

Blue Ocean MBA's in The Era of Wicked Problem Disruption From Automation, Robotics, & Artificial Intelligence

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ABSTRACT

Unprecedented disruptions in the U.S. economy are occurring because human capital can be replaced with automated technologies, robotics, and artificial intelligence (AI). These seismic changes have allowed many firms to produce the same number of goods and services using far fewer workers. Because of the pace at which machines can replace human capital, the authors recommend consideration be given to a “Blue Ocean Strategy” that would significantly change the content and structure of existing MBA programs. Specifically, the authors believe streamlined MBA course curriculums would provide more room for a “Wicked Problem” emphasis on disruption from highly automated business environments.

Keywords: Automation, Blue Ocean Strategy, Disruption, Higher Education, MBA, Robotics, Technology, Wicked Problem.

INTRODUCTION

Technology and automation have advanced dramatically in recent years and changed the global economic landscape. Firms now have new ways to replace labor with automated processes and robotics. Because the influence of labor has changed significantly, new business challenges and opportunities are more widespread than ever. In turn, this is creating unprecedented challenges and opportunities for higher education. This paper will explore what colleges and universities may need to consider to survive and to assure that their MBA programs are relevant to meet the demands of society. It is critical in this new environment that students are prepared to meet the challenges of tomorrow's employers who will depend heavily on investment in automation, robotics, and artificial intelligence (AI).

Should MBA providers consider using a “Blue Ocean Strategy” to differentiate their programs and pursue new markets? After all, discussion of Blue Ocean Strategy (BOS) is common in current MBA strategy courses. The old adage “practice what you preach” should apply to MBA programs. Yet, most MBA programs today appear to be homogenous and compete heavily with each other with only marginal differentiation. The irony of MBA providers that teach extensively about the value of Blue Ocean Strategy, but rarely follow the strategy themselves is counter intuitive.

Blue Ocean Strategy (BOS) was developed by Chan Kim and Renée Mauborgne. They noted that companies are inclined to pursue a strategy involving head-to-head competition in pursuit of continuous growth and profits, especially in industries that are overcrowded or seeing declining market share. The outcome is a bloody red ocean of competitors (i.e., “settlers”) battling over dwindling profits (Kim & Mauborgne, 2005). Blue Ocean Strategy dares companies to discontinue the red ocean of bloody rivalry by creating market spaces, in a blue ocean, that are more pristine and uncharted (Kim & Mauborgne, 2005). Nobody would argue that most MBA providers currently operate in a crowded market with programs that are largely homogeneous in content and structure. A BOS provides a mechanism for MBA providers to differentiate their programs and tap into the many new markets affected by automation disruption.

DISRUPTION TRENDS IN HIGHER EDUCATION

Academic institutions are facing many challenges that threaten their continued viability. Three financial trends impacting this situation are decreases in funding, rising costs, and tuition increases. Neuman (2017) reports that over the past decade, due to intense economic pressures, funding for state schools experienced a reduction ranging from

30-45 percent. At the same time the cost of providing higher education has risen.

Most colleges have reacted to increased costs and budget cuts by increasing tuition. In the last decade, after controlling for inflation, tuition has increased for public institutions by 34 percent while private, non-profit institutions have experienced a 25 percent increase (Neuman, 2017). With increases in family income significantly behind increases in tuition, additional increases in tuition may be difficult to afford. Many Americans are left wondering if a college education is really worth the cost.

Another trend is the shrinking number of students enrolled in colleges and universities. The National Student Clearinghouse Research Center (2017, May 23) reported that the number of students enrolling in colleges and universities nationwide has dropped consistently since 2012. They indicated that 2017 has been the worst year in the last five years. As the market diminishes, many colleges and universities will fail and some have already failed. The National Center for Education Statistics (2015, p. 602) reported that one hundred twenty-five colleges and universities closed their doors between 2010 and 2015 and 139 closed in the ten-year period before that. Additionally, Federal Student Aid reported that 538 colleges and universities are under increased government oversight due to financially related issues (Federal Student Aid, 2017). There are predictions of massive failures of traditional colleges and universities in the not too distant future and there are many who believe that the entire system of higher education is in dire need of radical reform (DeMillo, 2015, Harden, 2013, Frey, 2013, & Carr 2012).

