

Teaching Integration in MBA Programs

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Abstract

MBA programs prepare business leaders, and MBA graduates lead education, healthcare, and public sector organizations. The pedagogy and curriculum of MBA programs must address integration directly in order to help students appreciate the integrated nature of enterprises and their operating environment. Capstone courses with teams engaged in business simulation exercises are one approach to teaching integration that exposes students to imperfect knowledge and incomplete information. Furthermore, the experience of working in teams with varying backgrounds and abilities to achieve effective solutions to complex real world problems highlights the need for a cross functional view of an enterprise.

TEACHING INTEGRATION IN MBA PROGRAMS

MBA graduates face a diverse set of challenges in serving the needs of organizations and society as a whole upon graduation. Many disparate topics are taught in the typical MBA program, and graduating students need to be able to synthesize and apply the knowledge gained from their MBA education in leading organizations to success. A deep appreciation of the integrated nature of enterprises across functions is critical to significantly contributing to an organization's success: "Business problems, unfortunately, seldom respect functional or disciplinary boundaries. Especially when problems are complex, effective solutions usually require an integrated, holistic perspective: the ability to apply multiple lenses and link differing points of view" (Datar, Garvin and Cullen, 2010).

To facilitate such development, according to Latham and his coauthors, students need to be taught the ability to integrate one's approach to managing the various areas of the enterprise (Latham, Latham and Whyte, 2004). Merriam-Webster defines integrate "to form, coordinate, or blend into a functioning or unified whole: unite" (2008). In the context of this paper, integration means the coalescing of disparate areas of knowledge into a working body of knowledge wherein the MBA graduate has learned to link the various aspects of MBA study into a cohesive whole that helps him/her to understand the realities of business practice and apply his/her knowledge to solve business problems and lead organizations.

There are a wide variety of methods used in educating MBA students on the integration of the major functional areas of an enterprise in order to prepare students to deal with business issues from a well-rounded perspective. This paper describes some of the methods aimed at integration

teaching as described in the literature, reviews the experience in a capstone course which is one of the prescribed methods of teaching integration, and discusses some aspects of integration in a small engineering services enterprise.

Literature Review

Since the end of WW II, graduate management education has moved through two phases. At that time, many management positions were being filled by non-business professionals such as engineers and nurses (Kleimann and Kass, 2007). MBA programs emphasized technical expertise in the major functional areas of an enterprise, typically identified today as the areas of marketing, finance, operations management, accounting, human resources, economics, information systems, and the legal environment in which businesses operate. Business schools were “little more than trade schools” (Latham, Lathan, Whyte, 2004). The first phase, in response to criticism that such programs lacked academic credibility, was to introduce scientific methods and quantitative analysis into MBA curricula. The second phase, in response to new standards adopted in the 1990s by AACSB International – The Association to Advance Collegiate Schools of Business (AACSB), has been to adopt a mission-based approach. These new standards sought to have business schools focus efforts on curriculum development, rather than trying to be all things to all people. Under these standards, business schools first define their mission and then select courses to facilitate accomplishing that mission (Kleimann and Kass, 2007). AACSB standards require member schools to identify the desired outcomes for their MBA programs and then design the curriculum to serve that mission, acquire the resources, and plan and conduct its program to achieve the stated mission. With respect to graduate study in particular, the AACSB standards require that learning be developed in a more interdisciplinary and integrative manner than undergraduate business education (AACSB, 2011).

A review of the literature indicates that there are a wide variety of pedagogical methods used to teach functional integration of enterprises in the MBA curriculum and hone the critical thinking skills of students. These methods include team teaching, executive MBA programs, capstone courses, simulation courses, internships, and partnerships. The literature includes debates on the value of integration versus specialization in both undergraduate business and MBA programs. The term “silos” appears frequently in relation to business school academia, business education curricula, and the business world in general. The general meaning of silo in these contexts is the isolation of functional areas leading to a lack of communication and coordination amongst subunits of an organization or a failure to capitalize on synergies between such subunits leading to redundancies, errors, and other suboptimal conditions. Campbell, Heriot, and Finney mount a defense of silos in undergraduate business education. Their arguments for retaining certain aspects of functional specialization in undergraduate business programs are discussed later in this paper.

Hochradel, Long, and Johnson state that an integrated MBA program enables “students to ‘connect the dots’ between the information in various subjects and experience the interaction between these subjects as they are practiced in real-world situations” (2010). These authors also find that it is a challenge to find proper textbooks for teaching integrated coursework. One remedy the authors suggest is to develop cases and projects to suit the integrated module (Hochradel et al, 2010). For example, if existing texts do not adequately support specific cross-

functional content, faculty, in preparing for the course, could be given resources and incentives to augment existing texts with targeted presentations and extended class notes.

Latham and his coauthors argue that for MBA programs to be successful in the future, a “change should be aimed at fostering the capacity of MBA students to integrate various functional perspectives to meet the complex business challenges of the 21st century” (2004). The authors go on to state that MBA programs would be wise to learn from executive education programs which tend to use an integrated teaching strategy. In contrast to MBA programs, which are often based on functional specialization, executive programs take an integrated approach wherein modules are connected. Strategy and finance modules, for example, might both be connected to a module on leadership and team building. The importance of developing leadership skills becomes apparent to the student when learning about strategy and strategic thinking. Executive programs are “holistic,” presenting key concepts throughout the program to underscore the importance of understanding and making use of these interrelationships (Latham et al, 2004).

