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WHEN TOO MUCH IS JUST RIGHT: BUSINESS MODELS AND NEW VENTURE INNOVATION

Kevin Rhoads, Utah Valley University

ABSTRACT

Resource-based logic contends that firm performance is a product of superior resource endowments. Yet, many firms initiate operations with significant resource constraints and still generate superior performance. In this study, we explore how radical innovations create constraints for firm, and examine whether innovation in a firm's business model might exacerbate and/or attenuate these constraints. We test these arguments with a sample of young, technology-based ventures and find that the firm's business model amplifies the challenges associated with commercializing radically, new technologies thereby decreasing firm performance. Implications of these findings for resource-based theory and the literature on business models are discussed.

INTRODUCTION

Business model design is an important element of a new venture's challenge to achieve sustainable growth (Zott & Amit, 2010). As such, business models are emerging as a factor that can help explain firm performance under varying conditions. Many of the conditions examined in existing business model research focus on external conditions such as environmental dynamism and munificence (Zott & Amit, 2007), access and links to potential outside partners (Amit & Zott, 2001), and customer focused value creation (Teece, 2010). However, many firms, and especially new ventures, face specific challenges associated with internal factors such as firm resource constraints (Baker & Nelson, 2005). The focus of this paper is to explore the relationship between business model design and new venture resource constraints as it relates to firm performance. This relationship provides the opportunity to better understand the intersection between an important gap within existing resource-based logic work and the need to better understand the effects of business models on new ventures. Examining this intersection provides additional insights contributing to resource-based theory (RBT) as well as to our emerging understanding of the effects of business models on firm outcomes.

Considering this intersection between business model design and RBT, the question is asked: When do resource constraints impact firm performance and how does business model design address this challenge? First, according to resource-based logic, resource-constrained firms always underperform firms with superior resource endowments (*ceteris paribus*—Barney & Mackey, 2005; Sirmon, Hitt, & Ireland, 2007; Newbert, 2007). Most firms, however, initiate operations with significant resource constraints (Baker & Nelson, 2005; Mahoney & Pandian, 1992). For example, many new firms lack sufficient amounts of financial capital (Penrose, 1959; Lee, Lee, & Pennings, 2001), lack of suitable investment opportunities (Mahoney & Pandian, 1992), struggle with ineffective product development processes (Rao & Drazin, 2002), or even are mis-managed by inexperienced and/or unqualified management teams (Steffens, Terjesen, & Davidsson, 2007). Some ventures grow despite these constraints while many others fail early in their lifecycles (Penrose, 1959; Mahoney & Pandian, 1992). The ability of some firms to operate successfully under significant resource constraints raises key questions for resource-based logic

of why resource-based constraints negatively impact the performance of some firms but not others as well as for business models and how business model choice impacts resource constrained firms?

Recent work on business models addresses a key element within RBT, the organizing context of a firm. In this context, a business model is argued to be the organizing framework for links between the focal firm and potential outside partners in order to create customer-focused value (Zott & Amit, 2007). Additionally, RBT contends that the organizing context of a firm plays a central role in enabling firms to leverage resources effectively (Barney, 2003; Newbert, 2007). In particular, when superior (i.e., valuable, rare, and costly to imitate) resources are coupled with complementary organizational attributes in small firms (i.e., the VRIO model – Barney, 2003), performance increases (Wiklund & Shepherd, 2003). What is less clear, however, is whether the complementary effects of organizational attributes as outlined within business models are powerful enough to enable firms to overcome resource constraints? According to Penrose (1959), resource constraints exist when resources and/or capabilities provide limited and/or uncertain value to a firm and therefore do not meet the value condition in resource-based logic. To overcome these constraints, Penrose (1959) suggests that the organizational structures play a central role in shaping the ability of firms to leverage key resources successfully.

Based on these arguments, in this study, we explore the extent to which a firm's business model – as a type of organizational structure (i.e., Zott & Amit, 2007; Demil & Lecocq, 2010) – enables new firms to address the challenges associated with not meeting the value condition expressed by Penrose (1959) and to overcome critical resource constraints. In doing so, we build upon an organizing framework in resource-based theory and Penrose's theory of firm growth to explore how the instantiation of a firm's managerial capabilities within the firm's business model affects the ongoing efforts to overcome key resource-based constraints. We test these hypotheses with a sample of 146 observations of new, technology-based ventures in the Southwestern U.S. that are actively attempting to commercialize radically-new technologies. We find that the uncertain value of radical technological resources creates a resource-based constraint on firm performance, and that this constraint is impacted by the novelty of a firm's business model. We also find in a post hoc test that the lifecycle stage in which the firm currently operates attenuates these effects.

First, this study integrates business model research with an important gap within RBT research and builds upon RBT research to propose a definition and set of theoretical arguments linking resource constraints with firm growth. Since most new firms operate under such constraints, the theoretical arguments we propose herein, through examination of the intersection of business model design and RBT, provide organizational researchers with key insights to guide future studies to explore how resource-based advantages emerge and evolve in new firms and the role of business models within this emergence. Second, this study creates a more expansive view regarding the complementary role of the organizing context of the firm in overcoming resource-based constraints. In general, prior work from a resource-based perspective argues that firm performance is jointly impacted by the presence of superior resources with a complementary organizing context (Barney, 1991; Peteraf, 1993; Crook, Ketchen, Combs, & Todd, 2008). Therefore, one would expect that significant resource-based constraints should suppress the performance of firms. However, in this study we find that the uncertainty of introducing radical innovations by new firms can be largely offset by the presence of specific types of business models. Accordingly, given the potency of a firm's business model, it stands to reason that firms

have at their disposal a broader set of non-VRIO resources upon which to build the resource endowment of the firm and establish competitive advantages (i.e., Sirmon et al., 2007).

Third, this study contributes to the ongoing discussion in organizational research regarding the role of business models in organizational performance. Recent work on business models addresses the need to better understand the value creation role of business models. This study sheds light on the role of value creation and the ability of the business model to enhance perceptions of value of products and services otherwise deemed risky by customers. Additionally, in prior research, the exact mechanism through which business models impact firm performance remains largely underdeveloped (Amit & Zott, 2001). By linking the literature on business model design more closely with the organizing approach in resource-based theory, we build upon both our theoretical arguments and empirical findings to identify several ways emerging theory on business models might better incorporate an organizing logic to establish key theoretical arguments in this literature.

THEORY AND HYPOTHESES

Heterogeneous Resources, Organizing Factors, and Firm Performance

Resource Constraints and Firm Performance. In addressing the role of business model design within a resource constrained venture, it is requisite to first examine the nature and impact of resource constraints on a new venture. Resource-based theory (RBT) remains a dominant approach for conceptualizing the impact of organizational factors and resource issues on firm performance in management research (Barney, Ketchen, & Wright, 2011). At the core of resource-based logic is the notion that the ownership and use of valuable resources enables firms to generate and capture economic value (Lippman & Rumelt, 2003; Townsend & Busenitz, 2008). To the extent these resources are also rare and costly to imitate by competitors, RBT predicts that firms with ownership rights over these resources should generate competitive advantages and economic rents (Peteraf, 1993).

A large volume of research has been conducted over the past few decades to correlate the attributes of specific resources with key firm performance outcomes (Newbert, 2007). Although meta-analyses of empirical research in RBT suggests support for the link between resources and performance (Crook et al., 2008), the observation of this link is often limited to *ex post* time periods by managers in firms and is rarely linked with *ex ante* initial conditions (Foss, 1997). For example, under the strategic factor markets approach, managers must invest in resources with uncertain *ex ante* value, and over time, as markets approach an equilibrium point and the true value of the resources becomes apparent, the investment will pay off for the firm (Makadok & Barney, 2001). Importantly, though, in the early stages of this process, firms compete with resources of uncertain value. In similar fashion, the asset accumulation approach is subject to the same logical constraints since the firm must accumulate various stocks of assets of uncertain value before the firm can capitalize on their resource-based advantages (Dierickx & Cool, 1989). For these reasons, it has been pointed out that RBT is best conceptualized as a theory of the sustainability of a competitive advantage but the theory is less equipped to explain how and why resource-based advantages evolve in the first place (Helfat & Peteraf, 2003).

Radical Innovation and Firm Performance. In light of these issues, resource-based logic contains a surprising gap regarding how firms compete when organized around resources with uncertain value even though this likely is the reality faced by most early-stage firms (Baker & Nelson, 2005; Lee, Lee, & Pennings, 2001). For example, certain types of technological

resources can benefit from significant intellectual property barriers (e.g., patents) that protect the venture's technological core from imitation by competitors (Powell & Dent-Micallef, 1997). Radical innovations embedded within the firm's technological core can enhance intellectual property barriers with other isolating mechanisms (i.e., path dependency, social complexity, and causal ambiguity) to prevent others from copying the firm's technological resources down the road. However, in attempts to introduce radical new technology within the market, firms must balance the need to differentiate their products and services from those of incumbent firms while at the same time establishing legitimacy in the market (Aldrich & Fiol, 1994; Etzioni, 1987; Singh, Tucker, & House, 1986).

Nascent firms introducing radical innovations to the market face the difficult task of balancing these competing objectives since the value of too much innovation in the firm's technological core can actually hamper firm performance (Heeley & Jacobson, 2008; Uotila, Maula, Keil, & Zahra, 2009). Since the social complexity and causal ambiguity of radical innovations produce significant information asymmetries for customers, radical innovations are often difficult to commercialize successfully (Levinthal & March, 1993). These challenges are exacerbated because the closer the innovation is to the "technology frontier" the more likely it becomes that the firm will have to invest significant amounts of other scarce resources in order to complete the development process (Perez, 2003). Ultimately, a thin line exists between the radicalness of a firm's technological resources and whether these resources are actually valuable to the firm (Heeley & Jacobson, 2008). If the innovation is relatively radical, the time to commercialization tends to be longer and more demanding, thereby weakening firm performance outcomes creating the condition of resource constraint within a firm. On the other hand, if the level of innovation is more incremental, the firm will need substantial resources to compete with its competitors. As such, the degree of radical technological innovations can actually become a resource constraint that firms must address. Based on these arguments, we expect a complex relationship between radical innovations and firm performance.

Hypothesis 1a: There is a positive relationship between the radicalness of a new venture's technological resources and the performance of the firm.

Hypothesis 1b: There is a curvilinear relationship between the radicalness of a new venture's technological resources and the performance of the firm.

Business Models, Radical Innovation and Firm Performance. Given the reality that most firms initiate operations with significant resource constraints, the question is why some firms are able to overcome these constraints and produce superior performance over the long run (Mahoney & Pandian, 1992)? According to Penrose (1959), a firm's administrative structure enables firms to leverage the functional value of critical resources effectively to accomplish key organizational objectives (Penrose, 1959). More recently, prior research suggests that a business model—defined as "the structure, content, and governance of transactions between the focal firm and its exchange partners" (Amit & Zott, 2001: 511)—impacts both the value creation and value appropriation process (Teece, 2010). Through business models, managers: "(a) conceptualize the venture as an interrelated set of strategic choices; (b) seek complementary relationships among elements through unique combinations; (c) develop activity sets around a logical framework; and (d) ensure consistency between elements of strategy, architecture, economics, growth, and exit intentions." (Morris, Schindehutte, & Allen, 2005: 733). Accordingly, business models can significantly impact firm performance (Zott & Amit, 2007).

The roots of the business model concept in management studies are found in earlier research on organizational design (Miles & Snow, 1978). Design elements are central to business creation and organization and often adopt an internally-focused, coordination perspective on balancing administrative needs (Stinchcombe, 1963), resources (Alvarez & Barney, 2003; Barney, 1991), governance issues (Weber, 1946), decision making (Simon, 1976) and political pressures and needs (Zald, 1970). Research on business models augments these internally-focused design elements with an outward focus of helping to create a firm's boundary lines with markets, customers, products, and other environmental concerns in order to create value for customers (Morris et al., 2005). It is this balance of both the internal focus on a firm's resources and the external focus on the firm's exchange partners and customers that creates the relationship between organization and firm performance potentially leading to greater understanding of the key determinants of competitive advantage in RBT.

Based on these theoretical arguments, differing types of business model design themes have been examined. In the new venture context, Zott and Amit (2007) argue that novelty based business models have the greatest applicability due to the challenges associated with new businesses attempting to acquire resources and organize in order to effectively enter a competitive market. In particular, novelty centered business models create value through unique links, incentives, and outcomes between a business and its exchange partners and incorporate more broadly the ability to create value above and beyond the product or service being offered (Zott & Amit, 2007).

Building upon this approach, researchers have examined the performance effects of business model designs on post-IPO entrepreneurial ventures and conclude that novelty centered business models appear to positively enhance the overall market performance of post-IPO firms (Zott & Amit, 2007). What is less clear is the relationship between firm novelty centered business models and firm resources in attempts to achieve competitive advantages. Specifically, we ask: "how novelty centered business models impact the ability of firms to commercialize radically new technologies?" As noted above, one of the key challenges firms face when commercializing radically new technologies is the need to balance product differentiation with the market acceptance of a new technology (Aldrich & Fiol, 1994; Etzioni, 1987; Singh, Tucker, & House, 1986). Often the higher the degree of radical technological resources, the more likely these resources will act as constraints to a firm's commercialization process. Does linking a highly novel business model with a radical set of technological resources exacerbate these challenges? Specifically, do the unique relationships established with the new venture's exchange partners and customers create greater information asymmetries and compound the perception of too much innovation associated with radical innovation yielding an even stronger negative relationship on performance (Heeley, Matusik, & Jain, 2007)?

We theorize that novelty business models induce the opposite effect by creating unique links between a firm and its exchange partners that yield unique relationships, incentives, and outcomes (Zott & Amit, 2008). These unique linkages can actually create value in and of themselves outside of any specific product or service. The adoption of a novelty centered business model therefore aids in establishing an important foundation within the market for a new venture attempting to introduce new innovation to the market. Value creation occurs when a firm exceeds a competitor's ability to provide solutions for a customer's needs while maintaining or improving profit margins. This process of value creation through the unique linkages created by a novel business model helps to establish barriers against competition due to high switching costs and a lack of alternative options to receive the same value (Zott & Amit, 2007). Such

relationships provide a greater level of acceptance of highly innovative technologies that would otherwise suffer from challenges associated with legitimacy. Accordingly, we contend that novel business models actually will enhance performance by attenuating the negative impact of radical technologies on firm performance.

Hypothesis 2: Novel business models attenuate the negative effects of radical innovation on the performance of entrepreneurial ventures such that ventures attempting to commercialize radical technologies with more novel business models will generate more revenue than ventures with less novel business models.

METHODS AND DATA

Sample and Data Collection

To test our hypotheses, we developed a sample of technology-based ventures from the archival records provided by a technology commercialization assistance agency (hereafter the “agency”) headquartered in the Southwestern U.S. Based on the availability of data on the financial performance of individual firms, our final sample totaled 146 observations based on multiple years of performance data for 37 individual ventures [i.e., see Pollock, Rindova, & Maggitti, (2008) for a similar sampling methodology]. Overall, the sample includes data on technology-based ventures from 24 6-digit NAICS. The ages of the firms range from 12 months to 96 months. Lastly, no agency employee receives any direct or indirect compensation for services provided to these ventures thereby minimizing the effect of selection bias on the overall sample.

Measures

Dependent Variable. To measure firm performance, we utilize annual data on firm revenues are collected from an annual survey collected by an outside organization on behalf of the agency based on the reported performance outcomes from a member of the top management team of each venture. The total annual revenue for these firms ranges from 0 to \$7.5 M—with a mean of \$236,054. We elected to utilize revenue versus other firm-level measures of performance since recent work in RBT argues that the revenue of the firm reflects the value of the underlying resources (Lippman & Rumelt, 2003a). In addition, firm revenues also reflect the acceptance of new products and services by external customers (Priem, 2007). Among early-stage ventures, profitability measures such as net income would be less effective in capturing performance dynamics since these measures would be strongly influenced by the firm’s product and market development strategy.

Regarding the reliability of these revenue data, since these firms are small, early-stage, private companies, no external data sources such as Dun and Bradstreet contain these data. However, since these data are not publicly reported by the agency staff, firms have no incentive to under-/over-report these outcomes for competitive reasons. Also, the agency does not vary its services based on these reported outcomes and so based on our interviews with the agency staff, these revenue figures accurately reflect the performance of each firm at the time the survey was conducted.

Independent Variable Measures. To measure *radical innovation*, two independent coders who were not a part of the research team for this study analyzed a report prepared individually for each venture by an outside research firm that evaluates both the internal and external

operating environment as part of the due diligence process conducted for each firm. Both the coders we employed to evaluate these reports have 10+ years of experience in entrepreneurship and technology management and therefore possess the requisite skill set to evaluate the radicalness of each firm's technological resources. The professional due diligence report comes from an established research firm in the Midwestern United States purchased by the agency staff for each individual firm. This report contains an extensive analysis of the market-based, competitive, and technological dynamics of the internal and external environment for each venture. The researchers compiling the report often used both public and private information gathered through searches of databases and interviews with industry experts to develop a clear set of factors which shape the environment and determine the radicalness of the venture's technological resources.

Using a set of widely-cited scales developed by Gatignon and Xuereb (1997), the coders assess the following questions: 1) Is this new technology a major departure from current technology in the market? 2) Does this technology incorporate a small body of existing technological knowledge? 3) Is the future development difficult to forecast? Following Gatignon and Xuereb (1997) the anchors of the 7-point Likert-type scale were 'inaccurate' and 'accurate.' Finally, upon completion of the coding process, to assess the reliability of both the individual and combined efforts of analyzing the content of the reports, inter-rater reliability statistics were calculated for *radical innovation* (Cohen's Kappa was .76 -- Landis & Koch [1977] argue that any score over .61 represents substantial agreement).

The novelty of the business model was evaluated based on an analysis of the business plans, corporate websites, investment prospectuses, and other proprietary corporate documents, utilizing the 13-item scale developed and validated by Zott and Amit (2007). Similar to the coding process described above, the two different coders utilized for this project both have extensive experience in both entrepreneurship and technology management. Information about each business was gathered, analyzed, and then coded using the novelty scale referenced above. To validate inter-rater reliability, we calculated Cohen's Kappa which indicated an overall agreement score of 91%. Any differences in codings were then discussed and agreed upon using the written novelty items from the scale to determine an agreed upon coding.

Control Variables. To rule out alternative explanations, we include several control variables based on the results of prior research. First, building on Penrose's arguments (1959), the quality of the firm's management team likely plays a role in shaping the choice of business models in firms. In particular, since managers: "(a) conceptualize the venture as an interrelated set of strategic choices; (b) seek complementary relationships among elements through unique combinations; (c) develop activity sets around a logical framework; and (d) ensure consistency between elements of strategy, architecture, economics, growth, and exit intentions." (Morris, Schindehutte, & Allen, 2005: 733) through a firm's business model, it is necessary to account for the internal relationships among a firm's management team and technology on the choice of business model. (e.g., Sirmon et al., 2007). To construct this variable, we conduct a two-stage analysis whereby in step one, we utilize measures for *management team*, *radical innovation*, the *opportunity set* of the venture, a categorical variable indicating whether the firm was operating in the *dot-com* industry, a measure for *environmental dynamism*, a measure categorizing whether the firm was profitable, and a categorical measure for a firm that was started in 2006. After estimating the first stage probit model we calculate the inverse mills ratios—labeled *business model selection*—and utilized this variable in stage two models as a control variable to rule out any selection effects based on any internal relationship between the radicalness of a firm's

technology and the quality of the venture's management team. *Environmental Munificence/Dynamism*. According to Katila and Shane (2004), the relative munificence and dynamism of the surrounding environment plays a central role in shaping the value of key resources and the relative innovativeness of firms. To account for these effects, we utilize an adapted measure of environmental dynamism and munificence proposed by Sharfman and Dean (1991) and used frequently in many other studies (i.e., see Castrogiovanni, 2002). The procedure for developing the munificence measure involves regressing an ordinal scale of encompassing ten years on a ten-year panel of data from four industry-level indicators: annual sales, number of establishments, number of employees, and annual research and development expenditures (Ensley, Pearce, & Hmieleski, 2006). The resulting constant of the regression equation is then divided by the mean of each ten-year panel of data. The standardized version of this score is then summed with the other three indicators to form the munificence measure. In addition, to calculate the measure for environmental dynamism, regressing an ordinal scale of encompassing ten years on a ten-year panel of data from four industry-level indicators: annual sales, number of establishments, number of employees, and annual research and development expenditures (Ensley, Pearce, & Hmieleski, 2006). The resulting constant of the regression equation is then divided by the standard deviation of each ten-year panel of data. The standardized version of this score is then summed with the other three indicators to form the dynamism measure. Lastly, to eliminate any potential scaling issues, we also multiplied each raw munificence and dynamism score by a constant (10).

Dot-com. Since dot-com ventures operate with different business models than firms in more traditional sectors, we developed a dummy variable with all firms operating as a dot-com venture categorized as "1" and all other firms categorized as a "0."

Firm Age. Additionally, we control for the age of the firm to rule out the possibility that older firms would have had more time to construct routines and/or structures to enhance the firm's ability to generate revenue.

Total Capital Raised. We control for *financial capital* raised to account for any differences in the capital base of each venture (Lee, Lee, & Pennings, 2001). *Total capital raised* is measured directly from the records compiled by the agency for each venture for each year of observation in the sample and included any investment made by external investors in exchange for an equity stake in the venture. Specifically, the three types of equity-based capital investments that were raised each year and included in this variable were: 1) "angel" investments; 2) venture capital investments; 3) corporate investments made by external organizations. Since new ventures tend to seek capital from a variety of sources, we aggregated the capitalization outcomes from the three sources of equity-based capital to account for the presence of co-investment (Denis, 2004).

Growth Stage. New ventures progress through various stages of development that can have a significant impact upon the performance of the firm. In particular, early stage firms that are still in process of conducting research and development in order to solidify their product offerings often generate less revenue than firms operating within a growth stage. To account for these effects, we utilize the lifecycle stages developed by the National Venture Capital Association to a dummy variable that accounts for differences in firms that are at various stages of development. Specifically, firms that are categorized at a growth stage (i.e., firms that have generated positive net income) are categorized as a "1" and all early-stage firms are categorized as a "0").

Management Team. Consistent Penrose's argument (1959) that managerial skill plays a central role in establishing the administrative structure of a firm, we utilize a measure for the skill of a management team collected through a due diligence process where agency consultants evaluate the background and skill sets of the top management team and boards of directors (Amason, Shrader, & Thompson, 2006; Cannella, Park & Lee, 2008; Carpenter & Fredrickson, 2001). This measure includes the following dimensions: 1) The management team has a proven track record based on prior industry/start-up experience; 2) The management team is complete, covering the major operational areas of the company; 3) The management team has a proven track record of achieving major milestones in previous endeavors; 4) The compensation scheme for the management team is appropriate to ensure both short and long-term performance; 5) The management team has access to an adequate board of advisors/directors to provide mentoring. The agency consultants rate the management team on all five dimensions and generate a score scaled between 0 and 100.

Opportunity Set (NPV). According to Penrose (1959), the perception of the value of the set of opportunities available to the firm by managers also plays a significant role in shaping the growth rate of firms. To account for differences in these managerial perceptions, we calculate the net present value of the firm's research and development investments over the time period of the sample using data from the pro forma financial statements and a discount rate of 20%.

Capital Raised. Early in the lifecycle of firms, managers often have to balance the demands of leading the operations of the company while raising outside capital to finance early operations. To rule out the challenge of balancing these competing demands simultaneously, we create a dummy variable – *Capital Raised* – to rule out these effects.

Biopharma. Firms competing within the Biotech and Pharmaceutical Industries face a special set of regulatory constraints that often limit their ability to generate revenue before the firm has successfully completed a regulated set of clinical trials to prove the efficacy of the firm's therapies. In some case, however, these firms can pursue other revenue streams besides sales of therapeutic products and so to rule these effects out, we create a dummy variable – *Biopharma* – to rule out the special regulatory constraints of these particular industries.

Firm Size. Lastly, the size of the firm also likely influences the amount of revenue the firm generates. Since many measures of firm size such as Total Assets or other measures of financial performance correlate strongly with firm revenues, we utilize the natural logarithm of the total payroll of the firm as an alternative measure of firm size.

Method of Analysis

To test our hypotheses, we utilize a two-step model where we first account for the impact of the radical technological resources and a firm's management team on the choice of business model [Please see Pollock, Rindova, & Maggitti, (2003) for an example of this method in management research as a means for ruling out potential issues with endogeneity]. For the first step, we utilize probit to assess the impact of a set of variables that likely influence the relative novelty of the business model firm founders choose to organize around. Based on this step, we calculate the inverse mills ratio and name this variable -- *Business Model Selection*. We then use this variable as a control variable in the models estimated in Step 2 to account for any potential selection bias stemming from the impact of the presence of radical innovations on the choice of business models. For the models in Step 2, since a portion of the firms in the sample had not yet generated revenue, we utilize a single-limit tobit regression model to account for any potential bias introduced to the analysis by the clustering of observations at zero (Tobin, 1958).

Furthermore, since the panel structure of our data potentially violates the assumption of independence among the observations in the sample, we utilize clustered, robust standard errors to rule out any unobserved firm effects on the standard errors in our models.

Since the models in steps one and two utilize maximum likelihood estimates, we, utilize the procedures recommended and developed by Bowen (2010 a; b) for calculating and testing secondary interaction effects in limited dependent variable models. According to Bowen (2010 a), secondary interactions are calculated by subtracting the structural effect of the predicted distribution of the dependent variable from the observed distribution of the total moderating effect. In doing so, this calculation yields the “true” secondary moderating effect generated by the interacted variables (Bowen, 2010 a). These calculated secondary moderating effects serve as the basis of our tests of the hypotheses in the study.

RESULTS

Table 1 reports the means, standard deviations, and correlations among all variables utilized in this study. Before testing the full models we conducted tests of normality for all continuous control and independent variables. All continuous variables are within the normally accepted ranges for kurtosis and skewness (Hair, Anderson, Tatham, & Black, 1998).

TABLE 1
MEANS, STANDARD DEVIATIONS, & CORRELATIONS AMONG ALL VARIABLES

Variables	Mean	Std Dev	1	2	3	4	5	6	7	8	8	10	11	12
1 Total Revenue	236053.9	591997	1.000											
2 Radical Innovation	3.598045	1.58741	-0.239	1.000										
3 NovBizModel	22.0137	7.18042	-0.028	-0.181	1.000									
4 Total Capital Raised	1299726	2134953	-0.023	0.430	0.103	1.000								
5 Firm Age	52.52055	21.0052	-0.191	0.393	0.143	0.203	1.000							
6 Biz Model (Selection)	0.5463443	0.35143	-0.042	-0.236	0.476	0.024	0.271	1.000						
7 Management Team	63.80195	9.36761	0.187	-0.478	0.035	-0.368	-0.331	-0.055	1.000					
8 Capital Raised	0.5410959	0.50002	0.274	0.067	-0.087	0.127	-0.195	-0.073	0.107	1.000				
9 Env. Munificence	10.50702	2.1956	0.026	0.122	-0.010	0.164	-0.255	-0.202	0.137	-0.015	1.000			
10 Growth Stage	0.5068493	0.50167	0.349	-0.360	-0.063	0.086	-0.085	-0.005	0.288	0.191	-0.258	1.000		
11 Biopharma	0.1917808	0.39506	-0.173	0.590	-0.351	0.273	0.354	-0.231	-0.104	0.065	-0.140	-0.111	1.000	
12 Firm Size	6.429591	6.26128	0.422	0.060	0.073	0.213	-0.201	-0.094	0.158	0.591	0.072	0.399	-0.041	1.000

N=146. Spearman rank correlations reported were ordinal data are used. Values greater than .19 are significant at $p < .05$; values greater than .25 are significant at $p < .01$.

In Step 1, we test the impact of the presence of radical innovations on the probability that a firm would organize around a novelty based business model. The results of these analyses are reported in Table 2 below and indicate that there is indeed a relationship between the predictor variables we specify and the choice of business model. Specifically, firms with more radical innovations are less likely to organize around a novelty business model than firms with less radical innovations.

As we report below, a portion of the sample did not generate any revenue during the time span of the study. In these cases, the clustering of the distribution of the dependent variable at a particular boundary point can bias the slope of the regression line (Long, 1997). To account for these effects, we utilize single-limit tobit regression to test our hypotheses. Since our theory predicts several interaction effects, we follow the guidelines developed by Bowen (2010 a; b) for calculating and interpreting secondary interaction effects in single-limit tobit models.

TABLE 2

**THE IMPACT OF MANAGEMENT TEAMS ON THE CHOICE TO ORGANIZE AROUND A
NOVELTY BUSINESS MODEL**

DV: Pr(Novelty Business Model)	Model 1: Controls		Model 2: Full Model	
Variables:				
Intercept	0.3455	(0.4650)	2.3897	(1.0709) *
Opportunity Set (NPV)	5.06E-09	(0.00)	9.62E-09	(0.00)
Startup Year (2006)	-0.9694	(0.3450) **	-1.2443	(0.3542) ***
Dot-com Venture	1.1811	(0.3317) ***	1.1435	(0.3421) **
Environmental Dynamism	-0.0772	(0.0367) *	-0.0377	(0.0383)
Growth Stage	0.0189	(0.2212) *	-0.1363	(0.2338)
Mgt Team			-0.0219	(0.0148)
Radical Innovation			-0.2745	(0.1011) **
Model Statistics:				
Log Pseudolikelihood	-80.5690		-76.9137	
Wald's <i>Chi-sq</i>	25.25 ***		33.89 ***	
<i>Pseudo R</i> ²	0.122		0.162	
<i>N</i> = 146. † p<.10, * p<.05, ** p<.01, *** p<.001.				
Robust standard errors reported in the parentheses.				

TABLE 3

**THE IMPACT OF NOVELTY BUSINESS MODELS ON RADICAL INNOVATION FOR
TOTAL REVENUE GENERATED**

DV: Total Revenue	Model 1: Controls		Model 2: Main Effects		Model 3: Curvilinear Effect		Model 4: Quadratic Interaction	
Controls:								
Total Capital	0.0741	(0.0598)	0.0933	(0.0682)	0.1350	(0.0683) *	0.1323	(0.0635) *
Firm Age	3271	(6607)	4889	(5890)	293	(6141)	-1842	(6688)
Management Team	32628	(17925) †	34821	(17945) †	21547	(20226)	29025	(21767)
Capital Raised	-402613	(256750) *	-415372	(268395) **	-414609	(310989)	-368390	(319222)
Env Munificence	-63562	(73179)	-60915	(68965)	-87985	(70331)	-103342	(64599)
Growth Stage	-248923	(282598)	-322448	(332094)	177340	(271995)	458989	(283020)
Biopharma	-1763705	(587742) **	-1810870	(672787) **	-1417641	(614275) *	-1513827	(630502) *
Firm Size	73623	(29046) *	81177	(30102) **	97223	(31915) **	94580	(31970) **
Biz Model (Selection)	-469094	(345120)	-280965	(450198)	-768102	(601410)	-264740	(525768)
Main Effects:								
Radical Innov			-24663	(119691)	121196	(114736)	285887	(129392) *
Novelty Bus Model			-22340	(22124)	-18431	(24004)	-87231	(27401) **
Radical Innov ²					-219696	(93839) *	-257796	(96446) **
Interactions:								
NovBizMod*RadInnov ^a							-19232	(13437)
NovBizMod*RadInnov ^{2 a}							24576	(8226) **
Model Statistics:								
Log Pseudolikelihood	-851.124		-850.099		-842.105		-838.796	
F-statistic	2.40 *		2.14 *		3.06 ***		2.94 ***	
R ²	0.351		0.372		0.375		0.385	

N = 146. † *p* < .10, * *p* < .05, ** *p* < .01, *** *p* < .001. Clustered, robust standard errors reported in the parentheses.

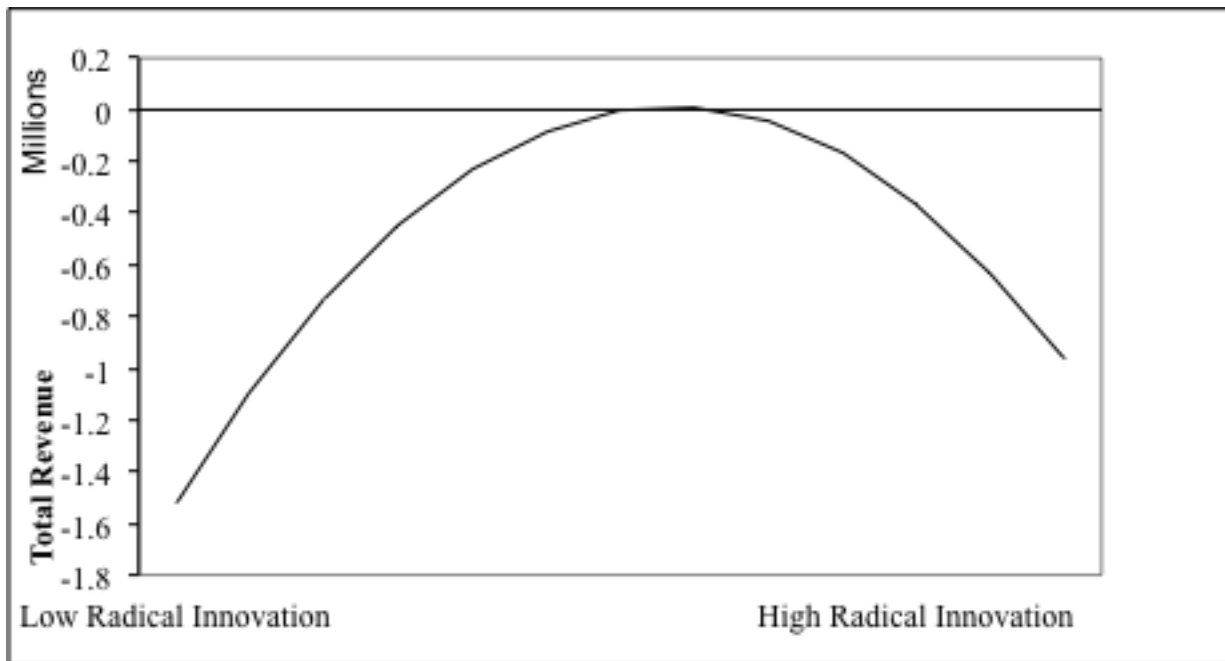
^a Parameter estimates are calculated using Bowen's (2010) method for estimating secondary interaction effects.

*R*² are reported based on OLS models.

Secondary interaction effects differ from total interaction effects used in prior research since secondary interactions subtract the nonlinear, structural effect of the single-limit tobit model from the total moderating effect thereby yielding the true (secondary) effect of the moderator variable on an independent variable. Based on these calculations, Table 3, illustrated below, reports the results of the tobit models.

In our first set of hypotheses, we predict that radical innovation will have a positive relationship with the total amount of revenue generated. We also predict that this relationship is actually curvilinear in nature where the greater the radicalness of the innovation the relationship with the total amount of revenue generated by early-stage ventures becomes negative (See Table 3). Model 1 reflects the results of the control variables only. Model 2 represents the main effects of the relationship between innovation and revenue generated. This model suggests mixed support for hypothesis 1a. According to Model 3, the squared parameter estimate for radical innovation is significant thereby suggesting support for Hypothesis 1b. To confirm our interpretation of the relationships, we plot out the curvilinear interaction in Figure 1 below. Based on this interaction plot, we confirm the curvilinear relationship between radical innovation and revenue generation such that the more radical innovation, the lower the revenue the firm will generate.

