with an eye toward the practical when possible. Toward that end, after identifying the overarching issues to be addressed, several practical strategies for assessment and possible implementation are identified and include responses to the following questions critical to the initial assessment as to whether any program should consider embracing the proposed modifications to current business curriculum.

1. To what extent, if any, does a contemporary BBA or MBA[2] graduate need formal academic exposure to digital issues?

[1] St. Edward's University, located in Austin, Texas, launched an MBA program with a concentration in Digital Media Management, in fall of 2005. The program was significantly revised in 2009. A BBA with a Digital Media Management major was launched fall of 2007.

[2] The BBA, or Bachelor of Business Administration, is a four year (120 hour) degree based upon core business curricula and areas of concentration typically including, among others, management, marketing, accounting, finance, human resources and international commerce.The MBA, is a master's degree in business administration consisting of business core courses and/or concentrating on specific disciplines including, among others, finance, accounting, marketing, management and human resources.

2. What does a contemporary BBA graduate actually need to know about the impact of the digital revolution vis-a-vis the environment of business?
3. To what degree, if any, has the digital revolution impacted or actually changed the substance and relevance of conventional business core disciplines?
4. Assuming that the digital revolution has indeed impacted the traditional core business disciplines, how does an educator or administrator assess whether core business disciplines actually require revision or modification?
5. If such changes are justified, what are the possible strategies to realistically implement meaningful amendments to the business curriculum that accommodate the digital revolution?

The paper is predicated upon the belief that the answers to the above questions conclude that change to the core business course offerings is not only warranted but absolutely necessary to ensure the viability and relevance of the discipline. The paper will discuss a specific strategy to assist in a transition toward a more relevant 21st century business education. Finally, this paper, though tailored for traditional business academia, also has relevance to those program areas that comprise hybrid disciplines, including most notably film, interactive gaming and music business programs. With minor modification, much of what is proposed can be adapted to those settings.

The Status Quo

Business school curricula have been largely static for many decades. This is especially true of the bellwether MBA degree which has changed little since its introduction in the late 19th century.[3] Though the consistency of the curriculum, bolstered by the case study method, offers a stable framework and toolset useful to analyze a large range of business issues, it necessarily fails to encompass more recent changes directly resulting from leaps in technology (Schramm 2006). As a result, a number of schools have begun to modify their business studies at both the graduate and undergraduate levels in an attempt to better prepare their graduates for a business environment greatly different than that of the preceding decades. The following list reflects generic business school subject matter usually comprising, at least in part, the core or foundational undergraduate courses.

Accounting, Financial and Managerial	Marketing
Business Communications	Operations Management
Business Law	Principles of Management
Economics, Macro and Micro	Statistics
Finance	Strategic Management/Capstone

Of course, each program will vary somewhat from this format and the major or areas of concentration build upon these offerings; however, this is a reasonable representation of current core business curricula. The contents of these courses provide the classical view of business issues whose relevance throughout the 20th century is beyond dispute. Arguably, the tenets of many of these will remain relevant without major adjustment for the foreseeable future notwithstanding changes arising from technology. This evergreen list would likely reflect the more quantitative courses including economics, finance, statistics and accounting. However, the balance of the core curricula including marketing, management and classical supporting study areas such as business law have very much been impacted by digital technology and will continue to be for the foreseeable future.[4] Adjustments to curricula to allow for addressing digital issues can largely focus on these limited disciplines. That does not imply that the quantitative areas have somehow dodged the technology bullet. They have merely been affected in terms of their application, as opposed to on a more profound, substantive level, requiring a retooling of core concepts. This is good news for administrators who, while recognizing the need to incorporate the recognition of the impact of digital technology to some degree, are hesitant to undertake a wholesale revision of an entire degree or program. With modest changes discussed below, a 20th century business program can be transitioned into the 21st century and

[3] The Wharton School of The University of Pennsylvania, founded 1881, was the first collegiate business school in the United States.

[4] For current research regarding the impact of the digital revolution upon various topics connected to education and the growing technology gap, see multiple articles and papers at the Berkman Center for Internet and Society web site (Harvard University). http://cyber.law.harvard.edu/research

thereby deliver graduates more conversant in the trends and outright paradigm shifts that are literally reshaping the world.

But, What Is "Digital"? Before addressing specific academic areas most suitable for assessment and revision, a general review of concepts is necessary. Echoing Justice Potter Stewart's attempt to define obscenity, to wit, "*I know it when I see it*" (Jacobellis vs. Ohio); many academics have experienced the same unsettling view of all things digital. Whatever *it* actually is, "digital" seems to be a relentless juggernaut gradually encroaching on all things previously viewed as terra firma if not sacrosanct in the academic setting. And even the staunchest opponent to change is being forced to grapple with the digital onslaught. The term "digital" is confounding both in terms of its utter universality and concomitant vagueness. The perceived lack of clarity immediately relegated anything academic associated with the term to a novelty status and kept at arm's length to prevent polluting the real disciplines. Now the threat is less one of polluting and more of total besiegement if not outright usurpation. But what does "digital" mean?

For our purposes, digital is a shorthand reference to technology which delivers content, ultimately in ones and zeros, or in other words with the assistance of computers and likely through the Internet. The delivery of content, in any setting, is the basic foundation of all things commercial, either in terms of goods and or services. That 21st century content is increasingly created and delivered digitally is beyond question (Pew Research 2010) and therefore of absolute relevance to the business environment. Defining terms and establishing relevance still does not support the notion that a review and possible reformatting of entire degrees and or programs is warranted. Therefore, the following sections will continue expanding and clarifying the term "digital" as it relates to business disciplines and answer the ultimate question as to whether change is really warranted.