Colleges and universities have largely failed to adapt to the changing needs of the twenty-first century. Concerned about this trend, former Secretary of Education, Margaret Spellings, organized one of the highest profile commissions in higher education history. The purpose of the commission was to transform universities so they would solely serve the needs of the market (Neem, 2015). The commission's report "A Test of Leadership: Charting the Future of U.S. Higher Education" (2006) issued the following warning about American higher education:

It is an enterprise that has yet to address the fundamental issues of how academic programs and institutions must be transformed to serve the changing educational needs of a knowledge economy. It has yet to successfully confront the impact of globalization, rapidly evolving technologies . . . and an evolving marketplace characterized by new needs and new paradigms (p. ix).

Thomas Frey (2013), Google's top rated futurist speaker, states that higher education is "slow to adapt and increasingly out of sync with the needs of business and society" (p. 45). We are entering an era where the demand for education will experience significant increases. At the same time, it is ironic that an immense disparity exists between traditional college programs and what consumers of the future will want (Frey, 2013).

THE NECESSITY TO RADICALLY REDESIGN MBA PROGRAMS

The literature is rife with controversy concerning MBA value, with much of it either mixed or indicating little evidence that earning an MBA has a positive impact on salary or career. Arcidiaconco, Cooley, and Hussey (2008) reported that the majority of the returns of MBA graduates were from those attending the top ten or top 25 programs and that the returns outside of the top 25 were quite small. Pfeffer and Fong (2002) found that obtaining an MBA degree contributed very little, if at all, to career success. Conversely, what made a difference in the long run was the graduate's capabilities prior to earning an MBA.

New articles appear frequently asking if an MBA is worth the cost. A growing number of graduates are discovering business schools' hollow promises (Broughton, 2011). Furthermore, Basulto (2015) suggests the following:

Robots could soon move into white-collar and other jobs in the creative industries. In fact, robots could take over nearly one half of all U.S. jobs in a decade or two . . . That has enormous implications for the educational system, which must educate students at a time of tremendous transformation of the workplace (para. 12 & 13).

Automation, robotics, and AI developments are already causing massive disruption in many industries creating never-before-seen problems, but also unparalleled opportunities. For these reasons, institutions providing MBA programs must adjust out of necessity. According to Christenson & Eyring (2011), "To avoid disruption, institutions of higher learning must develop strategies that transcend imitators" (p. XXVI). Today's business leaders need training that incorporates the newest technological advances and future trends where more and more automation will

be the norm. The authors believe automation, robotics, and artificial intelligence are disrupters fueling the necessity to dramatically transform MBA programs. The successful MBA providers of the future will be the ones that can provide insights into these constantly changing technologies. These providers then can show students how to apply this insight in a “real world” environment that develops critical thinking skills. These providers can differentiate themselves by examining Blue Ocean Strategies that fulfill unique market needs and provide significant value.

THE “WICKED PROBLEM” OF “AUTOMATED” DISRUPTION

In many ways, disruption from automation is not new. Machines have replaced human workers even before the Industrial Revolution. What is new is the speed and the complexity of automation, robotics, and artificial intelligence. In light of these technological advances, the future of work as we know it will become increasingly unclear. Large sectors of the economy are poised to be reshaped (Thurgood & Johal, 2017). In the near future, disruption due to technological advances will become “the new normal.” A 2016 report by McKinsey & Company of 800 occupations included a detailed analysis of more than 2,000 work activities and the level to which they are susceptible to automation. The report revealed that automation will not eliminate most occupations completely. However, all jobs will be affected to some extent (Chui, Manyika, & Miremadi, 2016). As the use of artificial intelligence escalates, it will take on more and more difficult and complicated tasks and society will be faced with new political, social, and ethical challenges (Dickson, 2017).