FIGURE 1
PLOT OF THE CURVILINEAR EFFECT OF RADICAL INNOVATION SQUARED FOR
TOTAL REVENUE GENERATED

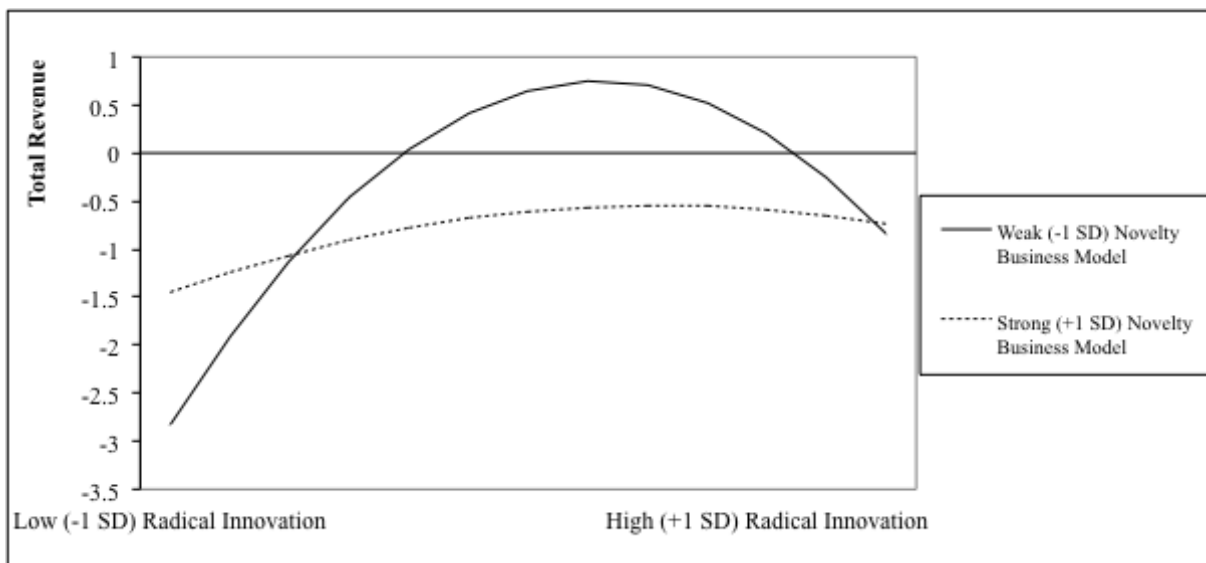


Next, Hypothesis 2 predicts that the relative novelty of the firm's business model will attenuate the effect of radical innovation on the total revenue generated by the firm thereby mitigating some of the negative downside to introducing radical innovations. Models 4 and 5 report significant parameter estimates. An additional (Bowen, 2010b) evaluation of the results of

the secondary moderating effect suggests that the effect is significant at lower levels of revenue (revenue < ~\$100K) thereby suggesting that early-stage ventures just starting to generate revenue enjoy the most benefit from linking novel business models with radical technologies.

In examining the interaction effects, the plot found in Figure 2 represents the relationship between the degree of radical innovation and novelty of the firm's business model as predictors of revenue generated. As Figure 2 indicates, higher levels of novelty in the firm's business model amplify the effects of radical innovation on the amount of revenue generated by the firm. Based on this relationship, Figure 3 illustrates the impact of the quadratic interaction term between the novelty of the business model of the firm with the squared term for radical innovation. In contrast to H2, we find that the novel business models amplify the downside of introducing more radical innovations thereby increasing the total amount of revenue generated.

FIGURE 2
PLOT OF QUADRATIC INTERACTION BETWEEN NOVELTY BUSINESS MODELS AND
RADICAL INNOVATION SQUARED FOR TOTAL REVENUE GENERATED



DISCUSSION AND DIRECTIONS FOR FUTURE RESEARCH

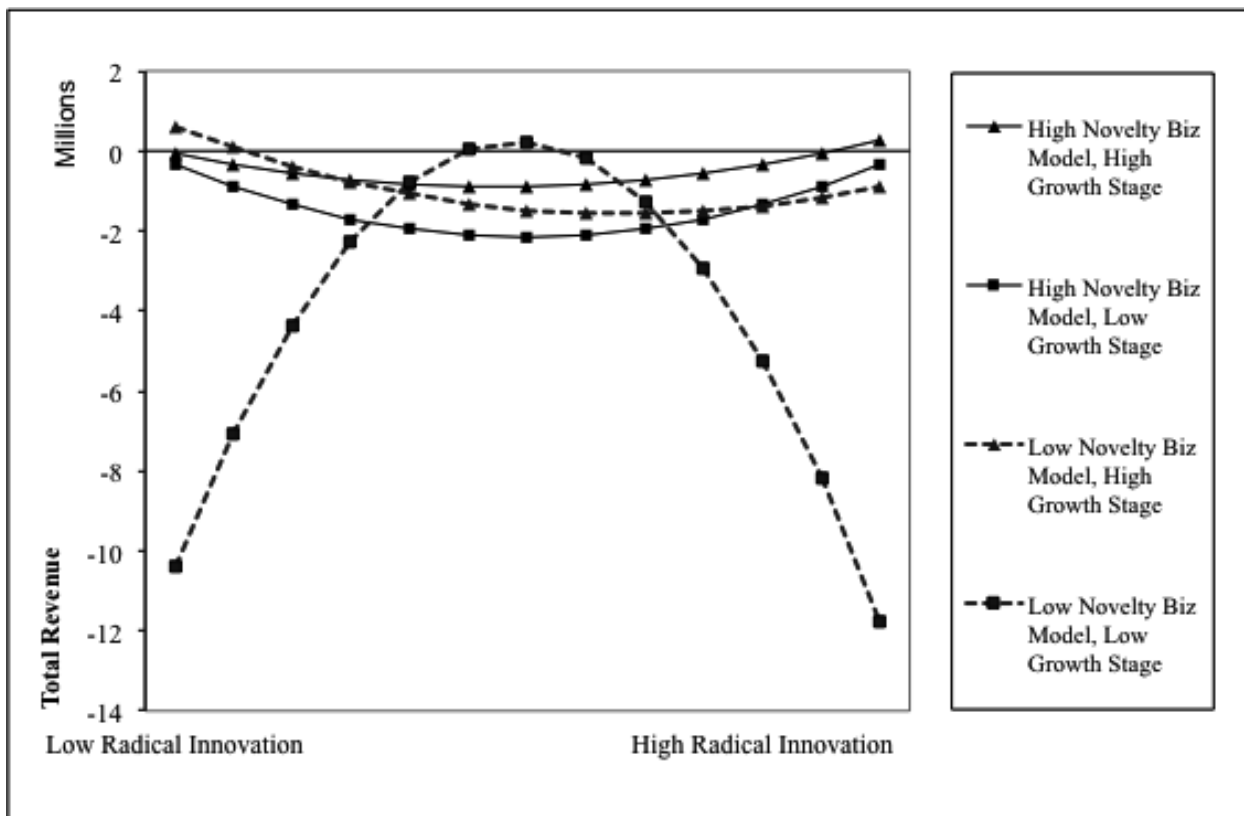
Implications for the Intersection of Business Model Design and RBT

According to arguments based in the heterogeneous resource approach in resource-based logic, observable performance differences between firms can be directly linked with the attributes of their resources (Barney, 1991; Peteraf, 2003). While these arguments have generated some empirical support (Crook et al., 2008), research from the organizing perspective in RBT contends that the manner in which firms are organized provides the key mechanism for unlocking the value of critical resources. In this study, we find that the manner in which a firm organizes its business model determines to a great extent its ability to capitalize on the potential value from technological resources even when such resources are initially seen to be constraints to achieving positive firm performance (Chesbrough & Rosenbloom, 2002). However, whereas prior resource-based logic assumes that the heterogeneous resources are the causal driver, we

find that novel business models attenuate what are thought to be resource-based constraints (i.e., the potential negative effects on customers of highly radical innovations) thereby increasing firm revenues.

For both business model based research and RBT, these findings make several important contributions. First, consistent with arguments based in the organizing perspective, we find that a firm's business model plays a significant role in shaping the ability of firms to generate revenue even in the face of resource-based constraints inherent in the attempts of ventures to commercialize radical innovations. In particular, whereas resource-based logic contends that the interaction of superior resources with organizational attributes affects firm performance, we find that business models can compensate for the difficulties associated with commercializing radical technologies. To further confirm this logic, we conduct a post hoc test using Growth Stage as a moderator of the relationship between radical innovation squared and novelty business model. After estimating the parameter estimates in a single-limit tobit regression model, we find a negative parameter estimate of -165,438 ($p < .05$). After estimating these models, we plot the interaction effects in Figure 3 below and find that firms operating in a lifecycle stage where the firm is generating positive profits, the effect of novelty business model enhances the effects of radical innovation on total revenue generated.

FIGURE 3
POST HOC TEST OF QUADRATIC INTERACTION BETWEEN NOVELTY BUSINESS
MODELS, RADICAL INNOVATION SQUARED, AND GROWTH STAGE FOR
TOTAL REVENUE GENERATED



In a sense, therefore, novelty centered business models help turn potential liabilities into potential assets for new ventures (i.e., Arend, 2004). So while the attributes of heterogeneous resources can certainly improve a firm's fortunes, the ability of business models to turn liabilities into assets suggests that the organizing context of firms plays a far more central role in determining the performance of new technology-based ventures than commonly believed in the heterogeneous resource approach. Additionally, the findings in this study establish greater insight into the gap in understanding the role of RBT in explaining how firms achieve a competitive advantage versus how firms sustain a competitive advantage. The moderating role of the novelty centered business models provides a key insight into the process of developing a competitive advantage making these findings important both theoretically and practically.

Second, building on this last point, this study contributes to the business models literature by discussing the impact of organizing logic on business model construction in startup firms. This is particularly important since business models are conceptualized as boundary spanning structures between internal and external factors of firms. What is less clear in prior research on business models, however, is how an emphasis on either internal or external factors would influence both the choice and implementation of business models by managers. Additionally understanding the impact of business model choice during the initial startup process is an area of focus requiring continued research. Although business models have been talked about in more generic forms for some time, we believe that new theoretical insights can be developed by linking organizing logics with business model development to uncover new structures and mechanisms for enhancing firm performance. In this study, we find that novelty centered models enhance the ability of firms to contend with the challenges associated with commercializing radical technologies and contending with capital constraints.

Limitations and Future Research

Although this study provides interesting new insights into the relationships between technical resources, business models, and revenue generation, there are some limitations to consider. First, although we are building upon a validated measure developed by Zott and Amit (2007) to evaluate the degree of novelty of the business model, and we incorporate new data gleaned from internal company records, it is possible that top managers are adapting the firm's business model in response to emerging opportunities and threats in the firm's environment. To account for this potential limitation we evaluated the changes in business model choice over time by each firm. Our findings indicate that although some changes in form and structure took place that no firm changed their business model in such a way as to change the degree of novelty used in coding each firm's original business model choice. In future research, the use of different research methodologies (i.e., qualitative methods such as interviews, etc.) may provide additional insights into how firms construct and adapt business models in response to particular internal and external factors.

In addition, our focus on the impact of resources on young, technology venture necessitates the use of firm revenue instead of alternative outcomes such as net income or other measures of performance. As such, it is possible that future research may find that the positive effect of novel business models on resource-based constraints such as radical innovation does not necessarily increase a firm's ability to generate wealth (i.e., net income) or even the firm's ability to survive. Extending the model developed in this paper by considering other key outcomes undoubtedly will enrich our theoretical understanding of business models and the resources they can leverage to enhance firm-level outcomes.

Third, although we have no *a priori* reason to expect that the results of our study will not generalize to other locations, it is important to note that the majority of our firms are located in one state in Southwestern U.S. That said, while there is some geographic clustering in our data, the breadth of industries in which these firms operate and differences in the ages of the firm ease some of the concerns regarding the generalizability of the results of this study to other geographic locations.

The findings of this study also suggest opportunities for future research. One such study that could be conducted would be to examine the potential of business models to substitute for other important resources. In this study, we examined the impact of novel business models in compensating for technological resource-based constraints. Each industry has critical resources that are essential to survival and success such as technology, human capital, land, or financial capital, and each depending on the context of the industry or business environment. The effects of business models in this study indicate that business models may not only be able to moderate some traditionally negative relationships with performance, but in some cases may be able to potentially act as a complete substitute for certain critical constraints. These types of relationships would be important for investigating why some firms are more successful in diversifying into new markets versus others who are less successful.

Finally, as briefly addressed in this study, additional work on the predictive nature of a firm's resources on its choice of business model may be an area of future research. The ability to acquire resources is a critical step for all ventures whether new or old. To better understand the ability of a business model to increase the ability to acquire resources or vice versa, the ability of a firm's set of resources to determine the nature of the business employed may have significant implications for both strategy research streams as well as entrepreneurship research streams.

Implications for Practice

This study also contributes to our understanding for practice. First, our findings suggest the importance of understanding the impact of an effective business model on the commercialization process. In the technology field, as an entrepreneur faces the challenges of acquiring resources and effectively commercializing those resources, the implementation of a novel business model will actually help to create unique relationships contributing to the potential revenue generation capabilities of the venture. The implementation of a novelty based business model additionally will assist the entrepreneur in dealing with the common occurrence of being faced with resource weaknesses and constraints in some cases transforming constraints into strengths able to be leveraged during the commercialization process. As cash is critical for new ventures, revenue generation and/or cost controls are essential in order to sustain operations.

For managers of new technology firms, the ability to create a highly novel business model can not only improve the probability of successful commercialization of a new technology, but it may be essential. Our results show that the combination of radical technology and highly novel business models improves revenue generation outcomes. The difficulty faced by firms, however, is how to choose between and/or balance these competing perspectives. During the dot-com era, new start-ups frequently abandoned an economizing model in favor of a purely externally oriented business models focused on generating market share as quickly as possible; Recent events, however, resulting in a growing scarcity of capital have increasingly forced firms to consider more carefully how funds are utilized (Wadhwa, 2009). Our study, however, shows several clear benefits from adopting a novel business model by new ventures

and suggests that firms may be able to attenuate the potential downside of operating with capital constraints and commercializing radical technologies.

CONCLUSION

In this research, through examining the intersection between business model design and resource-based logic, we add additional insight into the question of resources or organization as a source of competitive advantage. We build upon the organizing perspective in resource-based theory (Wiklund & Shepherd, 2003; Newbert, 2007) to examine how novel business models affect the ability of firms to introduce radical, new technologies and contend with capital constraints. Consistent with our theoretical approach, we find that while resource heterogeneity matters in shaping the performance of firms, novel business models do in fact successfully attenuate the challenges associated with introducing radical, new technologies and operating under significant constraints thereby increasing the amount of revenue firms within our sample generate. In doing so, we show that the ability of firms to leverage critical resources effectively hinges upon the type of business model utilized by the firm.

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INNOVATIONS IN THE BREWING SCIENCE PROGRAM

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ABSTRACT

With the ever-growing market for craft beer, one must be cognizant of the models used to build brewing science programs. While it is quite possible to utilize standard curricula, abstracts and syllabi, it is significant for educators and professionals in the industry to consider intrinsic and extrinsic components of curriculum modeling. One such model, relying on ideas from an established brewmaster, course material from an external entity, and concepts gained from a program in innovation is explained. The result is to analyze how all three components can be effective in what could be construed as a dynamic brewing science program.

INTRODUCTION

With the market for craft beer at a seemingly torrid growth pace, many facets of the industry have changed to keep up with the escalation of sales. Brewmasters, equipment, breweries, hops, beer flavors, and other components of the industry are fluid variables. For some, what started as a fun, do-it-at-home hobby has turned into an industry that allows, given the right combination of factors, an ability to earn a living. Additionally, investors have become an increasingly more significant component to aid in the growth of the industry. When investors are attracted to an industry, others take notice to what is happening with that sector. The craft beer industry has gained recognition by a myriad of capital raising techniques, all leading to funds being directed into the market.

When it is possible to attain a career in an industry, one expects that training and education would augment this growth. In the case of craft beer, part of the yield is the creation of the next generation of brewmasters. The training has come in many facets such as do-it-yourselfers, local brewing groups and clubs, YouTube courses, books, fellow brewmasters, and specific programs offered by various firms and organizations. Many of the first-generation brewers received training in any of a number of these formats. It has been a trial and error period that has resulted in some excellent brewers that thrive in the market.

As for education, two- and four-year institutions have claimed a stake by offering curriculum designed specifically for the industry. Whether brewing science, brewing business, craft brewing, or other names, such programs appear within the jurisdiction of schools of business, hospitality, science, and other categories. This points to differing programs that are quite diverse in courses and structure. If an occupation is created, there is bound to be a marketable program derived within higher education. Recently, beer production has become part of the curriculum path offered by higher education.

Determining how to build the program becomes critical to getting the curriculum off the ground and into efficient operating condition. In creating a new program, many questions arise. Who should be part of the team that builds the program? What existing courses are involved?

Should we rely on external or internal inputs (or both)? What school should house the new program? These and some other questions can be addressed by looking at the idea generation and building of a college-based brewing science program.

LITERATURE REVIEW

To discuss the curriculum attributes associated with beer brewing, it is important to think of the long history associated with the industry. The U.S. industry was interrupted by prohibition but that shouldn't serve as a restricting point for brewing education. One of the more interesting starting points was noted in the *Journal of the Institute of Brewing* that was published in 1898. In that volume, William Frew discussed the modern school of brewing and what should be critical to both curriculum and equipment. In many ways, it serves as a starting point for today's industry as the basic ingredients and process have remained similar and could be an excellent basis for building curriculum in today's market. Frew offered a brilliant groundwork for designing an effective brewing program as many of his ideas continue to be identified as pertinent starting points.

The science of brewing took a large leap during the eighteenth and nineteenth centuries because of science principles, equipment, and technologies (Meussdoerffer, 2009). This created some of the systems noted by Frew and was a large reason for the growth of the industry in many parts of the world. Additionally, some claim it was the start of the "real" training that would involve the learning of a larger scale of brewing by some of the budding master brewers of the time. When beer could be transported and shared geographically, scale of production could increase. Additionally, beers could demand a market that goes beyond the local scale of production.

There are many starting and continuation points in building a new program. Plenty of advice is available with many options. In getting a broad number of people on board with such a unique program, it is important that all understand what is needed for the brewing program. To help with this, curriculum mapping is a valid practice that gains acceptance as a way for individuals to visual the process and courses needed for the program (Jacobs and Johnson, 2004). Curriculum mapping is used at all levels of education and is an excellent way to bridge the gap between educators and noneducators. Hence, it is an effective tool that can lead a heterogenous group to a common goal. When programs such as brewing evolve around physical output, the use of mapping becomes an extremely important tool to visualize both the product and the program.

Mosher and Trantham (2015) go an additional step by comparing curriculum options of the general studies format to one built for brewing science. While many similarities can be found in housing a subject area in any school, it was important for students to see the unique differences for brewing science. Mosher and Trantham pointed out that students realize the true value of brewing science and the real use of chemistry to solve issues relating to the industry. This adds value to the argument for a specific brewing science program where learning isn't hidden with the realm of general studies. As with the growth of STEM programs, credence is added to the value of brewing as science becomes an important part of the curriculum.

Along with the idea of mind mapping, one can consider the argument for the positive facets of the beer brewing curriculum where aspects of the students' studies occur in lab environments. This allows for an enrichment of ideas while allowing students to move from the classroom and traditional books into a hands-on laboratory setting. Gillespie and Deutschman

(2010) note that curriculum is a connection between lecture and laboratory content that results in a flexible teaching and learning environments. Hence, adding innovation through mind mapping shouldn't be a problem in such a complex curriculum. By fostering an environment that builds on both class and labs, education and training can be enhanced for all participants. Thus, the hands-on output of the lab reinforces the theory built in the classroom.

As real-time labs heighten learning, the use of a brewmaster in developing and teaching brewing science shouldn't be undervalued. The hands-on experience of the instructor is significant to the students. With plenty of information available on the importance of the application-oriented educator, it is vital to see how the brewmaster enhances the curriculum and class experiences. Zeichner (2010) offers such information in looking at the importance of field experiences for the educator. Regardless of where or how the field experience occurs, it provides a true know-how and understanding that can be shared with students. These expanded learning opportunities benefit both educators and students. Application of experience to learning is critical in the brewing curriculum.

As noted before, there are many outside courses and training activities that could be incorporated into the brewing curriculum. Such practices are common in a day when third parties such as corporations, publishers, levels of government, trade organizations, and individuals can share in specialized topics that are suited for higher education. With the growth of the internet into a sort of training ground, Turoff (1999) offered an analyze of third party "canned" courses and suggested competition is good and allows for the breaking of the geographical monopolies once held by universities. This can be defended by looking at the various brewing schools and organizations noted on the website of Brewers Association, a trade organization that touts itself as being for small and independent craft brewers (2018). In order to broaden the base of the curriculum, one can argue that external sources are beneficial for a program as they add diversity in both knowledge and understanding of information.

An evolving trend is the sharing of courses among institutions thus creating more of a world campus view. By utilizing a global approach to education, efficiencies are gained in things such as networking, knowledge, expertise, and long-term relationships (Redden, 2018). Instead of trying to own the entire knowledge base of a subject area via internal control, much can be said for utilizing existing external courses and material where students can access items in an efficient format. This follows the configuration of taking some of the courses from master brewers, private institutions, and other beer-related entities. By not being afraid to secure such outside sources, colleges and universities see the benefit of bringing specialization to the students through more of a world approach.

An added approach to outside sources is the Open Educational Resources (OER) movement. This idea has existed since July 2002 when a UNESCO (United Nations Education, Scientific, and Cultural Organization) forum resulted in coining the term "open educational resources" and has been in use since that time (Commonwealth of Learning, 2015). As the title suggests, the resources are those that are free to use and reuse. Primarily, the intellectual property license is such that individuals are permitted to use the materials without cost. This relates to the disruptors of technology and access to information and has transformed many levels of education into cost-saving mode. OER is impactful as it sets the cost of the material at zero.

Finally, innovation is significant to brewing curriculum as part of outcome depends on the ability to generate new ideas, such as the next great beer flavor. By offering elements of innovation into the program, one moves the craft beer industry along the path of being a disruptor to the entire industry. As a long-standing industry, beer has been entwined into the

fabric of society. Although prohibition was a setback to the industry, one can look at disruptors that are important to the future of the industry. According to Christensen, Raynor, and McDonald (2015), disruptors first appeal to low-end or unserved customers and then migrate to the mainstream market. By beginning as a small-scale experiment, one sees the connection to microbrewing as many of the best microbeers started as brew-at-home ideas that expanded into a consumable product. The ability to innovate should be one of the most important factors in creating a brewing program.

PROCESS

To enhance innovation in the brewing science program, a three-pronged approach is used to add value to the curriculum. These include relying on ideas from an established master brewer, utilizing course material from external sources, and adding concepts gained from a program in innovation. Each approach can be extremely worthwhile in providing additional uniqueness, value, and appeal to a brewing program.

First, the ideas from the established brewmaster may be ground zero for the process. Besides, what better way to start a program than by relying on expertise of those working in the field? Regardless of how the brewmaster came to the level of expertise, such information is vital in creating a program that merits attention, is current in market conditions, and is seen as a great learning vehicle for students. As with all other expertise, injecting this information into a curriculum may have challenges but is important as a way of looking at the results offered by the professional. Instead of utilizing the standard method of in house professors and educators (college administrators), getting design recommendations from a brewmaster can be extremely success for building the program.

In years of transforming inexperienced individuals into functional, reliable, knowledgeable, independent, and complete contributors to craft beer production, brewmasters offer great insight about the need for integrated and cross-disciplinary learning. In developing the Associate Degree Program in Brewing and Fermentation Science at The Pennsylvania College of Technology, Tim Yarrington relied on science, brewing education and years of practical, professional experience. The Pennsylvania College of Technology (PCT) has been an ideal partner in this effort as it is dedicated to practical, hands-on, experiential learning with an “educate-to-employ” philosophy. PCT is also committed to innovative and integrative approaches to satisfy real-time, industry-driven needs for an educated and skilled work force. With over two decades in the craft beer industry, Yarrington hired and trained many individuals who’ve become contributing members of a professional team in commercial brewing operations. Due to the uniquely comprehensive nature of brewery operations, the challenges related to this effort are many. Typically, one starts by developing individuals with little or no brewing knowledge. Often, entry-level hires lack technical background or scientific knowledge. Most of the new hires have no experience performing either the focused tasks or operating the specialized equipment used in commercial breweries. Because the quality of the product is so closely linked to the skills and knowledge of the operators involved in the brewing process, a high quality, knowledgeable, skilled work-force is essential to the sustained growth and success of any commercial brewery. It requires countless hours of persistent training to ensure the attainment of practical proficiencies and conceptual understanding necessary before an individual can truly become independent of intense supervision.

Beer manufacturing is a physical process driven by scientific principles, all requiring practical management. Brewing and fermentation science courses are designed to establish meaningful understanding of the complex and comprehensive scientific principles involved in beer manufacturing through practical hands-on activities. One could utilize something like PCT's brewing lab (five micro-scale brewing systems) and fermentation facility to reinforce concepts presented through assigned readings, lecture content, and projects. Field trips to operating commercial brewing facilities, municipal water treatment centers, and municipal waste treatment facilities also support classroom and lab explorations. Mathematics are applied to quantify, understand and predict chemical, biochemical, microbiological and physical phenomena common in commercial brewing operations. Computer skills are developed and applied to model, predict, and manage various phases of beer manufacturing from grain to glass. The ability to capture, record, organize and critically assess data is an integral part of virtually every lab investigation. The capacity to coherently communicate conclusions based on data analysis is also an essential part of classroom activities. The need for precision and proficiency in the execution of protocols as well as the creation of and adherence to standard operation procedures is emphasized persistently. Management of raw materials inventory, finished product inventory, production schedules, and equipment maintenance are also emphasized. Fluid dynamics, heat exchange, refrigeration and process control systems are also introduced as essential "tools of control" necessary to achieve predictable and consistent quality. The global historical, economic and cultural importance of beer is integrated into discussion of current industry trends. Finally, sensory analysis is presented as an important part of the critical and objective assessment of quality.

In the continued development of the Brewing and Fermentation Science Program at Pennsylvania College of Technology, Yarrington continues to learn and incorporate new teaching approaches and utilizes technology important to the effort of the process. Additionally, Tim is exploring ways to combine the brewing-specific education with other areas of knowledge and disciplines to offer students the ability to utilize brewing education in ways that might not necessarily involve daily, hands-on operational activities. Programs in areas such as business, culinary arts, and technology are being explored to evaluate the possibilities of broadening the focus of the existing brewing education at PCT.

Second, by using material from an external entity, one can see an enhancement of curriculum. This information comes from varied sources such as professional organizations, educational institutions, consultants in the field, trade groups, book publishers, individuals, online methodologies, training specialists, and simulations. By relying on external sources, one sees a saving of both time and money. Importantly, it addresses the adage of "why reinvent the wheel" when many varied sources are available to the market. Additionally, one sees the benefits of using outsourced ideas as an enhancement to an existing process or system, thus allowing more time to focus on other internal attributes of the system.

Building on the brewmaster's ideas for curriculum, one could look at other successful education and training methods offered by third parties. For example, many established textbooks contain lab experiments and simulations that work in correlation with brewing programs. Also, interactive sources with digital content make it easy for the students to be plugged into education regardless of location and time of day. Top Hat, a reputable source of affordable and high-quality course content, is one such third party provider as it offers course materials that contain information specific to brewing. One of Top Hat's strategic management books, *Crafting a Strategy*, uses the craft brewing industry as the essential subject of learning.

The text is an engaging, interactive, hands-on approach to learning. To evaluate the brewing industry, Top Hat build a learning product that was based on guidance of those working many years in the industry. The material is quite appealing as it built upon hours of time spent with brewers and the working of the craft beer industry.

Additionally, focus is given to one industry instead of varied facets of many industries. In relationship to brewing, material to be covered includes: strategic thinking, governance, leadership, marketing environment analysis, internal analysis, value chain, management of innovation, strategic control systems, marketing strategy, corporate strategy, and goals and evaluating and resetting of goals. As the brewing industry is the focus of the entire text, it adds value to the program as students can focus on craft brewing to assist in learning of the material. By using an industry in growth mode and carrying wide appeal to various consumers and markets, craft brewing is an excellent choice to accompany the text and is a classic example of bringing ideas of a third party into a specific curriculum.

The general approach is that management concepts will be introduced while interactive, supplemental material will be used to help learning. Material is generated in digital format, so the smartphone generation can access information while on the go or in class. For example, a case study entitled “Beer Wars” will be evaluated along with an accompanying video. The most attractive feature of Top Hat is that educators can modify material usage on the fly. In addition to material offered via the platform provided by Top Hat, an instructor can add information deemed necessary for a course or specific cluster of students. Thus, each course can be tailored to the particular needs of the students. Gamification, the use of game design and mechanics to enhance non-game contexts, is employed with the goals of increasing understanding of material, participating in the course, and creating a certain level of competition among the students. When students succeed in applied learning, they earn points toward a rewardable means of measurement. Top Hat utilizes an open content initiative where thousands of documents and pages of material are free to users. By focusing on digital information that can be changed as needed, specialized material is viable to any fluid curriculum. Additionally, the material is very reasonably priced for students. It should be noted that Open Educational Resources, OER, make up 90% of material in Top Hat’s Marketplace).

Finally, elements of true innovation could be added to the program. For example, the addition of mind maps enhances innovation to both brewing and curriculum. To determine the effectiveness of mind maps on the ability to develop different flavors of beer, students in an applied innovation class were paired and asked to brainstorm ideas for new flavors of beer. Upon exhausting the number of new ideas, each pair was asked to tally the number of what they deemed new beer flavors they created during the brainstorming session. It was expected that some groups would be quite good at devising new flavors while others would be limited based on factors such as age (experience), preference for microbrews, lack of brainstorming instinctiveness, as well as other factors.

Following the brainstorming exercise, the same pairs were trained in the use of mind maps and asked to create a mind map that called for two related and two unrelated words that came to mind when thinking of beer flavors and could serve as a starting point for the exercise. The mind map used as the starting point for the experiment is shown in Figure 1. By selected five to seven ideas that came to mind when thinking of each of the related and unrelated words, each group would have between twenty and twenty-eight words that could be mixed in any assortment to develop new ideas for beer flavors. These words would act to stimulate thinking of new flavor ideas that weren’t noticeable by random brainstorming. Upon finishing the mind

map exercise, pairs were asked to calculate the number of what they deemed new beer flavors created during the mind map exercise.

FIGURE 1
Mind map for beer flavors

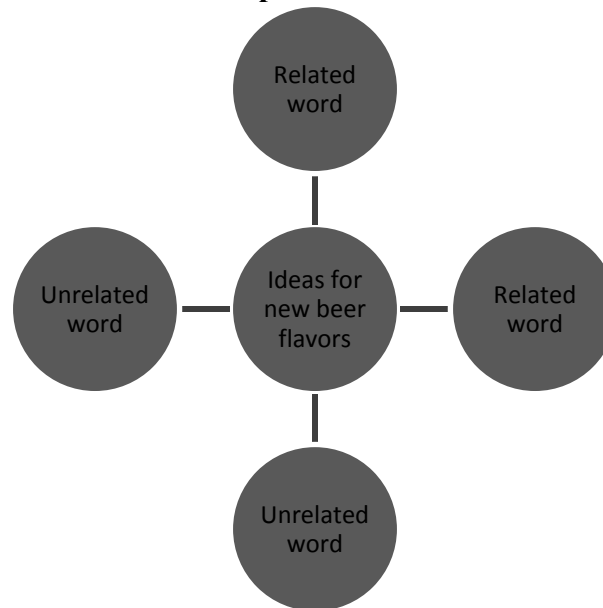


TABLE 1
T-test: Paired two-sample for means

	Pre-test	Post-test
Mean	8.533333	15.53333
Variance	5.409524	35.98095
Observations	15	15
Pearson Correlation	-0.18056	
Hypothesized Mean Difference	0	
df	14	
t Stat	-3.97879	
P(T<=t) one-tail	0.000686	
t Critical one-tail	1.76131	
P(T<=t) two-tail	0.001372	
t Critical two-tail	2.144787	

Upon completion of the pre-test (no mind map) and post-test (mind map), statistical information was calculated for both techniques (Table 1). Hence, the experiment entailed a pre- and post-test where the mind map was absent in the initial study and was introduced to establish post-test results. By comparing the quantity of ideas created from brainstorming to the number gained

from using mind maps, the study could establish the effectiveness of mind maps as a tool for innovation in the brewing curriculum. Specifically, would the use of a mind map be significant in helping students generate more ideas for beer flavors than what was gained from standard brainstorming? If so, students and brewmasters could partake in using mind maps to help innovative the brewing industry.

There was a statistical difference in the number of ideas generated with mind maps versus random brainstorming, $t(14) = -3.97$, $p < .05$. Hence, one could conclude there is a statistically significant difference in using the mind map over general brainstorming in creating ideas for new beer flavors. Mind maps are statistically significant to brainstorming in forming new ideas for beer flavors and could be deemed important as a tool to the brewing curriculum with expectations that this would allow for similar processes to occur in the brewing industry. Hence, one would assume that mind maps are an essential and effective tool that should be used in the innovative nature of the brewing curriculum and could be adapted to the craft brewing industry.

RESULTS

Measuring and evaluating success in innovation isn't as easy as one might expect. Generally, there are plausible standards to utilize before stamping something as a complete success. Regardless of the answers, building innovation into craft brewing or curriculum entails a plethora of possibilities. Many such options can be incorporated into the process with outcomes determining the level of success. While each merits attention, one must evaluate the results of each before deciding on the worth of the measured outcome.

First, the brewmaster is a critical component of adding value to a new program. How else would we expect to gain insight into the main core of the industry? By expanding on the ideas of the brewmaster, especially one with many years of experience, the curriculum is enhanced and will continue to gain as the brewmaster is far ahead of the educrats who understand the mechanics of developing such curriculum but lack the knowledge and depth provided by a professional in the field. Whether inception or a fully functional program, the brewmaster's experience enriches all stages of curriculum development and implementation.

Second, the education and training offered by third party sources is a critical contributor to building an effective brewing program. Educators must look beyond the protected turf gained by building everything internally and should look to the external horizon as a true manner for adding value to programs. A willingness to utilize ideas of third parties may seem humbling but can be seen as a triumph in building a top-level program. In the case of Top Hat, using an interactive, digital textbook featuring many white papers and video segments gleaned from years of knowledge of master brewers can be a great benefit in yielding positive results for the students. A willingness to rely on outside information becomes paramount to accumulating depth in the program.

Finally, no new program is complete without adding a dimension of innovation. How are we expecting students to build upon the standard brainstorming format of idea generation? Far too many programs are built with the expectation that innovation occurs automatically. Unfortunately, that isn't the case as intensifying the thought process requires a heavy stimulus that can be magnified into top-level ideas. In looking at the brewing industry, one sees the importance of innovation in critical factors like variety and flavors as a tool for building and maintaining future growth. The pre- and post-tests utilizing mind maps are a valid analogy of innovation in the brewing curriculum.

CONCLUSION

Developing a new brewing program can be seen as a system that relies on numerous internal and external sources of information. A brewmaster's ideas are the starting point for what is needed in combining science, brewing, and other knowledge into a curriculum that offers everything needed to build and pour a great beer. Without the input from a master brewer, one would expect the newly-minted curriculum to be limited in many ways. Hence, the brewmaster is critical for the industry to education conversion process that is needed to erect a superior program.

Building a new program can utilize a short-cut by buying and incorporating ideas, knowledge, and tools of third parties. Such entities can provide divergent thinking needed to bring additional ideas into the refined group of curriculum builders. A willingness to use outside information offers access to resources far beyond the boundaries of what can be retrieved within an organization. Otherwise, the internal-only mindset is paramount to restricting the program. Complexity entails the use of external information that can be appended to create validity for the program.

Finally, innovation is critical as a building block for generating new ideas. Whether by mind map or any of many other tools, it is important to create stimuli that will add to original ideas needed for successful innovation. One can't suffice to assume that, because it is a new program, it is heavy on innovation. Building a system with proven innovation yields great results for any program, especially those keen on spawning original ideas needed to supplement a new concept-based industry like brewing. Such innovation is compulsory to add rigor to the idea-generating process needed for an effective brewing program.

The three-pronged reliance on a brewmaster, third party entities, and innovation results in an excellent combination of factors critical for a successful brewing program. Each carries a critical piece of what is needed for success. Additionally, each of the factors is enhanced by the attributes of the other components to build a top-notch curriculum. As for students, what better way to learn than by the results of a combination of methods needed for success. Each component contributes to the ongoing brewing industry and accompanying curriculum.