Garvin compares and contrasts use of the case method in MBA and executive teaching in an effort to identify effective classroom methods. He also identifies differences in “program purpose, student characteristics, and class dynamics” (2007). He finds that due to differences in these areas, modifications to teaching methods are required. For example, executive teaching must focus more on information and knowledge sharing and less on basic skills when compared to MBA teaching. MBA students require more time spent on diagnosing problems when compared to executives (Garvin, 2007). Such differences should be considered when adopting executive teaching techniques in the MBA setting. While the need to teach functional integration to MBA students is evident, not all methods used in executive teaching would appear to transfer to the typical MBA setting.

Campbell, Heriot, and Finney write that “existing MBA curricula and undergraduate ‘capstone’ courses already address” concerns that business education should emphasize integrative models or “break down the silos” (2006). These authors defend silos at the undergraduate level and propose that silos can have value and be expensive to replace if broken. Silos in general are useful for storing and organizing something of value. In business education, functional specialization, that is, reliance on silos produces functional experts for entry level positions. In producing functional experts through undergraduate business education, better hedging signals are provided to prospective employers by indicating more clearly the graduate’s preparation for functionally specific assignments. They also suggest that undergraduate students are introduced to the concept of integration via the capstone course at the end of the undergraduate program. While acknowledging that many undergraduate capstone courses have evolved over time into courses on strategic management, these authors stipulate that students enrolled in these courses must integrate their understanding of business functions to grasp the concepts of strategic management (Campbell, Heriot, and Finney, 2006).

Campbell and his coauthors further conclude that MBA programs are where the concepts of integration are more fully developed, imparting subject matter experts with general management knowledge, skills, and abilities. MBA programs prepare employees lacking business background to function as executives and round-out executives possessing a business background to improve effectiveness. MBA programs address the need for integration at the proper point in a person’s

career. An employee that has mastered an entry level job in a specific functional area may pursue an MBA education, with its emphasis on integration of knowledge across the major business functions (Campbell, Heriot, and Finney, 2006).

Campbell and his coauthors do endorse the notion that integration teaching is useful in the undergraduate arena, suggesting that business schools update business courses so that students gain an appreciation for collaboration in cross-functional projects. However, they caution, these changes should not come at the expense of the functionally specific curriculum central to undergraduate programs (Campbell, Heriot, and Finney, 2006).

How does pedagogy affect success in teaching integration? Pedagogy is the art, science, and practice of teaching. A curriculum is the set of courses in the program – the content, what is taught. Campbell and his coauthors argue that many of the sought-after benefits of an integrative approach in business education require pedagogical rather than curricular modifications. “Many of the critics proposed solutions to the so-called silo problem are actually pedagogical, rather than curricular” (Campbell et al, 2006). They propose that the distinction is important as both types of program changes are costly. Their examples of pedagogical changes include multiple course cases, multiple course simulations, team projects, action learning (“live projects”), emphasizing mentoring, guest lecturers, and increased coordination between courses (“syllabi coordination”) (Campbell et al, 2006).

In contrast to the positions taken by Campbell and his coauthors, Stover and her coauthors propose that curriculum modifications are needed to address silo-related limitations in business education: “These ‘ivory silos’ are matched by comparable functional silos among business practitioners” (Stover, Morris, Pharr, Reyes and Byers, 2007). The authors describe a process at the University of Idaho that included a faculty task force that engaged in a two year planning activity to develop a vision for redesigning the core business program into integrative modules. Another task force was then formed which focused on the reorganization process. A pilot program was then developed. The process described by Stover and her coauthors is a lengthy and resource intensive one. However, the authors report, based on stakeholder feedback from students, an advisory board, and faculty, a valuable outcome of providing students with a better appreciation of business firms as a whole, rather than a collection of separate, even independent functions (Stover et al, 2007).

It is not difficult to uncover stories of dysfunctional organizations, replete with silos, wherein departments do not work well together, even when depending on each other for resources and information, and supposedly working toward common goals. Even at the undergraduate level, students should learn that there can be dysfunction and failure when silos run amok in an organization, and a more integrated approach to participation in an organization can add value.

Antonacopoulou states that MBA programs “tend to analyze management as a series of functions” and that such curriculum does not encourage the critical examination of the course content as it may relate to the real-world experiences of students and instructors (2010). Critical thinking holds “phronesis” as a central tenet. The author identifies phronesis, which is associated with “practical knowledge,” as one of Aristotle’s three modes of knowledge.

Antonacopoulou describes a course in critical thinking intended to “encourage participants to distil a more integrative analysis of the multifaceted nature of management and to critically reflect on their experiences of managing” (2010). The course is a series of three workshops over the course of an MBA student’s education. The first workshop has students examine their reasons for entering the MBA program. It includes exercises in developing critical thinking skills used in “reflexive critique.” Students are encouraged to critically analyze new data and not accept theories without reason, especially if they are not consistent with their own experience. The second workshop takes place after students have completed most of the core courses. It explores connections between the core modules, and draws on personal experiences in managing. The third workshop occurs at the end of the MBA program and looks at the research process as a learning experience based on reflexive critique (Antonacopoulou, 2010).

Partnerships are another means of enhancing the MBA student’s appreciation of functional integration. Think tanks, “corporate universities,” and consulting firms offer competition to MBA programs if businesses send executives to, or hire from, these organizations rather than relying on traditional business schools. Schoemaker recommends partnering with such competition to improve business school programs (2008). Internships as part of a student’s graduate program of study are another form of partnership. Through internships, students face real-world challenges and seek to develop implementable strategies for the partner company (Latham et al, 2004).