Disruption from automation would certainly fall into the category of a wicked problem. Camillus (2008) describes a wicked problem as a problem that has “innumerable causes, is tough to describe, and doesn’t have a right answer” (p. 100). Classic examples of wicked problems include terrorism, poverty, and environmental degradation. They differ from routine but hard problems that can be solved in a finite period of time through the application of standard methods. Conventional techniques are not successful in tackling wicked problems. Instead, they may exacerbate the problem and create a new set of unfavorable consequences (Camillus, 2008). The disruption caused by automation is an extremely complex problem to solve with no singular solution, which can also be exacerbated if not approached correctly. It will be with us for a long time, and dramatically change the way we live because it will revolutionize the way we work. From a business standpoint, disruption from automation is the mother of all wicked problems.

Some MBA providers currently use wicked problems as a major part of their curriculums. The College of William & Mary, for example, uses the concept of a wicked problem in their online MBA curriculum. In the first course, students are challenged to identify their own wicked problem derived from experiences in their professional or personal lives. Each student continues to work with the problem they identified all the way through the program (Wicked Problem). Other MBA providers may use existing MBA curriculums in combination with a wicked problem as a capstone project for corporate social responsibility purposes or for achieving something good in the public sector. For example, MBA students at the University of California at Berkeley use the wicked problem of the California drought (Bernstein, 2016, January 5).

MBA students enrolled in Said Business School at the University of Oxford (2013, June 25) are engaged in tackling some of the world’s most wicked problems facing policymakers and businesses. According to a 2013 press release the central feature is “a dynamic multimedia platform hosting videos from experts and practitioners, infographics, images, curated content and real-time online debate” (p. 1). Said Business School combines this with face-to-face learning using tutorial groups and scheduled events to spawn new ideas and develop action plans that address big problems that the world is facing (University of Oxford, 2013, June 25).

Disruption from automation is different from other types of wicked problems and is a more significant one for MBA providers. This is because putting aside the wicked problem, business curriculums will need to change anyway out of necessity. Business curriculums will fundamentally change because automation, robotics, and AI will profoundly impact all functional areas of business (Marketing, Finance, Human Resources, etc.). Therefore, the MBA curriculum should be laid out in reverse order with the wicked problem of automation disruption first, followed by the core courses. Institutions may currently use an existing MBA curriculum followed by a capstone course that focuses on a wicked problem (such as poverty). However, disruption from automation as a wicked problem is fundamentally different because automation itself directly impacts the course content in the curriculum. Poverty as a wicked problem may indirectly impact the MBA curriculum. However, automation, robotics, and AI impact the MBA curriculum in a much more direct and profound way. Thus, reverse engineering the MBA program with the wicked problem first is important, followed by the course design necessary to support work on the wicked problem. Starting the MBA program with the wicked problem is important. This will require MBA providers to use a new

out-of-the-box approach or a Blue Ocean Strategy.

Since many MBA providers need to overhaul their programs anyway (because the workplace will look much different from automation, AI, and robotics), a new Blue Ocean Strategy now can assure their MBA program is relevant and useful in the marketplace. Structuring the MBA program with disruption from these technological changes as a focal point is a path forward. There are multiple benefits to be derived from engaging in this type of Blue Ocean Strategy. It has the potential to dramatically transform MBA programs while at the same time providing an extremely valuable societal benefit: mitigating disruption from automation. Such an initiative is a win/win for all parties because it helps society, businesses, and individuals. For many universities, their MBA programs would again be at the forefront of business education.

BLUE OCEAN MBA STRATEGY CONSIDERATIONS TO ADDRESS THE “WICKED PROBLEM” OF DISRUPTION CAUSED BY AUTOMATION

At the core of the massive changes in technology, robotics, and AI is the overriding issue that firms simply do not need as many workers to produce the same number of products or services. Labor costs are just not the concern that they were in the past. This creates enormous societal disruptions and is certainly at the nucleus of what this wicked problem is.