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SCREENING LEADERS FOR SUCCESS IN TURBULENT ENVIRONMENTS

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ABSTRACT

The success of task-oriented organizations is highly dependent on the individuals selected to assume responsibility for leadership. Because of the high costs involved in leadership training, and the costs related to future consequences, it is important to ensure that individuals who can profit from training and perform successfully in the criterion environment are selected as candidates. The purpose of the present study was to test the efficacy of a unique personality variable, the General Incongruity Adaptation Level, as a predictor of success in OCS leadership training. The results of the study confirmed that a higher proportion of high GIAL candidates successfully complete the OCS program, which provides support for the basic GIAL hypothesis concerning the relationship between GIAL and environmental turbulence. Exposure to the tremendous turbulence in the OCS program resulted in a significant increase of the mean GIAL score of candidates completing the program. Low GIAL candidates also reacted more strongly to environmental turbulence than high GIAL candidates, emphasizing the importance of controlling for individual differences when investigating the effects of exposure to incongruent environments. Implications for OCS programs of this nature (i.e., producing turbulent-field conditions) include that the GIAL Self-Description Inventory appears to have high potential as a screening device, and that this type of program is instrumental in increasing the adaptation levels of low GIAL candidates.

INTRODUCTION

It has been established for some time that the success of task-oriented organizations is highly dependent on the individuals selected to assume responsibility for leadership (Williams, and Leavitt, 1947). Because of the high costs involved in leadership training, and the costs related to future consequences, it is important to ensure that individuals who can profit from training and perform successfully in the criterion environment are selected as candidates. Consequently, the determination of effective selection devices is highly desirable.

This need is especially acute in the Army Officer Candidate School (OCS) where over one-third of the entering class does not graduate, despite an initial screening examination which eliminates approximately 75 percent of all enlisted personnel from OCS consideration (Lippitt and Petersen, 1967). When examining personality characteristics as possible screening criteria, studies have found few significant correlations related to success in OCS leadership training, (Richardson, 1969; Williams and Leavitt, 1947) Although Petersen and Lippitt (1968) found that some OCS candidates have a greater propensity to successfully complete training programs than others, their results were confounded by a variety of design problems making their conclusions only tentative.

THEORETICAL FRAMEWORK, PURPOSE AND HYPOTHESES

The purpose of the present study was to test the efficacy of a unique personality variable as a predictor of success in OCS leadership training. The General Incongruity Adaptation Level (GIAL) has been proposed by Driver and Streufert (1965) as an important predictor of responses to turbulent situations (i.e., constantly changing, highly uncertain and ambiguous). Basically, the GIAL is an average expectation of all types of incongruity (e.g., stress, conflict, failure and ambiguity, etc.). Individuals differ in GIAL depending upon their previous experience with incongruity, i.e., the more, incongruity experienced in one's past, the higher his GIAL. Environments that provide too little or too much incongruity (i.e., very high or low degree of turbulence) will be disliked, and the individual will attempt to maintain the desired level of environmental turbulence within the range of his GIAL via physical or psychological avoidance, changing the nature of his environment, or the use of other internal defense mechanisms.

Since the OCS leadership training program is designed to expose candidates to turbulence similar to that encountered in actual combat, they are constantly subjected to mental, physical, and emotional stress (Petersen and Lippitt, 1968). Within this environment, the following relationships with the GIAL concepts were investigated:

Hypothesis 1: A greater proportion of high GIAL candidates than low GIAL candidates will successfully complete OCS (Hunsaker, 1975).

Hypothesis 2: Experience in OCS will increase candidates' expectations of incongruence.

Hypothesis 3: The OCS experience will elicit greater increases in the incongruity expectations of low GIAL candidates than high GIAL candidates.

Hypothesis 4: High GIAL candidates will be more effective leaders than low GIAL candidates in the OCS environment.

METHOD

Eighty-five cadets of the Wisconsin Army National Guard and Army Reserve completed the *GIAL Self-Description Inventory* (Driver and Streufert, 1967), immediately prior to, and immediately after, the two-week OCS training program conducted at the Wisconsin Military Academy. For comparison, a (nonequivalent) control group consisting of 29 undergraduate students enrolled in the Administrative Organization course at the University of Wisconsin-Milwaukee completed the GIAL inventory on the same dates. No significant differences existed between the mean scores of the control group and experimental group on the pre-test administration of the GIAL inventory. Comparisons of before and after scores provided evidence of the effects of differences in environmental turbulence on both groups' GIALs. Quartile comparisons provided estimates of the variation of these effects between low and high GIAL subjects.

Rosters of candidates withdrawing from the training program, and the reasons for these withdrawals, were obtained from the OCS administrative officers. The proportions of high GIAL

candidates (i.e., scores above the mean) and low GIAL candidates dropping out was determined after eliminating withdrawals due to extraneous reasons such as physical injury. Leadership scores, based on observations of the candidates' ability to accomplish assigned missions, were obtained from peer rankings and evaluations by the Tactical Department Officers [Tac officers] who made certain that each candidate was given ample opportunity to exercise leadership skills in turbulent environments. Leadership ranks were correlated with GIAL scores to determine the relationship of GIAL level to leadership effectiveness.

RESULTS

The proportion of high GIAL candidates dropping out of the OCS program was .09, while the proportion of low GIAL candidates dropping out was .18. The difference between these proportions was significant ($Z = 1.76$, $p = .04$), resulting in acceptance of the first hypothesis that the proportion of high GIAL candidates successfully completing the program is greater than the proportion of low GIAL candidates completing the program.

The mean GIAL score of the OCS candidates was 44.87 before exposure to the two-week training program, and 48.12 after completion. This 3.25-point difference represents a significant increase ($t = 4.12$, $df = 65$, $p < .001$) in the mean GIAL score. The before and after difference between mean GIAL scores for the control group was not significant, and the second hypothesis that subjection to the highly turbulent environment of OCS would result in increases in incongruity expectations was accepted.

Quartile comparisons revealed significant differences in the changes of incongruity expectations for low and high candidates in OCS, but not in the control group. Although OCS candidates in the first (top) quartile and second quartile manifest no significant changes, the mean GIAL scores for candidates in the third quartile increased significantly ($t = 2.98$, $df = 15$, $p < .01$) as did those for candidates in the fourth quartile ($t = 6.59$, $df = 16$, $p < .001$). Because of these differences the third hypothesis that the incongruity expectations of low GIAL candidates would increase by a greater degree than those of high GIAL candidates was accepted.

Pearson product-moment correlations between GIAL scores and leadership rankings by peers did not yield significant results. Correlations between GIAL scores and Tac officers' leadership rankings also failed to be significant. Consequently, the hypotheses suggesting a positive relationship between GIAL scores and leadership in the OCS environment were rejected. A significant, negative correlation was found between the leadership rankings of peers and Tac officers ($r = .59$, $Z = 4.72$, $p < .0001$). Since the numerical values in ranking schemes for peers and Tac officers were reversed, the significance of this correlation indicates that both types of judges agreed on candidates' relative leadership capabilities.

DISCUSSION AND CONCLUSION

The positive results confirming the first hypothesis, that a higher proportion of high GIAL candidates than low GIAL candidates would successfully complete the OCS program, provides support for the basic GIAL hypothesis concerning the relationship between GIAL and environmental turbulence. The proposition is that whenever the environment provides either too much or too little turbulence relative to the individual's GIAL, the negative effect associated with this incongruence will motivate the individual to change or avoid it. Since an OCS candidate can do little to modify the nature of his environment, an active response alternative for overloaded

individuals is to withdraw from the program. Consequently, low GIAL candidates behave in accordance with traditional dissonance theory and choose to sacrifice the future rewards of becoming an officer in order to avoid the surplus of immediate dissonance relative to their expectations. High GIAL candidates, on the other hand, find less discrepancy between this turbulent environment and their expectations. Consequently, they have little difficulty enduring the dissonant occurrences and successfully completing the program.

Support of the second hypothesis suggests an addition to the GIAL model. Exposure to the tremendous turbulence in the OCS program resulted in a significant increase of the mean GIAL score of candidates completing the program. Thus, when subjected to a situation where they can neither significantly alter the nature of dissonant inputs, nor escape from the situation without considerable cost, it appears that the successful candidates experience at least temporary increases in their incongruity expectations, allowing them to endure the situation. Research is currently in process to determine whether these shifts in expectations are temporary or permanent.

The results supporting the third hypothesis that low GIAL candidates react more strongly to environmental turbulence than high GIAL candidates, emphasizes the importance of controlling for individual differences when investigating the effects of exposure to incongruent environments. These results also substantiate the GIAL hypothesis that low GIAL individuals will be disturbed by much less turbulence than high GIAL individuals, who may actually seek more incongruence at the same level of environmental turbulence that causes low GIAL individuals to avoid it.

In terms of the resulting increases in adaptation levels, the largest increase occurred for candidates in the fourth quartile (i.e., lowest GIAL scores), and the second largest for candidates in the third quartile. No significant changes occurred for candidates in the top two quartiles (a slight decrease was noted for candidates in the first quartile and a slight increase was noted for candidates in the second quartile). These results suggest that the low GIAL candidates were encountering a degree of environmental incongruity exceeding their adaptation levels, and since withdrawal from the OCS program may have been even more costly (in terms of dissonance experienced) than enduring it, the outcome was an increase in their incongruity expectations. High GIAL candidates, on the other hand, may have found the dissonance of OCS training to be congruent with their expectations and, therefore, had no need to adapt. Had the level of environmental turbulence been even greater, so that the resulting incongruity exceeded the expectations of both high and low GIAL candidates, the result could have been an increase in the expectations of candidates in all quartiles.

The lack of significant results regarding the fourth hypothesis indicates that differences in GIAL's are not enough by themselves to predict leadership success rankings in OCS environments. Since a significant correlation was found between the leadership rankings of peers and experienced officers, it seems that this is another case, similar to that reported by Williams and Leavitt (1947), where the cadet's fellow candidates are better predictors of leadership effectiveness than personality tests. Further research to determine the criteria utilized by these raters, controlling for their own personality make-up, is needed to suggest other personality variables related to leadership success in OCS.

Implications for OCS programs of this nature (i.e., producing turbulent-field conditions) include the following: (1) the GIAL Self-Description Inventory appears to have high potential as a screening device. (2) this type of program is instrumental in increasing the adaptation levels of low GIAL candidates (at least temporarily), (3) although common leadership rankings are

produced by peer groups and superior officers, more research is needed to determine the personality and behavioral characteristics contributing to leadership effectiveness.

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ENTREPRENEURIAL STUDENT PROJECTS: WHAT ARE WE TEACHING OUR STUDENTS?

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INTRODUCTION

Providing real world opportunities for students in higher education business programs allows the students to apply the theories taught in the classroom, and gain additional skills and knowledge they will need in the workplace. Real-world opportunities may include special projects orchestrated by the university, internships, externships, co-ops, part-time or full-time work. The structure of the specialized projects may include individual students or groups of students assigned to work on a project that the instructor has created. Projects may also be innovative ideas the students were required to create per requirements in the course.

This paper examines a specific scenario in a four-year business program, in a three hundred level entrepreneurial business course, where students were required to analyze an existing company to determine growth opportunities or start up a new company. Through this example, analysis of college business school curricula and specialized projects required of the students to extend learning beyond the classroom, will be discussed. The question to be answered is whether or not the extra work assigned to the business students is beneficial when juxtaposed to the requirements employers look for in business school graduates.

LITERATURE REVIEW

Entrepreneurial education relies on the faculty to develop curriculum that ties in the theories of entrepreneurship and teach students the skills necessary to be a successful business owner. The challenge entrepreneurial educators face is which courses and skills are the most important to teach in the structured amount of time they are provided in their institutions. In addition to selecting the most meaningful courses, faculty must incorporate meaningful assignments and projects to apply and reinforce the material. Creating meaningful entrepreneurship projects is a challenge when time, resources, and the creativity of the students is limited. Solomon (2007) in a review of entrepreneurship education in United States of America suggested that the curriculum contents should stimulate an entrepreneurial mindset geared towards multiple venture plans and business ideas generation. In general, the goal of entrepreneurship education is to promote general entrepreneurial abilities such as knowledge on how to start a business and innovative processes in existing enterprises. Specific personal qualities and attitudes that are useful in many settings, such as: willingness to take initiative, innovativeness, and creativity, willingness to take risks, self-confidence, ability to collaborate, and social skills should be part of all entrepreneurial curricula (Johansen, 2014).

Olokundun, et. al. (2017) found that entrepreneurship curriculum contents have a high significant effect on students' open-mindedness to generate business ideas as expression of entrepreneurial intentions. The implication of their findings are that the design of the curriculum of an entrepreneurship programs largely affects the extent to which entrepreneurship students develop critical thinking abilities that result in students' receptiveness to novel and creative business ideas (Olokundun, etc. 2017). Chang and Rieple (2013) conducted a study of students'

skills before during and after they worked in live entrepreneurial class projects. The researchers found a decline in students' perceptions of their own skills as they progressed through the live projects. The greatest decline in the seventeen skills assessed in the study were; self-awareness, business concept, environmental scanning and accountability. Change and Rieple (2013) found that the students perceived that they had higher levels of emotional coping and self-awareness at the beginning of the live projects because they were dealing with existing businesses, and they did not have to start a new business. However, as the student's continued to work with the entrepreneurs the students realized they had a difficult time dealing with the ambiguity and uncertainty that came with the high expectations of the business owners. Their results indicate that the development of entrepreneurial skills can be improved by providing a learning environment in which students interact with real business people in live projects. They also indicated that entrepreneurship education programs may be improved by scheduling skills training in a more structured and timely manner than typically occurs now.

Siakas,et.al., (2014) conducted a study between Greek and Romanian entrepreneurial students to compare and understand the differences of the abilities of the students in the two countries according to the entrepreneurship education subjects typically taught: human resource management, innovation and creativity, project management, business analytics and management, risk management, and communication. The researchers found that the highest confidence scores derived from the question pertaining to risk management. The survey question ask the students, "How much confidence do you have in your ability to learn from failure?" The student responses were (4.21) Romania and (4.05) Greece, on a 5-point Likert scale with 5 being the most confident. These results were the highest in any of the other categories, however the researchers did not focus on these findings as much as the other differences they found between the two countries. The closeness and overall highest results of the survey are very valuable as educators continue to search for innovative ways to deliver entrepreneurial education. Creating space in live projects with in the curriculum where students experience failure might be one of the better learning outcomes they could experience.

The question that many researchers of entrepreneurial education ask is if we can actually teach someone how to become an entrepreneur or is it intuitive? Molaei,et.al., (2014) conducted a study on entrepreneurial idea value, entrepreneurial intention and the cognitive styles of undergraduate students. The researchers urge faculty teaching entrepreneurial curriculum to divide students into two groups; intuitive cognitive styles and analytic cognitive styles. They found that the entrepreneurial idea generation varies between the two cognitive styles, and the entrepreneurial intention is low if no unique business ideas are able to be generated. Moleaei,et.al., (2014) found that students who have perceived intuitive cognitive styles are more confident in their abilities to identify and recognize opportunities are less confident in their abilities to: assessment, evaluation, planning and the marshalling of resources. Students with perceived analytic cognitive styles are more confident in their abilities to: assess, evaluate, plan and marshal resources. However, they are less confident in their abilities to search for and recognize new opportunities. The results of their student provide educators another possibility of how to deliver entrepreneurial education in possibly more valuable format.

CASE PROJECT

Students enrolled in the three hundred level business course, titled Entrepreneurship, were required to select a company by which they would research and answer specific questions.

The company was required to be a new business establishment, expansion of existing operations, or purchase of an existing business or franchise. The business plan was required to meet all of the necessary requirements for applying for funding from a financial institution.

Small groups of four students were required at the beginning of the semester to determine whether or not they would select an existing company, that the professor had provided, or establish a new business. The majority of the groups selected an existing company the professor had provided. One group took advantage of a unique opportunity that the college administration had proposed, to open a new café on campus. The students were required to complete all of the requirements of the course, and to do so meant working with several different departments on campus to gather information and data.

The work necessary to gather the information outside of class was more involved than expected since other groups had only the internet to research other companies. Starting a new business was time consuming for the students, which was a concern for the professor. The students were given a baseline idea of what the administration was looking to create. The students were provided with access to the physical space, all financial data that was available, access to all stakeholders involved in running the business. The business was proposed as a partnership with a local coffee shop owner to provide the equipment, coffee products, and skilled labor. An existing college owned restaurant on the campus would supply any food items. The assigned group of students met several times with the key people from administration, the restaurant providing the food items, and the coffee shop owner during their 15-week semester to complete the project. During the meetings they gathered information to complete their weekly class assignments. The students decided to conduct a Beta test of the café business, and collected empirical data related to customer experience, expectations, and other feedback. The group presented their business plan to the highest levels of administration, the coffee shop owner, their classmates, and the professor. The students completed the course, completed their degree, and left the campus two weeks after the presentation.

CONCLUSION

In this case, the students earned an “A” grade in the class, therefore they fulfilled the requirements of the course. The goal of the course was met, however where was the sense of financial risk, the creativity to find a unique product or service, the negotiation of contract terms with vendors, the overall sense of possible failure and how it would affect them or their families financially, personally, emotionally? As educators, we need to ask ourselves if the students are really gaining enough of the “real-world” experience in these types of short term projects where barriers are removed for them, or are we allowing them to believe entrepreneurship is as easy as it might appear in a 15 week class.

Ferrier (2013) believes cultivating a culture throughout a program where failure is an acceptable outcome would help students gain a more realistic understanding of what to expect outside the classroom. Appropriately structured learning environments within different courses in the curriculum that allow for creativity and innovation are also necessary to foster more prepared entrepreneurs, not just in one class.

It is necessary for educators to analyze all of the necessary courses and assignments in an entrepreneurial program to ensure graduating students are prepared, and are meeting the expectations of employer needs when it comes to innovative idea generation, risk taking, team work and collaboration, and many other skills already taught in the traditional curriculum.

However, abstract and linear learning in traditional courses are different from ambiguity and uncertainty of entrepreneurialism (Chang & Rieple, 2013). For example, The Thiel Fellowship (2018) gives \$100,000 to young people who want to build new things instead of sitting in a classroom.” The fellowship allows students to take off two years from their studies and gives them \$100,000 to pursue their innovative ideas. The organization is seeking to gain more innovative ideas by removing students from the traditional classroom, and allowing them to experience a true entrepreneurial project.

FUTURE RESEARCH

Opportunities to further research how financial funding and administrative support similar to The Thiel Fellowship could be implemented into traditional courses in a higher education institution would be of interest to those educators looking for new and innovative ways to teach within the entrepreneurial curricula. The experience gained from these types of projects may not only catapult a rising entrepreneur’s future, but it could stimulate a whole program of students who truly have a passion to become entrepreneurs.

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INNOVATION IN HIGHER EDUCATION: REINVENTION OF THE PIONEER MBA

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ABSTRACT

The landscape of higher education is changing at a pace never before seen in the industry. Institutions of all sizes, affiliations, for-profit, not-for-profit, private and public are struggling to maintain relevant. Tusculum University has undertaken a number of entrepreneurial initiatives to keep Tennessee's oldest institution at the forefront including: doctoral programs directed at impoverished populations, redesigning academic programs, innovative reporting structures and student centered engagement initiatives. This paper explores the process embarked upon by the faculty in the College of Business to turn a stagnant MBA program into the robust 5-class Pioneer MBA with an employer focus that it is today.

INTRODUCTION

Historically the MBA degree was one of the most sought after and coveted degrees one could earn in the United States. In 1977, Forbes Magazine described the MBA degree as: "second in esteem only to the coveted Doctor of Medicine as a passport to the Good Life". It was foreseen that obtaining and garnering this credential would afford one the ability to provide in abundance for one's family.

Over the past 70 years the number of MBA degrees conferred in the United States has grown exponentially. In 1955-56 there were approximately 3,200 MBA degrees conferred (Zimmerman, 2001). A decade later in 1965, there were 7,585 MBA degrees conferred more than doubling over a decade (Cheit, 1985). This number grew to 46,650 in 1977 (Cheit, 1985), and over 102,000 by the late 1990's (Zimmerman, 2001). Today, multiple scholarly sources estimate that greater than 200,000 MBA degrees are conferred each year in the United States. This aggressive growth in MBA credentialed individuals in the workforce had and continues to have implications on the higher education industry as well as the workforce. Martin J. Gannon and Peter Arlow (1985) presented: "The number of schools offering the MBA degree during the last ten years has doubled, thus reducing the number of opportunities available for MBAs in the economy." Thirty five years later this statistic only continues to grow as institutions of higher education develop their strategic plans to survive troubling times ahead.

The original intent of the MBA was to develop managers that were business generalists with programs that led students through a curriculum of classes focused on a broad range of business facets and integration. As the popularity of the MBA grew the degree itself morphed into one with a specialized focus. Students would still receive the broad range of business facets but focus in an area of specialty such as finance, marketing, accounting or management. The mindset behind this was that employers were not seeking a general manager but an employee with in-depth knowledge of a business subject or functional area. Interestingly, in 2018 we are seeing a return to the generalist MBA degree. Given the positive economy and low current unemployment rates MBA programs are experiencing a shrinkage in applicants. Less applicants translates into less students, less tuition dollars and smaller classes. Students are no longer

demanding the areas of specialty and are in-turn looking to obtain their credentials in an accelerated straight forward pathway. Perhaps general MBA degree attainment in 30 academic credit hours vs. 36 academic credit hours for concentration specific attainment has driven this preference among MBA students. Additionally, the current positive economy, and shrinking applicant pool, have institutions of higher education scaling back their concentration options in efforts to obtain more operational efficiencies. Perhaps this apparent cyclical nature of MBA programs will reemerge with niche concentrations in the near future.

LITERATURE REVIEW

Naturally, with multiplicative growth experienced in the industry the value of the MBA has been brought into question. The obvious argument is supply and demand. There are simply more individuals in the workforce today with the MBA credential listed on their resume than ever before. In decades past, the MBA was a clear differentiator when hiring, however it is now as common as the undergraduate degree once was. Is this still a clear differentiator for hiring managers? Does this credential hold more credence than industry specific experience?

The body of literature provides many avenues for which we should question the value of the MBA degree. The majority of these scholarly articles were published between 1980 and 2010. Jeffrey Pfeffer and Christina T. Fong suggest (2002, p. 80): "There is little evidence that mastery of the knowledge acquired in business schools enhances people's careers, or that even attaining the MBA credential itself has much effect on graduates' salaries or career attainment." Moreover, Pfeffer and Fong found: "Internal studies conducted by the firms found that the no-MBAs did no worse and, in some cases, better than their business school counterparts." (Pfeffer, 2002, p. 81) Fisher argued: "MBA is the biggest waste of time and money imaginable." (Fisher, 2004, p. 54) Overall, the existing body of research includes salary studies, job offer studies, ROI formulas, and examination into faculty research. The ROI formulas take into account forgone opportunities such as the cost of the degree, time spent, potential job offers, lost wages while in school and improvement in skills such as decision making, written and oral communication and analytical analysis.

When comparing program outcomes researchers attempted to measure variables such as: career development, job performance, career satisfaction, employment, income and promotion. Is it possible to remove bias and environmental factors from such analysis? Many academics question if measuring program outcomes is even relevant or if it simply measures the quality of an institutions selection process. Pfeffer suggests: "A straightforward interpretation of these results is that it is not education in business but selectivity that is being assessed. (Pfeffer, 2002, p. 82) This could be evidenced by an institution that only admits the top 1% and graduates may experience the same outcomes regardless of competencies gained while in school. Bennis & O'Toole (2005) made the argument that research is 'measuring programs on the rigor of scientific research produced by faculty rather than measuring the competencies of their graduates'. If this research and knowledge gained is not conveyed to students and practice alike Bennis & O'Toole make a valid argument. This also brings into question the efficacy of AACSB v. ACBSP accreditation for business schools and programs with one of the primary differentiators being the heavy weight placed upon faculty research in AACSB schools.

MBA Destiny

Ultimately the composition of the MBA degree and underlying curriculum needs to be one that meets both the desires of students and employers in terms of format, deliverable and outcomes. Gannon and Arlow propose: “From the perspective of an MBA student, perhaps the fundamental reason for pursuing the MBA degree is the enhancement of opportunities for advancement.” (Gannon, 1985, p. 22) Pfeffer & Fong (2002) suggest that business schools should model themselves more closely on their other professional school counterparts by “focusing research on phenomena and problems of enduring importance, and building curricula that are evaluated, in part, by how well they actually prepare students to be effective in practicing the profession (p. 93). Given the current state of graduate business education, industry trends and the current body of scholarly literature the following assertions on the future of MBA programs are made:

- 1.) There will be an increased emphasis and focus on employer feedback and expectations
- 2.) Programs will adopt an increased focus on application and a lessened emphasis on theory
- 3.) Programs will implement elements demonstrating critical thinking and teamwork

PIONEER MBA

Given the presented state of graduate business education and Tusculum University’s transitional period from College to University. The College of Business seized this opportunity to re-evaluate their current MBA program and redevelop it into the Pioneer MBA. This faculty lead program reinvention is not only entrepreneurial but took into consideration student and employer feedback as well as integration of application, critical thinking and teamwork. The reinvention developed a 5 course program with classes combining like competencies into 6-credit modular classes often taught by one instructor. The curriculum is as follows:

Managerial Accounting & Decision Making	6
Management & Marketing	6
Managerial Economics & Finance	6
Law, Ethics & Strategy	6
Comprehensive Business Project	6
TOTAL	30 credit hours

A plethora of learning synergies were accomplished for MBA students. Modular classes taught by one instructor allowed students to learn one teaching style over 6 credits as opposed to two different teaching styles from two different instructors. If they were taking 12 academic credit hours in a term, this would be two styles of instruction versus the traditional model of four different instructors. Learning synergies include learning two course shells, two instructors, two sets of writing expectations and two course formats as opposed to four. Additionally, the modular classes allowed for courses to be in lock-step that build upon one another ensuring a student does not get out of sequence. For example, Managerial Accounting is delivered prior to Decision Making and the same with Management and Marketing. Concentrations including

Healthcare management were eliminated as historically only 8% of students were graduating with concentration attainment as opposed to the general MBA with two chosen elective courses. Student feedback indicated that they were interested in career advancement with their current employer as opposed to making a field or industry change that a concentration may provide.

How could the College of Business provide student and employer value unique to the Pioneer MBA? The two general elective courses became the Comprehensive Business Project accounting for 20% of the overall degree. This class is designed to be employer focused and delivered in a format in which the student, employer and a faculty member develop an original research project addressing an area of organizational interest for the employer. For this reason, Tusculum University became a corporate partner of choice for regional employers.

Interestingly, the first semester under this new Pioneer MBA format with modular classes, student and employer interest peaked in such a way that institutional record enrollment was achieved. Additionally, spring enrollment exceeded fall graduation numbers for the first time in program history. While the future of graduate business education is very much uncertain, we can count seeing a greater alignment of programs with student and employer needs and expectations to remain relevant in this space.

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COMMUNITY SHARES: A U.K. MODEL

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ABSTRACT

The community shares model first appeared in the United Kingdom in the 1800s. These enterprises, also known as community benefit societies, or “BenComs,” sell shares in an enterprise or asset. The buyers, or shareholders, are often members of a community that seek to build or preserve a local asset—a school, a pub, a road. The asset at the center of a community shares venture benefits everyone in a community, not just the members. If there is a surplus, it is usually reinvested in the venture. The U.K. has expanded governing laws to support and stimulate these enterprises in the 20th and 21st Centuries, resulting in hundreds of enterprises across Scotland and Britain.

In the United States, the community shares model is an alien concept mostly because U.S. regulations impose stringent guidelines that do not allow BenComs. Cooperatives, allowed under federal tax law and state statutes, go back to pre-colonial days when mutual insurance companies were first created, but while similarities exist between U.S. co-ops and BenComs, the growth of crowdfunding illustrates how the U.S. has attempted to make up for the differences. These differences also present possibilities for structural and statutory change in the U.S.

This article will examine the history of BenComs in the U.K., mutual organizations and co-ops in the U.S., analyze case studies of existing BenComs in the U.K. and similar ventures in the U.S., and explore needed action steps for initiating BenComs as legal entities, the sole purpose of which is to benefit a community, in the U.S.

INTRODUCTION

In 1844 in Rochdale, England, the Society of Equitable Pioneers opened a shop selling butter, flour and other groceries at prices that poor workers could afford. The co-op took in capital from its members, working people paying in a pound or two, and, in return, gave them dividends when possible (Subramanian, 2018). If the shop traded goods and services for a fair price and a surplus existed at the end of the year, the underlying concept of a co-op says that the members have paid too much and should receive that extra money as dividends (Lund, 2013). The cooperative movement’s thesis could be summarized by the statement that “profit is an accounting error” (Subramanian, 2018). The co-op movement’s guiding principles are still called the Rochdale Principles from that first venture of the Society of Equitable Pioneers and one of the principles holds that a co-op need only benefit its members—not everyone in a designated community (Mayo, 2017).

The cooperative as it exists in the United States is the nearest analogy to the community shares model, or a community benefit society—a “BenCom.” A BenCom sells shares in an

enterprise or asset; the buyers are often involved local community members who want to build a school, an electrical system, or mend a road in the town. The asset at the center of a community shares venture benefits everyone in a community, not just the members. The money that is raised through the BenCom goes directly to purchasing an asset—a school, a road, a harbor—and then the BenCom goes to work to turn a profit, if possible; there is no guaranty, however, of a return of surplus. Often, the surplus is reinvested in the venture (Community Shares Unit, 2019; Subramanian, 2018). The Financial Conduct Authority of the U.K. states clearly that “the conduct of a community benefit society’s business must be entirely for the benefit of the community” and that there can be no alternative or secondary purposes, including any that may preferentially benefit the members (FCA, 2019; Community Shares Unit, 2019).

In the United Kingdom, the law enabling BenComs to issue withdrawable shares dates back to the 1800s, but the resurgence of BenComs only came about in the 1990s and then only after the great recession of 2008 did enterprises begin embracing it in great numbers (Gilbert, 2019). As government funding disappeared in 2008 communities in England and Scotland started BenComs to buy or create assets that they felt critical to their existence. The U.K. encouraged community share issues and launched the Community Shares Unit in 2012 since which time over 400 enterprises have raised and spent more than 110 million pounds (\$150 million) (Gilbert, 2019; Community Shares Unit, 2019). Farms, pubs, schools, soccer clubs, hydroelectric power plants, and even a community harbor have flourished under the community shares model. Governing laws in the U.K. establish share-issue rules and make clear that the BenComs must sustain themselves (Community Shares Handbook, 2019). BenComs must be registered with Britain’s Financial Conduct Authority, but there is little oversight of the actual workings of a community share unit (FCA, 2019).

In the United States, the community shares model is an alien concept mostly because U.S. regulations and the SEC impose stringent guidelines on co-op stock (Lund, 2013). Cooperatives, nevertheless, are allowed under federal tax law and state statutes, with state statutes varying widely on registration of the co-ops (Lund, 2013). As in the U.K., a U.S. co-op is a legal entity owned and democratically controlled by its members who often have a close association with the enterprise as producers or consumers of its products or services, or as its employees (Lund, 2013; Mayo, 2017). The National Cooperative Business Association CLUSA International claims that more than 100 million U.S. citizens belong to one of the 64,000 existing cooperatives (NCBA, 2019). Credit unions make up the largest segment of coops in the U.S. along with agricultural ventures, schools, and health care ventures (NCBA, 2019; Community Wealth, 2019). Indeed, small changes in the U.S. laws and regulations date back to the JOBS Acts of 2012 which enabled equity crowdfunding such that a small grocery store, for example, could sell shares of itself in an online offering (SEC, 2016). Since 2011 when Kansas allowed small companies and coops to issue shares to local investors, thirty-five other states have followed suit (Co-OpLaw.org, 2019).

The history of coops in the U.S. goes back to pre-colonial days when Mutual Organizations were formed; indeed, the Philadelphia Contribution Mutual Insurance Company, founded in 1752 by Benjamin Franklin, is the oldest continuing mutual insurance company in the U.S. (Lund, 2013). Members of a Mutual Organization may or may not contribute to the capital of the company by direct investment; members derive the right to profit from their relationship with the company as customers. Mutual insurance companies, group captive insurers and risk retention groups are formed for the mutual benefit of insuring the members and the members

contribute monetarily and receive a profit share based on that contribution (University of Wisconsin, 2019).

This article will present an analysis of successful BenCom enterprises in the U.K., of mutual insurance companies and co-operative ventures in the U.S.—including crowdfunding efforts as an extension of a co-operative venture--within a historical study of the history of community benefit societies in the U.K., and of cooperative enterprises and mutual organizations in the U.S, as discussed above. Tangible applications of the legal structure as it exists in the U.S. and U.K. will explain compelling case studies and possible changes in laws to propel more such ventures.

HISTORY OF COMMUNITY SHARES MODEL IN THE U.K.

The history of the value of self-help and mutual aid stretches across centuries and across the world. The tension between freedom and repression exists at the heart of every story, as it does in explaining the history of the modern cooperative movement in Rochdale, England in 1844. From 1830 to 1843, a group of weavers in the town of Rochdale repeatedly held strikes to attempt to garner the means to support themselves and their families. The weavers made an average of six pounds a week, wore rags, slept on bags of straw and died at early ages. They were forced to buy their food from a large store that charged more than they could ever afford, keeping them in perpetual debt. Finally, in 1844, a group of twenty eight of the weavers, contributed one pound each, to raise twenty eight pounds with which they opened a small store, selling food and commodities to its members at prices they could afford. They registered a new co-op with the Register of Friendly Societies in October 1844 and developed a list of model rules that have become legendary as a recipe for mutual action:

- Open membership;
- Democratic control (one member, one vote);
- Distribution of surplus in proportion to trade;
- Payment of limited interest on capital;
- Political and religious neutrality;
- Cash trading (no credit purchases by members);
- Promotion of education (Thompson, 2012; Mayo, 2017).

Within twenty years, two hundred and fifty one retail co-operative societies were established across Britain—more than one new society every week.

The formation of the first co-operatives across the world was based on sharing gains, but also about pooling risk. New pioneers of co-operatives had to turn to the introduction of co-operative laws, some that came out of similar crisis such as those suffered by the Rochdale weavers. Indeed, although co-operative movements are not created by legislation, without an appropriate legislative framework, a co-operative movement in the form of a growing economic engine is not possible (Cracogna, Fici, Henry, 2013). In response to the great world recession of 2008, the U.K. established the Community Shares Program, an action research partnership funded by what was then known as the Department of Communities and Local Government (DCLG). The program set up publicly financed crowdfunding platforms available only to cooperatives, community benefit societies, and charitable community benefit societies (Gilbert, 2019). Similar to the JOBS Act crowdfunding platforms in the U.S. (discussed below), the U.K.

community shares platforms are publicly financed which eliminates fees that enterprises need to pay in order to raise capital (Gilbert, 2019). In addition, the program supports enterprises with technical assistance and helping to raise awareness of community shares as a sustainable funding mechanism for community enterprises.

Exempt from U.K. securities laws, community shares can only be issued by co-operatives and community benefit societies. The rules codified in the U.K. legislation mirror those of the Rochdale Pioneers: community shares cannot be transferred between people; the value of the shares is fixed and not subject to speculation; shareholders only have one vote; regardless of the size of their shareholding; there is a limit on interest paid; most societies are subject to an asset lock which prevents the society from being sold. The main reason people buy community shares is to support a community purpose, not to make a financial gain (Gilbert, 2013).

Examples of some of the more than 400 community businesses that have propagated since the legislation was passed in 2009 include local shops and pubs, renewable energy schemes, local groceries, new football clubs, restoring of historical buildings, and even the purchase of a local harbor and pier (Communityshares.org, 2019; Subramanian, 2018). Recent examples of the benefit community model in action illustrate the manner in which this kind of mutually beneficial venture results in a vibrant, strong, independent community.

BENCOM EXAMPLES IN THE U.K.

One illustration of the power of the BenCom to bring a community together to preserve an asset that lies at the heart of the fellowship that makes a locality a neighborhood is the village of Portpatrick, Scotland and its success in buying its harbor from private investors. In the April 2018 edition of *Harper's Magazine*, author Samanth Subramanian tells the beautiful story of Portpatrick and its fight to save the harbor that makes the village unique (Subramanian, 2018). After considering multiple methods of raising funds to purchase the harbor from the private investors who had neglected it—including charity lending, a Kickstarter crowdfunding campaign which was dismissed because of a lack of trust, or corporate financing—the community organizers met with an individual who had worked with social enterprises for decades and suggested the idea of a community benefit society, or “BenCom” (Subramanian, 2018). The 540 residents of Portpatrick inherently understood that a BenCom would benefit everyone in the community, member or not. They understood that the BenCom model prizes “a sense of communal well-being and a belief that such well-being will improve lives in immaterial as well as material ways” (Subramanian, 2018).