Schoemaker suggests that MBA programs “design the curriculum around the business challenges rather than academic disciplines.” This would foster the development of important skills such as the ability to frame problems through “multiple disciplinary lenses.” The ability to move beyond functional silos in this manner is critical, as the “more challenging problems of business are multifunctional, extend far beyond analytics, are imbued with value and ethical concerns, and tend to be too systemic for quick or partial solutions.” The functional silo approach, which may be appropriate in other programs, “is the bane of the business school.” In what Schoemaker calls the “clinical field” of business, solutions are rarely simple and final. If that were not so, the payoff for winning in business would not be great, as many would master and apply the basic techniques. A manager’s most important skill may be centered on the ability to deal with ambiguity and complexity (Shoemaker, 2008).

Latham and his coauthors provide a list of proposed courses developed at The University of Toronto's Rotman School of Management in a program reform effort aimed, in part, at promoting integrative thinking in its MBA program. These courses include a “field project requiring students to take a multidisciplinary approach to resolving unstructured business problems, a course on effective thinking, designed to acquaint students with a technology for integrative thinking that is rooted in systems dynamics and philosophically based approaches to reasoning and logic, a course on negotiations, which provides students with the capacity to create value by constructively integrating diverse perspectives, a course on leadership, specifically focusing on its integrative role,” and “a capstone business strategy simulation requiring students working in teams to think cross-functionally as they make decisions under competition in an environment characterized by uncertainty” (2004). These authors state that it is too early to assess the school’s success at incorporating integrative thinking into the curriculum. However, a

review of the school's website (University of Toronto, 2012) indicates that integrated thinking continues to be a program priority.

The Capstone MBA Course

One way to teach integration to MBA students is through a capstone class. The capstone MBA course in the Business School at one public University in the Midwest "Emphasizes the integration of all business disciplines in strategic planning," according to the 2010 graduate catalog (University of South Dakota, 2011). The Business School at this institution has been continuously accredited by AACSB International - The Association to Advance Collegiate Schools of Business International since 1949, and the graduate programs, Masters of Business Administration (MBA) and Masters of Professional Accountancy (MPA), have been accredited since 1965. AACSB International accreditation is the hallmark of excellence in management education, and less than 5% of the world's business schools enjoy this honor (AACSB, 2012).

According to the syllabus for the capstone MBA course at this particular institution, the course builds on students' understanding of the functional areas of business and demonstrates how businesses integrate these functional areas to be more successful (Wharton, 2010). A key component of the course is a business simulation activity, which lasts throughout the entire course. The simulation exercise uses an online product, the Marketplace Business Simulations system. Students form teams and each team creates a company within the simulation and competes against each other in a simulated global retail personal computer marketplace.

The capstone Strategic Management course in spring 2010 was an online course. All lectures were provided by prerecorded videos and narrated PowerPoint presentations. The Collaborate/Elluminate software available through the institution was used to host classroom discussions, team collaborations, and team presentations to the instructor.

The graduate student author's team name was International Microcomputers (IMC). The IMC team members were located in four time zones on two continents, making scheduling and collaboration challenging. Delegation and trust proved to be key factors affecting the success of IMC in the competitive marketplace simulation. Per course requirements, each of the four team members of IMC assumed a Vice President role: Finance/Accounting, Sales, Production, and Marketing. These assignments were made by the team after an initial conference call of the four, where introductions and were made and each student shared information on his/her background. Each student was also required to serve a rotation as IMC CEO to direct the team through a two to three week portion of the simulation. These features required each student to focus on a specialty, while at the same time keeping tabs on the overall progress of the team and the alignment of tactical initiatives with IMC's corporate strategy. Overall, this was beneficial as it provided students with a realistic experience of the integrated nature of enterprises.

The simulation exercise required each student to consider all the functional areas of running a business and the various interrelationships amongst these areas, providing students with a hands-on experience of functional integration. For example, each step of the simulation completed a three month simulated time period and the total simulated time was three years or twelve quarters. Each quarter the IMC executives were responsible for proposing expenditures within

their respective functional area. Examples include plant expansion, workforce sizing and compensation, product development, marketing, and sales promotions. All these proposals came at a cost, and the company operated within typical financial constraints. Each initiative could help or harm the performance of the company. These initiatives would be analyzed in an attempt to select the most effective tactic for advancing IMC's goals. The executive team would also assess major initiatives against the overall IMC strategy. For example, an impulse to develop a "Cadillac" personal computer may be at odds with a strategy of being the low-cost PC vendor. This could lead to either a change in tactics or a reassessment of strategic goals. Each proposed tactical maneuver was also subject to risk/reward trade-offs and other factors such as diminishing returns. Many of these factors could be gleaned from reviewing financial reports as well as industry and market research reports available to the players in the simulation.

At one point in the exercise, IMC experienced a significant loss of market share because certain sales force promotional activities were adopted by all of the competition but not by IMC. The cost of the sales force promotions was not great, but the relative advantage given to the competition was significant. When this discrepancy was discovered, the IMC team decided to sharply increase the promotions budget, outspending the competition in this area. The advantage held by IMC's competition was erased because the other teams did not recognize the far greater expenditures on promotions by IMC, even though the information was readily available in the market research.