The Essentials To Adopting Or Overhauling Digital Curricula

Though digital is a pervasive concept necessarily impacting ultimately both substantive content and format, when considering whether and how to approach an adoption of digital subject matter, or overhaul an existing curriculum to embody changes resulting from the digital world, three general academic areas most readily support review and possible revision. Almost all digital subject matter affecting business curricula will fall into three broad categories – technology, marketing and law. This is not to suggest or support the notion of the further segregation or "siloization" of academic disciplines or school. For purposes of analyzing the advisability of a digital academic shift, it is simpler to view already discrete subject areas separately in hope of suggesting an approach for review and possible implementation. Because the Internet is the main driver of the digital revolution, the first general area to be examined will focus upon technology and the subject matter and or courses necessary to facilitate a basic foundation in supporting a transition to a more digital education.

APPLIED TECHNOLOGY IN THE BUSINESS CURRICULUM

Perhaps the most daunting task faced by the traditional business program seeking to expand or transform their offerings to include a digital component is the acknowledgement and inclusion of the technology itself. Although arguably more adept than many of their liberal arts counterparts at using at least some form of technology in the classroom (if for nothing more than financial spreadsheets), the new business educator must recognize that at the heart of the new business student lies a digital generation accustomed to receiving information instantaneously and shaped by their own interactions with the data.

It is almost impossible to talk about companies like Google, Yahoo, Apple, Oracle, and Microsoft without having at least a basic knowledge of the technology that makes these companies tick and upon which they build their revenues and business models. For example, to say that Google's profits stem from "advertising revenues" is a bit like saying that the secret to making ketchup is using tomatoes. Knowing *what* a company does is not the same as being able to teach students *how* they do it, or what makes an industry leader stay that way.

In traditional business programs, the *how* of technology matters has typically been left up to non-computer science major computer classes. These classes are often taught by non-business professors. While these classes may (or may not) do a fine job of educating students in computer science principles, the opportunity to take these lessons

and apply them to the business world are lost once the student returns to the business school and is faced with lesson plans, classes, and textbooks based primarily on manufacturing and industrial revolution precepts. Business schools can no longer get away with ignoring applied technology in their curriculums. If one needs justification, he or she only need attempt to explain how the American car companies managed to become international industrial giants without understanding how an assembly line works. Understanding how technology works allows an information age professor and student to understand the companies that exploit and develop that technology. This conclusion does not dictate that business students and their educators become computer scientists in order to function in today's information economy. The question of where to draw the line, of how much technology is too much or too little, is often the most difficult question faced.

What Does The 21st Century Business School Graduate Need To Know About Technology?

How the Millennial student approaches business applied technology needs. Unlike the typical business professor, most students entering business programs in the last decade already have had a massive amount of exposure to digital culture and processes. A February 2010 study conducted by the Pew Research Center indicates that 75% of the so-called "Millennials" (defined by that study to include young people entering into adulthood since 2000 who were 18-29 years old in 2009) have created a profile on a social networking site (such as MySpace or Facebook). One in five has posted a video about themselves online. 74% believe that technology makes their lives easier, and over half believe that technology helps people use their time more efficiently. All in all, 90% of all Millennials use the Internet at least occasionally. These percentages generally show double digit declines when one compares them to technology use by "Generation X'ers" (ages 30-45) and "Boomers" (ages 46-64) (Pew Research Center 2010).

Understanding the business of technology. However, while the business student may understand how to use a social networking platform because of their own use of that platform, and may also understand traditional marketing concepts learned in business school, they may be at a loss when asked to apply those marketing techniques in a purely virtual environment. Moreover, the student will not understand how the unique characteristics of the platform make previously unheard of marketing techniques possible and available.

A recent example comes from the authors' own program, where a group of MBA candidates were asked to explain the business model of the popular file sharing platform BitTorrent. BitTorrent (like Google and many other cloud technologies) is essentially free software readily available for download with little to no obvious compensation model to support its widespread use. According to BitTorrent's own numbers, there are currently over 160 million BitTorrent clients installed around the world, and the overwhelming majority of those installations return little to no revenue to BitTorrent itself (BitTorrent 2010). It is a challenge to explain BitTorrent's success using traditional business models and analysis. The point is that the most visible manifestation of the BitTorrent platform, the BitTorrent client, cannot be explained in traditional business terms like any other widget or commodity. "Free" is seldom a successful business model in standard business paradigms (although, see Anderson 2009). Yet BitTorrent stands in defiance of the traditional business model, and the only way to understand that is to understand the technology that makes BitTorrent work.

What follows is a series of applied technology learning outcomes that should be adopted or at least acknowledged by business programs if they wish their students to succeed in a digital world and beyond. In many cases, these outcomes are easily added to existing programs or courses. All of them can usually be satisfied by simply adding one applied technology survey course that covers the basics of computer hardware, software, networking, and the Internet along with social networking and other virtual communities.

Learning Outcomes For A Business Technology 2.0 Manager

In order to ensure that today's business graduate is ready to manage a technologically sophisticated workplace and business organization, students must have certain core competencies that go far beyond the standard office suite applications training currently offered in many business programs. These skills break into four natural categories:

- Computer Hardware
- Computer Software

- Networking
- Internet and the Internet Protocol

The goal is to teach students the basics of how each of these technology elements work as well as how they interact with each other to form new business paradigms and models. In all cases, these elements should be taught with a constant reminder of how and why they are important in the context of both small and large business.

Computer Hardware - Learning Outcomes

- Understand the basic architecture of a computer and how a computer works
- Understand computer hardware and technology evolution models and processes
- Understand the economics of computer hardware purchases, leasing, and virtual alternatives, such as offsite server hosting, including both dedicated and on-demand solutions

In order to succeed in business tomorrow, today's business student must be able to at least understand the basics of computer hardware and technology. Even though the primary functions of hardware purchases and evaluation are and will likely continue to be the province of the company IT department, those with business backgrounds are in the unique position of evaluating these expensive cost centers from the perspective of management as a whole. Unless the business student has at least some understanding of the technology involved, computer hardware purchases and cost centers become a bewildering alphabet soup of technical acronyms that mean very little to the technologically uninitiated. A simple example involves the mind-numbing array of computer chips/processors available in today's market, each with their own set of confusing technical specifications. While the business manager need not be able to understand every option in detail, he or she should be able to read a basic technical description of a proposed purchase and understand generally what it means.