As noted above, BenComs must register with the U.K. Financial Conduct Authority (FCA) which regulates financial-services firms. However, there is no other real oversight; share issues are unregulated so investors feel protected only to the extent that they know the people running the BenCom—their neighbors or friends. The people in Portpatrick turned to Community Shares Scotland (CSS), an agency formed to assist new BenComs (CSS, 2019). CSS arranged a bridge loan of 75,000 pounds (approximately \$115,000) from a state-funded charity, Social Investment Scotland (Social Investment Scotland, 2019). The lead members of the soon-to-be Portpatrick Harbor BenCom needed 75,000 pounds to repay the loan and take possession of their harbor. The share offer started on a weekend in September 2015; each share was worth one pound; a subscriber could buy in with twenty-five pounds or a maximum of £10,000. Within three weeks, the harbor BenCom raised \$100,000. 554 new shareholders saved the harbor of Portpatrick where life would be unthinkable without it (Subramanian, 2018). The fact that the U.K. has

legislation and public financing available to prospective BenComs is key in the spread of the BenCom and community shares model.

To further demonstrate the efficacious spread of the community shares model in the U.K. is the Southern Staffordshire Community Energy Limited (SSCE) located in Lichfield, Staffordshire, England. Under the Co-operative and Community Benefit Societies Act 2014, the SSCE officially registered as a community benefit society fashioned to assist the community, while being run entirely by volunteers (SSCE, 2016). The SSCE issued community shares on three separate ‘green’ community projects in 2011, 2016 and 2018. Through the issued shares, the BenCom successfully funded and commissioned PV (photovoltaic systems) panels on various community and hospital buildings throughout the district of Lichfield, Staffordshire (SSCE, 2016). Companies occupying and utilizing SSCE buildings benefit from free or bargain-price electricity as panels generate solar power, while financial surplus is passed directly down to the community for benefit (SSCE, 2016).

It is important to note that the main purpose of the Southern Staffordshire Community Energy Limited is to conduct business for the long-term benefit of Staffordshire communities through renewable energy generation and development, installation and operable renewable energy sources that aid the community at large. Specifically, the SSCE upholds the following: 1) support sustainable use of energy/reductions in carbon emissions by supplying energy-efficient products or services; 2) provide advice on energy efficiency and energy waste reduction; 3) promote public awareness of environmental and related issues; 4) support educational initiatives related to renewable energy, energy efficiency and sustainability; and 5) promote sustainable initiatives and policies to improve health, wealth and wellbeing of the local communities, principally to those suffering from deprivation and scarcity (FCA, 2017).

Taking things a step further, the BenCom established the following parameters: 1) the SSCE can borrow a maximum of £10,000,000 from its Members at any one time; 2) it may mortgage or issue loan stock or securities for money borrowed; 3) the rate of interest on borrowed money shall not exceed 5% yearly or 2% above the Bank of England base rate at the initiation of the loan, whichever is the greater; 4) members must ensure that the rate of interest earned on borrowed money is sufficient to attract finance for projects; and 5) above all, financial surpluses must be used to benefit the community (FCA, 2017, SSCE, 2016). Clearly the parameters set forth by the SSCE indicate their commitment for the long-term benefit of communities in Staffordshire. To date, the BenCom successfully aided the community in green energy initiatives on nine buildings, raised £335,000 via a community share offer, and solar powered a large community hospital. Lastly, the highly regarded BenCom formed a community fund with surplus revenue for local organizations or charities to award grants to (SSCE, 2016). Through the fund, they provided two thousand pound grants to organizations and charities located in the Lichfield and Cannock Chase with initiatives surrounding energy audits, energy-saving, environmental projects for Hammerwich Cricket Club, Christ Church in Burntwood, St Michael’s Church in Lichfield, Woodhouse Community Farm and Shenstone Village Hall (SSCE, 2016).

Another instance of a community benefit example is King of Prussia Arts Centre, located in Bovey Tracey, Devon, England. In 2017, Bovey Tracey was a quaint, small town in desperate need of redevelopment for many buildings in the town center. Local citizens grew concerned with derelict buildings, a closed down pub on main-street, a run-down main street road, and lack of community entertainment, such as a cinema, an art gallery, or an excellent restaurant (Co-Operatives U.K., 2017). Through the help of the Co-Operatives U.K. and the Financial Conduct

Authority, the community formed a BenCom funding their town project. They raised £290,000 from local community members converting a dilapidated 16th century pub into the King of Prussia Art Centre with a 118 seat cinema theatre, an art gallery, an artists' studios, and a cafe bar with a brilliant restaurant (Paradiso, 2019). This BenCom was important for the Bovey community because they regard the town as a popular destination for day tourist attracted to the natural environment, recreational opportunities, and cultural events, such as the annual three-day Contemporary Craft and Nourish Festival (Paradiso, 2019). Bovey locals utilized a BenCom structure to fund the King of Prussia Art Center due to the prohibitive costs on the project. Citizens believed that capital would be attained easier with a community sharing model and that there would be greater community support for the project. The project was successfully funded and is currently under construction. The hope is to solicit more tourists interested in arts and entertainment, while providing the community with an informal meeting place, to renew acquaintances and make new ones (Paradiso, 2019).

Similar to the above community sharing ideas, Indycube in Wales was created as a community benefit society providing office space for the self employed. Indycube originally started as a social enterprise (community interest company), but with the help of Co-Operatives U.K. they quickly converted to a BenCom (Co-Operatives U.K., 2017). Indycube provides freelance workers with office space and office services, such as invoicing, insurance and support for their business. Company founders liked the idea of freelancers owning the business and workspace building themselves, thus the BenCom idea materialized. The BenCom has been widely successful to the point that they expanded to multiple locations across the U.K. (Co-Operatives U.K., 2017). In eight years, the company has provided freelancers, micro business and remote workers coworking space, legal advice, and invoice help allowing them to thrive in their communities (Co-Operatives U.K., 2017; Indycube, 2017).

A final BenCom worth mentioning is Clevedon Pier in Somerset. This BenCom rescued the town pier or 'pride of the city' from demise, much like the Portpatrick Harbor BenCom. Cleydon Pier started falling into disrepair approximately four decades ago becoming an eye-sore for community members who once regarded the pier as 'the most beautiful pier in England' (U.K. (Co-Operatives U.K., 2017). Originally community members created a charity trust, eventually converting the charity into the Cleydon Pier BenCom model due to funding requirements to issue shares (Co-Operatives U.K., 2017). Specifically, the BenCom required an additional 10% funding, beyond the grants awarded, to refurbish the dilapidated pier, thus the BenCom issues shares for £150 each (Cooney, 2015; Co-Operatives U.K., 2017). The BenCom utilized the funding from the share issuance to build a visitor pier center and a restaurant, which in turn financed pier repair and maintenance work. The BenCom received funding from local community members successfully raising £250,000 investment money from 1,100 local citizens (Co-Operatives U.K., 2017).

After reviewing the U.K. BenCom case examples, it is evident that a community shares model can be effective to allow community shareholders to benefit from a sense of ownership, to allow community shareholder to have a say in what happens with the projects and to allow financial gains to be passed through to the community. In the U.K., the BenCom examples discussed above show confirmation of pragmatic remedies to local problems, practical solutions to funding difficulties by allowing the issuance of stock to community members in exchange for capital while allowing communities to invest their own money into community projects that directly benefit themselves and those around them. It is important to mention that to date, community sharing companies in the U.K.

have a combined net worth of £36 billion (Co-Operatives U.K., 2017). This is a substantial amount of money that was funded by local community members for projects ranging from street retailers, to pubs, to fan-owned football clubs, to restaurants, to community farms, to hydroelectric power plants, to community harbors and piers.

HISTORY OF CO-OPERATIVES IN THE U.S.

The development of cooperative associations in the United States finds its roots in the upheavals of the Industrial Revolution in England and the U.S. where small enterprises disappeared and workers moved to the cities facing harsh working conditions and low wages. The first cooperative business in the U.S. was a mutual fire insurance company, founded in 1752 by Benjamin Franklin which continues to operate today (University of Wisconsin, 2019). However, agriculture most readily embraced cooperatives and continue to have a significant economic impact in the U.S. economy. Dairy and cheese cooperatives were first organized in 1810 and other commodities followed; these small localized cooperatives organized for the purpose of buying products in bulk for members and selling them at a cost, quite similar to the motivation of the Rochdale Society. Indeed, the Rochdale Principles were embraced by many of the early U.S. cooperative associations. The First Workingmen's Protective Union organized a bulk purchasing program for its members and used the Rochdale Principles as its guidance. Likewise, the Order of Patrons Husbandry, the Grange, formed after the Civil War, was formed to improve farming conditions and cut out the middleman. The Grange likewise endorsed the Rochdale Principles and its development led to the formation of hundreds of agricultural markets (University of Wisconsin, 2019). The federal government supported cooperative development in the agricultural sector by passing laws that supported partnerships between farmers, universities and the U.S. Department of Agriculture. The Smith-Lever Act of 1914 created the Cooperative Extension System, a program that created university-based agriculture, food, and natural resources partnerships that helps start numerous cooperatives (University of Wisconsin, 2019).

Interest in cooperatives intensified after the turn of the century in response to monopolistic practices of growing corporate interests. Farmer cooperatives even came under fire after the passage of the Sherman Antitrust Act of 1890 because these co-ops were a way for farmers to set a common price for their products. Congress reacted with the passage of the Capper-Volstead Act of 1922 that authorized the right of farmers to market or process their agricultural products cooperatively. The Cooperative League of the United States of America (CLUSA), organized in 1916, promoted a broad cooperative agenda and continues to draw support from consumer cooperation movements. CLUSA is now part of the National Cooperative Business Association (NCBA). CLUSA, aimed to building a "more inclusive economy" through co-ops (NCBACLUSA, 2019).

In addition to agriculture, credit unions have occupied a prime role in the cooperative movement in the United States, mainly because of the adoption of credit union legislation at the state and federal levels. The first credit union statute was passed in Massachusetts in 1909; because of legislation, there are now more than 6,000 credit unions in the U.S. A credit union, similar to a BenCom, is a member-owned financial cooperative, democratically controlled by its members and operated for the purpose of promoting thrift and providing credit at competitive rates. A credit union must be chartered by either the federal government or a state government. The National Credit Union Administration is the U.S. independent federal agency that charters federal credit union (National Credit Union Association, 2019). The role of legislation and public endorsement is clear in the lasting growth of this kind of coop.

The JOBS Act of 2012 (Jumpstart our Business Startups) was the first big step that the U.S. government has taken to enable co-ops to take a step towards the community shares model that the U.K. promotes. The Act enabled equity crowdfunding and required the SEC to write rules and issue studies on capital formation, disclosure, and registration requirements. The intent of the crowdfunding legislation was parallel to that of the Rochdale Society; a small shop could more simply sell shares of itself in an offering online (SEC, 2019). Likewise, Kansas passed a law in 2011 allowing small companies and co-ops to issue shares to local investors and 36 states have followed suit, especially in the realm of health care insurance (Kansas Statutes, Chapter 17, 2012; National Conference of State Legislatures, 2019). These are small steps towards the founding philosophy that is the bedrock of BenComs: assisting the community directly, not simply enhancing a local economy with new investments. Nevertheless, good illustrations of cooperatives in the U.S. lend insight, including housing cooperatives such as that describe below. Perhaps no example is more enduring than mutual organizations that date from the days of Benjamin Franklin.

COOPERATIVE HOUSING EXAMPLES IN THE U.S.

One of the most common co-op structures in America is cooperative housing. Cooperative housing is commonly utilized in large cities, such as New York City, Miami, Chicago and Washington, DC. It is estimated that greater than 7,500 housing cooperatives exist in the United States, providing 3 million people with housing at all levels of income (National Cooperative Month Planning Committee, 2005). Cooperatives include townhomes, apartments, single-family dwellings, student housing, senior centers, and trailer/mobile home parks (National Cooperative Month Planning Committee, 2005). Purchase prices of cooperative shares are determined by the real-estate market and are often maintained at below-market rates to preserve affordability (National Cooperative Month Planning Committee, 2005).

Co-op housing is different from direct housing ownership because members of a housing cooperative purchase shares in the cooperative ‘corporation’ which owns and controls the building or property in which people reside (Capital Park Team, 2013). Each shareholder is permitted to occupy a specific unit with voting rights in the cooperative. In other words, members own shares in a multi-unit apartment complex, resulting in a capital interest in the entire complex, not a specific unit. Shareholders are required to pay monthly sums equivalent to their percent stake in the cooperative. Monthly payment are used for operating expenses for the cooperative, such as essential mortgage payments, property taxes, management salaries, maintenance fees, insurance fees, utilities and monthly contribution requirements to the cooperative’s reserve funds (National Cooperative Month Planning Committee, 2005).

Among the earliest examples of cooperative housing is the Watergate East Cooperative Housing Complex functioning in Washington DC since the 1968. Watergate East Cooperative owns the building, land and all property, while the residents own the cooperative. Overtime, the Watergate Co-op has grown to include three apartment buildings (East, West & South), two office buildings, a shopping mall, and a hotel.

As a result of the success of Watergate Co-op, Washington DC has experienced a surge of co-op housing complexes resulting in 120 co-ops that are prime sources of affordable housing for community members (Capital Park Team, 2013). The DC co-op housing structure is in direct contrast to co-ops in New York City, which cater to wealthy, elite residents looking for co-op ownership in luxury buildings. As of today, cooperative housing is found in most DC districts

(Capital Park Team, 2013). It is important to note that an added benefit of co-op ownership is the ability to select or add new members via stringent application and interview processes. In addition, co-ops enjoy lower tax rates compared to condo owners because they provide opportunity to lower-income residents (Capital Park Team, 2013).

Today, housing cooperatives in the United States have a combined budget greater than \$11.5 billion, and in 2005 co-ops spent an average of \$1.2 billion to repair and improve buildings yearly (National Cooperative Month Planning Committee, 2005). Approximately one-third of housing cooperatives sponsor community activities, such as volunteer activities to benefit citizens (National Cooperative Month Planning Committee, 2005).

COOPERATIVE GROCERY EXAMPLES IN THE U.S.

According to the National Cooperative Month Planning Committee (2005), there are nearly 350 grocery and food cooperatives in the U.S. which generate greater than \$ 33 billion in revenue annually while serving thousands of members across the nation. Some of these cooperatives are major supermarkets, while others are smaller specialty shops, smaller local markets or natural food markets. Members of food and grocery coops help create policy, collect money for community causes, help organize volunteer events and provide discounts or rebates for membership (National Cooperative Month Planning Committee, 2005). Grocery cooperatives are able to maximize their purchasing power, increase operational efficiencies and provide dividends to member shareholders annually (National Cooperative Month Planning Committee, 2005). Some of the most well-known food cooperatives are Frontier Natural Products Coop in Iowa, Tucson Cooperative Warehouse in Arizona and Ozark Cooperative Warehouse in Arkansas. All three warehouse cooperatives supply food to the market, aid with advertisements for their local members' stores within their regions, and provide support to other groups interested in initiating new food cooperatives in their regions (National Cooperative Month Planning Committee, 2005).

MUTUAL ORGANIZATIONS, MUTUAL INSURANCE COMPANIES, GROUP CAPTIVE INSURERS, RISK RETENTION GROUPS

A type of cooperative, known as a mutual insurance company, has long roots in English and American society. Thanks to the innovation of English farmers, a new type of member-owned insurance company began to take root in 1696 because they could not obtain fire insurance from traditional, larger insurance companies (University of Wisconsin, 2019). As a member-owned insurance company, the farmers agreed to be collectively responsible or liable for the loss any of the members might suffer in the event of a barn fire. Once the Colonists came to America, they brought the insurance concept along with them with the establishment of the Philadelphia Contributionship for the Insurance of Houses From Loss by Fire by Benjamin Franklin in 1752 (Investopedia, 2018).

The only real purpose of a mutual insurance company is to ensure the availability of coverage for its members/policyholders (Kagan, 2018). While the goal of a mutual insurance company is to provide insurance coverage at or near cost, rather than earn a profit, mutual insurers also play a key role in their local communities (Kagan, 2018). For example, one mutual insurance company, PEMCO Insurance, touts their deep community involvement as a way of improving the quality of life in Seattle and the Northwest (PEMCO 2019). Mutual insurance companies, with deep community roots, engage in numerous unique activities to benefit the area

where their members live and work including charitable contributions, allowing paid time-off for employees to volunteer and even planting trees (Insurance Information Institute, 2019).

Perhaps this sense of community involvement had a more selfish genesis. Fire departments, as we know them today, did not exist as municipal or community entities back when the rise of mutual insurance companies began. Instead, insurance companies establishes their own fire brigades, but they were used exclusively to put out fires in the buildings that the insurance company covered with an insurance policy. These buildings were adorned with “fire marks” so the fire brigade would know whether a building was insured by the brigade’s owners, and thus whether they should put out the fire (Grundhauser, 2017).

CONCLUSION

After reviewing various literature, along with cases of successful BenComs or co-ops in the U.K., it is evident that much still needs to be done in the U.S. Although the JOBS Act provided a legal mechanism to use crowdfunding to sell shares in a “co-op” type enterprise, there are no specific “BenCom” laws in the U.S. Rather than simply allowing an equity interest in an enterprise, such as with equity crowdfunding, the JOBS ACT laws need to be modified to allow for the creation of enterprises that benefit an entire community, rather than just investors and shareholders. It is well established that the community shares model exists around the world, and that laws exists in countries like the U.K. which provide the legal skeletal structure for BenComs to operate and flourish. Bringing the BenCom model to the U.S. could result in a spur of economic activity to improve infrastructure, electrical systems, roads, school and many other needed community services for many communities throughout the country. Suggestions for using the JOBS Act to invigorate crowdfunding; invigorating state legislatures to adopt more vigorous legislation such as that commenced in Kansas. The U.S. needs to take equity crowdfunding a step further towards crowd sharing private partnerships. The U.S. should embrace some of the same institutions that have worked in the U.K.: i.e. an agency such as Community Shares Scotland that help arrange bridge loans and help their community at large. It is important to mention that with the constant government struggles to cut costs, cut services and manage spending, BenComs just make sense and can become major economic drivers. Let us not forget that co-ops and BenComs in the U.K. are worth £36 billion to the British economy (Co-operatives U.K., 2017).

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A LOOK AT AUTISM IN THE WORKPLACE TODAY: NEEDS AND TRANSITIONS

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ABSTRACT

Young adults with autism often have a difficult time transitioning into the world of work and becoming self-sufficient. Research is needed to discover the challenges associated with integrating them into the work force. This study investigated the transition needs and experiences of young adults with Autism Spectrum Disorder (ASD) as they attempt to enter the work force. Investigators researched the barriers that individuals with ASD face when attempting to fit in at the workplace with a survey of caregivers of individuals with autism. A focus group was also conducted with parents and families of young adults with ASD to discuss the transition needs and barriers faced from the caretaker's perspective. These are important issues as previous research suggests that the career and life outcomes for young adults with ASD are poor when compared with the general population. Moreover, the large number of young adults with ASD expected to enter the workplace in the next ten years is quite large. This study examined some of the transition needs and experiences associated with their transition into the world of work. Results indicated that young adults with ASD face significant challenges when navigating the world of work. Caregivers expressed concerns about the reduction in services provided to young adults with autism, the lack of communication and coordination across agencies and stakeholders to assist with transition needs, and safety issues both at work and in the broader community.

INTRODUCTION

Approximately 50,000 people with Autism Spectrum Disorder (ASD) will be entering adulthood each year in the United States (CDC, 2016). Some hope to find jobs. Some will go into post-secondary education. Many will find it difficult to do either. Employment is crucial for helping people with autism integrate into society. It is tremendously important because many aspects of our lives are interconnected. How we live, play, and work impacts how we connect to the community. Finding employment is a key component of being meaningfully integrated into society. Employment is often the primary transition goal of students with ASD as they prepare to exit high school. Getting a job is about much more than earning a paycheck. It is a rite of passage. It is about assuming an adult role in society, gaining self-confidence, establishing independence and taking those first steps toward pursuing a career. The most recent

unemployment statistics for adults with ASD found that 85% were unemployed and that 69% of them wanted to work (National Autistic Society, 2016). A recent national report found that 58% of young adults with autism, just out of high school, were paid much less than adults with other disabilities (Roux, Shattuck, Rast, Rava, & Anderson, 2015). Often people with autism are underemployed. Many of them want to work full time but are only able to find part time work. Studies find that individuals with ASD are poorly paid, and many do not receive benefits such as sick leave, retirement, vacation pay, and health insurance (Jennes-Coussens, Magill-Evans, & Koning, 2006; Taylor, Henninger, & Mailick, 2015).

An important issue for individuals with ASD is a sense of connection. The National Autism Indicators report, published in 2015 by Drexel Autism Institute, investigated the disconnection concept. When young adults do not get a job or continue their education after high school, they are referred to as disconnected (Roux, Shattuck, Rast, Rava, & Anderson, 2015). Young adults with ASD had far higher rates of disconnection than their peers with other disabilities. Less than 8% of young adults with other disabilities were disconnected, compared to 37% of those with autism. When young adults on the autism spectrum are disconnected from work and post-secondary education experiences, opportunities for socialization, friendship, and community participation are also reduced.

Our social networks expand our career and educational opportunities. Young adults who have less social and community participation are likely to have fewer opportunities to find out about jobs and careers, as well as schools and training programs to further their learning and skill sets. Parents and families also are concerned about their child with autism living an independent life. They are stressed about the quality of life their children will experience. Parents and families of children with autism are more stressed than parents of individuals without autism. In a study conducted by Easter Seals (2008) just 6 in 10 parents of adult children with a disability (61%) rate their child's quality of life as excellent or good, compared to 8 in 10 parents of adults without a disability (82%). They have many fears and concerns associated with the immediate and long-term care of their child such as "What will happen to my child when I die?" They also have a lot of financial stressors and costs associated with supporting their child. Autism has a major impact on individuals and their families, personally and financially, but it also has a major impact on communities as a whole (Buescher, Cidav, Knapp, & Mandell, 2014). A study in 2015 estimated an annual cost of 268 billion dollars to care for people with ASD in the US. This includes medical/non-medical expenses, being unemployed or underemployed, as well as the loss in productivity for parents who have to reduce their work hours to care for the person (Leigh & Du, 2015). The authors suggest that if the number of people with ASD continues to rise the cost could reach 1 trillion dollars a year by 2025.

TRANSITION SERVICES

Little is known about the transition of young adults with ASD into the workforce (Johnson & Joshi, 2016). It is very difficult to track individuals with ASD once they leave high school as there is little coordination among the agencies providing transition services to assist young adults and their families with career planning (Pellicano, Dinsmore & Charman, 2014). The transition process with its new tasks and experiences may be particularly challenging for young adults with ASD. Many of them will lose the services provided by their school districts just as they begin enrolling in post-secondary education programs or entering the work force. Most will continue to need some type of support to reach their educational, career, and life goals.

Children and young adults with ASD who qualify for services are protected by the Individuals with Disabilities Education Act (IDEA), a federal law that outlines the provision of services to children with disabilities until the age of 22 or when they graduate from high school (U.S. Department of Education, 2004). Services provided under this law may include mental health support and skills training opportunities which enable young adults to be placed in supported work situations or to participate in work programs through their school districts. However, there is great concern about the lack of services available for young adults with ASD once they reach the age of 22 and are no longer protected by IDEA (Roux, 2015). Roux (2015) calls this reduction in supports the *services cliff* and suggests there is an urgent need to create effective transition planning and programming for these young adults.

Prior to creating effective transition planning procedures and programming, there is an urgent need to identify the unique needs of young adults with ASD and the barriers they may encounter during their transition out of high school. It is important to understand transition needs from the perspective of the young adult with ASD, as well as from the perspective of their parents and caregivers. Anecdotal evidence identifying the barriers faced by young adults with ASD have been documented by several nonprofit organizations and autism support groups including the National Autistic Society and the local Autism Working Group of the Sunderland City Council. The need for support and services while navigating the world of work is a consistent theme identified by parents, caregivers, and young adults with ASD.

TRANSITION BARRIERS

During the transition process there are many barriers young adults with ASD face that differ from the career experiences of the general population (Seitz & Smith, 2016). Individuals with ASD often have difficulty understanding the thoughts, intentions, and emotions of others (Bruggink, Huisman, Vuijk, Kraaij, & Garnefski, 2016) and they often have difficulty regulating their own emotions. These challenges may create transition and employment issues for young adults with ASD (Samson, Huber, & Gross, 2012). One barrier is the lack of coordination between the agencies intended to support young adults with ASD. For young adults with ASD to be employed and contribute positively to society, these agencies need to collaborate. While there are organizations that focus on the school to work transition of young adults with ASD, little is known about the quality and impact of the services received. Another barrier is that many parents do not have the necessary information to navigate the transition process. Investigators found that 67% of families surveyed had no knowledge of available transition programs; 83% relied on family members as their primary source of transition planning assistance; and 78% were unfamiliar with agencies or professionals that might assist with job placement (University of Miami/Nova Southeastern University CARD, 2008). A third barrier is the absence of qualified staff to work with young adults during their transition into the workforce and into independent living (Gerhardt, 2016). Also, the quality of people working with these young adults is not as closely monitored as under IDEA. Under IDEA there are federal and state requirements about the training, degrees, and education required to work with children with disabilities. Once a child is no longer protected under IDEA there are very few requirements regarding who can work with these young adults for transition services (Guermo & Rodriguez, 2016).

PURPOSE OF THE STUDY

Previous research suggests that young adults with ASD are experiencing significant difficulty in transitioning to work. Little research has examined the transition barriers and transition needs from the perspective of young adults with ASD and their parents and caregivers. Therefore, the purpose of this study was to assess the transition needs and experiences of young adults with ASD as they prepare to enter the workplace. The study also sought to identify the barriers associated with their transition into the world of work. This study was designed to specifically focus on the current state of employment of youth with ASD, as well as the availability and gaps in services required to support improved employment outcomes. Investigators utilized both survey and focus group methodologies. Data were collected on career aspirations, preparation for work, career experiences, and transition barriers as experienced by young adults with ASD. Results are presented from an online survey study and an in-person social validation focus group on the above issues.

METHODS

Survey

The survey instrument was designed using a theoretical framework of the three-step career process and assessed the transition barriers encountered during this process. The three steps in the career development process are (1) career aspirations (2) preparation for work, and (3) career experiences. The instrument consisted of 37 questions. The specific number of questions offered to each respondent varied based on their respondent characteristics. For example, if a respondent identified themselves as a parent, they were asked slightly different questions than if they identified themselves as a person with a disability. A standard automatic branch logic was used to allow for consistency with respondent groups. Based on the results of a pilot study of 18 individuals, stratified to the targeted respondent groups, the average time to complete the survey was 20 minutes. Questions were derived from a review of the literature. Face validity of the survey was improved through a systematic feedback review of the instrument by administrators from local service provider agencies and parent support groups. The survey was administered in English and Spanish.

After obtaining IRB approval the survey instrument was converted into the electronic survey platform Qualtrics where a unique resource locator (URL) was created. Quantitative and qualitative data were collected. Quantitative data were obtained primarily through forced-choice or ranking questions. An “other” or short text box was available for many questions so that respondents could provide more detailed responses, providing qualitative data. An internet-based survey was used for this study. The survey cover letter assured the respondent that their responses would be anonymous. The anonymous nature of the survey precluded follow-up with respondents by the investigators.

Sample

The county Regional Center, two local parent/caregiver support groups, and a community mental health service agency supporting transition aged youth, agreed to participate in this study. Each agency and group agreed to send an email invitation to individuals on their proprietary lists

containing a uniform resource locator (URL) and an invitation to participate in the study. The survey link was active and open for 12 weeks. The survey was sent to primary caregivers or parents of individuals with ASD. Young adults with ASD were also eligible to complete the survey. Participants were able to direct any questions or concerns to the authors. They were fully informed in the survey cover letter that by doing so, their identity would be revealed. The authors received no questions on how to complete the survey instrument.

Since the survey research methodology was comprised of an anonymous analytical process, the researchers had no knowledge of who responded, only the demographic categories that the respondents provided were thus used in the study results. The survey cover letter outlined the purpose of the study, identified the researchers and their affiliation, explained the lack of risk associated with participation and stipulated that proceeding with the survey constituted consent to participate. Respondents were able to skip any question or exit the survey at any time.

A total of 307 respondents completed the online survey, of those respondents, 281 identified themselves as caregivers and 26 were the young adults themselves. Although the survey was directed to both caregivers and young adults, this study reports results from only the caregivers' perspective. The definition of caregiver for the purpose of this study was someone who was the parent, grandparent, sibling, relative, or other primary caregiver of a young adult with ASD between 15-30 years old. The participants who completed the survey primarily identified themselves as mothers (n=219). Due to the anonymous nature of this survey, it is difficult to determine if these participants are representative of parents of young adults with ASD in general.

Caregivers reported data about their young adults across a distribution of ages, for those who responded to this question, data reflected information about young adults under the age of 15 years old (6%), between the ages of 15 to 17 years old (20%), 18 to 21 years old (35%), 22 to 25 years old (25%), 26 to 29 years old (10%) and over 30 years old (3%). Respondents reported the gender of the young adult as predominately male (55%).

Generalization

While the total respondent group was modest at 307, the make-up of the group was generally comparative to the U.S. population within the targeted demographic categories. The sample was 16% Hispanic or Latino compared to the national distribution of 18%, while the proportion of respondents identifying as White was 57% compared to 62% nationally, according to the U.S. Census Bureau (2015). The main variation was a very low proportion of individuals who self-identified as Black, 3% within the survey sample compared to 12% nationally. Moreover, these noted variances are commonly noted in autism prevalence studies, specifically, that diagnosis is much more prevalent among those who identify as White and least prevalent among those who identify as African-American or Black (Mandell, Ittenbach, Levy & Pinto-Martin, 2007; Tek and Landa, 2012). The reported racial disparities in ASD identification among minority children is troubling, however, the current survey sample seems to be consistent with national population norms. As such, the results of this current study, in terms of population characteristics are consistent with the those of the national ASD population.

Focus Group

In addition to the survey, A focus group was conducted with the caregivers of young adults with ASD. The topic of the focus groups was the transition and career experiences of

young adults with ASD. Participants were introduced to the general topic to be discussed and were asked for their experiences with the transition process. Participants were prompted to elaborate on their responses, but the format was generally conversation and informal. This was done in order to help families feel comfortable and to elicit honest responses.

The focus group was conducted at a caregiver support group hosted social event for young adults with ASD. The support group holds these events four times a year and draws a large group of young adults with ASD and their caregivers. The caregivers are encouraged to spend time with other caregivers while the young adults participate in supervised social interactions with their peers. This group was chosen intentionally based the large number of participants it draws, the private space provided for caregivers whose young adults are attending the event, and the range of young adults who attend (in terms of general ability levels and support needs).

Sample

Approximately 35 caregivers participated in the focus group. Although all participants were encouraged to share their experiences, some contributed more and responded to the prompts more frequently than others. All responses were recorded. During introductions, parents informally provided their background and some basic demographic data. Based on the information provided, the majority of participants were mothers of young adults with ASD. Approximately 15% were fathers, and approximately 5% were other relatives (e.g. aunts, grandparents, adult siblings).

RESULTS

Data from the survey and the focus group were combined to provide insight into caregivers' perceptions of the status of employment and employment services for people with ASD, barriers to transition into the workplace experienced by the individuals with autism, the specific skill areas that require additional intervention, and transition services and supports that are still needed. These issues are discussed from the lens of what hinders and facilitates improved employment outcomes for youth with ASD.

Although all young adults face obstacles as they move through the career development process, young adults with ASD often face multiple barriers that are particularly detrimental to their career progress. Some of these barriers include difficulties with mental health and other co-occurring conditions, a significant decrease in services following high school completion, and a lack of communication and collaboration across stakeholders and settings.

Based on the survey data, ASD co-occurred with other diagnoses (not including strictly medical conditions) in 82% of cases. One of the most frequently co-occurring disorder were mental health disorders such as depression or anxiety. Participants in the focus group discussed the impact of these mental health challenges on employment. They talked about their young adults experiencing depression related to multiple experiences of "failure" throughout their academic careers, in their social experiences, and now in their adult lives. These multiple experiences of failure often lead to the youth "shutting down" and no longer wanting to try or put themselves in a position for future rejection, ultimately leading to a loss of motivation to obtain employment. They also talked about the idea that not knowing or understanding what their future might be like can be overwhelming and difficult for young adults. Many feel anxious about what the world of work is like and what will happen to them in the future. This anxiety may lead to

avoidance behavior. The caregivers reported that many young adults avoid seeking out job opportunities or engaging in activities that feel overwhelming or that may lead to failure. This avoidance could potentially lead to a reduced likelihood of obtaining and maintaining meaningful work.

Related to these mental health challenges is the reduction in services that occur after high school completion. Most of the survey participants (97%) received special education services through IDEA. While many students receive mental health services in school, the survey data indicates a significant (35%) decline in these supports after high school. Not only are mental health services reduced, other services that are critical for employment success are also reduced. Survey data indicate a 79% decline in speech and language services post high school. In addition, a great deal of supervision, case management, service coordination, and oversight are typically provided during high school, which declines following completion of high school. Specifically, survey data indicated that case management and service coordination declined by 29% post high school.

Focus group participants indicated that without supervision, they have some major concerns about their child participating in the workforce due to safety issues. Parents reported being concerned that their young adult may not recognize dangerous situations in the workplace. They worry that they may be taken advantage of at work because they are naive, and if an incident does occur, they may not respond appropriately to authorities or be able to accurately report the incident, due to their disability.

In addition to difficulties in the workplace, caregivers expressed safety concerns in the community, specifically regarding the way in which their young adult traveled to work. Although many of our survey participants drove themselves to work (39%), others required a family member (16%) or agency (24%) to transport them to their job. Parents expressed discomfort with the use of public transportation without proper safety awareness training. However, given the appropriate training, the use of public transportation could increase the independence of the individuals who are not able to drive themselves. Along with community navigation skills, survey data suggested that participants feel they would benefit from supports in a number of areas including: training in specific job skills (17.5%), help in finding a job (17.1%), training in the life skills needed for work (17.0%), help finding apprenticeships and internships (14.9%), and training in job search skills (14.0%).

In addition to the clear reduction in services, it is apparent that there is a lack of communication and coordination across agencies and stakeholders. With regard to employment of youth with disabilities, stakeholders may include: the young adult themselves, caregivers, school districts, services providers, as well as employers. Survey results indicated that many of the young adults who were employed obtained the job through the support of their school (12%), the regional center (15%), the department of rehabilitation (12%), or family and friends (12%). Although families may get some employment support from various agencies, focus group participants reported getting most of their information about available training and job opportunities by word of mouth from other parents or by searching the internet. Information was not typically obtained by speaking with service providers or employers, which participants felt led to inconsistent, nonexistent, or inappropriate services. Survey data suggested that there are areas of the employment process that may be “extremely challenging” for individuals with ASD, some of these areas include: interviewing skills (60%), finding a job that will allow for increased financial independence (56%), finding a work environment that is supportive of individuals with disabilities (53%), searching for work (47%), and managing the interpersonal nature of

professional relationships (45%). Given the aforementioned challenges it is important that all stakeholders are involved in the intervention planning process and communicate effectively across systems.

Parents also discussed the lack of communication across stakeholders, stating that “it feels like no one is talking to each other” and the expectation is that parents serve as case managers to hold all of the pieces together. For example, of those individuals who received agency support to obtain a job, only 63% received follow up communication from that agency. When there is little communication and sharing of data, services are less effective and the potential for positive employment outcomes is reduced. Participants suggested that a streamlined approach to employment communication would allow for more effective services and a deeper understanding of the appropriate steps to take toward meaningful employment.

CONCLUSIONS

Results of this investigation suggest that young adults with ASD face significant challenges when navigating the world of work. Not only is it important that these youths find a job in order to obtain financial support and security, it is important to their quality of life, sense of safety, and belonging in the community. To that end, data reveal significant needs in the areas of transition services, preparation for work, and career experiences. They further identify barriers to successful transition into the world of work and areas for necessary intervention. Recommendations for intervention and policy will be provided based on the needs identified in the study.