The problem at IMC was that the Vice President of Sales did not closely review the market research relative to sales promotions and dedicated only a nominal budget to this activity. The IMC executive team also did not ensure that all effective levers were being engaged each round of the simulation. Before the discovery of the root cause of the problem, each executive had reviewed his/her own areas of responsibility and found no cause for concern. The evidence that something needed to be done was in the falloff of productivity of the IMC sales staff. All IMC executives could see this development. All reviewed the compensation of the sales force relative to other teams. IMC was equal to or better than the competition. Rather than digging deeper, the team waited on more information from the next quarter's results. It took another iteration before the team investigated other aspects of the sales force activities that could explain the lag in sales force productivity. The sales promotion expenditure gap was discovered and corrected at that time. This episode was instructive in several ways. For example, IMC made a mistake upon which other teams capitalized. However, more than one competitor admitted during their final presentation that they did not immediately notice the IMC correction, thus giving up some of the ground they had gained. The course materials and instructor lectures included the advice to watch out for adjustments and counter-adjustments during the course of the simulation. Another lesson learned was to emphasize both the individual responsibility of each executive and the integrated approach to oversight, especially when relying on virtual teams where there is less interpersonal interaction, which could foster increased collaboration.

There were many aspects of the simulation that followed a similar pattern: An IMC executive would make a proposal and perhaps a teammate would have special knowledge or interest in the area and do some checking on his/her own in the simulation data. The proposing executive would justify the proposal based on the simulation information and on the strategic goals of the company. Unfortunately, the team lacked a coherent strategy for checks and balances. This

meant that where an executive had a special skill or interest in an area, the subject was essentially covered. If there was no such skill or interest, it could fall through the cracks. Another example of such a misstep occurred when a marketing priority was set on some brands but sales force promotions emphasized other brands. This was corrected in a subsequent quarter but the oversight resulted in lower sales and lower customer satisfaction. Potential solutions to this problem include recognizing such coverage gaps and addressing them explicitly in the functioning of the team. Each executive could have been expected to document his/her review of his/her functional area and provide that review to the team prior to meetings. In the interest of time and because the simulation included screens for reviewing all decision areas, such explicit documentation was not required. Another possible remedy to the problem would be to look at the overall picture as well as the separate components of the whole picture. In this particular situation, the team, and especially the Vice President of Sales, should look at both the total sales force expenditures relative to the competition and at the components of that total, relative to the competition. This may have led to a quicker discovery of the neglected promotions opportunity. In other words, each executive should “unpack” or break down the summary information and look for trends at both the corporate level and within each material component level.

IMC finished second out of eight teams in the simulation. It is likely that the mistake in sales promotions described herein, and the strategic decision to not enter the web-based markets until very late in the simulation, were the two most costly errors made by IMC. Nevertheless, learning from these mistakes and learning from the mistakes and successes of the other teams were integral to what was a vital and engaging learning experience.

The capstone class and team simulation were effective in helping students to learn about the integration of an enterprise in several ways. For example, the MBA students were allowed to form their own teams. The instructor suggested that teams with diverse backgrounds and specialties would be advisable. IMC team members came from diverse backgrounds: finance, engineering, sales, and marketing. IMC was able to make the vice president assignments to the four teammates in close alignment with the individuals’ backgrounds. In addition to this functional delegation, each team member took a turn as IMC CEO. The role of CEO was not just to organize the week’s activities but also to make decisions if there was a stalemate, and guide the team in pursuing tactics that aligned with IMC strategic goals, developed at the beginning of the course.

The CEO could further take on the responsibility of overseeing or double-checking the decisions of each executive team member. Individuals applied different strategies to this activity during the course. Sometimes the IMC CEO would look at many details early in his/her rotation and provide ongoing feedback to the executive team. Other team members in the CEO role would review a sample of proposed actions and ask questions to bring out the specific factors the responsible executive considered in making the decisions.

One tactic that was not well received by the team was when a teammate acting as CEO identified a possible course of action and asked the team if they supported the proposal. Only after obtaining buy-in from the rest of the team did the proposing CEO provide additional information regarding possible defects in the proposal. The CEO then asked the team members if they still endorsed the proposal. This tactic had the effect of discouraging the team and eroding cohesion

and trust within the team. This may be a method that works better in an in-person setting or in a situation where the team members are more familiar with and accustomed to one another. However, a more straight-forward approach might work as well or better without the downside consequence of reduced trust.

Each week the IMC team reviewed all of the data associated with the simulation, including IMC's performance in the marketplace and performance with respect to specific measures for a business including market share, profitability, growth, various financial ratios, quality measures, and the performance of the team in the simulation scorecards. This review and discussion revealed how the different functional areas interacted. Pricing decisions affected sales projections. Sales projections fed plant utilization decisions. Plant utilization affected plant expansion plans. Plant expansion plans affected finance decisions. The quarterly spending proposals selected had to fit within budgetary constraints. The simulation kept track of many performance statistics which were used in determining balanced scorecard results, both for individual team members and the team as a whole in competition with the seven other teams in the simulation.

The balanced scorecards also provided information that helped the student appreciate the integrated nature of an enterprise. They were constructed so as to simulate trade-offs between initiatives. Each IMC team member took ownership of a portion of the scorecard. There were eight scorecard components: financial performance, market performance, marketing effectiveness, investment, manufacturing productivity, human resource management, asset management, and creation of wealth. All four IMC team members owned the human resource management and creation of wealth areas. Other areas were assigned to one or two team members. For example, the IMC Vice President of Production was solely responsible for manufacturing productivity. However, the team was assessed on a combined score as well. That is to say, individual course grades were affected by both individual scorecard results and combined scorecard results. This course assessment methodology recognizes that it is possible to incentivize managers for both their individual performance and the overall performance of the organization.