The problem is that a business manager who comes from the perspective of "more is better" or "the higher number is better" doesn't understand that a computer with slower processor speeds may actually be faster than a computer with faster (albeit fewer) processors. If the manager asks the IT personnel to explain this discrepancy, they are typically assaulted by headache inducing "geek speak" that may mean absolutely nothing to the business manager and therefore cannot form the basis of an informed decision on the purchase. It is therefore important for business managers to know and understand generally how and why computer processors do what they do. This is only one example. In our program, business students watch videos on the chip making process as well as open up computer workstations and learn to identify major computer parts. They are then asked to virtually "build" a new system from scratch, researching and selecting various computer components from system builder websites such as www.newegg.com based on the requirements of the assigned system, including specific decisions on computer cases, motherboards, processors, memory, fixed and optical drives, and multimedia video and sound cards. The shopping cart from Newegg or similar site becomes their deliverable on the assignment.

Another key element of our hardware module involves understanding hardware technology evolution, with particular emphasis on "Moore's Law" and its various corollaries. Moore's Law is essentially a rule of thumb first expressed by Intel co-founder Gordon Moore in 1965, which states that the number of transistors that could inexpensively be placed on a computer chip will double about every two years (Moore 1965). While Moore's Law is often discussed in even the most basic "Introduction to Computer Science" courses, its impact on modern business practices is often overlooked or ignored. Technology courses are concerned with the impact of theories such as Moore's Law on the development of the technology itself. Business, on the other hand, must view Moore's Law from the perspective of equipment obsolescence and capital investment. While IT departments always seem to want the latest, greatest, and most expensive, the business manager must approve or guide IT purchases through the lens of actual and technological depreciation, striking a balance between cost and business objectives now and in the future. Knowing that almost any technology purchase is obsolete before it is taken out of its factory box, a business manager can balance short term needs, which can often be satisfied by cheaper, older technology and needs which will require longer term purchasing considerations. Understanding principles such as Moore's Law therefore becomes critical for the business manager.

Finally, a business manager in a technologically adept company must understand the seemingly mundane yet critical opportunities presented by cloud computing and even remote back office hardware functions through virtual elastic computing. Although still in its infancy, this new business model could radically alter the way technology back office functions are handled in the future, and is something that a new business manager must understand going forward. Without a proper grounding in both traditional and network computing, business may be unable or unwilling to take advantage of those new business models.

Computer Software – Learning Outcomes

- Understand and evaluate the software needs of different kinds of businesses
- Understand and evaluate options to traditional office software suites, including open source applications and Web 2.0 technologies
- Understand the functions of and creative needs of traditional and Web 2.0 technologies
- Understand database technologies

Most colleges and universities today require their students to show basic computer software proficiency in various business applications (usually Microsoft Office). While our university does likewise, our program takes that instruction much further into the ever-changing needs and options of today's business environment. Both our graduate and undergraduate digital media management programs evaluate Microsoft Office in conjunction with open source (free) alternatives such as OpenOffice (which can read and write Microsoft compatible files) and the increasing presence of cloud software alternatives such as Google Docs. Our classes debate the merits, benefits, and disadvantages of each, and in some classes, students are required to use one or the other for projects despite their comfortable familiarity with Microsoft products.

We require the student to evaluate business needs, such as when less expensive software alternatives may not only be available but better suited to the particular business environment. Some of our classes even involve elaborate case studies and role play, where the students are placed in the position of an IT consultant who is brought in to evaluate the needs of a specific business and propose information technology solutions for that business. This takes the focus off the technical specificity predominant in must computer science courses and on to ensuring that the proposed technology meets the business needs and the budget available. The students must obviously understand something about the technology and software they are proposing, but this technical knowledge is used in furtherance of the business goals, not as an end to itself. In order to do this, we believe the modern business student must understand the technical back office hardware needs and workflow of the information technology department. All of students leave our program with a sense of how databases work and even how to set up and program simple database technologies, such as Microsoft Access and SQL. As databases form the back office back end of most modern web technologies and business asset management, a basic understanding of the language and structure of database systems goes a long way towards forming a core knowledge base for new software and technologies as they are developed.

However, we also take this a step further. In addition to hardware needs, we believe students should understand the creative and end-user software needs and workflow of the advertising and marketing departments. We therefore introduce our students to professional web page creation software such as Adobe Dreamweaver and image editing software such as Photoshop. We give them some instruction in web content management systems (used by most major complex websites as a back end technology) and other digital asset management systems. We let them get their feet wet in Adobe Flash, and even let them dabble in digital non-linear video editing, usually with Apple Final Cut Pro or Adobe Premiere. All of these software packages are essential tools in today's advertising and marketing departments. Today's business student must be able to explain their functionality, needs, and workflow to both management and information technology personnel. Note that this is extremely valuable even if the future manager does not eventually work in the creative departments. Understanding the capabilities and workflow, and not necessarily absolute proficiency in the software, meets the learning objective for effective management.

Networking and Internet - Learning Outcomes

- Understand the basics of modern networking, network architecture, and network components
- Understand the principles of the Internet Protocol ("IP")
- Understand the history of and general architecture of "the Internet" and the World Wide Web
- Understand the basics and standards of wireless and mobile networking
- Understand the basics of network and file security, network security, and encryption

The origin of the term "Web 2.0" is often associated with a seminal conference held in 2004 and sponsored by ubiquitous technology publisher O'Reilly Media. Heralding the concept of the "Web as a Platform," Web 2.0 is seen as a way to replace our concept of workstation computer software *applications* with web-based web *platforms* that can be used to spread and utilize collective intelligence to improve and develop functionality (O'Reilly 2005). Analyzing and understanding exactly what this means, and its impact on business productivity and future technology, is one of the main goals of our digitally-enhanced business curriculum. The development of Web 2.0 technologies and an increasing dependence on local and remote networks for even the simplest information technology tasks has elevated what at one time was obscure and arcane lore into an absolute necessity for modern business managers. As new technology rapidly moves towards on-demand network delivery of software and information that until now could only be delivered on a standalone, workstation basis, the need to understand how a network works, how the Internet works, and how the set of rules that binds them all together (the "Internet Protocol") works, has never been greater.