Jon Kolko (2012), the former Vice President of Design at Blackboard and founder of The Austin Center for Design, describes a wicked problem as a “social or cultural problem that is difficult or impossible to solve” (p.10). He attributes this to four problems: (1) incomplete or conflicting knowledge, (2) the number of persons and their various opinions, (3) the large economic burden, and (4) the interconnectedness of the problems with other problems (Kolko, 2012). As an illustration, poverty is connected to education, nutrition to poverty, the economy to nutrition, and so on. Kolko (2012) indicates that these types of wicked problems are usually unloaded on policymakers or dismissed because they are considered too big and cumbersome to address. Yet these are the problems that plague our world and touch everyone. Kolko maintains that by using the process of design, these problems can be mitigated. The process of design “is an intellectual approach that emphasizes empathy, abductive reasoning, and rapid prototyping” (Kolko, 2012).

EXAMPLE OF A NEW REDESIGN APPROACH

In this example of a Blue Ocean Strategy, the authors weigh the MBA curriculum courses, and a wicked problem project each at 50%. Because of reverse engineering mentioned earlier we will look at the wicked problem (the capstone project) first, followed by course curriculum considerations.

Wicked Problem (50%): Because a wicked problem has numerous causes, is difficult to describe, and lacks a right answer or solution, it differs from routine hard problems (Camillus, 2008). Ordinary or routine problems can be solved in a finite period of time by applying standard methods. However, conventional techniques are not successful in solving wicked problems. Instead, they may exacerbate the problem by creating a new set of unfavorable consequences (Camillus, 2008). The disruption caused by automation is certainly a complex problem with no singular solution. This type of problem can also be exacerbated if not approached correctly. MBA providers should carefully design their programs to maximize societal welfare and opportunities for participants. MBA providers should also engage automation disruption in a way that adds value to the firms their students work for as well as the markets they serve and other stakeholders.

Technological advances in the near future are projected to be so pervasive that the effects will bleed over into all industries, professions, and sectors of the economy. For that reason, it is recommended that students focus on how to approach the problem of disruption in a particular industry or segment of the economy. MBA providers could even tailor their program(s) to specific industries and offer areas of specialization to enable students to work together to resolve the wicked problem of adapting to automation. Because this wicked problem is so widespread, individual institutions could specialize in specific areas, avoiding redundancy and head-to-head competition, while adding real world societal value.

MBA providers who specialize in specific areas of the wicked problem of automation not only reduce redundancy but also discourage “red-ocean” competition. Because this wicked problem (automation) is so vast and will be with us indefinitely, numerous approaches will be needed from different MBA providers. Thus, institutions with MBA

programs will have new incentives to break away from competitors and the current homogenous program offerings. Using their own unique Blue Ocean Strategy, they can contribute to tackling the wicked problem in a way distinctive from other MBA programs and consistent with their institution's mission and strengths. The enormous nature of the wicked problem of automation and the length of time society will be dealing with it assures that there will be plenty of "blue waters." MBA providers will have ample opportunities to develop areas of specialization and contribute to the global economy in their own unique way.

Critical thinking skills and creativity: To encourage MBA students to actually think critically and innovatively, Hess (2014) maintains that it "will require MBA students to learn critical and innovative thinking processes and to develop the ability to manage their thinking" (p. 2). Hess (2014) indicates these new skills and abilities are best "learned by doing." Additionally, they need to be done often enough that new habits, behaviors, and ways of thinking are ingrained. Individualized attention and mentoring are important. According to Hess (2014), the level of intensity and day-to-day individualized practice needed to acquire and develop these much needed competencies will require major innovation in the majority of MBA programs. If Hess is correct, future MBA programs will be radically different from current MBA programs. Why not now? This is the time for MBA providers to redesign their MBA programs and provide real world opportunities for their students to learn by "doing" via the wicked problem of disruption from innovation. It is a win-win: MBA providers have relevant programs again at the same time that business and society reap benefits. The heavier weight of the wicked problem in the program (50%) not only allows students to learn by "doing," but also provides a greater chance to develop the new habits Hess mentions.