There are multiple barriers identified in supporting a smooth transition into the workplace including: difficulties with mental health, a reduction in support services, as well as problems with communication and collaboration across stakeholders, resulting in difficulties in implementation of already existing policies. Many of the difficulties related to youth “giving up” on finding employment could be explained by mental health complications. As a community, we need to develop better mental health options for youth with ASD who are transitioning into adulthood. We will also need to identify and support clinicians who can be appropriately trained in this specialized area.

We must be aware of the significant change in support and services for individuals with ASD as they transition out of the school system. Agency teams need to begin communicating and planning for this change. Stakeholders should identify the services the individual will still require (based on each individual’s needs), how these services may be accessed as an adult, and begin the process of setting these up early on, so that a smooth transition between services is developed prior to the transition out of school.

Further, we need better systems to enhance communication and collaboration across settings. Although there are many available interventions focused on specific work skills, there do not appear to be evidence-based interventions that address interagency collaboration (Test, et al., 2009). In order to develop an effective collaboration process, it will be important to use existing evidence to develop a formalized model for this and investigate the use of such a model on outcomes. This model will assist in developing a bridge between specific policies and legislation that guide adult services and the implementation of these policies in the community and workplace. This process will allow practitioners to complete ongoing developmental evaluations of the new programs, in order to see what works, and adjust when specific practices are not working.

As discussed previously, it will be important for future research to gain the perspective of young adults. Perhaps this will be best done through methodologies other than an online survey. Due to the anonymous nature of this survey, it is difficult to determine if these participants are representative of parent of young adults with ASD in general. First, all respondents had access to the internet and the time to complete the survey. In addition, it is possible that this sample was comprised primarily of participants highly motivated to complete this survey and provide feedback, perhaps because they are having exceptional difficulties with issues of employment and transition to increased independence. Improving transition services for individuals with autism requires immediate attention and focus. However, the issues involved in understanding the experiences of young adults in critical career pathway areas, evaluating the quality and impact of services currently provided, and understanding the needs and experiences of employers also need to be studied in an effort to integrate individuals with autism into the workplace.

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MGM RESORTS FILES COUNTER SUITS AGAINST VICTIMS OF THE OCTOBER 1, 2017 MANDALAY BAY SHOOTING: DID THE MARKET REWARD THE STRATEGY?

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ABSTRACT

America's deadliest mass shooting took place on October 1st, 2017 at a music festival in Las Vegas, Nevada. The shooter was located the 32nd floor of the Mandalay Bay Hotel and Casino. During November of that year, victims began filing lawsuits against MGM Resorts International, the parent company of the Mandalay Bay. On July 13th, 2018, MGM Resorts International filed lawsuits against those individuals who filed against the company, most likely to seek protection under the federal SAFETY Act and move the suits from state court into federal court. This paper examines the expected stock returns of both events.

INTRODUCTION

On October 1st, 2017, an armed man committed the most severe mass shooting in US history from a suite at the Mandalay Bay hotel located in Las Vegas, Nevada. 58 souls were lost on that night, and over 850 more victims were injured (Miltra, 2018) while attending a country music festival, called the Route 91 Music Festival, on property that was also part of the Mandalay Bay. In November, lawsuits from the victims started to be filed both in Los Angeles Superior Court in California and in Nevada against MGM Resorts International, the owner of the Mandalay Bay and the property upon which the music festival took place.

On July 13th, 2018, MGM Resorts International filed a lawsuit against all claimants involved in lawsuits against the company, and also against those who have threatened to bring a lawsuit against the company. MGM Resorts International claim that it had no liability in the shooting (Feeley & Blumberg, 2018; Lardeiri, 2018), because of a 2002 federal law – the Support Anti-Terrorism by Fostering Effective Technologies Act (or SAFETY Act) – shields MGM from any liability caused by the person(s) who actually carried out the killings (Maidenberg, 2018). The SAFETY Act offers immunity to companies which purchase and utilize technology that is considered effective against terrorist acts (“Vegas Victims”, 2018).

MGM Resorts International did in fact use the services of such a company, Contemporary Services Corporation, for crowd control and general security at the Route 91 concert (Mest, 2018). It is assumed that by filing this lawsuit, MGM Resorts International intends to get a ruling to dismiss any state-filed liability lawsuits because the jurisdiction would be at the federal level, necessitated by the SAFETY Act (“Vegas Victims”, 2018). The filings from MGM Resorts are against 1,900 survivors from eight states in the U.S., and in a statement from MGM Resorts International, the company states that it is not interested in money or attorney or court fees (“Vegas Victims”, 2018). Attorneys for some of the victims’ families have stated that MGM Resorts International is directly responsible because the shooter was engaged in the act of killing from the inside of the Mandalay Bay hotel itself, which did not have a contract with Contemporary Services Corporation (Gentry, 2018). Attorneys for the victims’ families also

argue that the SAFETY Act does not apply because the mass killing was not an act of terror, and now the Secretary of Homeland Security, Kirstjen Nielsen, must decide if the shooting was in fact an act of terror (Mest, 2018).

What is clear is that a tragedy occurred on October 1, 2017, at the Mandalay Bay hotel. MGM Resorts International has taken the offensive in suing the victims and their families to force all state lawsuits into federal court, where it seeks protection under the federal SAFETY Act.

THEORETICAL FRAMEWORK

What this paper intends to learn is how the market reacted to the decision of MGM Resorts International to begin filing lawsuits against plaintiffs and would-be plaintiffs who are in fact victims of the largest mass-shooting spree in US history. Would investors think this was a shrewd business move by the company or did they view this as an outrageous public relations disaster?

Investor sentiment theories are mostly based on two assumptions (Baker & Wurgler, 2007): a) the belief concerning future cash flows and risk is not justified by current market conditions (DeLong, Shleifer, Summers, & Waldmann, 1990) and b) it is inherently riskier to 'bet' against the sentimental investor, leaving more 'rational' investors less aggressive (Shleifer & Vishny, 1997). Lo and Lin (2005) state that investors should utilize a contrarian investment strategy to realize excess returns. Would the shooting at the Mandalay Bay cause investor sentiment to leave the stock quickly or to await strategic moves by the company's management to at least alleviate investor concern? Certainly, the contrarian position would be to purchase MGM Resorts International stock as soon as news of the shooting became public. It can also be argued that a similar contrarian strategy would be to purchase stock when the company announced it filed countersuits against the victims in the next year.

The market did indeed react negatively immediately after the October 1st shooting in the ensuing trading days, no doubt (midday trading had MGM shares down by as much as 4.73% on October 2, 2018 (Grant, 2017)). This study employs the event study methodology to ascertain what, if any, abnormal returns were realized during the event window of the MGM Resorts' announcement of ensuing litigation against the victims of the shooting.

LITERATURE REVIEW

There is much literature about how terrorism affects tourism and tourist destinations. Arana & Carmelo (2008) studied the short-term effects of the September 11th, 2001 attacks in New York City, comparing that devastated city's tourism climate to competing destinations abroad. Also, on the global stage, Saha and Yap (2014) studied the effects of a country's political stability and potential for terrorist attacks on that country's tourism development. Also, Wolff and Larsen (2013) examined the perceptions of tourists and concerns about tourism before and after a terrorist attack, in this case, the July 22nd, 2011 mass shooting in Norway.

Investigating the broader scope of international terrorism's effects on financial markets around the world, Chesney, Reshetar, and Karaman (2011) studied 25 countries over an 11-year period using a variety of methodologies, including event studies. Chang and Zeng (2011) performed a comprehensive study of terrorist attacks that specifically affected Americans either by geographic location or by citizenship for a 30-year period (1973 to 2003) and how those attacks affected the financial performance of hospitality-related securities. They found that

investor sentiment is negative in the immediate short-term when a terrorist act has taken place. In the longer-term, however, they found that the average returns of the companies affected by a terrorist attack were up to four times higher than average (examining hospitality stocks in particular).

Entire industries that have experienced a singular event, which is usually an adverse event such as a natural disaster, have been studied using this technique. Ferstl, Utz, and Wimmer (2012) studied the effects of the devastating 2011 earthquake that caused catastrophic damage to a nuclear plant in Japan regarding both the worldwide nuclear energy markets and what effect the disaster had on competitive energy markets, such as the “clean” energy market.

Event studies are routinely used in corporate litigation, serving as a practical tool to ascertain any losses/damages due a stockholder(s), usually because of alleged gross mismanagement of a firm. Specifically, event studies are useful in the determination of loss causation, artificial inflation of the security, and securities fraud (Torchio, 2009).

While this paper will deal with an event with a relatively short-term window, many long-term event window studies are plentiful within the literature. Usually, these long horizon event studies deal with corporate events that have a long-term impact on a company’s stock performance, such as the announcement of an initial dividend (firms usually continue to offer a dividend once they begin), a stock split, or after a merger or acquisition has taken place (Barber & Lyon, 1997).

DATA AND METHODOLOGY

This study uses the event study of analyzing stock returns for a company and/or industry. In this case, we will analyze the stock returns of MGM Resorts International against its expected returns based on the returns of a broader market index: The S&P 500 Index. The basic steps for conducting an event study are given by Bowman (1983):

1. Identify the event and date that is to be examined. In this study, we will be investigating the MGM Resorts International’s stock returns on the days surrounding both the actual shooting, October 1st, 2017, and the day MGM Resorts International filed countersuits against the victims of the shooting, July 13th, 2018. The event window will be five trading days before the event and five trading days after each event.
2. Modeling the security returns. As this is a preliminary study which will serve as a platform for a more in-depth study surrounding the events, this study will use a simple two-tailed t-test to test for the significance of the security returns. Future studies will include the use of the Fama French Time Series Model Portfolio Crude Dependence Adjustment statistic.
3. Estimate any abnormal or excess returns. Again, as this is a preliminary paper, this study will use the S&P 500 Index to compare security returns against those of MGM Resorts International. Further research will utilize the market model to determine any estimates of expected returns, as used by Wells (2004). The returns of both MGM Resorts International and the S&P 500 Index were calculated using 252 days of stock return data

prior to the beginning of the event windows in both cases. This method is a way to establish expected returns.

4. Account for excess returns. This step is accomplished by adding any excess returns during a specific period (the event window), which will be done in this study. In a further analysis, the cumulative average residual (or CAR) model, developed by Fama, Fisher, Jensen, and Roll (1969), will be utilized.
5. Analysis of the returns in terms of statistical significance.

As stated previously, in this preliminary study we will be examining the performance of MGM Resorts International's stock returns (and accumulated excess returns, if any) in the predetermined event windows of five trading days before the event (noted as -5) and five trading days after the event (+5). We first examine the event window surrounding the day of the shooting, October 1st, 2017, with details listed in Table 1 below:

Table 1										
Event Window of Shooting - October 2, 2017 Trading Day										
Intercept	0.000286		R-Square		0.1851659					
Slope	1.384133		Std Error		0.0139729					
MGM Resorts					S&P 500		Expected	Abnormal	Cumulative	Abn Rtn
Date	Close	Adj Close	Returns %	Volume	Adj Close	Returns %	Returns	Returns	Abn Rtn	t Value
9/25/2017	31.94	31.46	-1.36%	5096000	2496.66	-0.22%	0.34%	-1.70%	-1.70%	-1.2131
9/26/2017	32.16	31.68	0.69%	3460300	2496.84	0.01%	0.02%	0.67%	-1.02%	0.4796
9/27/2017	32.46	31.98	0.93%	5676900	2507.04	0.41%	-0.54%	1.47%	0.44%	1.0518
9/28/2017	32.34	31.86	-0.37%	5023100	2510.06	0.12%	-0.14%	-0.23%	0.21%	-0.1657
9/29/2017	32.59	32.10	0.77%	5414300	2519.36	0.37%	-0.48%	1.26%	1.47%	0.8998
10/2/2017	30.77	30.31	-5.58%	37692800	2529.12	0.39%	-0.51%	-5.08%	-3.61%	-3.6334
10/3/2017	30.85	30.39	0.26%	23273800	2534.58	0.22%	-0.27%	0.53%	-3.08%	0.3794
10/4/2017	30.75	30.29	-0.32%	11191900	2537.74	0.12%	-0.14%	-0.18%	-3.26%	-0.1290
10/5/2017	30.90	30.44	0.49%	9709600	2552.07	0.56%	-0.75%	1.24%	-2.02%	0.8880
10/6/2017	30.81	30.35	-0.29%	8093400	2549.33	-0.11%	0.18%	-0.47%	-2.48%	-0.3353
10/9/2017	30.81	30.35	0.00%	9086700	2544.73	-0.18%	0.28%	-0.28%	-2.76%	-0.1992

Note: *Abn Rtn* = abnormal return

As the shooting occurred on October 1st, which was a Sunday, October 2nd was the first trading day after the attack and the stock price of MGM Resorts International reflects the effects of the ordeal, with a -5.58% return for that trading day. Investors were perhaps selling stock for fear of impending lawsuits against the company and also fear of the negative public relations position of the company. The *t*-value, at -3.6334 is significant, at the 1% level, if not higher. The assumption is that degrees of freedom is set to infinity.

In table 2 below, we use the same -5 and +5-day event window surrounding the day that the company filed the lawsuits against the victims (Friday, July 13th, 2018). We see the stock return information for MGM Resorts International and the S&P 500 Index, showing the *t*-value of July 13, 2018, at 1.0834, which is not significant at any level. An interesting observation, however, is the *t*-value for the day before MGM Resorts International filed the lawsuits against

the victims and families affected by the shooting, which is July 12. The t -value on July 12 is 2.0360, significant at the 2.5% level.

Table 2											
Event Window of MGM Counter Filing Announcement - July 13, 2018											
Intercept	-0.00072			R-Square		0.2652132					
Slope	1.182566			Std Error		0.0154571					
MGM Resorts					S&P 500		Expected	Abnormal	Cumulative	Abn Rtn	
Date	Close	Adj Close	Returns %	Volume	Adj Close	Returns %	Returns	Returns	Abn Rtn	t Value	
7/6/2018	28.97	28.84	1.97%	5859700	2759.82	0.85%	-1.07%	3.05%	3.05%	1.9704	
7/9/2018	29.46	29.33	1.69%	5561700	2784.17	0.88%	-1.11%	2.81%	5.85%	1.8156	
7/10/2018	29.93	29.80	1.60%	8528400	2793.84	0.35%	-0.48%	2.08%	7.93%	1.3442	
7/11/2018	29.89	29.76	-0.13%	7087800	2774.02	-0.71%	0.77%	-0.90%	7.03%	-0.5829	
7/12/2018	30.50	30.36	2.04%	8607400	2798.29	0.87%	-1.11%	3.15%	10.18%	2.0360	
7/13/2018	30.95	30.81	1.48%	9606300	2801.31	0.11%	-0.20%	1.67%	11.85%	1.0834	
7/16/2018	31.12	30.98	0.55%	10424700	2798.43	-0.10%	0.05%	0.50%	12.35%	0.3230	
7/17/2018	31.25	31.11	0.42%	11232500	2809.55	0.40%	-0.54%	0.96%	13.31%	0.6206	
7/18/2018	31.02	30.88	-0.74%	8120100	2815.62	0.22%	-0.33%	-0.41%	12.90%	-0.2646	
7/19/2018	30.82	30.68	-0.64%	7096400	2804.49	-0.40%	0.40%	-1.04%	11.86%	-0.6733	
7/20/2018	31.20	31.06	1.23%	10371800	2801.83	-0.09%	0.04%	1.19%	13.05%	0.7714	

We also looked at the first full trading day, July 16th, after the investing public learned of the countersuit filings. The end of this trading day saw abnormal returns of 0.50% with a t -value of 0.3230. Further analysis is needed to determine any effects of autocorrelation, or other contaminating effects.

CONCLUSION

As stated earlier, this study is in the first stage, and more in-depth analysis is needed using more refined tools, such as the Fama French 3-Factor Model or the market model to better understand the expected returns upon which the MGM Resorts International returns are measured. At first review, however, it seems that the findings agree with Chang and Zeng's conclusion that after an initial downturn in investor sentiment after an act of terrorism impacted a hospitality company, the returns turn positive in the longer-run. Further study would focus on whether MGM Resorts International's strategy to seek protection from massive liability using the federal SAFETY Act was viable as a business decision in the long-run.

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ADDRESSING THE “SKILLS GAP”: THE VALUE OF PARTNERSHIPS BETWEEN HIGHER EDUCATION AND PROFESSIONAL ORGANIZATIONS

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ABSTRACT

Organizations of all types are facing one of the biggest talent shortages in recent history – there are currently more jobs available than there are people to fill them, and a growing gap exists between job requirements and candidate qualifications. To address the skills gap, employers are adopting new strategies in the hiring process, including targeted training efforts, flexibility in education requirements, and recruiting outside traditional candidate pools.

This trend has a significant impact for higher education – retention rates are on the decline due to factors such as increasing tuition, uncertainty of employment, and a lack of confidence that a degree will provide the necessary skills and competencies needed to enter the workforce.

This paper will address how colleges and universities can play a role in addressing the skills gap and ensuring students increase their perceived return on investment in their higher education. It will provide an overview of the role that higher education can play by forming partnerships with industry and professional organizations to help ensure graduates possess the skills and competencies needed to enter the workforce and their selected career paths. A key component of this paper will involve a discussion of both the benefits and considerations involved in developing partnerships that will meet the needs of all relevant stakeholders. This paper will also present a case study of how one institution, Metropolitan State University of Denver, is developing a curriculum in partnership with the Society of Human Resource Management to ensure graduates pursuing their Human Resources Concentration are well prepared to position themselves for a career in the field.

INTRODUCTION

In today’s complex and dynamic workplace, organizations of all types are facing one of the biggest talent shortages in recent history. In April 2018, the Department of Labor reported that, for the first time since they began tracking this data in 2000, there were more jobs available than there were people to fill them – specifically, the number of job openings exceeded the number unemployed by 350,000 (Schindelheim, 2018). Over the last several months, this gap has grown larger – as of January 2019, there were a reported 7.6 million job openings (Bureau of Labor Statistics, 2019a), exceeding the number of jobless by slightly over 1 million (Rugaber, 2019a).

Despite the fact that there are an estimated 6.5 million active job seekers (Bureau of Labor Statistics, 2019b), and more than enough jobs to accommodate them, companies still report challenges in filling open positions (Morath, 2018). This appears to confirm speculations of a growing gap between job requirements and the availability of qualified candidates (Mauer, 2016). Many of today’s jobs require specialized and rapidly changing skill sets, leaving many job

seekers ill-prepared or underqualified to fill the positions due to a lack of relevant industry-specific education, training, or experience (Gurchiek, 2017; Mauer, 2016).

This trend has significant implications for higher education. In 2016, about 70% of high school graduates enrolled for college (Bureau of Labor Statistics, 2017). However, a much smaller proportion of those who enroll actually complete their degrees (Kovacs, 2016). Key factors contributing to low retention and graduation rates include increasing tuition, uncertainty of unemployment post graduation, and perceived lack of value of a college degree (Parke, 2016).

This paper will address how colleges and universities can play a role in addressing the skills gap and ensuring students increase their perceived return on investment in their higher education. It will provide an overview of the current strategies that employers are using to address the skills gap and the role that higher education can play by forming partnerships with industry and professional organizations to ensure graduates possess the skills and competencies needed to enter the workforce and their selected career paths. A key component of this paper will involve a discussion of both the benefits and considerations in developing partnerships that will meet the needs of relevant stakeholders. This paper will also present a case study of how one institution, Metropolitan State University of Denver, is developing a curriculum in partnership with the Society of Human Resource Management to ensure graduates pursuing their Human Resources Concentration are well prepared to position themselves for a career in the field.

THE STATE OF THE SKILLS GAP

According to a recent survey conducted by the Manpower Group (2018), 45% of employers in the United States report challenges filling jobs due to a lack of available candidates with the necessary skills and experience to fulfill the job requirements. This is the highest level reported in over a decade, and affects jobs ranging from skilled trades to executive positions.

In an effort to address the labor shortage and skills gap, many companies are rethinking their approach to the staffing process. According to the Manpower Group (2018) the top three tactics included (1) providing training/development opportunities for new hires/existing employees to provide them with the specific skills needed to succeed in their role, (2) becoming more flexible in their education/experience requirements, and (3) recruiting outside of the “traditional” target candidates. All three of these strategies allow companies to broaden their talent pool and develop a workforce with the specific competencies the employer needs.

Targeted Training and Development

Fifty four percent of companies report they are proactively working to address the skills gap by providing additional training and development opportunities for both existing employees and new hires (Manpower Group, 2018). This includes technical certification programs, apprenticeships, offering tuition reimbursement or financial assistance for professional development activities, and working with external training providers (Manpower Group, 2018; Mauer, 2019). A growing number of companies are also adopting a “hire to train” approach, where they select candidates based on their “potential” to learn and succeed, even if they may lack the traditional technical credentials (Fernandez-Araoz, 2014).

Flexibility in Education/Experience Requirements

Education and experience have traditionally been the primary criteria in evaluating candidate qualifications. In fact, they often served as “minimal requirements” in the hiring process - candidates who lacked an appropriate degree or desired relevant job experience rarely

proceeded past the application stage. However, education and prior experience are not always effective predictors of performance (Schmidt & Hunter, 1998), and 36% of employers report they have adjusted their education and experience requirements (Manpower Group, 2018). Many organizations are re-evaluating job requirements to define education and experience as “desirable” rather than “essential” criteria. This means companies are de-emphasizing or even eliminating education and experience requirements (Fryar, 2019) and focusing instead on the candidate’s cultural fit, soft skills, transferrable skills, and trainability (Brodersen, 2018). Similar to the “hire to train” approach discussed above, this allows organizations to focus on what the candidate might be able to do in the future vs. what the candidate has done in the past (Mauer, 2019).

Broadening the Talent Pool

Adjusting education/experience requirements and providing training to new hires has opened the door for organizations to tap into talent pools that might have been previously overlooked. Thirty three percent of employers (Manpower Group, 2018) report they are proactively working to broaden the talent pool by incorporating new forms of recruiting methods and strategies. This includes proactively reaching out to non-traditional candidates, tapping different demographics and locations, and capitalizing on the use of technology and social media. Essentially, today’s recruiters are increasingly focused on “recruiting for talent” rather than “hiring for a job”.

IMPLICATIONS FOR HIGHER EDUCATION

The growing skills gap and the way in which companies are addressing it has significant implications for higher education. According to a 2018 Strada-Gallup report, the primary reason that students choose to pursue a post-secondary degree is to increase their employability. However, students also report a lack of confidence that their college education will provide them with the hard and soft skills needed for success in the job market and the workplace (Strada-Gallup, 2017). Instead, the degree simply serves as a “checkmark” or a necessary prerequisite to get them in the door. Further, there is a growing disconnect between employers and academia with respect to the perceived value of college education in workforce preparation – while the vast majority (96%) of higher education leaders believe their students are well prepared for the workforce, only 11% of employers agree (Strada-Gallup, 2017).

These contradictory perspectives seem to indicate a shift in the perceived value of a degree. As previously discussed, many employers are taking a proactive stance to address the skills gap by seeking out candidates to have the “potential” to succeed, even if they may lack traditional educational qualifications, and providing them with the training and development they need to perform the job effectively. Students, in turn, are delaying graduation and entering the workforce. With the rising cost of tuition and the opportunity to receive on the job training specific to their careers even if they lack a degree, students are seeing a lower return on investment in their college education. This is particularly noteworthy given the current unemployment rate of 3.8% (Bureau of Labor Statistics, 2019b). Traditionally, low unemployment rates are associated with fewer job openings (Schindelheim, 2018). However, despite the fact that labor is in short supply, the demand for talent continues to increase (Morath, 2018). This means students have a higher confidence (and likelihood) that they can easily find employment even if they lack a degree. Simply put, both employers and students are questioning

the role of a college education in building the competence and capabilities needed to enter the workforce.

INCREASING THE VALUE OF HIGHER EDUCATION THROUGH PARTNERSHIPS

Because of this, many colleges and universities are re-evaluating their curriculum in order to address the skills gap and ensure students increase their return on investment in their education. In a recent panel discussion on the future of higher education (Baer, Chopp, Davidson, Foster, Garcia, & Horrell, 2018), leaders in the Colorado higher education system emphasized the importance of developing strategic partnerships between universities and employers and professional organizations to help ensure graduates possess the skills and competencies needed to enter their selected career paths. These partnerships are designed to:

- Define and operationalize key skills necessary for workforce success
- Develop learning objectives, goals, and curricula that foster skill development
- Provide “real world” opportunities for students to develop skills during their academic career through internships, applied projects, and other experience-based activities
- Increase employability for students and graduates

These partnerships offer several potential benefits for students, universities, and employers. Students will be more likely to graduate with the necessary core skills and competencies currently in demand by the workforce. Further, by providing more opportunities for hands on, experiential learning, these partnerships may also help facilitate their transition into the workforce. These aspects, in turn, serve to increase their perceived (and actual) value of a degree and may lead to increased retention and graduation rates. These partnerships can also help colleges and universities strengthen their reputation and visibility by marketing these alliances with current students, potential students, and employers. Finally, by engaging and collaborating with higher education institutions, businesses and professional organizations can have a greater voice in addressing the skills gap and broadening their talent pool by having a voice in the development of a curriculum that will meet its current and future needs for talent.

Many institutions and employers are already taking advantage of these opportunities. For example, in 2018, United Airlines announced a partnership with Metropolitan State University of Denver to develop a specialized degree and career path designed to ready students for a career in aviation (Sealover, 2018). After completing the educational and flight time requirements, students will be eligible to move into available open positions with the airline (Rubino, 2018). Another example is Arizona State University, who has partnered with Draper University, a private enterprise focused on entrepreneurship in the tech industry, to help students develop their entrepreneurship skills and potentially use the experience to develop their own company (Bogardus Cortez, 2017). In addition to working directly with employers, universities are also working with community-based partners, professional organizations, and other educational institutions.

BUILDING EFFECTIVE PARTNERSHIPS

While there is definitely a high potential value in developing partnerships, there are key questions that higher education institutions must consider before entering into these relationships

in order to ensure their effectiveness, including (1) who drives the partnership, (2) who the partnership benefits (and how), (3) the impact of the partnership on curriculum and academic rigor, and (4) ensuring the effectiveness of the partnership.

Who Drives the Partnership?

Developing academic and professional partnerships requires a careful consideration of the extent to which each party will be involved in driving the partnership. Both parties should work to ensure the relationship that puts the needs of the university and its students first. In 2017, Amazon announced plans to build a second corporate headquarters, and their request for proposal invited opportunities for partnerships with local colleges and universities in order to develop their talent pipeline (Owen-Smith, 2019). In response, colleges in many of the cities vying for the new headquarters began rushing to develop curriculum plans to meet Amazon's needs, often at the expense of other areas of study or without considering the impact on the university. By over-emphasizing the needs of the business, universities run the risk of tunnel vision and losing sight of their overall mission (Owen-Smith, 2019). Thus, it is crucial that universities consider the partnership in light of how it supports their strategic mission.

Who Does it Benefit (And How)?

A second consideration in designing partnerships is an exploration as to who, exactly, the partnership is designed to benefit and the way in which it will benefit them. In August 2018, Foxconn, a leader in the Taiwan tech industry, invested in a multi-million dollar partnership with the University of Wisconsin with the intent of developing an engineering research facility (Dzieza, 2018). However, issues related to funding for new faculty and intellectual property ownership, and an overall lack of transparency in the details of the partnership has caused an increasing amount of concern for current students (Dzieza, 2018). When considering entering into a professional partnership, universities should involve multiple stakeholders in the process to establish the potential benefits (and risks) to each. This may involve focus groups with relevant parties to ensure the partnership will in fact be of benefit to students, faculty, the university, the professional partner, and the community.

How Does it Impact Existing Curriculum?

Higher education is often criticized for an inability to keep up with and adapt to rapidly changing workforce needs (King, 2015). Thus, a major advantage of forming strategic relationships with businesses and professional organizations is curriculum development. By collaborating with industry partners, universities can build curricula and assignments that are consistent with the needs of employers and provide students with applied experiences to strengthen their skills. That said, it is also critical that the institution be able to support any changes to the curriculum, which should involve a careful consideration of the availability of resources as well as faculty and administrative input as to potential positive and negative outcomes. Similarly, it is important to ensure that any curriculum changes do not compromise the institution's standards for academic rigor and quality. Although industry partners may provide valuable input as to necessary competencies and skills, they may not understand or consider the need to uphold institutional and accrediting agencies' standards. It is therefore very important to ensure curriculum changes do not compromise existing quality.

How Can We Ensure Effectiveness?

As part of the planning process, it is important to develop criteria to evaluate the continued success of the partnership. The American Association of State Colleges and Universities (AASCU, 2017) has provided several recommendations and guidelines to measure both the effectiveness and impact of partnerships, including financial/non-financial outcomes, quantifiable metrics, the extent to which the partnership supports the university's mission, faculty, and students, and potential warning signs should the partnership be not going as planned. Having these criteria in place prior to entering the partnership helps ensure the desired objectives and goals of the partnership will be achieved.

A CASE STUDY IN FORMING A PROFESSIONAL PARTNERSHIP

The Society for Human Resource Management (SHRM) is the largest professional organization devoted to the study and practice of HR, and is internationally recognized as the authority in field. Under SHRM's Academic Eligibility Program, colleges and universities offering HR degrees or concentrations can apply to have their curriculum reviewed for alignment with SHRM's recommended educational standards and guidelines. Obtaining alignment ensures that graduates are equipped with the competencies deemed by SHRM as critical for success in the field, and are well prepared to enter the profession. It enhances both the credibility and relevance of their degree. Alignment with SHRM standards also offers a critical benefit for students in that it affords them the opportunity to apply for and take the SHRM-Certified Professional exam *before* they graduate. This means that students could potentially graduate with both a degree and a professional certification in the field of HR.

In October of 2017, Metropolitan State University's Department of Management explored the idea of having the HR Concentration approved for alignment with SHRM's curriculum standards. Before pursuing this partnership, we consulted with students, faculty, and the College of Business to ensure this partnership would meet the needs of relevant stakeholders by addressing the questions outlined above. The results of this analysis are presented below.

Who Drives the Partnership?

Obtaining alignment was found to be a mutually driven partnership. SHRM developed an *HR Curriculum Guidebook and Templates* (2018) to outline key competencies and educational requirements necessary for HR professionals; however, each partnering institution has the freedom and flexibility in designing a curriculum that meets these standards. The goal of the partnership is to promote collaboration between educational institutions and SHRM to ensure consistency in the competencies being taught in HR programs and build the talent pipeline of HR professionals.

Who Does it Benefit (and How)?

Obtaining alignment was found to positively affect relevant stakeholders in several ways. Attaining alignment would ensure that the HR Concentration meets the content and educational standards set forth by SHRM, thus benefiting the field of Human Resource Management. Graduates of the program will be well prepared with the key competencies they need to enter the field and helps ensure a next generation of qualified professionals well equipped for their profession.

Additionally, alignment provides students with a “fast track” to obtaining their SHRM certification. The Society for Human Resource Management’s Certified Professional (SHRM-CP) credential is an internationally recognized designation of competence and expertise in the field. SHRM-CP certification is especially important early in the career, as it demonstrates proficiency even in the absence of work experience (Greengard, 2016). By obtaining curriculum alignment, students would be eligible to take the certification exam in their senior year, provided they have 500 hours of relevant HR experience (typically, 1000 hours of relevant work experience are required for eligibility). Many of the students in our HR Concentration are working adults who have already gained professional experience in the area, and their response to pursuing alignment was overwhelmingly positive. Further, under alignment, the 500 hours of “relevant HR” experience may also come from internships, applied class projects, work-study, independent study, or HR-research (Gorlin, 2017). This means we could build in components throughout the curriculum to help students get close to (or attain) those 500 hours prior to graduation.

Finally, by increasing the value of the HR Concentration and the marketability of our graduates, obtaining alignment would benefit both the College of Business and MSU Denver as a whole. Obtaining alignment is consistent with MSU Denver’s initiatives of collaborating with business and industry leaders to ensure the programs offered effectively prepare our students to succeed in the workforce.

How Does it Impact Existing Curriculum?

In reviewing the SHRM curriculum guidelines, we found our existing HR Concentration was already well aligned with their standards. Thus, few changes would be needed in the curriculum, and the resources needed to obtain alignment, including qualified faculty, were already in place. Finally, alignment with SHRM standards is recognized by the Association to Advance Collegiate Schools of Business (AACSB; the accrediting agency of MSU’s College of Business). AACSB supports alignment, and encourages business schools to adopt SHRM’s educational standards in developing/revising their HR programs.

How Can We Ensure Effectiveness?

Because our existing standards for academic rigor under AACSB already meet the requirements of alignment with SHRM curriculum guidelines, we have already ensured the effectiveness of the curriculum design and learning objectives of the HR Concentration. Ways to extend the assessment of the program’s effectiveness can include the number of students who pursue the concentration, the number of students who take (and pass) the certification exam in their senior year, and the ways in which our existing curriculum offers opportunities to ensure students are able to obtain the requisite 500 hours of professional experience through internships, applied learning projects, and other qualified experiential activities.

CONCLUSION

Colleges and universities are increasingly recognizing the importance and value of helping to bridge the skills gap by forming partnerships with employers and professional organizations. Not only does this help ensure graduates are well prepared with the technical and soft skills needed to enter and succeed in the workplace, these partnerships may help increase the perceived (and actual) value of the degree. Of course, not all partnerships are created equal, thus it is important that partnerships are formed in a strategic manner with the “right” organizations,

will benefit the needs of all parties, supports existing mission, curriculum, and learning goals, and will have a positive short- and long-term impact for all stakeholders.

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An Examination of External Risk Factors in Electronic Equipment Industry Supply Chains

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Abstract

The global electronic equipment industry has evolved into one of the most innovative technology-based business sectors to transpire in the last three decades. Much of its success has been attributed to effective supply chain management. The purpose of this study is to provide an examination of external risk factors associated with the industry's key suppliers through the creation of Bayesian networks. The results of this study show that Bayesian networks can be effectively used to assist managers in making decisions regarding current and prospective suppliers with respect to their potential impact on supply chains as illustrated through their corresponding external risk profiles.

Introduction

The global electronic equipment industry has evolved into one of the most innovative technology-based business sectors to transpire in the last three decades (Digitivity.com, 2017). This industry includes producers of electronic equipment, instruments, electronic components and electronic equipment mainly for the OEM (Original Equipment Manufacturers) markets. Their products include analytical, electronic test and measurement instruments, electronic components, connection devices, equipment not classified elsewhere, and distributors of technology hardware and equipment (Fidelity, 2017). The industry enjoys a current market capitalization of \$323.2 billion, a 7.05% revenue growth rate over the previous twelve months, and an 8.61% return on investment (Fidelity, 2017). Much of its success has been attributed to effective supply chain management. For example, one of the most lucrative companies in the electronic equipment industry is Apple, Inc. Korkeamäki and Takalo (2013) conducted a study of Apple Inc.'s global supply chain for its iPhone product. The study estimates that 10 to 13 percent of the firm's market capitalization is generated within this supply chain. The authors argue that much of the value created within the iPhone supply chain comes from the firm's uniquely dynamic managerial and organizational capabilities in globally competitive and innovative industries.

Supply chains can be described as business entities which coordinate with each other to achieve competitiveness as well as their own interests (Long, 2014). The research literature demonstrates that the coordination and integration of activities across the supply chain can improve firm performance, and lead to a sustainable competitive advantage for its membership (Mackelprang et al., 2014). To facilitate supply chain effectiveness, firms have adopted the tenets associated with supply chain management (Singh et al., 2005; Li et al., 2006; Gunasekaran et al., 2008; Kirovska et al., 2016). Supply chain management (SCM) utilizes a comprehensive approach to addressing the fundamental business problem of supplying product to meet demand in a complex and uncertain world (Kopczak and Johnson, 2003). Hakansson and Persson (2004) suggest that SCM can be characterized as a strategic management concept that can contribute to the competitiveness and profitability of the individual firm as well as the entire supply chain. The execution of SCM necessitates the management of information, material, and cash flows

across multiple functional areas both within and among organizations (Faisal, et al., 2006). A precondition to effective supply chain management is the coordination of functional and supply chain member activities with organizational strategies that are aligned with organizational structures, core processes, management cultures, incentive systems, and human capital (Abell, 1999).