Traditional computer science networking courses are typically filled with acronyms, equipment standards, and network protocols only an electrical engineer could love. Fortunately, the business student does not need to know the minute details of the magic, but they should be able to pull back the curtain, know what is going on, and be able to ask intelligent questions of the great and mighty wizard. In our program, we generally try to ensure that students have exposure to the general architecture of simple and large scale business networks and be able to read and understand a network architecture diagram, including the symbology used therein. Our graduate students are asked to research and design a basic network for a small office, and are asked to defend their structure in terms of cost, need, speed and efficiency.

The Internet itself is discussed on both an historical and practical basis. Understanding what the Internet was and was not designed to do, and therefore, what its strengths and weaknesses may be, allows the manager to truly evaluate new Internet innovations and determine whether paying for or developing that innovation is worthwhile. Of course, increasing connectivity comes with increased risk from cyber-attacks, and the technologically savvy business student must be able to evaluate and manage those risks. Our students do not necessarily understand the minute details of network security and file encryption, but they generally understand the security and legal issues presented by transferring sensitive data over a publicly accessible network (including the Internet), and generally how such data is secured on both a local and international basis. We teach them about firewalls, virtual private networks (VPNs), and public and private key file encryption and the transfer of those files through secure web protocols. As companies like Google and Apple continue to seek to increase business dependence on web-based technologies, business students must be able to understand how the network works, so that informed decisions can be made on just how much should be or could be put online, and how much should or could not be.

MARKETING PRINCIPLES ARE CHANGING IN A DIGITAL WORLD

When it comes to the digital world influencing and changing a particular academic field of study, marketing is arguably the most affected of the core business school disciplines (or at least the discipline that is most obviously affected, due to the proliferation of new media options for sending marketing information to consumers). Beyond the superficial recognition that convergence and "new" media affect the art and practice of advertising, each of the classic "Four Ps" (Product, Price, Promotion, Place/Distribution – attributed first to McCarthy, 1960 and collectively termed the "marketing mix") has had to embrace significant change.

This is not to say that the Four P's model is outmoded, but that within each of these marketing mix components there have been shifts in how things work, due to the introduction of digital products and media choices. For example, the promotion P still represents marketing communications – communicating a marketing offering with an intended target audience is still done in the digital world. What has changed is that the traditional realms of print (magazines, newspapers) and broadcast (television, radio) have been joined by a proliferation of other media channels through which to communicate the marketer's offering to the consumer. Marketers are being forced to shift their ad spending to where the consumers are, though one recent report says they are lagging, allocating only 13% of all ad spending to the Internet in the face of evidence that 28% of consumer media time is on the Internet (Meeker 2010).

The following subsections lay out a non-exhaustive listing of concepts that must be infused into the academic marketing curriculum in order for it to have relevancy for current and future students. Faculty and textbook writers need to keep in mind that their student audience is living all the digital changes the world has presented, likely to a much greater extent than faculty and textbook writers. This statement is supported generally by Facebook data showing that only 19% of U.S. Facebook users are age 45 or older (Burbary 2011). The challenge is to identify where marketing has changed (either fundamentally or in the details) so that students can master more than the principles. As an additional insight, our own experience is that the majority of the graduates of our program are finding entry jobs in digital marketing, adding to the importance of making the marketing curriculum current and relevant in an increasingly digital climate.

Products And Services

A digital product is one that can be converted into other formats for consumer usage, but which at its core is made up of data files stored on hard disk computer drives. The most prominent digital products are in the area of entertainment and publishing, examples being films, music, videogames, e-books, and newscasts.

Does Tangibility Matter? Digital products have some of the same characteristics as nondigital products, but there are some important considerations that as yet have not emerged in textbook descriptions. For example, a digital product by its very definition is not tangible. It is made up of zeros and ones – data, which are stored on the servers of either owners or facilitators (part of the much-mentioned "cloud," see Distribution).

Inseparability. A digital offering, whether it is a product or a service or some combination of the two, is technically never tangible, though in its consumer-usage format it is normally wedded to something tangible that makes it possible to consume (e.g., game console and cartridge, DVD and player, etc.). This is related to the marketing services literature surrounding the idea of inseparability (Lovelock 1996). Inseparability in services refers to the concept that the service experience, the service context, and the person who delivers the service, are considered simultaneously by the consumer in their evaluation of what they have received. For example, a haircut consists mostly of the cutting of hair but also involves the human interactions and physical touch of the barber or stylist. Similarly, digital products and services depend on devices for their delivery to the consumer. For example, you cannot view a missed television episode on www.hulu.com without some sort of hardware/software/interface combination (a laptop, an operating system, a browser, and Internet access). You cannot access www.pandora.com 's streaming personalized music site without the correct hardware/software/interface combination (an iPod, the Pandora application, and wireless network access). A less theoretical change related to products is the growing expectation that the consumer expects to be able to customize many products or services (Tapscott 2008). In other words, they seek less generic and more personalized forms of the product. The cell phone is a perfect example of a piece of hardware used to access a digital service. With the advent and growth of application stores (e.g., "The Market" for Android operating system users), smartphone users download free or paid applications related to entertainment, productivity, and so forth, and the phone thus becomes exactly the mix of products and product access the consumer desires.