Curriculum course content in functional areas (50%). Streamlined courses are delivered before working on a wicked problem. An example of what a Blue Ocean Curriculum could potentially look like includes the following areas:

Human Resources in an Automated and Telecommunications World: The rise in the use of automated technologies, robotics, and artificial intelligence may mean many firms will be working with fewer workers. This, in turn, could make outsourcing the heavily compliance based human resources (HR) function more desirable. On the other hand, if the firm decides to maintain the HR function internally, the role of each remaining worker becomes even more important. As fewer workers manage increasingly complicated and automated equipment, the management of those individuals will also become more important as well. These individuals may need a stronger emphasis on the soft skills needed to be effective team members and managers in a very lean organization. They will need to be able to effectively handle more complex problems that have the potential to shut down a major portion of the automated firm. For this reason, they will also need the training and emotional intelligence to work effectively with fewer colleagues to manage robots.

Organizational Behavior in an Automated and Telecommunications World: Radical changes with organizational charts will occur because of fewer workers and even leaner organizations. Organizations will have to become faster and better at what they do to gain competitive advantage. Therefore, managers will have to address problems and challenges that are more complex than in past times. Automation and robotics in the information age have caused organizations to revamp the way people interact and communicate in today's business environment. The need for higher level skills will impact the motivation and training of leadership.

Accounting in an Automated Society: A recent McKinsey study revealed that as many as 70% of tasks have the potential to be automated with next generation technologies (Chui et. al., 2016). The finance function holds great potential for automation. The accounting/finance function of the future will take on a more strategic role in supporting businesses. The focus will be on preparing MBA students to perform more knowledge work that adds value to the business with a greater emphasis on using accounting information (both qualitative and quantitative) to support decision making. According to Vasarhelyi, Kogan, and Tuttle (2015), "Big Data has the potential to cause a paradigm shift allowing economic activities to be traced and measured earlier and deeper" (p. 384). With an abundance of data available in real time, the financial reporting process should be optimized to provide useful and timely information that supports strategic goals (e.g. use of key performance indicators, scorecards, dashboards, etc.). Key assignments will be project based and support active learning in a highly automated business environment.

Finance and Digital Currency: In addition to standard course content in corporate finance, next generation currency including Bitcoin and Crypto-currency are examined in the context of the highly automated firm. Additional emphasis on operating leverage (substituting fixed costs for variable costs) takes on a much greater

significance in a highly automated environment. Fixed costs (robots, new automated systems, and advanced machines) replace many variable costs (workers) thereby, dramatically changing the finance function. Because the shift from variable costs (workers) to fixed costs (automated systems) is at the center of all these changes, understanding the impact from various scenarios is critical. Furthermore, because even newer technology moves automated technologies, robotics, and artificial intelligence down the cost curve, decision points to automate to the next level or stay at the same level are constantly changing. Also discussed is the continuously increasing automation of the firm that puts traditional finance areas (capital budgeting, short and long-term asset management, liquidity control, etc.) into new contexts.

Data Analytics (i.e., Big Data): Big data has been expanding and becoming more complex on its own because of new methodologies, systems, and technologies. The automated firm takes this to a new level with existing data technology systems interfacing with operating systems generating near instant data. Understanding the complexity of these intersections and how to optimize big data in a highly automated firm is emphasized. New problems and solutions, are explored for enhancing corporate objectives consistent with developing trends and next generation technologies. The role of data professionals in the organization and their interaction with employees from other functional areas (and the big data problems unique to their respective disciplines) are examined. Various scenarios representing a cross section of industries combined with case studies also augment content areas.

Social Media and Technology in Marketing: Firms that operate using fewer workers will have additional challenges with marketing and public relations when it comes to corporate social responsibility. Example: Firms may no longer be able to meet previous corporate social responsibility expectations by just providing jobs if they are considerably smaller in number. If automation and robotics replace those jobs, firms may need new ways to respond to communities and other stakeholders. If the firm's societal role changes, how they determine the best way to become a good corporate citizen will also change. Communicating with customers, especially through social media, may take on new forms as organizations use it as a way to more fully explain how they interface with the highly automated firm. Firms can take advantage of the sustained and constant power of social media to keep all stakeholders current on the automated changes taking place. They can also stay informed as to why they are doing it and how it benefits the community, etc. Other marketing concerns for the highly automated firm may include utilization of AI to better understand customers' needs and desires, segmenting markets, and building brand value. Automation will also impact product development, pricing, and distribution decisions.

