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THE MODERATING ROLE OF ORGANIZATIONAL CAPABILITIES AND INTERNAL MARKETING IN MARKET ORIENTATION AND BUSINESS SUCCESS

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ABSTRACT

The study was conducted to measure and justify the contribution of Organizational Capabilities and Internal Marketing as moderating factors of market orientation and business success. The article used twenty four listed companies out of a total of thirty seven from Ghana to conduct the study. Seventy two senior officials were surveyed from these companies using a five-Likert Scale questionnaire. Stepwise regression approach was used to investigate the level of contribution made by organizational capabilities and internal marketing to market orientation and business success, in relations to other known existing scales. The findings revealed that, compared to existing scales, organizational capabilities contributed significantly to the components that determine the level of market orientation of listing companies. Similarly, not only did internal marketing related with ten of the eleven antecedents of market orientation; but internal marketing also contributed to all seven economic and non-economic factors determining business success. Thus, the significant contribution of the two new scales to market orientation and business performance justifies their consideration as moderating factors for the study of market orientation.

JEL: M21, M31

KEYWORDS: Business Success, Internal Marketing, Market Orientation, Organizational Capabilities

INTRODUCTION

T his paper attempted to investigate the significant contribution made by organizational capabilities and internal marketing to the level of market orientation, and consequently to business success. Market orientation refers to a business behavior that ensures that products and services are developed such that they meet customer needs and expectations (Grönroos, 2006). In this connection, a market- oriented firm shall involve the customer in designing the marketing mix in order to provide customer value. In support of this argument, Chen and Quester (2009) aver that both the implementation of customer-centric thinking in marketing; and customer value creation are critical for achieving a positive business performance (Alhakimi and Baharun, 2009).

Market orientation was first identified as the important determinant of a business' performance by Kohli and Jaworski (1990) and Narver and Slater (1990). Since the work of Kohli and Jaworski (1990) and Narver and Slater (1990), many studies have been done to try to establish the link between market orientation and firm performance. Most of these studies have found a strong positive correlation between market orientation and performance (Zebal, 2003; Shoham et al., 2005; Hafer and Gresham, 2008; Tomaskova, 2009); though a few studies found no positive linear relationship between market orientation and firm's performance (Appiah-Adu, 1998; Savitt, 2001; Osuagwu, 2006; Qu and Ennew, 2009).

Previous studies have suggested direct relationship between market orientation and business performance, using specific scales. For instance, top management emphasis has a profound influence in the success of a company. (Kirca, et al., 2005; Hammond et al., 2006; Tamaskova, 2009; Malik and Naeem, 2009). Other scales that have been used extensively to measure market orientation- business performance linkage includes: management training (Pulendran et al., 2000; Zebal, 2003; Liu et al., 2006; Morgan et al.,

2009); management risk aversion (Jaworski and Kohli, 1993; Avlontinis and Gounaris, 1999). Also used extensively are: organizational culture and organizational politics (Deshpande´ et al., 1993; Hurley and Hult, 1998; Sussman et al., 2002; Carrillat et al., 2004; Mao, 2006; Miller et al., 2008). Similarly, researchers have used centralization and formalization as scales to measure market orientation (Matsuno et al., 2002; Zebal, 2003; Kaynak and Kara, 2004; Trueman, 2004; Walter et al., 2007; Tomaskova, 2009). Moreover, previous studies have continually used scales such as state of economy (Palmer and Pels, 2002; Zebal, 2003); technological turbulence (Varela and Del Rio, 2003; Olavarrieta and Friedmann, 2008); competition (Kohli and Jaworski, 1990; Simkin, 2002; Zebal, 2003); and market turbulence (Jaworski and Kohli, 1993; Appiah-Adu, 1997).

Previous studies have also used common components as moderating factors for market orientation and business performance. These factors include: intelligence generation (Deshpande and Webster, 1989; Kohli and Jaworski, 1990; Zebal, 2003; Mavondo et al. 2005); intelligence dissemination (Wood and Bhuian, 1993; Zeithaml et al., 1990; Zebal, 2003); and intelligence responsiveness (Jaworski and Kohli, 1993; Zebal, 2003).