Reviewing all these facets of the business allowed students to see how the decisions were interrelated. For example, IMC initially made the mistake of failing to hold on to enough cash to avoid an emergency loan. The team's rationale for this move was to not leave any cash idle. However, due to the iterative nature of the simulation and the somewhat realistic rule that bank deposits could not be used to cover cash shortages, IMC was forced to give an ownership interest in IMC in return for an emergency loan from the simulation's loan shark "Guido." This altered the scorecard performance numbers for the remainder of the simulation. However, the team learned a lesson from this and adjusted the parameters of the weekly evaluation so as to avoid repeating that mistake.

One of the factors the team had to overcome was the Vice President of Finance/Accounting's reluctance to engage in borrowing. His initial thought was that debt would make IMC less attractive to venture capitalists. Other team members looked into the matter and successfully made the case that the different debt instruments available in the simulation should be used to

support IMC's start-up activities and that the use of debt would not adversely affect IMC's performance.

Later on, when preparing for the simulated "Venture Capital Fair," team members wanted to forego taking any equity financing from the venture capitalist in the simulation. These team members did not want to not give up any ownership position in IMC. They wanted to keep control of the company and keep the rewards of success with the original owners. However, the simulation was constructed to require equity financing in order to successfully compete. The course documentation stated that fact plainly. Once the team understood this necessity, the Vice President of Finance/Accounting presented the worst case cash flow pro-forma financial statement to the team, based on a 50% reduction in projected sales and associated revenues, indicating a recommendation for \$3,500,000 of equity financing. The final result of the fifth quarter Venture Capital fair was the receipt of \$3,600,000 in venture capital. Details of the venture capital obtained by all teams are not currently available, but the indication was that all teams received financing at comparable levels and prices. While financial performance and creation of wealth scores on the balanced scorecard rewarded minimizing outside investment, failure to obtain any was bound to leave IMC incapable of financing its expansion plans. The IMC team did not give up controlling interest but did acquire sufficient venture capital as recommended by the course documentation.

Another example of the interrelatedness of decision making was in the area of scheduling plant capacity. The IMC team had great difficulty accurately predicting sales. The Vice President of Sales was aggressive in his sales projections. The CEO at this time was adamant that all decisions that were dependent on sales projections rely strictly on the Sales division's projections. This placed significant importance on the accuracy of those projections. The Vice President of Sales explained that he had no historic record in the simulation for making credible sales projections, and his projections merely reflected an ever-improving sales staff performance and ever-growing overall market. Other team members were concerned that the market could enter a stable or even declining phase during the simulation. Unfortunately, while the market did continue to grow, IMC sales staff performance lagged, and IMC did not have any presence in the burgeoning online market. So, with 50% sales growth projections, the graduate student author, as Vice President of Production, continued to schedule a high level of operating capacity in anticipation of continued sales growth. This led to much idle capacity, high inventories, and higher overhead costs. These factors impacted IMC's overall performance. It was clear that other teams were not much better at predicting sales. However, IMC was slow to learn that penalties associated with stock-outs were more readily overcome in subsequent quarters than the penalties associated with low productivity and low plant utilization.

The capstone simulation experience helped students learn about the integrated nature of the modern enterprise. All the major functions of an enterprise were represented in the Marketplace simulation, and the software and course delivery were effective in showing how these business functions interacted.

An instructive component of the simulation experience was the final presentation made by each team. These final presentations were open to the entire class, although attendance was not required. The final presentations offered insights into the backgrounds of the team members,

how the other teams were organized, and how they dealt with some of the challenges of working in teams and working on the multiple facets of their company. The graduate student author attended four of the eight final presentations given over the Collaborate/Elluminate system. Many of the lessons learned presented by the teams were similar. Examples include the need to maintain a consistent strategy across all facets of the organization, the challenge of implementing a strategic thrust and keeping the strategy focused over time. It was also evident that many teams struggled to make use of all the information available in the simulation and that it was a common challenge to cover all the bases.

To provide an earlier opportunity for the students to learn about the other teams, it is suggested that the course include a “virtual trade show” in the middle of the simulation. During the trade show, held on the Collaborate/Elluminate web-conference system, teams would make presentations touting the virtues of their products and company. The teams would be required to showcase two or more business units. For example, a team could explain how its manufacturing organization had the most productive workers in the industry. The team may explain its strategy for motivating the workforce through specific benefit programs and levels. Another team might explain how its product or brand is outperforming the competition. Alternatively, teams could explain lessons learned to date or highlight strategies for improving performance. Not all such information would be topical for an actual trade show, but it would give students the opportunity to see their competition earlier in the course and learn about how they conduct themselves as a team. With the course presented entirely online, holding such a trade show through Collaborate/Elluminate would provide an opportunity for more and earlier student interaction. However, the teams may be reluctant to share confidential information with the game only half over. To overcome this reluctance, a grading mechanism could be devised to incent a minimum level of accurate disclosure. Such an activity at the halfway point of the simulation could prove instructive and serve to encourage students to engage in collaboration at a higher level. A possible benefit of this exercise would be increased discussion within the individual teams about organizational issues such as roles, expectations, hierarchies, and silos.

A second recommended addition to the simulation activity is for each team to prepare and distribute a company data sheet. The data sheet would be modeled on the “about us” information found on most corporate web site home pages. Through this exercise teams can demonstrate their approach to managing the imperatives of functional integration. Sharing the results of this exercise could serve to spark new ideas within the teams about how to organize, operate, and compete more effectively.