Firms involved in the strategic use of SCM methodologies may find it necessary to alter their business focus to reap its potential benefits (Kopczak & Johnson, 2003). These alterations may include improvements in their ability to acquire and manage reliable demand information (Croxtton et al., 2002; Wang et al., 2014), better management of physical goods flow through suppliers, manufacturers, distributors, and retailers for enhanced value to final customers (Jammerneegg & Reiner, 2007; Melnyk et al., 2014), more focus on cross-functional and cross-enterprise integration (Chen & Kang, 2007; Danesea and Bortolottib, 2014), and an increased emphasis on strategy alignment, innovation, and continuous improvement (Kushwaha, 2012; Mandal and Korasiga, 2016). Kushwaha notes that effective SCM provides the means for organizations to mitigate the effects of rapid wage inflation in previously low-cost labor markets, spikes in commodity prices, and escalating fuel prices via enhanced flexibility and agility. Additionally, Mandal and Korasiga argue that supply chains need to innovate constantly to maintain their position in the marketplace and to depress the impacts of uncertainties. Enhancements in supply chain flexibility, agility and innovation result in improved supply chain reactivity, which leads to increased customer satisfaction and value (Gaudenzi & Borghesi, 2006). Supply chain reactivity is defined as the network's ability to compress lead times, adapt to unanticipated changes in demand, and to adjust to uncertainty in the business environment. However, the integration of supply chain networks via SCM creates interdependencies among participating trading partners which make them more susceptible to supply chain disruptions, resulting in increased risks within the network.

The purpose of this study is to provide an examination of external risk factors associated with key suppliers in the electronic equipment industry through the creation of Bayesian networks. These networks were constructed to determine the external risk probabilities of these suppliers for the creation of supplier risk profiles. The risk profiles were used to assess a supplier's potential impact on the firm's supply chain delivery system for its served markets. Thus, this study attempts to provide insights regarding the ability of leading global electronic equipment companies to sustain their competitive advantages vis-à-vis the external risk profiles of their key supply chain members.

A review of the literature in the areas of supply chain management and supply chain risks is presented in the next section of the paper to provide a theoretical foundation for the study. Provided afterwards is an overview of the research methodology used in the study, which includes a discussion on Bayesian networks and data collection procedures. Results and conclusions are offered in the final sections of the paper, which include managerial implications, limitations, and directions for future research.

Literature Review

The commencement of the 21st Century has been marked by widespread disruptions in supply chains caused by fuel protests, disease outbreaks, terrorist attacks and the threat of weapons of mass destruction (Jüttner, 2006; and Wagner and Neshat, 2012). Thus, the research literature has reflected a growing interest in the area of supply chain risk management by

academics and practitioners over the past sixteen years (Lavastre et al., 2014; Micheli et al., 2014; and Ali and Shukran, 2016). Risk can be defined as the probability of variance in an expected outcome (Spekman and Davis, 2004). Therefore, it is possible to quantify risk since it is possible to assign probability estimates to these outcomes (Khan and Burnes, 2007). However, uncertainty is not quantifiable and the probabilities of its possible outcomes are not known (Knight, 1921). A joint assessment of risk and uncertainty conducted by Yates and Stone (1992) reveals that risk implies the existence of uncertainty associated with a given outcome, for if the probability of an outcome is known, there is no unknown risk. Thus, uncertainty can be viewed as a key determinant of risk that may not be entirely eradicated, but can be mitigated through the deployment of risk reduction action steps (Slack and Lewis, 2001). In business environments, managers are expected to reduce the firm's exposure to uncertainty through the deployment of effective risk management strategies. Thus, firms need to adopt systematic approaches for the management of supply chain risks (Jüttner, 2006; Oehmen et al., 2009; Wagner and Neshat, 2012; Macdonald and Corsi, 2013; Hachicha and Elmsalimic, 2014; Lavastre et al., 2014; Manuj et al., 2014; Micheli et al., 2014; Rajesh et al., 2015; and Ali and Shukran, 2016).

Uncertainties caused by economic business cycles, consumer demands, and natural and man-made disasters all provide sources for supply chain risks (Tang, 2006; and Wagner and Neshat, 2012). These sources of uncertainty can be categorized as 'risk events' that can lead to supply chain disruptions that impede overall performance (Lockamy, 2014). Researchers Handfield and McCormack (2007) defined operational, network, and external factors as categories of supply chain risks. Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people or systems. Quality, delivery, and service problems are examples of operational risks. Network risk is defined as risk resulting from the structure of the supplier network, such as ownership, individual supplier strategies, and supply network agreements. External risk is defined as an event driven by external forces such as weather, earthquakes, political, regulatory and market forces. This research study examines external risk factors associated with suppliers to seven of the leading global electronic equipment companies through the creation of Bayesian networks.

Supply Chain External Risks

An examination of the supply chain literature in the area of external risks factors reveals that the primary focus has been on mitigating the effects of unforeseen events such as terrorist attacks (e.g. New York 2001, Madrid 2004, London 2005, Jakarta 2009), natural disasters (e.g. Tsunami 2004, Hurricane Katrina 2005, Taiwan earthquakes 1999, 2009, and 2010), and diseases (e.g. SARS 2003, avian/bird flu 2005, swine flu 2009) on the integrity of the supply chain (Wagner and Neshat, 2012; and Lockamy, 2014). Although these risk events can have detrimental effects on a firm's supply chain, there are additional external risk factors that should be considered by firms while attempting to develop practices which reduce supply chain vulnerability. External risk factors examined in the study of key suppliers in the electronic equipment industry are: (1) Country Risk; (2) Business Climate Risk; (3) Commercial Risk; (4) Logistics Risk; and (5) Corruption Risk.

Country Risk refers to the exposure of a loss that an investor is endangered due to economic and sovereign issues in a country (Fruet-Cardozo et al., 2014). This category of external risk creates an unpredictable environment for international buyer-supplier relationships, resulting in the reduction of both parties' ability to effectively manage the relationship (Griffith

and Zhao, 2015). Political instability, changes in economic policy, economic turbulence, and exchange rate volatility are all factors that lead to pronounced country business risk. Due to the proliferation of global supply chains, country risk analysis has become increasingly important as firms attempt to define the potential for these risk events (Stankevičienė et al., 2014).

Business Climate Risk can be viewed as a component of country risk comprised of specific economic, financial, and political risk factors which collectively influence the level of unpredictability encountered by firms who choose to operate in a particular sovereign nation. Non-economic and financial risk factors include: (1) Government stability; (2) Internal and external conflicts; (3) Military's political influence; (4) Religious and ethnic tensions; (5) Laws and regulations; (6) Democratic accountability; and, (7) Bureaucracy quality. These factors, along with GDP, debt and export levels, liquidity, and exchange rate stability are used to establish international ratings of the level of business climate risk associated with a country (Karabiyik and Kara, 2015). During the past decade, business climate improvement has become a significant element of the work conducted by governments in many countries, which has been primarily encouraged and measured by the World Bank (Mojsovska, and Janeska, 2015). The World Bank's Doing Business project, which was launched in 2002, gathers quantitative data to compare regulations faced by small and medium-size enterprises across economies and over time (Besley, 2015).

Commercial Risk relates to cross-country differences in equity volatility and uncertainty that are explained by the interaction between firm and country characteristics (Favara et al., 2012). The International Monetary Fund (IMF) provides a country-level assessment of this risk in its *World Economic Outlook* and *Global Financial Stability* reports (Vernengo and Ford, 2014). The level of commercial risk associated with a country directly affects its sovereign credit risk and its potential macroeconomic impact on global financial markets (Augustin and Tedongap, 2016). For example, the degree to which countries can mitigate the effect of country-specific income shocks on their own domestic financial instruments and markets is a function of their inherent level of commercial risk (Mimir, 2016).

Logistics risk refers to the degree to which a country can systematically and consistently fulfill essential activities associated with the transportation, distribution, warehousing, and packaging of materials within a firm's supply chain (Salanță and Popa, 2015). Inventory management and reverse logistics are also cited as critical components of effective supply chain management requiring minimal levels of logistics risk (Vikulov and Butrin, 2014). Moreover, Jereb et al. (2012) defined four primary logistics resources which are necessary for logistics processes to take place: (1) Resources to facilitate the flow of goods and services from the point of origin to the point of use in order to meet the requirements of customers; (2) Resources to accommodate information flows which can trigger a change in the state of the logistical system based upon a change of knowledge; (3) Logistics infrastructure and superstructure resources needed for the propagation of efficient and effective supply chain operations; and (4) Human resources to plan, organize, acquire, implement, deliver, support, monitor and evaluate logistical systems and services.

Corruption risk refers to the degree to which political institutions in sovereign nations can exercise undue influence on the economic mechanisms of the country. According to Ionescu (2010), corruption raises the barriers to entry and exit of corrupt markets, restrains exchange to insiders, and augments the importance of local partners. Additionally, this researcher states that corruption leads to less effective government, rests upon a foundation of an unfair legal system, and remains high in countries with low trust and elevated levels of inequality. A major outcome

of political corruption is the inefficient allocation of limited resources necessary for economic growth and national prosperity (Hauser and Hogenacker, 2014). Heywood and Meyer-Sahling (2013) cite the following indicators of corruption in political bureaucracies: (1) Personal versus impersonal exchange relations; (2) Mutual dependencies or multiple principals; (3) Absence of screening mechanisms; and, (4) A lack of incentives to develop reputations for honesty. This research study incorporates country-specific data on the aforementioned external risk factors associated with suppliers to seven of the leading global electronic equipment companies.

Research Methodology

This study employs a research methodology that includes empirical data retrieved from the Bloomberg Supply Chain Analysis Database, and the creation of Bayesian networks used to construct external risk profiles for key suppliers to seven of the leading global electronic equipment companies. The following is an overview of Bayesian networks, along with a discussion of these suppliers.

Bayesian Networks

Bayesian networks are annotated directed acyclic graph that encode probabilistic relationships among nodes of interest in an uncertain reasoning problem (Pai et al., 2003). The representation describes these probabilistic relationships and includes a qualitative structure that facilitates communication between a user and a system incorporating a probabilistic model. Bayesian networks are based on the work of the mathematician and theologian Rev. Thomas Bayes who worked with conditional probability theory in the late 1700s to discover a basic law of probability which came to be known as Bayes' theorem. Bayes' theorem states that:

$$P(H|E, c) = \frac{P(H|c) \times P(E|H,c)}{P(E|c)}$$

The posterior probability is given by the left-hand term of the equation $[P(H|E, c)]$. It represents the probability of hypothesis H after considering the effect of evidence E on past experience c . The term $P(H|c)$ is the a-priori probability of H given c alone. Thus, the a-priori probability can be viewed as the subjective belief of occurrence of hypothesis H based upon past experience. The likelihood, represented by the term $P(E|H,c)$, gives the probability of the evidence assuming the hypothesis H and the background information c is true. The term $P(E|c)$ is independent of H and is regarded as a normalizing or scaling factor (Niedermayer, 2003). Thus, Bayesian networks provide a methodology for combining subjective beliefs with available evidence.

Bayesian networks represent a unique class of graphical models that may be used to depict causal dependencies between random variables (Cowell et al., 2007). Graphical models use a combination of probability theory and graph theory in the statistical modeling of complex interactions between such variables. Bayesian networks have evolved as a useful tool in analyzing uncertainty. When Bayesian networks were first introduced, assigning the full probability distributions manually was time intensive. Solving a Bayesian network with a considerable number of nodes is known to be a nondeterministic polynomial time hard [NP hard] problem (Dagum and Luby, 1993). However, significant advancements in computational

capability along with the development of heuristic search techniques to find events with the highest probability have enhanced the development and understanding of Bayesian networks. Correspondingly, the Bayesian computational concept has become an emergent tool for a wide range of risk management applications (Cowell et al., 2007). The methodology has been shown to be especially useful when information about past and/or current situations is vague, incomplete, conflicting, and uncertain.

Bayesian Analysis in Supply Chain Research

Pai et al. (2003) were among the first researchers to analyze supply chain risks using Bayesian networks. Their study examined the risk profile associated with a US Department of Defense (DoD) supply chain for trinitrotoluene (TNT). The supply chain was comprised of TNT recovery plants, storage facilities, and ammunition depots. Using Bayesian networks, the researchers could establish risk factors and acceptable risk limits for all assets contained in the DoD supply chain. Bayesian networks have also been used to conduct diagnostics (Kauffmann et al., 2002; Kao et al., 2005), cost optimization studies (Narayanan et al., 2005), flexibility analysis (Milner and Kouvelis, 2005; Wu, 2006), and manufacturing resource allocation planning (Wu et al., 2013) in supply chains.

Since the work of Pai et al. (2003), researchers have continued to explore the use of Bayesian networks to analyze and manage supply chain risks. For example, there have been several studies which examine the use of Bayesian networks as part of a decision support system to manage such risks (Li and Chandra, 2007; Meixell et al., 2008; Shevtshenko and Wang, 2009; Makris et al., 2011; Taskin and Lodree, 2011). Studies by Tomlin (2009) and Chen et al. (2010) demonstrate how Bayesian networks can be used to manage supply chain uncertainty. The integration of Bayesian networks into supply chain forecasting methodologies to mitigate risks has also been examined by several researchers (Yelland, 2010; Yelland et al., 2010; Rahman et al., 2011). Lockamy and McCormack (2009) conducted a study which uses Bayesian networks to examine operational risks in supply chains. The authors have also used these networks to analyze outsourcing risks in supply chains (Lockamy and McCormack, 2010). Finally, Bayesian networks have been used to develop a methodology for benchmarking supplier risks (Lockamy, 2011) and to create supplier disaster risk profiles (Lockamy, 2014).

Study Sample and Data Collection

A search for the leading global electronic equipment companies in the Bloomberg Supply Chain Analysis Database (BSCAD) yielded the following organizations: Apple Inc.; Cisco Systems Inc.; Telefonaktiebolaget; Hewlett-Packard (HP) Inc.; LG Electronics Inc.; Samsung Electronics Inc.; and the Sony Corporation. Apple Inc. is a technology enterprise that designs, manufactures, and markets mobile communication and media devices, personal computers and portable digital music players, and sells a variety of related software, services, accessories, networking solutions and third-party digital content and applications. The company's products and services include a portfolio of consumer and professional software applications, operating systems, and a variety of accessory, service and support offerings. The company sells and delivers digital content and applications through the iTunes Store, App Store, Mac App Store, iBooks Store and Apple Music. It sells its products worldwide through its retail stores, online stores, and direct sales force, as well as through third-party cellular network carriers,

wholesalers, retailers, and value-added resellers. Cisco Systems Inc. designs and sells broad lines of IT products. Cisco provides services and delivers integrated solutions to develop and connect global networks. It offers products and technologies in areas including: switching; next-generation network routing; collaboration; service provider video; data center; wireless; security; technical support services, and advanced services. Telefonaktiebolaget is a global communications technology company that provides equipment, software, and services to enable transformation through mobility. It delivers network products and solutions for mobile access, Internet Protocol and transmission networks, core networks, and digital clouds. The company offers managed services, product-related services, consulting and systems integration services, as well as broadcast and media services. Its support solutions include operations and business support systems, television and media solutions, and money and payment transaction services. Hewlett-Packard Inc. is a provider of products, technologies, software solutions, and services to individual consumers, businesses, and large enterprises, including government, healthcare, and educational sectors. Its offerings span personal computing and other access devices; imaging and printing-related products and services; enterprise information technology infrastructure; multi-vendor customer services; and software products and solutions, including application testing and delivery software, big data analytics, information governance, and information technology operations management. LG Electronics Inc. is a South Korean multinational electronics company headquartered in Yeouido-dong, Seoul, South Korea. LG comprises four business units: Home Entertainment, Mobile Communications, Home Appliance & Air Solution, and Vehicle Components, with Starion India as its main production vendor for refrigeration and washing machines in the Indian sub-continent. In 2011, LG Electronics was the world's second-largest television manufacturer. Samsung Electronics Company Ltd. designs, manufactures and markets semiconductors, telecommunications, digital media and digital convergence technologies. The company's products include mobile phones, tablets, televisions, Blu-rays, DVD players, home theaters, air track, Bluetooth speakers, and mini components; cameras and camcorders; home appliances comprising refrigerators, air conditioners, washing machines, microwave ovens, conventional ovens, and dishwashers; PC/peripherals/printers, including laptops, all-in-one PCs, tablet PCs, notebooks, chrome devices, monitors, optical disc drives, laser printers, and consumable/toners; memory and storage products, such as solid-state drives and memory cards; and accessories. Finally, the Sony Corporation designs, develops, manufactures, and sells electronic equipment, instruments, and devices for consumer, professional, and industrial markets. They are also engaged in the acquisition, production, and distribution of: TV programs, movies, and animated films; operation of television networks and studio facilities; creation and distribution of digital content; development of new entertainment products, services, and technologies; and the music publishing business.

According to the BSCAD, these organizations are considered peers in the global electronic equipment industry. Thus, the study sample consists of the key suppliers to seven of the leading global electronic equipment companies based upon their incurred expenditure levels (e.g., cost of goods sold; selling, general and administrative cost; research and development, etc.) directly associated with these suppliers. A listing of these suppliers including their location and relative rankings based on the company's cost exposure to them is presented in Tables 1-7. These suppliers are based in Canada, France, Germany, India, Japan, The Netherlands, S. Korea, Taiwan, and the United States.

Supplier	Location	Rank (Cost to Telefona)
Flextronics International Ltd.	USA	1
Jabil Circuit Inc.	USA	2
Emerson Electric Co.	USA	3
Intel Corporation	USA	4
Toenec Corporation	Japan	5
Sanmina Corporation	USA	6
Qualcomm Inc.	USA	7
Dassault Systemes	France	8
Ciena Corporation	USA	9
SAP SE	Germany	10
Amazon.com Inc.	USA	11
Tata Consultancy Services Ltd.	India	12
Supplier	Location	Rank (Cost to Apple)
Hon Hai Precision Industry Co.	Taiwan	1
Pegatron Corporation	Taiwan	2
Quanta Computer Inc.	Taiwan	3
Samsung Electronics	S. Korea	4
LG Display Co. LTD	S. Korea	5
Sharp Corp./Japan	Japan	6
Compal Electronics	Taiwan	7
Taiwan Semiconductor	Taiwan	8
Jabil Circuit Inc.	USA	9
Schneider Electronics	Germany	10
GungHo Online Entertainment	Japan	11
Japan Display Inc.	Japan	12

Table 1 Apple Supplier Profiles

Supplier	Location	Rank (Cost to Cisco)
Hon Hai Precision Industry Co.	Taiwan	1
Juniper Networks Inc.	USA	2
Celestica Inc.	Canada	3
Flextronics International Ltd.	USA	4
Microsoft Corporation	USA	5
KLA-Tencor Corporation	USA	6
Apple Inc.	USA	7
Jabil Circuit Inc.	USA	8
VMware Inc.	USA	9
Emerson Electric Co.	USA	10
Broadcom Ltd.	USA	11
Quanta Computer Inc.	Taiwan	12

Table 2 Cisco Systems Supplier Profiles

Supplier	Location	Rank (Cost to LG)
LG International Co. Ltd.	S. Korea	1
LG Display Co. Ltd.	S. Korea	2
Jabil Circuit Inc.	USA	3
LG Innotek Co. Ltd.	S. Korea	4
Samsung Electronics	S. Korea	5
Qualcomm Inc.	USA	6
AU Optronics Corporation	Taiwan	7
Ingram Micro Inc.	USA	8
Media Tek Inc.	Taiwan	9
LG Chem Ltd.	S. Korea	10
Intel Corporation	USA	11
General Electric Co.	USA	12

Table 3 Telefonaktiebolaget Supplier Profiles

Table 4 HP Inc. Supplier Profiles

Supplier	Location	Rank (Cost to HP)
Hon Hai Precision Industry Co.	Taiwan	1
ASML Holding NV	Netherlands	2
Amkor Electronics Co.	USA	3
Invensys Research Corporation	Taiwan	4
Applied Materials International	USA	5
Intel Corporation	USA	6
Samsung Electronics	S. Korea	7
PANJIG Corporation	Taiwan	8
Microsoft Corporation	USA	9
Quanta Computer Inc.	Taiwan	10
Flextronics International Ltd.	USA	11
Wistron Corporation	Taiwan	12
Jabil Circuit Inc.	USA	13
Seagate Technology	USA	14

Table 5 LG Electronics Supplier Profiles

Supplier	Location	Rank (Cost to Sony)
Ingram Micro Inc.	USA	6
Qualcomm Inc.	USA	7
Hon Hai Precision Industry Co.	Taiwan	8
KLA-Tencor Corporation	USA	9
Jabil Circuit Inc.	USA	10
Market Korea Inc.	S. Korea	11
LG Display Co. Ltd.	S. Korea	12
LS Corporation	S. Korea	13
Samsung Electronics	S. Korea	14
Sodexo Corporation	France	15
Tokyo Electric	Japan	16
Microsoft Corporation	USA	17
Canon Inc.	Japan	18
Qualcomm Inc.	USA	19
Nihon Denkei Co.	Japan	20
Activision Blizzard	USA	21
Taiwan Semiconductor	Taiwan	22
Pegatron Corporation	Taiwan	23
FIH Mobile Ltd.	Taiwan	24

Table 6 Samsung Electronics Supplier Profiles

Table 7 Sony Corporation Supplier Profiles

Information pertaining to the suppliers was obtained via queries made in the BSCAD. The database is accessible through a Bloomberg terminal which provides users the ability to review quarterly, semi-annual, and annual financial reports of over 28,000 public companies. Additionally, the BSCAD allows for the creation of a firm's 'supply chain map', which includes its major suppliers and customers.

Data relating to the level of country, business climate, commercial, logistics, and corruption risks associated with each supplier was obtained to develop their external risk profile in these areas. A.M. Best Rating Services was used as a source for acquiring country risk data for key suppliers to seven of the leading global electronic equipment companies. A.M. Best is the oldest and one of the most widely recognized provider of ratings, financial data, and news on over

3,500 companies in more than 80 countries worldwide. Best's Credit Ratings are recognized as a benchmark for assessing a rated organization's financial strength as well as the credit quality of its obligations. A.M. Best defines country risk as the risk that country-specific factors could adversely affect an insurer's ability to meet its financial obligations. Countries are placed into one of five tiers, ranging from Country Risk Tier 1 (CRT-1), denoting a stable environment with the least amount of risk, to Country Risk Tier 5 (CRT-5) for countries that pose the most risk and, therefore, the greatest challenge to an insurer's financial stability, strength and performance.

Data obtained from the Coface Group was also used to assess the level of country risk demonstrated by key suppliers to global electronic equipment industry. Established in 1946, Coface offers risk prevention, monitoring and protection services to companies of all sizes and nationalities, and in all sectors. The organization develops a 'country risk assessment map' each quarter for 160 nations based on macroeconomic, financial and political data. Coface employs

A1	A2	A3	A4	B	C	D	E
Very Low	Low	Quite Acceptable	Acceptable	Significant	High	Very High	Extreme Risk

an eight-level ranking system for countries in

ascending order of risk: A1, A2, A3, A4, B, C, D, and E. The ranking system is illustrated in Table 8. Additionally, Coface data was used to assess business climate risk. This external risk factor is generated by the firm via the quarterly analysis of macroeconomic, financial and political data for 160 countries. Business climate risk country rankings are constructed using the same system illustrated in Table 8.

Table 8 Coface Ranking System for Country and Business Climate Risk

After the upheaval that followed the First World War, the Belgian government had the desire to create a public body that would ensure political risks and revive exports. In 1921, the Belgian Ministry of Economic Affairs set up the Delcredere Committee to insure the political risks of exports. The Delcredere Committee was conceived as a temporary entity but was maintained as crises emerged, such as the 1929 Wall Street crash. In 1939, the government decided to turn it into a permanent body, making it a financially and administratively autonomous institution that is guaranteed by the government. Delcredere was the source used to obtain commercial risk data for key suppliers within global electronic equipment supply chains. The institution's commercial risk assessment model is composed of three types of indicators: (1) Economic and financial indicators affecting all companies in a country due to their impact on corporate results and balance sheets; (2) Indicators reflecting the country's payment experience for commercial risk; and, (3) Indicators characterizing the institutional context in which local companies operate, such as political factors, transitions occurring in the economy, etc. Delcredere utilizes an ABC categorization scheme for assessing the level of commercial risk associated with a given country. Category A includes countries presenting a low commercial risk, Category B contains those countries for which the corresponding commercial risk is deemed as 'normal', and Category C comprises the countries presenting a high commercial risk. The systemic commercial risk categorization for each country is updated at least twice a year and is subject to intermediary reviews, if necessary. Data obtained from Delcredere was used to determine the level of commercial risk associated with key suppliers in the global electronic equipment industry.

The Logistics Performance Index (LPI) is a comprehensive measure of the efficiency of international supply chains developed by the World Bank. Its first version was published in 2007, and it has since been updated every two years. The LPI is the weighted average of the country scores on six key dimensions: (1) Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs; (2) Quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology); (3) Ease of arranging competitively priced shipments; (4) Competence and quality of logistics services (e.g., transport operators, customs brokers); (5) Ability to track and trace consignments; and, (6) Timeliness of shipments in reaching destination within the scheduled or expected delivery time. It demonstrates comparative supply chain performance using a 5-point scale ranging from the lowest (1) to highest (5) score. The LPI data was used to assess the level of logistics risk associated with key suppliers in the global electronic equipment industry.

In 1993, a few individuals decided to take a stance against corruption in political institutions, and created Transparency International. The organization, whose mission is to stop corruption and promote transparency, accountability and integrity at all levels, and across all sectors of society, is now present in more than 100 countries. Their vision is a world in which government, politics, business, civil society and the daily lives of people are free of corruption. Each year, Transparency International constructs a 'Corruption Perception Index' (CPI) for 168 countries and territories. The index is based on expert opinion from around the world. A country or territory's score indicates the perceived level of public sector corruption on a scale of 0 (highly corrupt) to 100 (very clean). A country's rank indicates its position relative to the other countries. The CPI data for 2015 was used to assess the level of corruption risk associated with key suppliers within global electronic equipment supply chains.

Data Integration and Analysis

The supplier external risk profiles for key suppliers in the global electronic equipment industry are illustrated in Tables 9-15. These profiles were constructed using the collected data from the previously discussed sources. The profiles also reflect the ranking systems associated with the data source for a particular risk event. For example, the LPI uses a 5-point scale ranging from the lowest (1) to highest (5) score. Therefore, the level of logistics risk associated with each of the leading global electronic equipment companies' key suppliers was ranked accordingly. Note that the LPI percentage ranking is also included in the table. This ranking is a relative measure of logistics risk based upon the country with the highest LPI ranking (Germany).

Supplier	Location	Rank (Cost to Apple)	Country Risk (1)	Countr y Risk (2)	Business Climate	Commercia l Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index
Hon Hai Precision Industry Co.	Taiwan	1	2	A3	A2	A	3.70 (83.6%)	62
Pegatron Corp	Taiwan	2	2	A3	A2	A	3.70 (83.6%)	62
Quanta Computer Inc.	Taiwan	3	2	A3	A2	A	3.70 (83.6%)	62
Samsung Electronics	S. Korea	4	2	A3	A2	B	3.72 (84.2%)	56
LG Display Co. Ltd.	S. Korea	5	2	A3	A2	B	3.72 (84.2%)	56
Sharp Corp./Japan	Japan	6	2	A2	A1	B	3.97 (92.1%)	75
Compal Electronics	Taiwan	7	2	A3	A2	A	3.70 (83.6%)	62
Taiwan Semiconductor	Taiwan	8	2	A3	A2	A	3.70 (83.6%)	62
Jabil Circuit Inc.	USA	9	1	A2	A1	B	3.99 (92.8%)	76
Schneider Electronics	Germany	10	1	A1	A1	A	4.23 (100.0%)	81
GungHo Online Entertainment	Japan	11	2	A2	A1	B	3.97 (92.1%)	75
Japan Display Inc.	Japan	12	2	A2	A1	B	3.97 (92.1%)	75

Table 9 Apple Supplier External Risk Profiles

(1) A.M. Best Rating Services

(2) Coface Country Risk Assessments

Supplier	Location	Rank (Cost to Cisco)	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index
Hon Hai Precision Industry Co.	Taiwan	1	2	A3	A2	A	3.70 (83.6%)	62
Juniper Networks Inc.	USA	2	1	A2	A1	B	3.99 (92.8%)	76
Celestica Inc.	Canada	3	1	A3	A1	A	3.93 (90.8%)	83
Flextronics International Ltd.	USA	4	1	A2	A1	B	3.99 (92.8%)	76
Microsoft Corporation	USA	5	1	A2	A1	B	3.99 (92.8%)	76
KLA-Tencor Corporation	USA	6	1	A2	A1	B	3.99 (92.8%)	76
Apple Inc.	USA	7	1	A2	A1	B	3.99 (92.8%)	76
Jabil Circuit Inc.	USA	8	1	A2	A1	B	3.99 (92.8%)	76
VMware Inc.	USA	9	1	A2	A1	B	3.99 (92.8%)	76
Emerson Electric Co.	USA	10	1	A2	A1	B	3.99 (92.8%)	76
Broadcom Ltd.	USA	11	1	A2	A1	B	3.99 (92.8%)	76
Quanta Computer Inc.	Taiwan	12	2	A3	A2	A	3.70 (83.6%)	62

Table 10 Cisco Supplier External Risk Profiles

(1) A.M. Best Rating Services

(2) Coface Country Risk Assessments

Supplier	Location	Rank (Cost to Telefona)	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index
Flextronics International Ltd.	USA	1	1	A2	A1	B	3.99 (92.8%)	76
Jabil Circuit Inc.	USA	2	1	A2	A1	B	3.99 (92.8%)	76
Emerson Electric Co.	USA	3	1	A2	A1	B	3.99 (92.8%)	76
Intel Corporation	USA	4	1	A2	A1	B	3.99 (92.8%)	76
Toenec Corporation	Japan	5	2	A2	A1	B	3.97 (92.1%)	75
Sanmina Corporation	USA	6	1	A2	A1	B	3.99 (92.8%)	76
Qualcomm Inc.	USA	7	1	A2	A1	B	3.99 (92.8%)	76
Dassault Systemes	France	8	1	A2	A1	B	3.90 (89.9%)	70
Ciena Corporation	USA	9	1	A2	A1	B	3.99 (92.8%)	76
SAP SE	Germany	10	1	A1	A1	A	4.23 (100.0%)	81
Amazon.com Inc.	USA	11	1	A2	A1	B	3.99 (92.8%)	76
Tata Consultancy Services Ltd.	India	12	4	A4	B	B	3.42 (75.0%)	38

Table 11 Telefonaktiebolaget Supplier External Risk Profiles

(1) A.M. Best Rating Services

(2) Coface Country Risk Assessments

Supplier	Location	Rank (Cost to HP)	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index
Hon Hai Precision Industry Co.	Taiwan	1	2	A3	A2	A	3.70 (83.6%)	62
Emerson Electric Co.	USA	2	1	A2	A1	B	3.99 (92.8%)	76
Inventec Corporation	Taiwan	3	2	A3	A2	A	3.70 (83.6%)	62
Intel Corporation	USA	4	1	A2	A1	B	3.99 (92.8%)	76
Compal Electronics	Taiwan	5	2	A3	A2	A	3.70 (83.6%)	62
Pegatron Corporation	Taiwan	6	2	A3	A2	A	3.70 (83.6%)	62
Microsoft Corporation	USA	7	1	A2	A1	B	3.99 (92.8%)	76
Quanta Computer Inc.	Taiwan	8	2	A3	A2	A	3.70 (83.6%)	62
Flextronics International Ltd.	USA	9	1	A2	A1	B	3.99 (92.8%)	76
Wistron Corporation	Taiwan	10	2	A3	A2	A	3.70 (83.6%)	62
Jabil Circuit Inc.	USA	11	1	A2	A1	B	3.99 (92.8%)	76
Seagate Technology	USA	12	1	A2	A1	B	3.99 (92.8%)	76

Table 12 HP Supplier External Risk Profiles

(1) A.M. Best Rating Services

(2) Coface Country Risk Assessments

Supplier	Location	Rank (Cost to LG)	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index
LG International Co. Ltd.	S. Korea	1	2	A3	A2	B	3.72 (84.2%)	56
LG Display Co. Ltd.	S. Korea	2	2	A3	A2	B	3.72 (84.2%)	56
Jabil Circuit Inc.	USA	3	1	A2	A1	B	3.99 (92.8%)	76
LG Innotek Co. Ltd.	S. Korea	4	2	A3	A2	B	3.72 (84.2%)	56
Samsung Electronics	S. Korea	5	2	A3	A2	B	3.72 (84.2%)	56
Qualcomm Inc.	USA	6	1	A2	A1	B	3.99 (92.8%)	76
AU Optronics Corporation	Taiwan	7	2	A3	A2	A	3.70 (83.6%)	62
Ingram Micro Inc.	USA	8	1	A2	A1	B	3.99 (92.8%)	76
Media Tek Inc.	Taiwan	9	2	A3	A2	A	3.70 (83.6%)	62
LG Chem Ltd.	S. Korea	10	2	A3	A2	B	3.72 (84.2%)	56
Intel Corporation	USA	11	1	A2	A1	B	3.99 (92.8%)	76
General Electric Co.	USA	12	1	A2	A1	B	3.99 (92.8%)	76

Table 13 LG Supplier External Risk Profiles

(1) A.M. Best Rating Services

(2) Coface Country Risk Assessments

Supplier	Location	Rank (Cost to Samsung)	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index
ASML Holding NV	Netherlands	1	1	A2	A1	B	4.19 (98.8%)	87
Lam Research Corporation	USA	2	1	A2	A1	B	3.99 (92.8%)	76
Applied Materials Int'l	USA	3	1	A2	A1	B	3.99 (92.8%)	76
Samsung Engineering	S. Korea	4	2	A3	A2	B	3.72 (84.2%)	56
FANUC Corporation	Japan	5	2	A2	A1	B	3.97 (92.1%)	75
Ingram Micro Inc.	USA	6	1	A2	A1	B	3.99 (92.8%)	76
Qualcomm Inc.	USA	7	1	A2	A1	B	3.99 (92.8%)	76
KLA-Tencor Corporation	USA	8	1	A2	A1	B	3.99 (92.8%)	76
iMarket Korea Inc.	S. Korea	9	2	A3	A2	B	3.72 (84.2%)	56
LS Corporation	S. Korea	10	2	A3	A2	B	3.72 (84.2%)	56
Sodexo Corporation	France	11	1	A2	A1	B	3.90 (89.9%)	70
Microsoft Corporation	USA	12	1	A2	A1	B	3.99 (92.8%)	76

Table 14 Samsung Supplier External Risk Profiles
 (1) A.M. Best Rating Services
 (2) Coface Country Risk Assessments

Supplier	Location	Rank (Cost to Sony)	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index
Hon Hai Precision Industry Co.	Taiwan	1	2	A3	A2	A	3.70 (83.6%)	62
Jabil Circuit Inc.	USA	2	1	A2	A1	B	3.99 (92.8%)	76
LG Display Co. Ltd.	S. Korea	3	2	A3	A2	B	3.72 (84.2%)	56
Samsung Electronics	S. Korea	4	2	A3	A2	B	3.72 (84.2%)	56
Tokyo Electric	Japan	5	2	A2	A1	B	3.97 (92.1%)	75
Canon Inc.	Japan	6	2	A2	A1	B	3.97 (92.1%)	75
Qualcomm Inc.	USA	7	1	A2	A1	B	3.99 (92.8%)	76
Nihon Denkei Co.	Japan	8	2	A2	A1	B	3.97 (92.1%)	75
Activision Blizzard	USA	9	1	A2	A1	B	3.99 (92.8%)	76
Taiwan Semiconductor	Taiwan	10	2	A3	A2	A	3.70 (83.6%)	62
Pegatron Corporation	Taiwan	11	2	A3	A2	A	3.70 (83.6%)	62
FIH Mobile Ltd.	Taiwan	12	2	A3	A2	A	3.70 (83.6%)	62

Table 15 Sony Supplier External Risk Profiles

- (1) A.M. Best Rating Services
(2) Coface Country Risk Assessments

A-priori probabilities for the external risk events discussed previously were computed using the collected data. This type of probability is calculated by logically examining the existing information to determine what outcomes of an event are possible, along with the chances that an outcome occurs for a particular event. The a-priori probabilities for the supplier external risk event variables under examination in this study are presented in Table 16. The probabilities were calculated based upon the risk ranking system associated with each risk event category. For example, the risk event labeled 'Country (1)' is derived from data obtained from the A.M. Best Rating Services and places countries into one of five tiers, ranging from Country Risk Tier 1 (CRT-1), denoting a stable environment with the least amount of risk, to Country Risk Tier 5 (CRT-5) for countries that pose the most risk. Thus, the a-priori probability of this risk event for a Tier 1 country is set at .20, while 1.00 is the value associated with a Tier 5 country for this event based on the methodologies employed by A.M. Best. An a-priori probability external risk event profile for the leading global electronic equipment companies is provided in Tables 17-23. The profiles were developed from the a-priori probabilities for the supplier external risk event variables under examination contained in Table 16. As illustrated in Table 16, the probability of an external risk event for a supplier located in a Tier 1 country is 20%, while there is a 100% probability of occurrence for a supplier located in a Tier 5 country. The integration of data pertaining to a supplier's country, business climate, commercial, logistics, and corruption risks for the establishment of the a-priori probabilities illustrated in Tables 17-23 was used to construct Bayesian networks for each supplier to determine their probability of experiencing an external risk event.