Automated Business in a Global Economy: Because automation and robotics make labor less of an issue than before, deciding where to produce in the world also changes. Technology should address this issue and enhance exporting and importing as well as foreign market entry and growth. Because global and domestic competition has increased tremendously in recent years, globalization will continue to pressure leaders to think more in terms of the big picture than ever before. International managers will have to use automation to represent their companies on today's stage. Innovation rather than reaction will keep companies ahead of the competition.

Ethics in a Shrinking World with Machines and Artificial Intelligence: In addition to a firm's internal ethics, there are new external and ethical decisions such as corporate social responsibility. Accordingly, the firm's focus on ethics changes as the firm experiences significant increases in automation. Leaders must, therefore, engage in making ethical decisions at home and in a cross-cultural environment in a digital world. Social media, for example, is growing at a rapid pace and will continue to impact practices such as automated data extraction and ethical decision making. As the world becomes more interdependent, questions will increasingly arise as to what is legal and what is illegal as well as what is right and what is wrong.

Leadership and Innovation through Disruption: The introduction of new technology appears on a daily basis to serve as tools to present day leaders. The process of unlearning old methods of leadership, however, will present as difficult a challenge as learning new methods. Change is often difficult for leaders to address, but changes must be faced so leaders can move forward through innovation. Disruption, therefore, must offer opportunities and not always be considered a threat. Humans will have to think outside the box to keep pace with machines, robotics, and artificial intelligence. Companies will even have to consider relieving some of their brightest most talented people from their day to day responsibilities to assist in leadership development, problem-solving skills, and collaborative endeavors.

Strategy Decisions in the Era of Automation, AI, and Societal Change: In the future, new strategy approaches

will change because of the rapidly changing technological environment. They will become more complex and traditional strategies that have worked in the past may not have the same effectiveness they once did. Firms that are highly automated with the extensive use of robotics and AI, may provide openings for new hybrid strategies, or even entirely new strategies altogether. At the very least, use of more Blue Ocean Strategies discussed in this paper may become more common as companies use the technological leverage they gained as a way to explore entirely new markets with fewer competitors. Other strategic issues for the highly automated firm may include: (1) changes in globalization and international forces because of these technological changes, (2) changes in organizational goals, (3) changes in environmental concerns (external and internal) including industry and analysis of resources, (4) technology, (5) cost management, (6) growth and (7) sustainability, etc. All of these areas will take on new meaning as global firms shift to the next big leap in automation, robotics, and AI.

After graduating from the program, continuing education should be offered because the technological environment will continue to change rapidly. MBA providers should consider offering these continuing education courses, to their graduates as a value-added service at no cost or, even, provide the courses for a nominal fee. This way MBA students' will have some assurance that their return on investment will be less volatile, and that their MBA degree will not become obsolete. Not only do MBA graduates maintain degree relevance, but they also remain close to their institution and can provide "real world" feedback from the field. This automation / AI feedback can in turn be recycled back into the streamlined course content areas so they remain current for new incoming MBA students.

CONCLUSION

Future MBA programs will be training individuals for skill sets that are increasingly a moving target. Never has this been more evident than it is now because of massive changes in automation, robotics and AI. These changes are causing unprecedented challenges and opportunities for business entities, as well as extraordinary disruption issues for society in general. MBA providers can provide valuable contributions to private and public sector interests by aggressively pursuing new and innovative training programs. Academic institutions using Blue Ocean Strategies that emphasize out-of-the-box thinking, can assure future MBA program relevance, graduates with needed skills, and a mechanism for mitigating the societal "wicked problem" of disruption from automation, robotics and AI. As the global economy evolves to the next level with these advanced technologies, MBA providers need to be in a strong leadership position to minimize adverse disruption effects while maximizing the welfare for as many stakeholders as possible.

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