Implications for Curriculum and Pedagogy: These incremental shifts in product-service theory and practice have led us to include a digital assessment assignment in the digital media marketing course. The assessment includes a fairly standard marketing report on a (digital) company, but also requires students to think about how the digital product or service is found by consumers, and more particularly how it is experienced by them, in terms of technology and/or human interaction.

Price

Information. A major shift in the pricing arena is that there has been a change in the availability of pricing data, putting fuller information and hence more bargaining power in the hands of informed consumers. For example, smartphone applications like Shopsavvy allow users to compare prices and sales locations for most items by scanning a barcode with the phone's camera. Free. Besides the shift in pricing information, consumers have become accustomed to not paying for digital information products to such an extent that certain businesses (most notably newspapers) have been forced to seriously rethink their business models. For example, twice in the last three years, managers of *The New York Times* online offering have attempted to charge for certain "premium" content. The most recent attempt is dubbed the "pay wall" (Pérez-Peña 2010), which managers hope will not drive site traffic away. The very nature of a pure digital product (a digital file stored on a server) makes the cost of selling an additional "copy" near zero (the marginal cost is whatever a little more space on the server costs). In *Wired* magazine editor Chris Anderson's *Free!* (2009), the author lays out reasons for a radical re-think on what pricing makes sense when the marginal cost is virtually zero and the traditional retail shelf-space restraints are removed. It should be noted that there are plenty of counter voices to this Free movement (cf., DeLong 2009).

Implications for Curriculum and Pedagogy: In the same assessment project referred to in the last section, new pricing is carefully considered with the inclusion of a required section on the "business model" of the digital company. In other words, students are forced to think about where cost-covering revenues come from if not directly from the consumers themselves. Many student projects have reported that their business relies on start-up capital from venture investors, in various rounds, and that some future promise of advertising sales will make the enterprise profitable eventually.

Promotion

Consumer Reviews. A huge change on the promotion front for marketers is that consumers now have extensive access to a new form of digital "word of mouth" via online consumer reviews of nearly every product or service imaginable. Marketing scholars are only recently focusing on the power that these (literally) millions of reviews can have on as a potential consumer taps them before making a purchasing decision. As just one example, Zhu and Zhang (2010) looked at the sales impact of reviews on videogame purchases, noting that less popular titles are the most affected by this additional course of information. Viral Marketing. The ability of consumers to share digital files with one another extends to their ability to pass along advertising that they find amusing, interesting, or otherwise useful. Virtually every website now offers a variety of easy ways for consumers to share the story, video clip, graphic or other information. These options might include sending the story to individuals who "follow" the consumer on Twitter or to "friends" on Facebook. Consumers may also send the item to larger, less personal aggregators such as www.reddit.com, where the submissions become, in effect, votes for that story's relative importance in an increasingly information-overloaded world. The more times an item is shared, the more free exposures it gets, and when the items spread quickly and to many (hence the term "viral") this activity acts to break through the clutter of billions of pieces of information competing for consumers' attention, by crowdsourcing and then distilling the most personally relevant items on the Internet. A dissatisfied consumer now also can also become a PR nightmare, as the ability to publish a digital complaint is quick and free (www.twitter.com, blogs, www.yelp.com, etc.). Companies find themselves needing to be more responsive to complaints or risk the consequences. A vivid example of this can be seen in Dave Carroll's YouTube video "United Breaks Guitars," posted after United Airlines refused to engage Carroll or quickly solve the problem of a guitar checked as baggage they had broken. In ten days, more than three million viewers saw the video (Van Grove 2009), and by mid-2011 it had been viewed more than 10.5 million times.

Personalized Service Expectations. Another shift related to consumers' consideration of marketing communication (promotional) efforts in a digital world is that consumers now routinely expect companies to engage them directly via social media or personal email attention. Consumers seek engagement and even a relationship with their digital brands (Batey 2008). The Mobile is the Medium. There is an unmistakable move by consumers toward receiving much of their media content on mobile devices, such as smartphones (Pavlik and McIntosh 2011; Wertime and Fenwick 2008). In effect, the phone has become one of the most important media options for the new digital consumer. Measurability of Media. Digital media arguably affords the most measurable advertising and promotional

metrics of all promotional options. There has been a shift in online advertising from charging for mere exposure to online ads to charging for the more direct and active measure known as click-through (Bradley and Bartlett 2006). Consumers' active movement toward the ad is much more valuable and is easily accounted for. Strong measures of effectiveness are also easily available, such as the time spent on site or number of pages viewed, as noted in the next paragraph. Free Internet traffic metrics measurement sites such as www.alexa.com allow users to determine from where ("upstream") online consumers clicked into a particular website and where they went "downstream" after they left. They measure and report time spent on site and the number of pages clicked into, as well as give demographics of the consumer. Alexa also reports a ranking for how the website does compared to others and does so for 100 countries – an amazing amount of data for marketers' potential use, particularly as a targeting and segmentation tool.

Implications for Curriculum and Pedagogy: In the same assessment project referred to in prior sections, new media and the digital consumer are carefully considered. Given the importance of Web 2.0 (the interactive Internet), personalization is expected by consumers, who can and often do voice their dis/pleasure rapidly online via reviews and other sharing. In their course project students must spend time seeking this information and considering its implications for their chosen company. In another required course, students spend an entire semester understanding social networks and relevant digital analytics – both critical for understanding the success of companies involved in digital product and service provision.

Distribution (Place)

The Channel Has Changed. The movement of traditional, nondigital goods from manufacturer through intermediaries and on to the final consumer, the "distribution channel," is as follows (in its simplest form):

Traditional Model: Manufacturer → Wholesaler → Retailer → Consumer
Digital Model: Maker/Artist → Publisher → Distributor → E-Tailer → Consumer

In the digital distribution process, a similar channel exists, but in its purest form, a digital product requires no physical movement, as it is transferred via the Internet in the form of ones and zeros. Here is a simplified model of a music file (a digital product) making its way from producer to consumer. As with the traditional nondigital channel, there are facilitators, such as agents, rights clearance firms (e.g., The Harry Fox Agency in New York), wholesaler-aggregators (e.g., the Orchard, which specializes in "indie" music) and e-tailers (e.g., iTunes, www.amazon.com). There are also specialty financing and legal firms associated with facilitating commerce in the channel.