Country Risk (1)					
Risk Event Level	CR1	CR2	CR3	CR4	CR5
Risk Probability	.200	.400	.600	.800	1.000

Country Risk (2)								
Risk Event Level	A1	A2	A3	A4	B	C	D	E
Risk Probability	.125	.250	.375	.500	.625	.750	.825	1.000

Business Climate Risk								
Risk Event Level	A1	A2	A3	A4	B	C	D	E
Risk Probability	.125	.250	.375	.500	.625	.750	.825	1.000

Commercial Risk			
Risk Event Level	A	B	C
Risk Probability	.34	.66	1.000

Logistics Performance Risk					
Risk Event Level	1	2	3	4	5
Risk Probability	.200	.400	.600	.800	1.000

Corruption Risk										
Risk Event Level	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Risk Probability	1.000	.900	.800	.700	.600	.500	.400	.300	.200	.100

Table 16 A Priori Probabilities for Supplier External Risk Event Variables

(1) A.M. Best Rating Services

(2) Coface Country Risk Assessments

Supplier	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index (2015)
Hon Hai Precision Industry Co.	.400	.375	.250	.340	.239	.400
Pegatron Corp	.400	.375	.250	.340	.239	.400
Quanta Computer Inc.	.400	.375	.250	.340	.239	.400
Samsung Electronics	.400	.375	.250	.660	.237	.500
LG Display Co. LTD	.400	.375	.250	.660	.237	.500
Sharp Corp./Japan	.400	.250	.125	.660	.217	.300
Compal Electronics	.400	.375	.250	.340	.239	.400
Taiwan Semiconductor	.400	.375	.250	.340	.239	.400
Jabil Circuit Inc.	.200	.250	.125	.660	.215	.300
Schneider Electronics	.200	.125	.125	.340	.200	.200
GungHo Online Entertainment	.400	.250	.125	.660	.217	.300
Japan Display Inc.	.400	.250	.125	.660	.217	.300

Table 17 Apple A Priori Probability External Risk Event Profiles

Supplier	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index (2015)
Hon Hai Precision Industry Co.	.400	.375	.250	.340	.239	.400
Juniper Networks Inc.	.200	.250	.125	.660	.215	.300
Celestica Inc.	.200	.375	.125	.340	.220	.200
Flextronics International Ltd.	.200	.250	.125	.660	.215	.300
Microsoft Corporation	.200	.250	.125	.660	.215	.300
KLA-Tencor Corporation	.200	.250	.125	.660	.215	.300
Apple Inc.	.200	.250	.125	.660	.215	.300
Jabil Circuit Inc.	.200	.250	.125	.660	.215	.300
VMware Inc.	.200	.250	.125	.660	.215	.300
Emerson Electric Co.	.200	.250	.125	.660	.215	.300
Broadcom Ltd.	.200	.250	.125	.660	.215	.300
Quanta Computer Inc.	.400	.375	.250	.340	.239	.400

Table 18 Cisco A Priori Probability External Risk Event Profiles

Supplier	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index (2015)
Flextronics International Ltd.	.200	.250	.125	.660	.215	.300
Jabil Circuit Inc.	.200	.250	.125	.660	.215	.300
Emerson Electric Co.	.200	.250	.125	.660	.215	.300
Intel Corporation	.200	.250	.125	.660	.215	.300
Toenec Corporation	.400	.250	.125	.660	.217	.300
Sanmina Corporation	.200	.250	.125	.660	.215	.300
Qualcomm Inc.	.200	.250	.125	.660	.215	.300
Dassault Systemes	.200	.250	.125	.660	.222	.300
Ciena Corporation	.200	.250	.125	.660	.215	.300
SAP SE	.200	.125	.125	.340	.200	.200
Amazon.com Inc.	.200	.250	.125	.660	.215	.300
Tata Consultancy Services Ltd.	.800	.500	.625	.660	.267	.700

Table 19 Telefonaktiebolaget A Priori Probability External Risk Event Profiles

Supplier	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index (2015)
Hon Hai Precision Industry Co.	.400	.375	.250	.340	.239	.400
Emerson Electric Co.	.200	.250	.125	.660	.215	.300
Inventec Corporation	.400	.375	.250	.340	.239	.400
Intel Corporation	.200	.250	.125	.660	.215	.300
Compal Electronics	.400	.375	.250	.340	.239	.400
Pegatron Corporation	.400	.375	.250	.340	.239	.400
Microsoft Corporation	.200	.250	.125	.660	.215	.300
Quanta Computer Inc.	.400	.375	.250	.340	.239	.400
Flextronics International Ltd.	.200	.250	.125	.660	.215	.300
Wistron Corporation	.400	.375	.250	.340	.239	.400
Jabil Circuit Inc.	.200	.250	.125	.660	.215	.300
Seagate Technology	.200	.250	.125	.660	.215	.300

Table 20 HP A Priori Probability External Risk Event Profiles

Supplier	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index (2015)
LG International Co. Ltd.	.400	.375	.250	.660	.237	.500
LG Display Co. Ltd.	.400	.375	.250	.660	.237	.500
Jabil Circuit Inc.	.200	.250	.125	.660	.215	.300
LG Innotek Co. Ltd.	.400	.375	.250	.660	.237	.500
Samsung Electronics	.400	.375	.250	.660	.237	.500
Qualcomm Inc.	.200	.250	.125	.660	.215	.300
AU Optronics Corporation	.400	.375	.250	.340	.239	.400
Ingram Micro Inc.	.200	.250	.125	.660	.215	.300
Media Tek Inc.	.400	.375	.250	.340	.239	.400
LG Chem Ltd.	.400	.375	.250	.660	.237	.500
Intel Corporation	.200	.250	.125	.660	.215	.300
General Electric Co.	.200	.250	.125	.660	.215	.300

Table 21 LG A Priori Probability External Risk Event Profiles

Supplier	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index (2015)
ASML Holding NV	.200	.250	.125	.660	.202	.200
Lam Research Corporation	.200	.250	.125	.660	.215	.300
Applied Materials Int'l	.200	.250	.125	.660	.215	.300
Samsung Engineering	.400	.375	.250	.660	.237	.500
FANUC Corporation	.400	.250	.125	.660	.217	.300
Ingram Micro Inc.	.200	.250	.125	.660	.215	.300
Qualcomm Inc.	.200	.250	.125	.660	.215	.300
KLA-Tencor Corporation	.200	.250	.125	.660	.215	.300
iMarket Korea Inc.	.400	.375	.250	.660	.237	.500
LS Corporation	.400	.375	.250	.660	.237	.500
Sodexo Corporation	.200	.250	.125	.660	.222	.300
Microsoft Corporation	.200	.250	.125	.660	.215	.300

Table 22 Samsung A Priori Probability External Risk Event Profiles

Supplier	Country Risk (1)	Country Risk (2)	Business Climate	Commercial Risk	Logistics Performance Index (LPI)	Corruption Perceptions Index (2015)
Hon Hai Precision Industry Co.	.400	.375	.250	.340	.239	.400
Jabil Circuit Inc.	.200	.250	.125	.660	.215	.300
LG Display Co. Ltd.	.400	.375	.250	.660	.237	.500
Samsung Electronics	.400	.375	.250	.660	.237	.500
Tokyo Electric	.400	.250	.125	.660	.217	.300
Canon Inc.	.400	.250	.125	.660	.217	.300
Qualcomm Inc.	.200	.250	.125	.660	.215	.300
Nihon Denkei Co.	.400	.250	.125	.660	.217	.300
Activision Blizzard	.200	.250	.125	.660	.215	.300
Taiwan Semiconductor	.400	.375	.250	.340	.239	.400
Pegatron Corporation	.400	.375	.250	.340	.239	.400
FIH Mobile Ltd.	.400	.375	.250	.340	.239	.400

Table 23 Sony A Priori Probability External Risk Event Profiles

A depiction of the Bayesian networks used in this study is illustrated in Figure 1. Nodes (circles) represent variables in the Bayesian network. Each node contains states, or a set of probable values for each variable. The values ‘yes’ and ‘no’ represent the two states in which the variables can exist in the network illustrated in Figure 1. Nodes are connected to show causality with arrows known as ‘edges’ which indicate the direction of influence. When two nodes are joined by an edge, the causal node is referred to as the parent of the influenced (child) node. Child nodes are conditionally dependent upon their parent nodes. Thus, in Figure 1, the probability of suppliers experiencing external risks is dependent on the a-priori probabilities associated with the following variables: Country Risk (1); Country Risk (2); Business Climate Risk; Commercial Risk; LPI Risk; and Corruption Risk.



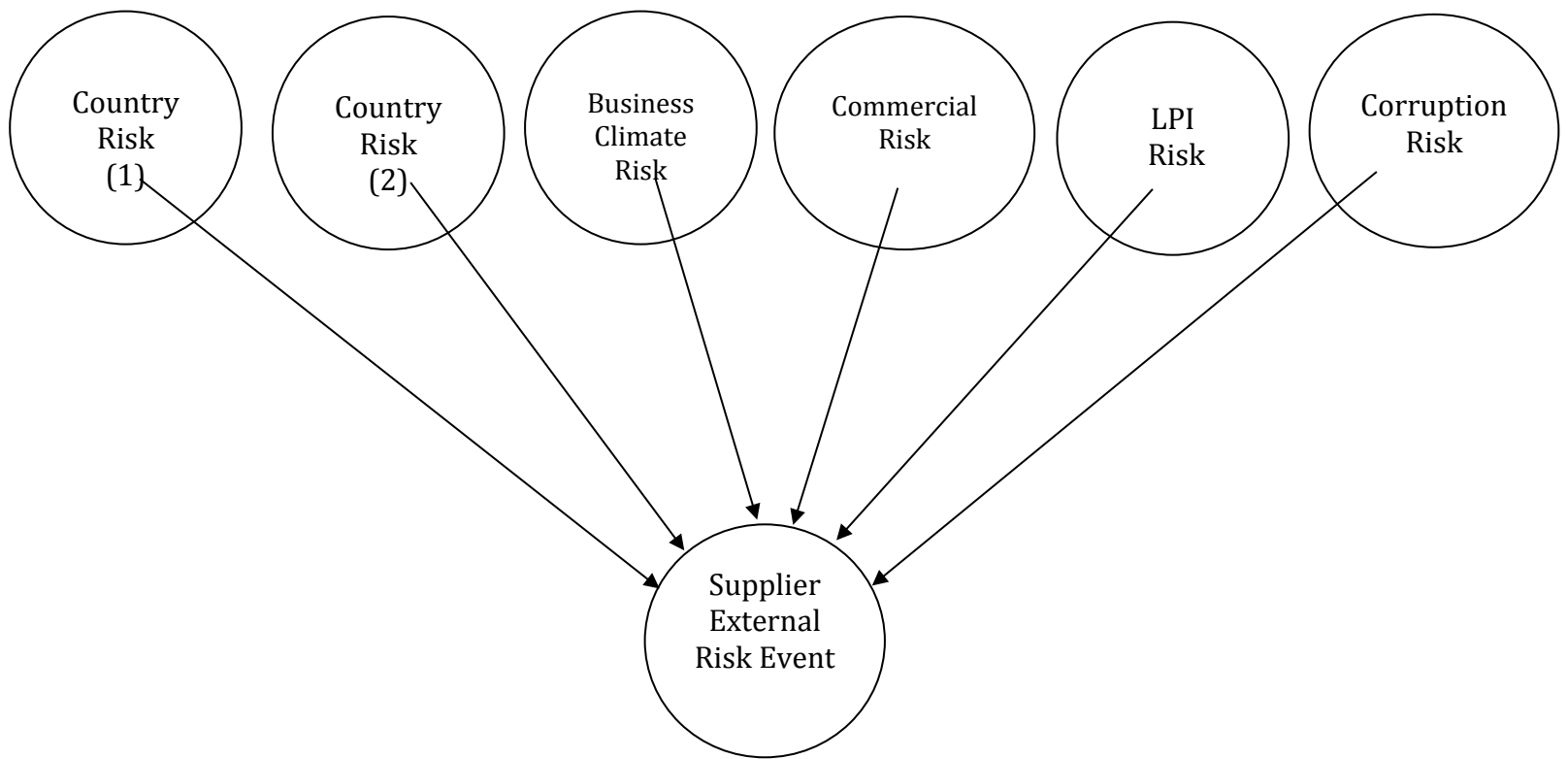


Figure 1 Bayesian Network for Supplier External Risk Assessments

Results

Bayesian networks were constructed for each of the key suppliers in the global electronic equipment industry using the a-priori probabilities provided in Tables 17-23. The results of this analysis are presented in Tables 24-30. An examination of these tables reveals that Telefonaktiebolaget's Indian supplier (Tata Consultancy Services Ltd.) possess the highest probability of supply chain failure due to an external risk event, while the German suppliers (SAP SE and Schneider Electronics) have the lowest risk of failure as a consequence of experiencing such an event. The industry's South Korean suppliers (iMarket Korea Inc.; LG Chem Ltd.; LG Display Co. Ltd.; LG Innotek Co. Ltd.; LG International Co. Ltd.; LS Corporation; Samsung Electronics; and Samsung Engineering) have the second highest probability of supply chain failure due to an external risk event, followed by its Taiwanese (AU Optronics Corporation; Compal Electronics; FIH Mobile Ltd.; Hon Hai Precision Industry Co.; Inventec Corporation; Media Tek Inc.; Pegatron Corporation; Quanta Computer Inc.; Taiwan Semiconductor; and Wistron Corporation), Japanese (Canon Inc.; FANUC Corporation; GungHo Online Entertainment; Japan Display Inc.; Nihon Denkei Co.; Sharp Corp./Japan; Toenec Corporation; and Tokyo Electric), French (Sodexo Corporation), American (Activision Blizzard; Amazon.com Inc.; Apple Inc.; Applied Materials Int'l; Broadcom Ltd.; Ciena Corporation; Emerson Electric Co.; Flextronics International Ltd.; General Electric Co.; Ingram Micro Inc.; Intel Corporation; Jabil Circuit Inc.; Juniper Networks Inc.; KLA-Tencor Corporation; Lam Research Corporation; Microsoft Corporation; Sanmina Corporation; Seagate Technology; Toenec Corporation; Qualcomm Inc.; and VMware Inc.), Dutch (ASML Holding NV), and Canadian (Celestica Inc.) suppliers.

Supplier	Probability of Failure (%)
Hon Hai Precision Industry Co.	34.53
Pegatron Corporation	34.53
Quanta Computer Inc.	34.53
Samsung Electronics	41.01
LG Display Co. LTD	41.01
Sharp Corp./Japan	32.88
Compal Electronics	34.53
Taiwan Semiconductor	34.53
Jabil Circuit Inc.	29.64
Schneider Electronics	20.15
GungHo Online Entertainment	32.88
Japan Display Inc.	32.88
AVERAGE	33.59

Table 24
Apple's Probability of Supplier Failure Due to an External Risk Event

Supplier	Probability of Failure (%)
Hon Hai Precision Industry Co.	34.53
Juniper Networks Inc.	29.64
Celestica Inc.	25.24
Flextronics International Ltd.	29.64
Microsoft Corporation	29.64
KLA-Tencor Corporation	29.64
Apple Inc.	29.64
Jabil Circuit Inc.	29.64
VMware Inc.	29.64
Emerson Electric Co.	29.64
Broadcom Ltd.	29.64
Quanta Computer Inc.	34.53
AVERAGE	30.09

Table 25
Cisco's Probability of Supplier Failure Due to an External Risk Event

Supplier	Probability of Failure (%)
Flextronics International Ltd.	29.64
Jabil Circuit Inc.	29.64
Emerson Electric Co.	29.64
Intel Corporation	29.64
Toenec Corporation	32.88
Sanmina Corporation	29.64
Qualcomm Inc.	29.64
Dassault Systemes	29.75
Ciena Corporation	29.64
SAP SE	20.15
Amazon.com Inc.	29.64
Tata Consultancy Services Ltd.	59.42
AVERAGE	31.61

Table 26
Telefona's Probability of Supplier Failure Due to an External Risk Event

Supplier	Probability of Failure (%)
Hon Hai Precision Industry Co.	34.53
Emerson Electric Co.	29.64
Inventec Corporation	34.53
Intel Corporation	29.64
Compal Electronics	34.53
Pegatron Corporation	34.53
Microsoft Corporation	29.64
Quanta Computer Inc.	34.53
Flextronics International Ltd.	29.64
Wistron Corporation	34.53
Jabil Circuit Inc.	29.64
Seagate Technology	29.64
AVERAGE	32.08

Table 27

HP's Probability of Supplier Failure Due to an External Risk Event

Supplier	Probability of Failure (%)
LG International Co. Ltd.	41.01
LG Display Co. Ltd.	41.01
Jabil Circuit Inc.	29.64
LG Innotek Co. Ltd.	41.01
Samsung Electronics	41.01
Qualcomm Inc.	29.64
AU Optronics Corporation	34.53
Ingram Micro Inc.	29.64
Media Tek Inc.	34.53
LG Chem Ltd.	41.01
Intel Corporation	29.64
General Electric Co.	29.64
AVERAGE	35.19

Table 28

LG's Probability of Supplier Failure Due to an External Risk Event

Supplier	Probability of Failure (%)
ASML Holding NV	27.60
Lam Research Corporation	29.64
Applied Materials International	29.64
Samsung Engineering	41.01
FANUC Corporation	32.88
Ingram Micro Inc.	29.64
Qualcomm Inc.	29.64
KLA-Tencor Corporation	29.64
iMarket Korea Inc.	41.01
LS Corporation	41.01
Sodexo Corporation	29.75
Microsoft Corporation	29.64
AVERAGE	32.59

Table 29
Samsung's Probability of Supplier Failure Due to an External Risk Event

Supplier	Probability of Failure (%)
Hon Hai Precision Industry Co.	34.53
Jabil Circuit Inc.	29.64
LG Display Co. Ltd.	41.01
Samsung Electronics	41.01
Tokyo Electric	32.88
Canon Inc.	32.88
Qualcomm Inc.	29.64
Nihon Denkei Co.	32.88
Activision Blizzard	29.64
Taiwan Semiconductor	34.53
Pegatron Corporation	34.53
FIH Mobile Ltd.	34.53
AVERAGE	33.97

Table 30
Sony's Probability of Supplier Failure Due to an External Risk Event

A comparison of supplier failure probabilities due to an external risk event for the leading global electronic equipment companies is presented in Table 31. The values in this table represent the average supplier failure probability for each company's key suppliers. An examination of the

table reveals that Cisco Systems Inc. retains the lowest probability of supply chain failure due to an external risk event (30.09%), while LG Electronics Inc. has the highest probability of failure as a consequence of experiencing such an event (35.19%). A further comparison of Cisco's and LG's

probability of supplier failure due to an external risk event profiles using the results in Tables 25 and 28 respectively illustrates a probability of failure range of 25.24% to 34.53% for Cisco, while the failure range is 29.64% to 41.01% for LG. Additionally, Cisco's top supplier is in a country with the third highest probability of failure (Taiwan), while LG's top two suppliers are in a country with the second highest probability of failure (South Korea). Moreover, Cisco only has two suppliers in Taiwan while LG has five suppliers in South Korea. Finally, nine of Cisco's top

twelve suppliers are in a country with the sixth highest probability supplier failure due to an external risk event (United States).

Company	Probability of Failure (%)
LG	35.19
Sony	33.97
Apple	33.59
Samsung	32.59
HP	32.08
Telefona	31.61
Cisco	30.09
AVERAGE	32.73

Table 31
Comparison of Supplier Failure Probabilities Due to an External Risk Event

Conclusions

This study examines external risk factors associated with key suppliers in the electronic equipment industry through the creation of Bayesian networks. The results of the analysis illustrated in Table 31 suggest that the industry collectively exhibits a moderate risk (32.73%) of experiencing a disruption due to an external risk event occurrence with a key supplier. The probability of failure due to such an event for the leading global electronic equipment companies examined in this study ranges from 30 to 35%. However, as illustrated in Tables 24-30, the probability of failure due to an external risk event for key suppliers in the electronic equipment industry ranges from 25 to 41%. This suggest that these electronic equipment companies may have an opportunity to mitigate their exposure to the types of external risk examined in this study

by reconfiguring their supply chain towards those suppliers with the lowest probability of experiencing such an event. For example, LG's top two suppliers are in a country with the second highest probability of failure due to an external risk event (South Korea), and its supply chain contains a total of five suppliers from this country. Thus, LG may be able to reduce its external risk exposure by re-orienting its supply chain activities in the direction of suppliers exhibiting lower levels of risk in this area. Table 28 reveals that six of LG's twelve key suppliers in the electronic equipment industry are based in the United States. This country has the sixth highest probability supplier failure due to an external risk event. Therefore, LG may consider shifting a larger portion of their cost exposure towards these suppliers.

Managerial Implications

The methodology presented in this study can be used to monitor external risks in supply chain networks by supply chain professionals. As part of a supply chain governance agreement, suppliers could be required to periodically update their external risk probability profiles for the risk events outlined in Tables 9-15. These updates could be applied to Bayesian networks to create new risk profiles for each supplier. Adjustments to existing risk management strategies, policies, and tactics could then be made to reflect the current risk realities associated with the supply network. Thus, the methodology can provide a proactive means of managing all categories of supply chain risks.

The methodology can also be used by firms to develop supplier external risk profiles to determine expenditure risk exposure levels. Firms can then decide if it is in their best interest to either continue or terminate a supplier relationship based upon its risk profile. Supplier external risk profiles can be used to determine those external risk events which have the highest probability of occurrence, and the largest potential cost impact on the supply chain. Thus, this methodology can assist firms along with their suppliers in developing comprehensive supplier risk management programs designed to minimize the effects of external and other risk events. Finally, this methodology can be used as a tool to assist managers in evaluating current and potential suppliers. Suppliers who have experienced increases in external risk events over an extended period of time may be viewed as 'at risk' suppliers whose relationship may require reassessment by the firm. The reassessment could result in removal from the supply network. Potential suppliers willing to provide information for the generation of their risk profiles may then become viable candidates for network inclusion.

Limitations

This study provides an examination of external risk profiles associated with key suppliers in the electronic equipment industry through the creation of Bayesian networks. Therefore, the results are specific to the study sample. Also, the analysis contained in this study was conducted at the country level and did not attempt to examine external risk factors which may be associated with a particular firm. Thus, a potential limitation to the use of the methodology presented in this study is the ability to acquire the necessary data from suppliers needed for the construction of Bayesian networks to assess the probability of firm-level risk events. For example, there may be circumstances where some participants within a supply chain network are reluctant to share firm-level risk profile data with their customers. Moreover, suppliers must also be willing to periodically update this data in order to construct risk profiles that are valid and reliable.

Another potential limitation to the use of Bayesian networks to model supply chain risks is the proper identification of risk events and risk categories that can impact a supply chain. Since there are a number of approaches available for categorizing supply chain risks, the inability to incorporate all relevant risks into the model could limit its effectiveness in representing a supplier's true risk profile. Therefore, the data used in the construction of Bayesian networks must represent the supplier's current risk realities within the supply chain network. Finally, there is currently no universally acceptable level of supplier or supply chain risk established in the research literature. Hence, a limitation of this study is its inability to establish risk thresholds in these areas.

Future Research

Research studies which explore external as well as other risk profiles for suppliers and supply networks in other industries should be examined using Bayesian networks to determine if industry dynamics significantly influence supply chain risks. These studies should also incorporate firm-level data in order to gain a better understanding of the differences in risk levels inherent in firms located in the same country. Future researchers may also investigate how external risks can be mitigated within supply chains. For example, it may be possible to develop inventory management policies, procedures, and programs with a supplier or supplier group to maintain a sufficient flow of materials through the supply chain during and after an external risk event. Future research is also needed to benchmark risk levels among supply chains and suppliers within specific industries to establish guidelines regarding acceptable levels of risks. Finally, future researchers may choose to develop studies which solely focus on other categories of supply chain risks, such as network and operational, to expand the body of knowledge in these areas.

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Enhancing Leadership Skills of MBA Students Through a Leadership Fellows Program

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Abstract

This paper describes the impact of the Leadership Fellows Program in the Graduate School of Business Administration at the University of San Diego. Based on an analysis of data collected over the life of the program, the effectiveness of this innovative education program in meeting its leadership and team development objectives is described. After reviewing similar programs at other universities, as well as suggestions from participants and faculty members, strategic options for continuing and expanding the program are discussed.

Introduction

The University of San Diego (USD) Graduate School of Business Administration (GSBA) initiated the MBA Leadership Fellows program during the 2011-2012 academic year. One purpose of the program is to provide second year MBA students the opportunity to develop their leadership skills in process observation and follower coaching and development. A second objective is to improve the satisfaction and effectiveness of first year MBA teams. The third objective is to develop first-year students as productive team members and leaders.

The impetus for the program development came primarily from three sources: in response to feedback from corporate leadership during a MBA curriculum review; a review of current trends in MBA programs, strong interest in leadership development from the Dean, and expertise and interest in leadership and team development processes from senior faculty members. The program centers on the engagement between Leadership Fellows (LF) and first year MBA student learning teams working on core curriculum class projects. These interactions are referred to as “leadership labs.” The labs offer experiential development for the learning teams as well as the leadership fellows. The lab provides the opportunity for behavioral feedback, role experimentation as well as informal mentoring. The labs may be formal and scheduled as an integral part of a graduate class, or on an ad hoc basis to address a specific challenge unique to a learning team.

Labs provide second year MBA’s the opportunities to engage in the leadership activities of process consultation, behavior feedback, role analysis, and informal mentoring. All USD/MBA students participate in a minimum of three “Formal” Leadership Labs as part of their first semester, and many students take part in additional labs that support student leadership and team development before and after International Practicums, post-internship. “On-Call” Leadership Labs are available to assist Learning Teams that are facing challenges related to team dynamics.

Leadership Fellows Program

Knowing how to develop others is a crucial leadership competency. The Leadership Fellows Program in the Graduate School of Business Administration at the University of San Diego plays an integral role in the leadership curriculum by bringing together a group of talented second year MBA students to support the leadership and team development of the first-year cohort. This is an honorary elective program is open only to those students who have applied and been accepted into the Fellows Program. Leadership Fellows selection criteria are listed in Appendix 1. Interested students can apply at the beginning of their second semester in the MBA program. After a competitive application process, successful applicants are invited to take part in the program during their second year. GSBA 535: Interpersonal and Group Dynamics is a pre/co-requisite for admission to the Leadership Fellows Program.

Through GSBA 535 and a series of workshops, Fellows develop the advanced leadership skills of leading teams and developing others through coaching and mentoring. Among the specific competencies developed are: 1) team process consultation (e.g. diagnosing group dynamics, teamwork facilitation, debriefing and coaching without undermining the leader); 2) individual coaching skills (e.g. effective inquiry, asking powerful questions, balancing support and challenge, providing effective feedback, holding others accountable, utilizing, valuing and connecting across personality differences and power differentials, and using oneself in service of another's development); 3) personal development skills (e.g. self-reflection and self-awareness, leveraging strengths, stretching outside one's comfort zone, and learning from experiences.)

Fellows are assigned to teams of first-year MBAs in Leadership Labs where they coach teams regarding their charters, structure, process, and individual effectiveness. There are two types of labs to develop student teamwork and leadership skills.

- In **formal labs**, all members are required to meet at one time to complete team development assignments, discuss the personal effectiveness of members, and develop plans to improve team dynamics. Formal labs typically take place during GSBA 501, 515, 516, and consulting practicums for MBA, EMBA, and IMBA students. Fellows observe and provide feedback to teams as they work to complete team projects. Formal labs are either “in class” or “take home” where Fellows and team members agree on mutually satisfactory times and locations to meet.
- **On Call Labs** are optional labs initiated by team members or instructors, where teams meet with Leadership Fellows for coaching regarding team and interpersonal problems, or how to deal with special challenges that have developed.
- In addition, Fellows provide **individual coaching** to first year students who request it.

At the beginning of the program, Fellows receive training in team building and leadership development from USD faculty members. During the school year, Fellows meet several times with USD faculty for additional skills training, planning and debriefing labs, and peer clinics to discuss specific strategies for working with first year students and explore areas for their own skill development. Readings on topics such as process consultation, team development, feedback, coaching, and counseling provide the conceptual base for fellows to apply when they coach and mentor first-year MBAs.

Evolution of the Leadership Fellows Program

The USD MBA Leadership Fellows Program has grown in scope and scale over the subsequent five semesters since its founding. Initially the leadership labs were conducted by a team of 4-5 Leadership Fellows with 2 to 3 labs offered on a voluntary basis, outside of scheduled class time. Beginning with the fall semester of 2013, two Leadership Labs were formally integrated within a required introductory course: GSBA 501, Ethical Leadership and Organizational Behavior, and a required International MBA course, GSBA 515, Leading Multicultural Teams and Organizations. In 2014, required labs in these courses expanded to three. Additional labs were conducted for second year MBA students. One was for students returning from summer internship experiences to examine and share leadership development lessons. Another was held in support of the GSBA 594, Advanced International Consulting Practicums held during the January Intersession. There are both pre and post practicum labs.

The first was held before departure to address team formation, planning, and leadership challenges associated with these short duration, high intensity business projects. The second was held upon the teams' return, to debrief the experience and summarize and share the lessons learned. By 2014 the labs involved twelve Leadership Fellows supporting fourteen student learning teams per semester. Data regarding the conduct of leadership labs to date is presented in Figure 1.

Initiation

The Leadership Fellows Program was launched with a simple gathering of second year MBA students assessed by organizational behavior course instructors to have exceptional aptitude for team leadership and interest in developing coaching skills as peer mentors. The first few meetings pre-dated the assignment of a Director, and concerns were expressed about the direction and intent of the group. Proposals for initial Leadership Fellows Program roles varied. Ideas ranged from suggestions that the Leadership Fellows should coach MBA learning teams that "needed" them, to suggestions that the Leadership Fellows should evaluate all of the MBA learning team projects, to Leadership Fellows should conduct "real-world" consulting projects themselves in order to showcase the leadership effectiveness of USD MBA students. The initial cadre of Leadership Fellows did not embrace roles that appeared evaluation or demonstration focused. The idea of being positioned as "expert" leaders among the peers nearly caused a collapse of the group.

The near dismantling of the group, and the whole program, was a significant learning experience. The Leadership Fellows revealed themselves to be responding to intrinsic motivators commonly associated with servant leadership and less from extrinsic motivators typically associated with MBA students (such as opportunities to differentiate themselves from their peers, enhance resumes, prove a greater individual worth when compared to peers etc.) USD MBA Leadership Fellows wanted to serve as mentors and coaches for their peers, but they wanted to do so to enhance the team and leadership development of their peers and themselves, not for status or recognition.

Transformation

The catalyst for recovery and redefinition of purpose came from an emerging student leader of the fellows group, and a newly appointed faculty Director of the Leadership Fellows Program. Based on their experiences in the GSBA 535 course, Interpersonal and Group Dynamics, the student and professor proposed that the Fellows conduct Leadership Labs for first year MBA teams focused on enhancing interpersonal, team, and leadership skills through the facilitation of constructive performance feedback. This idea clearly resonated with the fellows, most of who had either completed the GSBA 535 course or had plans to take it in future semesters. The Leadership Fellows unanimously expressed support of the plan, and the Leadership Labs were initiated.

Moving forward into semester two, the Leadership Fellows Program had a Director, a program model, and a cohort of motivated second year MBA student leaders. Three Leadership Labs were conducted with learning teams in the first year MBA course: GSBA 501 Ethical Leadership and Organizational Behavior. Labs focused on forming productive student teams through the development of team charters, analyzing team process and member roles midway through the semester, and assessing strengths and improvements in team and member process at the end of the semester. “On-call” labs were available at teams’ requests if issues developed with team process of interpersonal relations. After gathering data on the effectiveness of this approach (to be described later in this paper) this has become the basic model for the on-going leadership labs at the university.

Format of Leadership Labs

All MBA students participate in at least three Leadership Labs during their first semester. The labs consist of three phases.

1. **Process Observation.** The initial phase of the Leadership Labs is relationship building. The “consultant” (Leadership Fellow) is introduced as an observer for the team’s initial project assignment, typically the development of a Team Charter. The Leadership Fellow observes the team and its dynamics during a project that the fellow has experienced him or herself as a first year student. This generates an initial measure of confidence for the fellow when providing feedback, and it establishes fellow’s credibility with the learning team as members realize that that the fellow understands their tasks, the process, and their challenges.
2. **Team Performance/Role Analysis.** The second phase of the Leadership Lab is a Role Analysis exercise. This phase is designed to turn the team’s focus away from the Leadership Fellow as a guide, and focus the participants on their learning team structure. The Leadership Fellow provides the team with a list of common roles found in task teams and asks participants to fill in the names of team members that most closely serve in the roles. There are two parallel learning points during this exercise. The first is the identification of the teams’ existing roles. Team members usually question the Leadership Fellow about whether the team should exhibit all of the roles listed. This leads to the exploration of whether all necessary roles are being fulfilled, and which team members are contributing the most to the team process. The second point of learning is the indirect positive and negative feedback associated

with members who were identified as being prominent in certain roles, or those not recognized as serving in roles. This recognition, or lack thereof, provides individuals with feedback and opens the door to more detailed exploration about individual contributions to the team.

One common point of this phase of the lab, is the “temporary” nature of the team. Often this point is used to explain the need for certain roles, or to rationalize the negative effects of missing, but valuable, roles. It is this temporary nature of the team that is frequently articulated as an excuse for team shortcomings or failure to utilize previously learned concepts. This rationalization suggests that MBA student teams may benefit from an honest self-appraisal of their ability to self-organize and deliver on complex tasks. The example of surgical action teams (Vashdi, Bamberger & Erez, 2013) that consist of highly specialized members cooperating in brief, but often urgent performance events that require improvisation in unpredictable circumstances provides an insightful model for understanding MBA learning teams. These findings suggest that the compositional instability of MBA teams need not impede team learning, and this needs to be explained to the team members (Sundstrom, De Meuse & Futrell, 1990).

3. **Individual Performance Feedback.** The final phase of the labs is designed to offer MBA students an opportunity to obtain individual performance feedback. The Leadership Fellow introduces the team to an exercise referred to as “The Note Card Drill.” This consists of each member writing one or more positive points of feedback, and one or more constructive points of feedback, for each teammate. The participants are cautioned to make points validated by observation of specific events. During these feedback sessions the Leadership Fellows provide examples of effective feedback and facilitate the sharing of specific events by participants. An honest self-narrative is the goal in this final phase. Fellows help participants avoid the trap of self-deception that comes from group pressure to represent each other in only positive ways. When this occurs, members avoid confronting each other about negative interpersonal behaviors, leaving participants with blind spots and missing opportunities for improving interpersonal competence (Berkovich, 2014).

Program Assessment

Participant feedback was collected after the completion of labs over the course of the second, third, and fourth semester. Two forms of data were collected: survey responses about the overall experience and written reactions about the value added in specific labs.