Third, an interesting aspect of the simulation was the employment of various response functions. Demand for a specific computer model was driven by a host of factors including diminishing returns, market saturation, and advertising expenditures and quality. Productivity was driven by things like regional demand for wages and benefits. These functions are likely based on research and textbook sources. It is also likely that each simulation commences with some initial setting of parameters to generate an interesting simulated marketplace. Following the end of the simulation, it might be instructive for students to learn of some these parameter settings. This could serve to demonstrate how integration between the functional areas of an enterprise was modeled and as a starting point for discussion on the relationship of the simulated parameters to real-world drivers.

The Educational Testing Service (ETS) Major Field Test for MBA assesses mastery of concepts and principles by graduating MBA students. The MBA Major Field Test became available in 2002, and USD began using the MBA exam in the fall of 2007. The exam assesses knowledge of the specific areas of marketing, management, finance and managerial accounting. The exam also tests the students' ability to integrate knowledge of the specific areas. Therefore, the exam results include five assessment indicators, one for each content area previously mentioned plus one assessment indicator that focuses on Strategic Integration knowledge. Each test taker earns an overall exam score, and the assessment indicator scores are reported for groups of students, such as a cohort of MBA students (Educational Testing Service, 2012).

. The MBA program at this institution is delivered in three different modalities:

- Full-time, face-to-face program on the main campus
- Part-time, face-to-face program on a satellite campus 60 miles from the main campus
- Part-time, online program

The face-to-face MBA program has been offered since the 1960's at this institution, and the program has been delivered face-to-face to the satellite campus since the 1990's. In 1997 distance delivery was initiated through video conference technology to reach more locations within the state, and in 2007 video conference delivery was replaced by online course delivery. The full-time students on the main campus tend to be younger students with less work experience who are more likely to be recent college graduates. The online students as well as those on the satellite campus tend to be working professionals with more experience.

While the same faculty members teach the same content regardless of delivery mode, results were initially not consistent across groups of students on the Strategic Assessment indicator when the ETS Major Field Test for MBA was initiated as an assessment tool in fall 2007. For example, the first part-time, face-to-face satellite cohort of students (fall 2007 – 17 students) performed in the 90th percentile on the Strategic Assessment indicator while the while the first full-time, main campus group of students to take the exam in spring 2008 (10 students) performed in the 65th percentile. The first distance group to take the exam in spring 2008 (10 students) scored in the 60th percentile. Results were also similar for the summer 2008 cohort of main campus, full-time students (22 students) as they scored in the 75th percentile.

The graduate faculty members teaching in the MBA program have certainly focused more on integration across the curriculum in the past four years, and the capstone course has also transitioned to a more integrated approach, including incorporation of the simulation described herein. While it is impossible to isolate the reason for the improvement of Strategic Integration scores due to the combination of changes that took place across the MBA curriculum, a desirable outcome has been attained nonetheless! The Strategic Integration scores improved greatly beginning in fall 2008. In fact, beginning with fall 2008, all seven groups of students (159 students in total) across all three modalities have scored at the 85th percentile or above! Four groups have scored in the 95th percentile, two in the 90th, and only one in the 85th percentile!

The Small Enterprise

MBA programs prepare students to be business leaders who understand and can manage an enterprise. MBA graduates may also be found leading organizations in other fields such as education, healthcare, and the public sector. An integrated approach to addressing the challenges faced in these settings is a necessity. The need is no more urgent than in a small business, where the overlap of people, processes, and constraints is a daily reality. This section of the paper reviews the graduate student author's experience with functional integration as the Chief Operating Officer of the small service company that will be referred to by the fictitious acronym RPPACO throughout this section.

RPPACO is a small engineering services company that provides engineering analysis in support of electric transmission grid planning and reliability assessment for a group of electric utilities in the upper Midwest. RPPACO employs electrical engineers and support staff totaling twelve persons. RPPACO is organized as a 501(c) cooperative. RPPACO cooperative members are the electric utilities taking services from RPPACO. These utilities belong to an unincorporated regional power planning association referred to herein by the fictitious acronym of RPPA. In the last ten years, the size of RPPA, and the associated budget of RPPACO, has shrunk considerably. This, along with other industry changes, has precipitated several reorganizations of the company. Two asset sales reduced the staffing of RPPACO from approximately 100 employees in 2001 to eighteen in 2010. In 2010, the further reduction in the size of RPPA membership resulted in another reorganization and reduction in RPPACO staffing from eighteen to twelve employees by January 2011.

The graduate student author has served as RPPACO's Chief Operating Officer since 2008. During this time the company has undergone significant changes and the CEO, COO, and Controller have collaborated extensively to navigate through these changes. As the size of RPPA has shrunk, staff has had to consolidate functions and provide increased oversight of various operational aspects as both staff and budgets for outside consultants have been reduced. RPPACO executives have taken on more oversight duties as a result of the reorganization. For example, corporate finance control procedures have been modified such that adequate risk management strategies are in place to safeguard RPPACO's finances against fraud. In one case, due to a layoff, procedures related to review and approval of accounts payable activities were modified to require COO or CEO sign off on certain transactions, in addition to the Controller, to provide adequate control over these activities. Responsibility for the financial health of RPPACO has become more of a shared responsibility in the wake of staff reductions. For example, the COO traditionally reviewed monthly financial statements and attended quarterly board meetings. In the wake of staff reductions, and the reduction in membership, the COO has participated in review and decisions associated with member equity retention policies. The COO also has been involved with corporate bylaw changes associated with relaxing membership requirements, which could benefit RPPACO as a 501(c) cooperative primarily chartered to provide services to members on an "at cost" basis. Additionally, due to new contractual arrangements made for providing services to the United States Department of Energy on a grant basis, the COO has assisted the Controller in documenting the development of labor rates and overhead charges and in establishing reporting procedures to ensure that RPPACO has adequate documentation

available in case of an audit as permitted under the US DOE grant agreement and associated regulations.