DIY. There is a growing number of musicians (and writers and filmmakers) who are able to adopt a do-it-yourself (DIY) approach to getting their product out to customers (cf., Oliver 2009). This has been aided by three major forces, according to Anderson 2006: (1) The Democratization of Production – including digital cameras, editing and blogging tools; (2) The Democratization of Distribution – eBay, Netflix, Facebook, iTunes, BitTorrent, and; (3) The Connection Between Supply and Demand – Google and the "wisdom of crowds," blogs, consumer rankings, recommendations and best lists. Whereas in the past, a singer-songwriter needed a business team, it is now possible to do many of the tasks in the channel personally. One thing has not changed however – you can take away a channel intermediary but you cannot take away the functions of that intermediary. Suggestions that it is now easier are probably correct in some ways but the caveat is that now there are many more independent producers making competition even tougher than ever.

The Long Tail. Because the form of the digital product is ones and zeros stored on hard drives, the need for large spaces to store inventories of product is greatly diminished. This has led to talk of a longer "tail" of product being offered profitably. Anderson (2006) says this opens up the market for more consumer options (notably, obscure music and film no longer have to justify their existence on a retailer's shelf through large unit sales, as smaller sales can more easily cover the storage costs. More product can be profitably held in "inventory" if it is no longer only thought of in physical terms. Elberse (2008) questions the long tail as a business strategy but nonetheless endorses the idea that more obscure music can now be offered to finer and finer micro-*niches* as a result.

Implications for Curriculum and Pedagogy: Again, in class projects these changes in digital marketing theory and practice are incorporated. Students must discover and report on the channel choices and facilitators used by their respective digital businesses. The notion that even a small businessperson can accomplish much with new digital tools allows students to choose even small entities for inquiry (often resulting in one-to-one contact between entrepreneurs and the students – a great outcome for the program that could result in internships and other hiring). We find that many of the students drawn to our program come with strong interests in music and film and gaming. The program recognizes this and allows students to explore these areas in the projects and assignments, resulting in deeper motivation and better deliverables. Many of our graduates have gone on to create their own digital businesses and brands.

LAW

Like marketing, law has been an essential topic of classic business school education, at both the undergraduate and graduate levels since at least the early 20th century when it appeared among the first Harvard MBA degree plans. And, during the past 100 years the overall emphasis has varied very little with the bulk of the focus upon contract law, entity formation and those areas of liability associated with business torts. The most recent changes in emphasis have arisen from the corporate ethical scandals of the first part of this century. Otherwise, the core subject matter has been reasonably static. However, with the advent of the Internet and the pervasive digital delivery of content, even the most traditional business law classes have been forced to address some areas of the law that were previously considered esoteric if not arcane.

Notwithstanding the fact that by some calculations the combined value of intellectual property exceeds that of all physical property in the world (Clarkson, et al. 2009) currently most business law textbooks devote a single chapter to all of intellectual property. This single chapter is usually a brief survey of copyright, trademark, patent law and trade secret.[5] In some instances there may be a reference to e-commerce [6] and or issues arising from the collision of contract law and commerce facilitated by the Internet. [7] However, a deeper look into what can be collectively viewed as digital law is increasingly necessary notwithstanding any decision to further modify a business school curriculum. A digital law course geared toward a more business setting should focus largely upon copyright, e-commerce and to some degree trademark law. Though patent law has clearly enabled the creation of the structure underlying the digital transition, it is perceived as too rarefied to be considered a business topic and for that matter is still relatively remote discipline even for conventional law schools studies.[8] To some degree the same can be said of trademark; however, as discussed below, trademark law finds significant expression and relevance in business curricula, most notably in courses dealing with branding. Finally, a course in digital law must necessarily address issues of privacy arising from social media and the web.

The greatest changes impacting business disciplines have arisen from the copyright setting because anything appearing online is automatically afforded U.S. copyright protection regardless of the author's intent (Evans 2004; Lessig 2004). And with virtually every good and/or service as well as artistic expression accessible online, copyright issues rise exponentially and consequently entangle management strategies and decisions.

[5] The law of trade secret, though typically studied in conjunction with traditional intellectual property subjects such as copyright and trademark, is actually derived from private contract law.

[6] Electronic commerce, or "E-commerce" is the buying and selling of goods and or services on the Internet.

[7] The relative absence of textbooks devoted to digital law is not as problematic as it could be. First, textbooks would likely be outdated by the time they were printed and students are increasingly aware and critical of expensive books with a minimal shelf life. One of the appeals of a digital law course would be its cutting edge relevance to significant events of the day many of which are increasingly garnering main stream news coverage. There is an abundance of resources easily found on the internet, especially related to the major lawsuits du jour that can be used to supplement materials that do exist. For example, one could begin with a primer on U.S. Copyright law, easily attainable from public domain sources, and easily incorporate current events and cases illustrating contemporary legal and business issues both in the U.S and abroad. There are a number of web portals that aggregate current events, cases and other relevant content. One such example is sponsored by Digital Media Wire which provides a daily compendium of legal and business issues relating to the entire spectrum of digital commerce including, film, music, interactive gaming, marketing and communications. http://www.dmwmedia.com/

[8] For information regarding educational and professional requirements for the patent bar see the American Intellectual Property Law Association citing the ABA Section of Intellectual Property Law at http://www.aipla.org/Content/NavigationMenu/Student_Center/Careers_in_IP_Law/CIPLA_-_Chapter_4.htm

Therefore, arguably the greatest emphasis in a digital law class for business majors should be copyright and the immediate impact of this area of law upon commerce.