Survey Data

Over 400 participants completed open-ended surveys that asked them to share their assessments of positive and negative lab experiences, the Leadership Fellows impact on the quality of their projects and team process, the helpfulness of the Leadership Fellows' facilitation, and to recommendations for improvement of the Leadership Labs or Leadership Fellows Program. The responses were collected anonymously on note cards filled out after the completion of each of the 37 Leadership Labs. Figure 2 summarizes the survey data and

indicates that the participants valued the Leadership Lab experience (68% positive feedback overall). An example survey form can be seen in Appendix 1, Figure 2.

Participant Feedback Testimonials

A brief summary of participant feedback regarding the Leadership Fellows and the various types of Leadership Labs can be found in Appendix 2: Participant Feedback Testimonials Regarding Leadership Labs and Leadership Fellows. As stated by the Leadership Fellow Coordinator, “These are just a few feedback samples. I have had numerous opportunities to catch up with our Fellows individually and their insight and commitment to the Learning Teams’ success is simply inspiring. They continue to do great work and I am very proud to be counted among them!”

Assessment Discussion

While the participant approval ratings for the Leadership Fellows and Leadership labs are very high, interpreting them as a measure of success should be done in context. It is possible that these ratings are more a confidence measure of participant buy-in, than a measure of effectiveness. Measuring the long-run effectiveness of this program should consider the impact of its graduates, both student learning team participants and Leadership Fellows, as leaders in organizations. Both the high level of participant buy-in and the high level of the all-volunteer Leadership Fellows commitment clearly validate the value of this type of experience at the university. What is still needed is a mechanism to measure the impact of the program on participants after graduation. There needs to be time to absorb the feedback of program participants as they move through career positions where these skills are relevant.

One approach to an objective measurement of long-term leadership development can be found in the work of Alice Black and Garee Earnest (Black and Earnest, 2009). They suggest that leadership development program outcomes occur in three different ways: as episodic, developmental, or transformational. Episodic is related to the actions of the participants, developmental refers to observable, across-time behaviors that are represented in steps taken by individuals, and transformative outcomes are fundamental long-term shifts in behavior or performance. This model has the potential for providing more meaningful long-term assessment of the Leadership Fellows program impact on leadership development. As the participants increase generationally, there may be opportunities to observe and measure impact, as well as to adjust program execution year-to-year to increase its effectiveness.

Where Do We Go From Here?

Going forward, with the limited data gathered to date, there appear to be essentially three options to consider. After describing these options, they will be assessed in light of the leadership mission at the University of San Diego, and similar programs at other universities.

Maintain and Refine. This option offers the least risk. The program is clearly earning high participant satisfaction ratings. Resource expenditure could be limited to simply addressing the expressed concerns of the participants that fall within a minor adjustment of schedules, content,

or organization. This option would most likely lead to minor increases to an already high level of participant satisfaction.

Update and Adjust. This option would involve a substantial change to the program content and structure. There are a wide variety of content changes that could be considered. The engagement model, second year MBA students mentoring first year MBA students, should be considered as the right base from which to update. This relationship is fundamentally driving the value statements found in participant feedback. The content and lab structure are mentioned frequently enough in the constructive comments to merit consideration should this option be selected.

Radical Re-Organization. This option offers the opportunity to take the initial developmental capital earned in the existing MBA students, all of whom have now participated in, and have a personal awareness of the leadership lab experience, and applying their updated interpersonal skills to a new leadership development model. The new leadership development model has yet to be defined, but it would be reasonable to assume that with 90% of existing students expressing value in the Leadership Lab experience, that there could be sufficient interest in providing an expanded developmental experience, designed for their benefit, by the program leadership that provided the existing model

Perhaps the single greatest risk to this program decision is a simple, but subtle one. The risk is that leadership development is readily accepted as an absolute "good" to have. There are few mature organizations (if any) that do not embrace the value of leadership and acknowledge the need for competent leadership to reach organizational level success. This is exactly what places a program like leadership development in a university setting at risk. There is an inherent trap associated with trying to meet an objective that is generally accepted as worthwhile.

Considerations for Selecting the Best Program Option for USD MBA Students

Two considerations for selecting the best program option for USD MBA Students are discussed below. The first is the mission of the USD GSBA, and the second is what can be learned from similar programs at other universities.

Congruency of the Leadership Fellows Program with the Leadership Mission of the University of San Diego MBA Program

Leadership is about influence that can lead to change. Evidence of the Leadership Labs promoting this outcome is abundant in the participant feedback. While options and definitions of leadership and leader characteristics abound, it is more appropriate to evaluate future directions of the Leadership Fellows program within the context of the values of the institution conducting the program, in this case, the University of San Diego MBA program. One criterion of the LF program success, is how closely aligned the experience is with the values expressed in the USD School of Business Administration mission statement. The mission statement of the USD School of Business Administration mission statement is:

The USD School of Business Administration's mission is to develop responsible business leaders -- socially, environmentally, and professionally -- with a global mindset through academically rigorous, relevant, and values-based education and research.

The Leadership Fellows program goals and experiences appear to be very congruent with this mission statement. However, if this were the only criteria for success, it could leave a gap between what the Leadership Fellows and learning teams *do*, and what the program aims for them to *become*.

This is not an uncommon challenge with leadership development programs. While participants can be taught skills, it is ultimately up to individuals to apply these skills themselves in other contexts. Given this consideration, another measure of the LF program impact would be the impact of the USD MBA alumni leaders in quantity and alignment with their own institutions' espoused values. This will be addressed in the near future via surveys to alumni organizations.

Similar Programs at Other Universities

Of the top 10 MBA programs in the 2012 Bloomberg Businessweek rankings, six have programs similar to the USD MBA Leadership Fellows Program. MBA programs at Wharton, Harvard, Stanford, University of Washington, University of Rochester, Duke University, University of California-Davis, Emory University, NYU and Brandeis have all instituted Leadership Fellows programs within the last ten years. Most of these programs share the following characteristics:

- Leadership fellows are second year MBA students chosen because they exemplify strong leadership and interpersonal skills, integrity of character, self-awareness, ethical behavior and global sensitivity
- Leadership fellows mentor new MBA students
- Leadership fellows receive training in self-awareness, interpersonal skills, leadership and team process consultation
- Leadership fellows receive training and coach peers in teams, and in some cases, one-on-one settings

A number of the leadership fellows programs are endowed, such as the COLE leadership fellows at Duke University, the Arbuckle Leadership Fellows Program at Stanford, and the Leadership Fellows program at the University of Washington. At the Wharton School of Business for example:

“Through a rigorous selection process, 40 first-year MBA students are chosen every January to serve as Leadership Fellows. Fellows are charged with providing every first year student the opportunity to enhance their leadership potential. To achieve this goal, Citigroup Foundation sponsors a thorough training program for the Fellows that gives them greater awareness of, and exposure to, the leadership skills of self-awareness, emotional intelligence, group facilitation, and conflict mediation. Along with these skill-building training sessions, the Leadership

Program delivers team-building social opportunities to unite and encourage teamwork amongst the Leadership Fellows.”

Research on the means and implication of funding of these programs is currently underway by the authors of this paper to determine how similar support would enhance the USD LF program.

Option Comparisons

There is a significant alignment between the Leadership Fellows program and the mission of USD. However, it is important to consider a trap in selecting Option 1, to maintain and refine the current program. This option would be the easiest and least likely to require additional capital investment. Option 1 provides a success, but also risks losing the opportunity to move forward, to gain, to grow, and to lead in a world of seemingly commodity driven MBA options.

Options 2 and 3 have positive attributes to be considered. They both provide a commitment to change the program through continual evaluation and focus. The primary task is to develop a more focused definition of the desired impact point for participants. Currently this is undefined, and should be imagined by the leadership and communicated to student participants. It should help the undeveloped leaders understand the relevance of their developing leadership skills and allow some clarity to imagine their personal leadership impact. This might come in the form of a mission or vision statement. It should be woven into broader program literature and it should compel and align. This is not a small task, but the University of San Diego is uniquely positioned to make this vision a reality: USD is a private, Roman Catholic university that is agile, mature in its desire to make an impact, and less hindered by accountability to competing special interests.

Discussion and Conclusion

Successful so Far. The Leadership Fellows Program clearly connects with the leadership developmental interests of the USD MBA students. It constantly earns high participant satisfaction ratings (over 67% positive feedback and an additional 22% constructive feedback for improving the program in the future). Consequently, we conclude that the program is successful and should be continued. At this point our main concerns are how to improve and expand the program. Following are some of our current ideas about where we should go from here.

Building Student Accountability in Lab Participation. Next semester the Leadership Fellows supporting the first year MBA Organizational Behavior classes will participate in a performance feedback loop that increases the accountability measures for participants and fellows. These were developed based on the feedback of two generations of previous Leadership Fellows. One purpose is to build some “soft accountability” into the fellows program by having fellows to give feedback to us about the contributions of members of the teams they are coaching, and this feedback can influence course grades.

Leadership Fellow Assessment and Feedback. We have developed a Leadership Fellow rating form to give team members a structured way of rating, providing feedback, and rating the

effectiveness of their fellows at the end of the semester. The results will give the program coordinators feedback for each specific fellow and allow us to determine additional what additional skill training and lab formats are necessary to improve the program. Preliminary feedback and assessment forms are presented in Appendix 2.

Expansion. In order to increase the opportunity for this area of learning, the Leadership Lab concept will be expanding into the undergraduate business student realm with the addition of Leadership Labs for project teams in marketing research and organizational behavior classes. This move is based on the demand from undergraduate professors for help with facilitating undergraduate task teams working on class projects.

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Figures

Figure 1: Leadership Fellows Program Lab Statistics to Date (2012-2014)

Leadership Labs		Leadership Fellows	
Completed	37	Fellow/student ratio	1/5
Teams Supported	83	Fellow prep time per lab	2-3hours
Students engaged	400+	Average labs per semester	5

Figure 2: Leadership Fellows Program Survey Feedback

Percent	Nature of Comment
67.8%	Positive
22.3%	Negative
9.9%	Constructive
90.1%	Perceived value in the Leadership Labs (Positive + Constructive comments)
59.7%	Made some reference to enhanced interpersonal skills development
Percent	Specific interpersonal skills improved
2.2%	Listening
14.4%	Role Analysis
7.9%	Team Building
0.7%	Leadership
10.8%	Team Dynamics
2.2%	Coaching/Mentoring
5.8%	Communication
10.1%	Self-Awareness
10.0%	Collaboration
44.6%	Giving and Receiving Feedback

Appendices

Appendix 1: Leadership Fellows Selection Criteria

- Completion or con-current enrollment in GSBA 535 (Interpersonal & Group Dynamics), or an equivalent course.
- Endorsement by GSBA 535 and other USD professors regarding interpersonal and team skills, including ability to effectively coach teams and individuals.
- Successful team leadership and development experience.
- Willingness to be present for facilitating leadership labs and one-on-one coaching.
- Willingness to attend development clinics to receive feedback on their facilitation strengths and opportunities for improvement.

Appendix 2: Participant Feedback Testimonials: Leadership Labs and Leadership Fellows

Following is a brief summary of some of the participant feedback regarding the Leadership Fellows and the various types of Leadership Labs. As stated by the Leadership Fellow Coordinator, “These are just a few feedback samples. I have had numerous opportunities to catch up with our Fellows individually and their insight and commitment to the Learning Teams’ success is simply inspiring. They continue to do great work and I am very proud to be counted among them!”

Leadership Fellows

“I jumped at the opportunity to become a Leadership fellow because I believe that leadership is the single most differentiating factor in a well-rounded MBA education. Anyone can be taught the principles of finance, how to deliver a presentation, or learn the basics of operations. But leadership and the ability to work effectively in team environments has to be cultivated through experience and feedback. If I can help someone with that, then we both benefit all that much more in our journey to become better leaders, managers, and team members.”

“First & foremost I want to commend the Leadership Fellows for their time. Our Leadership Fellow helped us stay focused on our tasks, and helped us develop ways to iron out differences among the teammates.”

“Maria was a very professional and engaging leadership fellow. She got the group involved and produced very interesting results. I’d like a private follow-up with her to learn more about what she observed.”

“I thought the lab was very helpful. Mike was great helping us understand our team dynamic and creating a positive environment for us to discuss critical feedback.”

“Working with the leadership fellows was excellent. They helped us navigate a few issues, and make sense of a few abstract moments in the program. The exercise on roles was even more awesome and helpful than you think. Please have more of these.”

“Leadership Fellows Program – a great resource to have. A great experience to have a mentor for our team in the very beginning & also come full circle at the end of the semester to lead us through a tough topic (constructive feedback).”

Required Leadership Labs (In-class and take-home)

“I found the team analysis session really valuable. We wouldn’t have engaged each other or learned how the team members perceived us otherwise. I really enjoyed learning about my perceived role within the team.”

“It was my first time with this kind of feedback; sometimes it’s not obvious who’s taking a certain role on a team, and having an external person was helpful; It made me realize what I can do better for the rest of the project. I liked the activities.”

“The leadership lab was useful in evaluating our team’s positives & shortcomings. I think this was the first time where the agenda of our meeting was to evaluate each other and the team. It’s useful to have this exercise and having Leadership Fellow helped.”

“Very helpful and informative. Our Fellow was willing to meet with us based on our schedule. The program is a great idea when executed properly and our fellow does a great job. Our Fellow allowed us to “talk it out” and grow as a team.”

“I think the labs are very good. I didn’t think so at first, but they really help stir up thought as it relates to my group as well as my role in the group. And it gave perspective on the difference between by perceived role and my team’s perception of my role.”

“The leadership lab was very useful in helping me understand my leadership skills and to create an environment for constructive feedback so I could see how I am perceived (how my leadership is perceived) by others. Our fellow was extremely helpful as he also serves as an advisor about the MBA program.”

“I think the Leadership Fellows Program has helped a lot in facilitating group feedback sessions. I was fortunate to have a great group that worked very well together but it was nice to be forced to sit down with each other and discuss our group dynamic and give feedback. I realized a lot about how others perceive me and I got to say a lot of positive things I felt about my team members that I otherwise may not have had the opportunity to say.”

Post-Practicum Leadership Labs. Feedback about the Leadership Fellows Program and the post practicum lab were solicited. Participants were instructed to write down any concerns, likes, dislikes, etc. Following are some examples of the comments collected.

“It’s helpful to do post-project leadership lab. It gives teammates a chance to communicate about what could be better in the future projects.”

“Personal feedback after the project was very useful. Good to air our concerns about group, and know what to work on for future.”

“Labs are a great platform to recap, and learn about the good & bad aspects of team dynamics.”

“This program has real value in terms of knowing where the hearts of problems lie & where the strength of the team lies.”

Internship Debriefing Labs. These labs allow students to share what they learned from their internships. They also challenge them to self-manage their leadership development as they begin their second year of study. A couple of feedback comments from a recent lab are below.

"I always considered myself a leader but took the approach that leaders are born, not made. It's always good to remember that a leader should be constantly developing. The second year plan on note cards definitely helped me frame my plan."

"Thanks for making us write our leadership goals today. It really inspired me to work more on my leadership skills and challenge myself. Also, it helped us all to step back and rethink our post-graduate job roles."

Appendix 3: Leadership Lab Feedback Form

The goal of a Leadership Lab is to develop each student's ability to lead, work and communicate effectively in teams. Labs provide a feedback loop to each team member about how they can grow and improve as team leader or contributor, based on the perspective of their teammates.

With this in mind, please provide feedback on how effectively we achieved this goal in our session today, and how we can improve future lab experiences.

Date of Lab: _____ Type of Lab: _____ Formal _____ On Call _____ Facilitator name: _____

1. Please indicate your assessment of the following items by circling a number:

	Very Poor	Poor	Fair	Good	Very Good	Excellent
The lab provided an effective feedback loop to you about how others perceive you on a team (e.g. increased your self awareness)	0	1	2	3	4	5
The lab provided valuable feedback and ideas about how you can work more effectively on future projects	0	1	2	3	4	5
Your facilitator guided a meaningful discussion for all teammates, and enabled the group to discuss points of tension or conflict for the team	0	1	2	3	4	5
The overall facilitation effectively encouraged the team to give honest and meaningful feedback to each other	0	1	2	3	4	5

2. To what extent would you recommend others to participate in a lab experience so they can grow in their abilities to work effectively on a team? (circle one, explain) Please use the back if you need more space.

Do not recommend

Somewhat Recommend

Highly Recommend

Please help us understand your response:

3. What were the most effective and valuable aspects of the lab? Please explain why.

4. What were the least effective and least valuable aspects of the lab? Please explain why.

5. What topics do you wish the team would have explored further? What prevented further exploration?

6. How can we improve the lab experience to be more effective in the future?

Appendix 4: USD Leadership Fellows Program

Fellow Evaluation Form

Name of your specific fellow: _____

<u>Specific question</u>	<u>Things to look for</u>	<u>Numeric Rating</u>	<u>Comments (e.g., specific behavioral comments about the fellow)</u>
Did your fellow provide the team with specific and actionable feedback? Please rate using the 5 point scale with anchors: (1 = not at all, 3 = moderately, 5=very much so)	**Fellow pointed out specific behaviors team might wish to change		
Did your fellow strike the right balance between facilitating and leading? Please rate using the 5 point scale with anchors: (1 = not at all – the fellow either gave us too much structure or too little, 3 = moderately, 5=very much so – the fellow facilitated meetings in a way that did not make us feel constrained)	**Note when the structure provided by the fellow felt supportive or constraining		
Is there anything else we can do to help improve the leadership fellows program, or your experience with the program?	**Things we could have done to have maximized your time with your fellow.	N/A	

Welcome to the American National Business Hall of Fame

The ANBHF is a nonprofit education and research organization dedicated to creating an awareness, understanding and appreciation of exemplary business leadership. We research and promote outstanding examples of business leadership, exposing students and the public to their stories. The ANBHF also supports specific areas of academic research in management and business leadership.

One of the great strengths of the free enterprise system is its ability to create the conditions under which entrepreneurship and managerial leadership thrive. Our laureates demonstrate that lasting business success is usually based, not only upon hard work and a concern for the bottom line, but also upon a willingness to make unpopular decisions when necessary, a concern for the customer and a concern for employees. Moreover, they demonstrate that capitalism is consistent with a high standard of ethics.

Established in 1972, The American National Business Hall of Fame is dedicated to creating an awareness and appreciation of America's rich heritage of exemplary business leadership. Our organization revolves around several key programs. The foundation is our ANBHF Laureate program. We identify and induct outstanding American business leaders into the ANBHF. These exceptional business leaders' case histories offer the practical management techniques to which the laureates and historians attribute their success. In addition, the laureates' lives provide inspiration -- to take risks, to strive for excellence and to set high ethical standards.

The organization also recognizes living laureates as ANBHF Fellows. These leaders represent a career story which will be reclassified as laureates after their death. Finally, the organization recognizes Situational Role Models. These individuals represent business leaders whose careers have episodes worth remembering and celebrating but whom, for various reasons, the selection committee of the ANBHF did not feel comfortable naming the individual fellows or laureates. In this case the selection panel decided that specific ethical lapses in an otherwise memorable career were too serious to justify elevating the individual to the status of laureate. In other cases, the individual committed a management error so serious as to be of major concern to the panel of judges. Henry Ford is an example of a business leader whose extraordinary positive contributions to American economic development were seriously tarnished by several noteworthy ethical lapses and management errors. The ANBHF board recognizes the possibility that judges erred in placing persons in this category and welcomes public requests for reconsideration.

The American National Business Hall of Fame program is managed by an executive office and a Board of Representatives from universities throughout the United States.

Our laureates and fellows exemplify the American tradition of business leadership. The ANBHF has published the biographies of more than 40 of our laureates and fellows. Some are currently available online and more are added each month.

Following are the **American National Business Hall of Fame Laureates** listed in alphabetical order by last name:

FELLOWS

In the mid-1990s the board of directors created a new classification system to distinguish between living laureates and those who had passed away. For future selections living laureates were to be named “fellows”. Thus, fellows are business leaders whose career story meets the criteria for a laureate but who are still alive. They become reclassified as laureates after their death.

Following is a list of ANBHF Fellows:

Earl Bakken
Arthur Blank
John Bogle
Donald Brinckman (F)
Tom Chappell
Yvon Chouinard
Max DePree
William Hewitt
Charles Knight
Bernard Marcus
Ken Melrose
Jack Miller
Ross Perot
J. Harwood Cochrane
Jack Stack

SITUATIONAL ROLE MODELS

In addition to recognizing Laureates and Fellows, the ANBHF board of directors also recognizes individuals as “Situational Role Models.” Candidates selected for this category represent business leaders whose careers have episodes worth remembering and celebrating but whom, for various reasons, the selection committee did not feel comfortable naming the individuals fellows or laureates. In some cases a situational role model is a person for whom the selection panel wanted more information. In others the selection panel decided that specific ethical lapses in an otherwise memorable career were too serious to justify elevating the individual to the status of laureate. In some instances the individual committed a management error so serious as to be of major concern to the panel of judges. Henry Ford is an example of a business leader whose extraordinary positive contributions to American economic development were seriously tarnished by several noteworthy ethical lapses and management errors. The ANBHF board recognizes the possibility that the judges erred in placing persons in this category and welcomes public requests for reconsideration.

Following are the ANBHF situational role models.

Andrew Carnegie
Henry Ford
Samuel Insull
John D. Rockefeller
Herbert & Marion Sandler

Wallace Abbott
Mary Kay Ash
H. H. Barber
William M. Batten
Stephen Bechtel Sr.
Charles Becker
Olive Ann Beech
William Blackie
Jacob Bunn
Alfred Burdick
Leo Burnett
Andrew Carnegie
William Casey
S. Truett Cathy
J. Harwood Cochrane
Gary Comer
Fairfax Cone
John Cotter
G.D. Crain
Frederick C. Crawford
Henry Crowell
Harry B. Cunningham
Arthur V. Davis
Charles Deere
John Deere
D. J. DePree
Hugh DePree
Walt Disney
Donald W. Douglas
George Eastman
Thomas A. Edison
Harvey Firestone
Benjamin Franklin
R.J. Frisby
Bob Galvin
Paul Galvin
Roswell Garst
Parker Gates
William Gore
Andy Granatelli
W. B. Greene
Walter A. Haas
Joyce C. Hall
Ken Hansen
Sidney Harmon
Martha Matilda Harper
Henry J. Heinz

William Hewitt
James G. Hill
Conrad N. Hilton
Wayne Hummer
R. B. Hulsen
Roy Ingersoll
Richard D. Irwin
Kenneth Iverson
Eric Jonsson
James Johnson
John Johnson
Robert Wood Johnson
Robert Wood Johnson II
Henry J. Kaiser
William Karnes
Herb Kelleher
Bernard Kilgore
Dale Kirlin
Robert J. Kleberg
Ray Kroc
Edwin Land
Albert Lasker
Leonard Lavin
James Lincoln
Wesley H. Loomis III
Frances Cabot Lowell
Gust E. Lundberg
Franklin Lunding
Ian MacGregor
Irl Martin
Konosuke Matsushita
Cyrus McCormick
Col. Robert McCormick
General Robert McDermott
Eugene McDonald
William Marsteller
George Mecherle
Charles E. Merrill
Joseph L. Miller
George S. Moore
J. Pierpont Morgan
Louis Neumiller
William Norris
David N. Ogilvy
Ken Olsen
John H. Patterson
W. A. Patterson

James Cash Penney
William Cooper Proctor
Harry V. Quadracci
Tom Roberts Sr.
John D. Rockefeller
Julius Rosenwald
David Sarnoff
John G. (Jack) Searle
Richard Sears
Alfred P. Sloan
Cyrus R. Smith
Charles C. Spaulding
E. Staley
W. Clement Stone
John Swearingen
Gustavus F. Swift
Herbert Taylor
David Thomas
Fred Turner
Cornelius Vanderbilt
Marion Wade
Charles Walgreen
Charles R. Walgreen III
DeWitt Wallace
Lila A. Wallace
Sam Moore Walton
Aaron Montgomery Ward
Thomas J. Watson, Jr.
Thomas J. Watson, Sr.
Ken Wessner
George Westinghouse
Frederick Weyerhaeuser
Joseph C. Wilson
Robert Wood
Robert W. Woodruff

SAMPLE PAPER FOR THE JOURNAL OF BUSINESS LEADERSHIP OR PROCEEDINGS PUBLICATION

Jane Smith, University of Abcdef

ABSTRACT

Each paper must start off with an abstract (with the exception of case studies). The abstract should be approximately 300 words and summarize the topic and findings of the paper. It should also be italicized and be formatted in the same manner of the rest of the document (see instructions below).

When you complete your manuscript, we will ask you to submit the “camera ready” manuscript as a MS Word file (.doc or .docx). Please work with us to make the document look great! Follow these directions carefully, and the result will be a highly professional appearance.

INTRODUCTION

The following sections of this document will give you some insight into how you can use this document as a template to create a nice looking paper. However, you do not need use this file as a template if you are mindful in how you format your own document. The aim is to make your document look “**camera ready**” so that we do not need to make any modifications. For your convenience a summary of the key elements is as follows.

- The page size for the document should be set to 8.5 by 11 inches.
- The margins should be set at one inch all around.
- The document must be single spaced.
- Turn on Widow/Orphan control and avoid headings to break over a page.
- Do not use headers or footers.
- The font used should be Times New Roman, 12 point (with the size exceptions mentioned below for quotes, tables, and references).
- The document must use full justification throughout (with the excepting of the headings that need to be centered).
- Each paragraph should begin with a left tab or first line indent of one half inch (typically the default tab option).
- There should not be any extra blank lines between paragraphs unless there is a section of text that needs to stand out from the other paragraphs.
- Title of the paper must be in ALL CAPITAL LETTERS, bolded, centered and in 18 point font.
- The Author’s names and affiliations should be in 14 point font, bolded and centered. Please do not use honorifics for author names (i.e. PhD, Dr., etc.)
- Main Headings in the document should be in ALL CAPITAL LETTERS, bolded and centered in the default 12 point font. Subheadings should be in Initial Capital Letters, bolded and left justified. Pay attention not to orphan a

heading from the text that follows at the bottom of a page. More information on headings can be found in the sections below.

If the paper contains hypotheses, lists, formulae, tables, figures, footnotes, etc., please read those sections below for more information.

- References should be APA style in 10 point font, single spaced between references, with hanging indents.

The important thing is to make your document look consistent with this document before it is submitted for publication.

FORMULAE

Below we have inserted some meaningless formulae just to serve as an example. In this example we offset the equation by one half inch, then set a left tab on the ruler bar at the margin to handle the display of the equation number. You change the type of tab on the ruler bar by clicking on the little icon at the far left edge of the ruler bar. The type of tab will change, and then you can click on a location within the ruler bar to insert the newly defined tab.

$$\sqrt{a^2 + b^2} \quad x \lim_{x \rightarrow \infty} \frac{b \pm \sqrt{b^2 - 4ac}}{2a} \quad (1)$$

$$\sum_{i=1}^n X_i = \frac{1}{n}$$

When you have certain formulaic characters that are simply italicized letters (i.e. *r*, *z*, etc.) that you would like to include in the body of a paragraph, it is best just to use the letter rather than a formula box. Formula boxes in the body of paragraphs can alter the line spacing, which we would like to avoid, if at all possible.

TABLES

We encourage you to submit your tables just as you would like them to appear. With that in mind, we do have a few requests to maintain some consistency from one paper to the next. We would like for the table contents to be in 10 point font (or smaller if the size of the table calls for it) and centered on the page. Tables should NOT exceed the width of the one inch margins of the document. Please include the table's title **inside** the borders of the table as shown below. The table title should be centered and bolded, and in the same size font as the rest of the table.

Left justify, center, or right justify columns in your table to make your material more readable, as you desire. Please note that an auto indent setting in your "Normal" tab will affect the contents of your table. To correct this, highlight the table, open the "Paragraph" box in the "Home" tab, and remove the first line indent instruction. Also, please place the tables in the body of the document where you would like them to appear. If the table breaks a page, move text material from above or below to keep the table on one page. If the table cannot fit on one page, set the title and descriptive rows to "repeat" on the following page.

Table 1 DESCRIPTION OF STUDY Table Title on the Inside		
COMPANY	Name	DATE
ABC	A Name	1/1/2010
DEF	B Corp.	1/2/2009
GHI	C. Name	5/5/2008
WXY	D. Inc.	7/21/2007

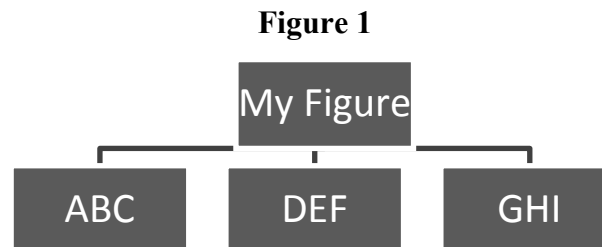
If your table is extremely complex, or extremely large, you can try to get it to work by sizing down the font to 9 point, or even 8 point. Do NOT go below 8 point type as that will make it extremely difficult to read your table. If you are still unable to get your table to work on the page, then you must create it as a jpg and shrink it to fit.

We do not accept landscape tables or figures. You must scale the table to fit in portrait mode. If you are unable to handle this yourself, you may contact us for advice or engage us to handle the conversion.

We might advise you concerning tables, that extremely complex, or busy tables are difficult to read, and do not add to the manuscript. It is better to use simple tables, even if you need more of them, than to create something that no one can understand.

FIGURES

Your figures should always be centered, and should have a title for reference purposes. When you create figures, remember to use Times New Roman as the font in the figure, and think about how it will look in the journal. Generally, figures should not exceed 6 inches in width. Put the figures where you want them to appear and format them the way you want them to look in the final document.



If you have extremely complex figures, or if you have trouble placing them in the manuscript, you may need to consider engaging us to process the figures. You may contact us for a price quote for any aspect of the formatting process.

GUIDELINES FOR CASES

Prepare cases as described above with these exceptions. First, instead of an abstract, begin the case with a “Case Description” and a “Case Synopsis,” both in italics as illustrated below. Technical information is in the Description, while the Synopsis should gain the reader's interest. The body of the case should follow the synopsis, separated by a heading. Prepare the “Instructors’ Note,” described more fully below, in accordance with these instructions as well.

The description and synopsis are important as they communicate basic information about the case to the reader. Never forget that the Note is actually more important than the case, at least in the perspective of accrediting agencies for your university!

CASE DESCRIPTION

The primary subject matter of this case concerns (describe the most important subject, ie, entrepreneurship/conflict management/ethics/etc.). Secondary issues examined include (list as many as the case contains just like for the primary subject). The case has a difficulty level of (choose one of the following: one, appropriate for freshman level courses; two, appropriate for sophomore level; three, appropriate for junior level; four, appropriate for senior level; five, appropriate for first year graduate level; six, appropriate for second year graduate level; seven, appropriate for doctoral level). The case is designed to be taught in (indicate how many) class hours and is expected to require (indicate how many) hours of outside preparation by students.

CASE SYNOPSIS

In this section, present a brief overview of the case (a maximum of 300 words). Be creative. This section will be the primary selling point of your case. Potential case users are more apt to choose cases for adoption which catch their fancy.

The Case Description and Case Synopsis are not used when the case is assigned to students. Their purpose is to inform instructors and prospective users of the case.

CASE BODY

The body of the case will follow the description and synopsis, and should be formatted in accordance with the forgoing instructions. Avoid using photographs or extensive exhibits which will make reading the case more difficult. The general rule of thumb is, if looking at this exhibit is not important to the decision point of the case, then omit it.

Please do NOT include assignment questions in the body of the case. These should be in the Instructors' Notes. Leaving them in the case body will prejudice student readers, as they will seize on the assignments, ignoring much of the content of the case.

INSTRUCTORS' NOTES

Instructors' Notes are an important part of the referee process and must be included with all cases submitted for review or for publication in any form. Notes should be prepared in accordance with these publication guidelines and prepared as a separate manuscript and a separate file because the case notes are published in a different issue from the case.

Prepare Instructors' Notes for use by instructors who are not familiar with the case issues. The note should allow the instructor to teach the case without additional research. Begin the note with a **REPEAT** of the Case Description and Case Synopsis. Follow the Case Synopsis with Recommendations for Teaching Approaches. Specific questions, assignments or teaching methodologies should follow. Be sure to **INCLUDE ANSWERS** for all questions or assignments. Please do not include the questions and assignments in the case, but include them

in the Instructor's Note instead. This gives instructors more flexibility in what to assign. Epilogues, if appropriate, should close the note. If your case is from library research, include the references for all material used in a **REFERENCES** section.

REFERENCES

References should be completed using APA style. They are to be single spaced left justified and completed in Times New Roman 10 pt font.

AMERICAN NATIONAL BUSINESS HALL OF FAME

PUBLICATION POLICIES AND PROCEDURES

Review Process

All journal submissions undergo the double blind, peer review process by members of the Editorial Review Board. The Editor strives to maintain an acceptance rate of 20-25% or less for first time submissions. The review process is as follows:

1. The journal Editor will review papers for appropriateness, and use a plagiarism verification tool to ensure the work has not been plagiarized.
2. The Editor will send the manuscript to two reviewers, without disclosing the identities of the authors or second reviewer.
3. The review results are confidentially delivered to the Editor, who then reviews the feedback to ensure the comments are relevant and non-discriminatory. The reviewer comments are sent to the author(s) with the Editor's decision regarding publication.
4. The reviewer feedback and Editor's decision is sent to the authors. Submissions are either Accepted, Accepted with Minor Revisions, Accepted with Major Revisions, or Rejected for publication.
5. Author(s) receiving an accepted with revisions determination are instructed on the process to revise and resubmit the article.
6. Revised papers are returned to the Editor who returns the revisions to the original reviewers.
7. Feedback from the second round of reviews are processed in the same manner. In some cases, author(s) are given a second opportunity to revise and resubmit papers should they not be found acceptable after the first revision.
8. If accepted for publication, the author(s) are notified by the Editor and provided with instructions on the submittal process.

Accepted Journal Article Requirements

The requirements for journal publication include:

1. The submission must be formatted according to **SAMPLE PAPER FOR THE JOURNAL OF BUSINESS LEADERSHIP OR PROCEEDINGS PUBLICATION.**
2. All author(s) must read and agree to the **ASSIGNMENT OF COPYRIGHT TO THE JOURNAL OF BUSINESS LEADERSHIP.**

Ethics Policy

The Journal of Business Leadership publication ethics policy follows the Committee on Publication Ethics (COPE) Best Practice Guidelines for Journal Editors, reviewers and authors. The JBL attests journals remain transparent and neutral to regions, religion, and will not discriminate based on the age, gender, race, and people that are physically challenged. The journal strictly abides by the review for publication ethics as recommended by the COPE and remain transparent in acknowledging the source while publishing the information on a collaborative mode.

Authors verify: Submitted manuscripts are the original work of the author(s), and that all contributing authors are listed and given credit. Manuscripts have not been published nor are under consideration by another journal concurrently. All sources of data used in the development of the manuscript are properly cited.

Reviewers verify: Manuscripts are reviewed based on the intellectual content of the paper without regard of gender, race, ethnicity, religion, citizenry or political values of author(s). Conflicts of interest during the review process must be communicated to the Editor. Manuscript information is kept confidential. Any concerns regarding the review of a manuscript are communicated to the Editor.

Editors verify: Manuscripts are evaluated in fairness based on the intellectual content of the paper without regard of gender, race, ethnicity, religion, citizenry or political values of authors. Conflicts of interest pertaining to submitted manuscripts must be disclosed. Manuscript information is confidential. Publication decisions of submitted manuscripts are based on the reviewer's evaluation of the manuscript, policies of the journal editorial board and legal restraint acting against plagiarism, libel and copyright infringement rest with the Editorial Board.

Right of Editors and Reviewers to Publish in Journals

Editors and reviewers are allowed to publish their original research in the journal. If an Editor wishes to have a paper considered for publication, the Co-Editor or Associate Editor will send the paper out for review. The review process for papers by Editors and Reviewers is the same as any other paper and no preference is given. A strict blind review process is maintained in all cases.

Retractions and Corrections

Should any paper need to be removed or edited from the journal, the issue will be updated accordingly and republished.

The Journal of Business Leadership (JBL) is the official journal of the American National Business Hall of Fame (ANBHF). JBL is a multidisciplinary journal of interest to scholars, professionals, and students in a broad range of management thinking. The purpose the journal is to encourage publications related to leadership and management issues in organizations.

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