RPPACO has begun to realign itself to pursue new revenue from nontraditional sources such as government contracts, utilities outside of the upper Midwest, and through providing technical services outside of the portfolio traditionally provided to RPPA member utilities. While the changing regulatory environment has led many utilities to exit RPPA to join larger centralized wholesale markets to the south and east, new opportunities are also being opened up by the same regulatory changes. For example, RPPACO can offer services over a wider geographic area and in areas of expanded requirements, such as national reliability standards audits and assessments which are being deployed in the electric industry in the wake of the August 14, 2003 Northeast Blackout.

A significant example of integrating functional areas occurred during the unfortunate need for a reduction in force at RPPACO in 2010. This activity, unforeseen at the beginning of 2010, required RPPACO executives to collaborate in the areas of corporate finance, operations management, information systems, human resources, and RPPACO's legal environment.

RPPACO executives engaged outside legal counsel in 2010 to assist with the needed reduction in force. RPPACO also hired an outplacement firm. These human resource and corporate legal challenges were handled collaboratively by the CEO, COO, and Controller. The executive team met frequently to analyze pro forma financial statements, review alternative strategies for reducing the operating budget, and select a course of action to achieve the needed result. Once the course was chosen, the executives then consulted with outside legal counsel on layoff procedures, risk management approaches, and the options for severance terms as well as the advisable sequence of events to follow. The executive team also sought and retained an outplacement firm to assist in the layoff activities and provide advice regarding developing a severance package. The team met with the outplacement firm to review the details of the severance package and the action plan for carrying out the terminations. These plans included the usual employee termination procedures as well as additional procedures for retrieving equipment from a terminated employee, day of termination protocols for physical security and to respect the dignity of the terminated employees, and plans for addressing the remaining "surviving" employees in the wake of the reduction in force. These activities brought to the fore lessons learned in the MBA program regarding the need to consider the legal ramifications of such actions, the impact on morale that such events have, the alteration in operations when a significant workforce reduction occurs, and the impact on mission such an event may have. For example, under the reduced budget, employees juggle more assignments. It is critical to keep the quality of work products high such that RPPACO retains existing customers and is able to attract new customers. For these reasons, RPPACO will continue to offer continuing education and job specific training to employees. The CEO and COO made presentations to the Board of Directors outlining new projects and initiatives and how these would improve RPPACO's bottom line and result in stabilization of dues levels.

The executive team also collaborated on preparing modified budgets and addressing member patron equity questions. Through discussions with RPPA members, RPPACO executives determined that a significant reduction in the operating budget in 2011 compared to 2010 was

needed in an attempt to retain members who might otherwise exit RPPA and seek to self provide the services currently provided by RPPACO. Executives collaborated on a restructuring that reduced staff driven budgets and reliance on outside vendors for technical services. As a result of these measures, the 2011 budget was reduced by 25% compared to 2010. For example, through layoffs and elimination of open positions, budgeted salary and fringe expenses for 2011 were reduced by 24% compared to 2010. In addition, budgeted outside services were reduced by 49%. Not surprisingly, as the size of RPPACO has shrunk, the need for employees to wear several hats has increased. For example, the responsibility for the provision of specific IT services, once outsourced, is now directly provided by RPPACO staff. Service contracts that produced monthly settlement statements for services provided to our members through an online transaction processing system are now performed by RPPACO staff. Eliminating that outsourced contract saved over \$100,000 in contractor expenses annually, with a minimal impact on staff resources. The opportunity presented itself because the contract had recently dropped from a multiyear agreement to a month to month arrangement, and the transaction level had stabilized at a lower level. RPPACO staff had been trained in the processes such that in-house procedures and tools could replace the vendor supplied system and service which had ceased to be cost-effective.

It can be difficult to ascertain the affect such changes have on employee morale. RPPACO leaders have consistently committed to inform employees of significant developments as soon as feasible to reduce uncertainty. Even the possibility of layoffs was telegraphed during an employee meeting where management indicated a significant budgetary reduction would be necessary. Managers have stressed the opportunities and concomitant risks for employees to make substantive contributions to RPPACO's success. Individual contributors now have a greater role to play in the success of the organization. By developing a greater entrepreneurial focus at RPPACO, with its attendant risks, it is thought that commensurate rewards may be realized. In trying economic times, continued employment may be its own reward. Over a longer time period, a growing client base may offer additional rewards in the areas of compensation and career development. These suppositions offered by management seem generally well received by the staff. The effort to keep employees well-informed has also led to a general understanding that the team members at RPPACO are dependent on each other more than ever.

On the basis of these and other organizational changes, RPPA members adopted modifications to their association agreement to unbundle some of the services provided by RPPACO. RPPACO executives were also able to secure new sources of funding by participating in federally funded transmission grid expansion studies, and RPPACO's Board showed support of by endorsing RPPACO's participation in responding to various engineering services request for proposals suitable to RPPACO's skills and experience. These measures were well-received by the Board and membership as providing greater confidence that budgets and dues allocations would be relatively stable, especially when compared to the preceding three to five years.