Copyright

Over the last 200 years, the law of copyright has struggled, and ultimately failed to keep up with technology (Lessig 2004). Notwithstanding the multiple substantive amendments to the statutory basis of the law, copyright finds itself increasingly behind the curve and some critics have argued somewhat persuasively against its ultimate relevance. This is further exasperated by the fact that the Internet has provided a worldwide bazaar for the transfer and consumption of goods and services requiring the law to be stretched beyond its extraterritorial boundaries and possibly beyond its conceptual foundations. This problem is compounded due to the rise of almost viral copyright and trademark infringement. As business becomes both more international and digital in scope due to Internet distribution (and therefore often subject to US copyright law) [9], there is a need for more homogenized laws to better facilitate electronic commerce and protect IP. Likewise, there is an increased need for business studies to explore these issues from both a business and legal perspective.

Managers are now faced with business forecasting quandaries based upon an environment that changes radically from quarter to quarter. They must also assess legal issues that would have in the past been the domain of a few IP specialists. Managers make strategic life and death business decisions that essentially require managing disruption resulting from the assaults on the notion of copyright as actual legal property. The purpose of such a digital law course is not mastery of the finer points of copyright, but to impart the ability to spot legal issues arising from IP concerns in an attempt to not only assist with "future-proofing" their businesses, but also side stepping potential liability. Common to both business and law schools, the case study and Socratic methods help students develop issue spotting skill sets that transfer to post graduate careers.

Trademark

The origins of the law of trademark differ significantly from copyright and patent (*see*, Lanham Act). Not concerned with originality, trademark has a more natural bias toward commerce as it originates from the common law of unfair trade practice.[10] Trademark concerns itself with the goal of providing consumers credible information regarding the origin and authenticity of a particular good or service. Branding, marketing and advertising are the business manifestations of the law of trademark. This connection becomes even more significant as goods and services transfer through the Internet. Marketing has been forever changed by the impact of Internet commerce, and though still the norm in business schools, it is hard to imagine a marketing student graduating without significant exposure to these changes, both business and legal. Every business school course dealing with marketing should include digital and Internet issues; and because of the widespread adoption of digital commerce, there is an increased need to introduce the more abstract legal underpinnings. As Internet transactions become less tangible, understanding the abstract nature of the law that facilitates such dealings, and impacts marketing, becomes more essential to the businessperson. Additionally, with virtually ubiquitous Internet and digital distribution of content rendering national or physical borders increasingly abstract, every branding or marketing course becomes a study of international commerce and trademark issues. One aspect of the global business community's wholesale adoption of electronic commerce and the Internet is the rapid growth of copyright infringement and its trademark counterpart, counterfeiting.[11] Industrialized countries are currently negotiating an agreement to better coordinate international

[9] The United States, through its Trade Representative, is currently involved in negotiating a treaty establishing international standards on intellectual property rights enforcement. The other countries are Australia, Canada, the European Union, Japan, South Korea, Mexico, Morocco, New Zealand, Singapore, and Switzerland. (*See*, The Anti-Counterfeiting Trade Agreement [ACTA]).

[10] Though also codified at both the state and federal levels (Lanham Act), the law of unfair trade practice or unfair competition originates in the common law. It is broad in scope and includes not only trademark issues but also interference with business relations, trade name and trade dress infringement, trade secrets, false advertising, trade defamation, and misappropriation of name or likeness.

[11] Though arguably not clearly defined in the ACTA, typically counterfeiting as related to IP and trademark specifically involves the fraudulent manufacture, alteration or distribution of a product that is of lesser value than the genuine product. The term also applies to reproductions of packaging with the intent to defraud or to violate IP laws.

efforts to monitor, control and punish trade in counterfeit products (ACTA). Business school graduates must have a working knowledge of these issues and international agreements that heavily impact trade and commerce. If recent trends have any merit or validity, it is hard to imagine that e-commerce infringement, pirating and or counterfeiting will end in the near future.[12]

E-Commerce, Privacy And The Internet

The sheer breadth and magnitude of the impact of the Internet on commercial transactions justifies reviewing the legal issues connected to such transactions. Such studies include topics ranging from Internet or e-commerce contract law, Internet/digital marketing, inventory management, supply chain management, Internet transactions and the transfer of electronic funds. Additionally, social networking's worldwide ascent into the daily lives of consumers demands academic, including legal, scrutiny[13] (*see also* Wortham 2010). Straddling a number of digital business topics, social networking could be approached from several different disciplines including notably marketing and any applied web analytics study. Social networking has come under increased scrutiny because of its potential impact on privacy.[14] More progressive management and human resources courses have found it necessary to venture into privacy issues arising from employee's use of the Internet at the workplace. Business related privacy issues arising from social networking would include an employee's blog postings potentially defaming an employer company, supervisor or coworker, as well as using social networking sites as forums for harassing other employees. Social networking epitomizes the digital dilemma simultaneously and profoundly impacting legal, business and technology issues. Therefore, the real question is not so much should e-commerce be included in a business school setting but rather if it should support a separate course or be included in a combined digital law approach.

Classic business law studies provide foundational concepts that underpin all world commerce. The Internet has revolutionized the delivery of goods and services upon which that commerce is based and has made it necessary to revise the study of underlying laws that support and sometimes hinder these changes. Digital delivery of commercial and artistic content represents a paradigm shift that will continue to affect all academic studies, but especially the law topics discussed herein which together comprise digital law. A business school educator must therefore decide to either retool existing business law studies or add additional classes dealing with digital issues emphasizing copyright, trademark, e-commerce and privacy.

DISCUSSION AND CONCLUSIONS

For the foreseeable future, technology will continue to accelerate the blurring of international boundaries in commerce. The traditional silos of goods and services will likewise become less distinct. Commerce will become increasingly digital and concomitantly international in scope. While challenging in its unfamiliarity to most business programs, the new business curriculum must include applied technology components if it wishes to stay relevant to the millennial student and modern business. Furthermore, those components should be taught or closely monitored by business professors to ensure that the learning objectives are tied to business and do not veer into the technical minutia common to many computer science courses. This requirement can be met by a single comprehensive survey course, or perhaps better, by incorporation of the subject matter into existing courses. By graduation, students should have basic knowledge of four separate applied technology areas: (1) computer hardware; (2) computer software, including professional office and creative suites; (3) computer networking and the Internet; and (4) Web 2.0+ and social networking mechanics. Armed with this knowledge along with exposure to the new digital issues emerging in marketing and law, the new business manager will have the ability to serve perhaps the

[12] The First Global Congress on Combating Counterfeiting (2004) estimated that trade in counterfeited goods by the year 2000 had already hit $450 Billion, and that the FBI had estimated U.S. losses of between $200-$250 Billion per year. See, http://www.ccapcongress.net/archives/Brussels/Files/fsheet5.doc

[13] Social networking, and its closely related parent, social media, has been loosely and concisely defined as "the use of technology combined with social interaction to create or co-create value" (Jantsch 2005). The term generally includes all forms of social media, including blogs, RSS newsfeeds, social networks such as Facebook and MySpace, and other forms of "social bookmarking" (Pavlik and McIntosh 2011, 253).

[14] For a list of recent (2010) articles on the various legal issues related to social networking see, Legal Informatics Blog, *Legal Problems Arising from Social Media*, 2010 at http://legalinformatics.wordpress.com/2010/04/10/legal-problems-arising-from-social-media-selected-resources/

most important function of the digital manager – the ability to translate between the financial, creative, and IT functional silos present in almost every modern company.

Similar to traditional law studies, the traditional 4 Ps Model (Product, Price, Promotion, Distribution/Place) of marketing still holds, but each of the Ps has changed in significant ways as digital products and media have come increasingly into the marketplace. Digital products have different properties than physical ones, affecting how they are created, marketed and stored. Growing digital media options have greatly opened up the marketing communications (promotion) area, including where and how information about marketed products is sent and received. Because the marginal cost of digital products is near-zero (the cost of storage on a server), the new laws of pricing can become less cost-based and can be thought about in new ways. And again, because of the nonphysical nature of digital products, distribution has become a completely different enterprise, especially as consumers become more familiar and accepting of owning and using less tangible formats of traditional goods (a file on one's laptop versus a music CD).

Throughout this article, the authors note that digital convergence has brought together many previously independent business functions under its technological umbrella. Whether a company makes bricks, makes music, or provides accounting services, that company must understand the new methods of marketing and delivering those products and services. This is the reason why digital marketing has taken on such prominence in the new millennium, and why companies such as Google now stand among the giants of modern global business. Nonetheless, generally knowing how to apply marketing principles to the new and expanding digital marketplace is only half the battle. Knowing at least something about the inner workings of that technology and the workflow needed to produce it not only allows the new business manager to understand the marketplace, it also allows him or her to serve what the authors believe may be the most important role of a modern-day manager. That role has to do with the artificial silos typical in many business organizations that are dedicated to (1) finance & management; (2) information technology, and; (3) creative functions & marketing. These three silos often work at cross-purposes with each other, with each speaking its own arcane language and having its own goals. The situation can be analogized to an international treaty negotiation between three negotiators who speak different languages. In those cases, the most important person in the room is not the negotiator *but the translator* who can translate the needs of one side into the language of the other sides. We see our students, and indeed have designed our program, as meeting this need to interpret between the silos and report to each the needs and concerns of the others in a language they will understand.

Law will likely continue to lag developments in technology and business practices; however, focus upon digital legal issues will become increasingly necessary as markets for goods and services become less tangible in nature. Inclusion in existing business law courses the digital law topics addressed herein would somewhat reduce the gap between current-day international business practices and the inherent intellectual property basis of commerce resulting from digital distribution of content. However, shoe-horning in such a significant field of study is not recommended because it would necessarily dilute traditional legal studies currently and necessarily part of the business law discipline. That is to say, the addition of digital law curricula should not be at the expense of current business law studies, and should therefore stand alone as an additional and required area of study for any business program. For the reasons stated above, a digital law course should emphasize copyright and trademark law as well as recent changes in privacy resulting from social media and e-commerce, generally. The study of the management of disruption will become commonplace and therefore the emphasis in a digital law course will be more upon issue recognition as opposed to rote memorization. An overall business school curriculum modified to anticipate, accommodate and embrace the management of the evergreen disruption common to technology, marketing and the law will better serve higher education and 21st century industry.

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APPENDIX A - DIGITAL MEDIA MANAGEMENT CURRICULUM – MBA (54 credit hours)

Year One - Fall Term	Spring Term
Accounting I	Accounting II
Digital Marketing	Interactive Technology & E-Commerce
Introduction to Digital Media and Entertainment	Research Methodologies in Digital Media
Introduction to Economics & Statistics	Finance
Managing the Organization	Human Relations & Org. Behavior
Information Systems	Business Communications

Mandatory Summer Internship in Digital Industries

Year Two – Fall Term	Spring Term
Applied Digital Convergence & Evolution	Independent Research
Business Law and Ethics	Global Digital Media
Promotion and Branding	The Digital Consumer
Project Management	Capstone Project (significant
New Venture Creation	consulting project for a digital
Digital Law, Policy & Ethics	organization)

- DIGITAL MEDIA MANAGEMENT CURRICULUM – BBA

Business Core (36 credit hours)	Major (21 credit hours)
Financial Accounting	Principles of Digital Media & Entertainment
Managerial Accounting	Digital Media and Law
Business Statistics	Digital Interactive Technology
Legal Environment of Business	Digital Media Marketing
Business Communications	Digital Media Enterprise Creation
Microeconomics	Social Networking & Digital Analytics
Macroeconomics	Digital Media Production Planning
Introduction to Finance	
Principles of Management	
Principles of Marketing	
Operations Management	
Strategic Management	

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