RPPACO is refocusing itself with respect to the marketplace. Marketing has not been a major strategic thrust for RPPACO in the past. While there were some attempts over the years to have RPPACO offer its services to a broader customer base, the RPPACO Board of Directors, comprised of RPPA members, did not support this. RPPACO essentially had one customer, RPPA. As RPPA has shrunk, RPPACO's dependency on individual RPPA members has increased. Recently the Board has permitted RPPACO to seek other work. This necessitates that

RPPACO develop a marketing plan and materials. The COO, in cooperation with the CEO and working with department managers, has been involved with this activity for the past eighteen months.

Seeking new customers creates issues for RPPACO in the areas of finance and accounting. RPPACO files a nonprofit federal tax return. RPPACO could lose its tax-exempt status if substantial nonmember revenue is received. This situation should be avoided, to a degree. RPPACO needs to be flexible and open to the possibility of restructuring if that is necessary to remain a viable organization. Any such restructuring would need to account for the rights of the RPPACO cooperative members to recover their equity. Generally, such equity cannot be turned over to a private enterprise or used to finance new business ventures. Options include forming a for-profit subsidiary or a buyout of the cooperative assets by a third party or even the employees.

As a cooperative, RPPACO is subject to a myriad of regulations from state and federal entities. As RPPACO acquires new customers, accounting practices will need to be reviewed and modified to keep pace with regulations that perhaps previously did not play a role for RPPACO.

As has been described herein, RPPACO had significant human resource related challenges in 2010. RPPACO had little need for outside legal expertise in the area of employment law in the past five years or more. With the restructuring in 2010, the COO reestablished a working relationship with RPPACO's outside firm and worked through severance related issues with that firm to safeguard RPPACO's interests while at the same time providing fair and justifiable benefits to the terminated employees. All severed employees signed comprehensive severance agreements with RPPACO. While the terminations occurred fewer than 12 months prior to the drafting of this paper, no adverse actions have been taken against RPPACO by any severed employee to date. Retained employees also seem satisfied with the treatment of their former coworkers and with the ensuing reorganization initiated by the COO.

RPPACO's last comprehensive strategic plan document was written in 2008 for the 2009 budgeting process, but significant organizational changes have taken place since then. Many of these changes were anticipated in the 2008 document, but some were not. Recommendations from the 2008 plan included the following: retain current staff, continue support of current functions for RPPA, develop reliability studies and modeling capabilities, develop standards/compliance expertise, capitalize on new business opportunities, and expand services to RPPA. An update to this strategic plan would undoubtedly expand on new opportunities and partnership concepts as core services to RPPA have been reduced since 2008, and RPPACO has begun to successfully backfill with new revenue sources. Another modification for RPPACO's strategy should be aimed at developing staff so that RPPACO is better equipped to manage multiple projects and rapidly respond to new business opportunities. RPPACO staff background is primarily in the vertically integrated electric utility sector while RPPACO is evolving into the roles of vendor and consultant. RPPACO's history has been as a service provider to one customer, RPPA. Therefore, a realignment of priorities and work practices is necessary. Plans touching all functional areas need to be developed. Management's appreciation of the integrated nature of these functions is an important ingredient in devising such plans.

Conclusion

The literature reveals a great deal of critical self-examination taking place in the field of business education over the past ten years. The economic crisis of 2008 sparked a renewed debate about the role of the business manager in society (Podolny, 2009). These debates will continue as business schools continually self-assess both their relevance to society and role within higher education.

There is a continuing interest in improving the teaching of integration across functional areas at both the undergraduate and graduate levels of business education. At the undergraduate level, a continued focus on functional specialization can be anticipated as this meets a business community need for technical expertise. Seniors will be exposed to strategy and integration through capstone courses and other pedagogical modalities. The pedagogy and curriculum of MBA programs, however, can be expected to address integration teaching more aggressively and directly. Programs will continue to develop learning modes that MBA graduates take with them into the world. At the graduate level, the methods outlined in the literature will be expanded upon. Students need to appreciate the integrated nature of enterprises and the environment in which these enterprises operate in order to be successful at managing businesses and people as the real example of the situation at RPPACO illustrates.

It is likely that further cross-functional activities will ensue at RPPACO as the entity continues to focus on maintaining vitality and relevance in the ever changing world. RPPACO has some cushion in place, due to service agreements with both RPPA and non-RPPA entities. These agreements have limited time span, however, and where RPPACO previously had a customer base in RPPA that was assumed to be perpetual, RPPACO now needs to look to keeping a full pipeline of projects and revenue sources in the works in order to stay relevant to the industry and provide value to its customers.

A capstone course serves a valuable pedagogical function by placing MBA students in a situation replete with uncertainty, imperfect information, time pressures, and expectations for high performance. The design of the course and simulation and the issues encountered while working in a virtual team contributed to the realism of the experience. The difficulties of taking a course online with fellow students scattered across the hemisphere further served to highlight the need for cross functional view of an enterprise as well as the need to be able to work as a team with individuals from varying backgrounds, interests, and abilities.

In order for MBA students to successfully integrate and apply the components of an MBA education, a mixture of approaches to teaching integration should be applied. Students should be encouraged to view their role as managers/leaders in a larger societal context, such as described in the literature. Capstone courses with teams engaged in business simulation exercises are valuable in that they expose students to real world pressures, deadlines, imperfect knowledge, and incomplete information that they are likely to encounter in their professional careers. Evidence from ETS Major Field Test for MBA suggests that a focus on integration of the MBA curriculum at one Midwestern University with a Business School accredited by AACSB International may be linked to better scores on the Strategic Integration section of the ETS exam. As can be seen in the discussion on leadership and change at RPPACO, business professionals

can be called upon to take an integrated approach to their management activities and cannot always plan on residing in a silo of his/her own specialty.

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Biographies



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