A cursory review of the literature suggest that despite the many studies that have been undertaken to learn about market orientation, certain critical scales, including organization's capabilities and internal marketing have not been given desired attention in the literature. This creates a gap in the market orientation-performance measurement. The supporting reason is that these two scales have been identified to make a significant contribution to eventual success of business. For instance, organizational capabilities is known to improve the relationship between quality and firm performance (Cho and Pucik, 2005; Erdil et al., 2010), financial and non-financial performances (Montes et al., 2005), and enhancement of core employees value and uniqueness, which has significant effect on the firm's performance (Lopez-Cabrales et al., 2006). Similarly, internal marketing is suggested to foster job satisfaction (Ahmed, et al. 2003; Hwang and Chi 2005), work motivation (Bell et al, 2002), and organizational commitment (Mukherjee and Malhotra 2006), resulting in firm success.

The rest of the study deals with the literature review of the two new scales with the view of conceptualizing the supporting theories. This is followed by the data and methodology used for the study; and the results and discussions. The article concludes with the concluding comments, limitations of the study, and policy directions and recommendations for further studies

LITERATURE REVIEW

This study acknowledges the moderating effects of common antecedents and components factors that have been used over the years to study market orientation and firm's performance. However, the article conceptualizes that in addition to the most common and known scales, two important scales are critical for consideration of the the study of market orientation and business performance. These factors are organizational capabilities and internal marketing. These scales are discussed below.

Organizational Capabilities

Organizational capabilities refer to the combined skills and knowledge that a firm possesses, which enable it to coordinate activities and make use of their assets (Day, 1994). Organizational capabilities involve the combination, coordination and deployment of organizational competences, which are directed towards the strategic purpose of the organization (Peppard et al. 2000). Also, organizational capabilities may refer to the ability of a company to design and implement unique business programs and practices that give it competitive advantage (Lado and Wilson, 1994). Again, Helfat and Peteraf (2003, p.1) defines organizational capabilities as "an organisational ability to perform a coordinated task, utilizing organizational resources, for the purpose of achieving a particular end result". In this connection,

organizational capabilities may be considered as organizational core competences (Stalk et al. 1992). Resources of organizations only become productive when they are turned into capabilities through effective management and coordinated efforts. Thus, it is the turning of the resources into capabilities that determines the performance of a firm, not just the availability of the resources. It is argued that organisational capabilities are valuable resources which are usually unique to the firm, rare, imitable and non-substitutable (Song et al., 2007). Capabilities give the firm competitive advantage, which fosters improvement of the organization's success, both in the short-term and long-term (Newbert, 2008). Thus, organization's resources and capabilities enhance firm's economic success.

Further, capabilities refer to the dynamic, non-finite, firm-specific and path dependent processes that are not obtainable in the market place. They are difficult to copy, and are accumulated through long-term, continuous learning (Spanos and Prastacos, 2004). Thus, organizational capabilities are seen as the ability to coordinate and deploy resources in order to achieve the firm's goals (McKelvie and Davidsson, 2009). This implies that while resources are necessary determinant of competitive advantage, combining resources to attain capabilities is the sufficient condition for success. Every business develops its own type and level of capabilities that is rooted in the realities of its competitive market, past commitments and anticipated requirements (Song et al., 2007). Thus, the firm that has the resources and abilities to put its capabilities to best use, and that invests in capabilities usually gain competitive advantage, which translates to business success (Song et al., 2007).

Capabilities may enhance competitive advantage by being unique in business practices and preventing imitation. Organisational capabilities are necessary to create economic value, sustain competitive advantage and achieve superior organizational performance. In this study we operationalize the classification of capabilities including, managerial, technical and output based capabilities in order to use organizational factors to measure the relationships between organizational capabilities and firm success (Lado and Wilson, 1994; Lopez-Cabrales et al., 2006).

Managerial capabilities are the engine through which other equally important capabilities of the firm are developed and attained (Branzei and Vertinsky, 2006). These capabilities may involve reinforcement of the organizational culture, strategic vision, obtaining employee potential, and flexible design (Lado and Wilson, 1994). In this study, we use this classification of managerial capabilities with due consideration to the four dimensions. Technical capabilities on the other hand, involve the manufacturing processes, technology, new product development, production facilities in the firm (Song et al., 2007). Technical capabilities are what the organisation needs to convert inputs into finished products (Song et al., 2007); and consequently carry out new combinations of resources, methods, systems and processes to generate new products and services (Lopez-Cabrales et al., 2006). Output-based capabilities, however, involve creating physical assets that provide value to the customer (Lado and Wilson, 2006). These physical or intangible assets are of three dimensions: quality orientation, customer loyalty, and product diversity (Lopez-Cabrales et al., (2006).

A good company reputation may arise from a firm's dedication to creating and delivering products or services of superior quality that may yield competitive advantage in the market. Repeated findings on quality either measured by customer satisfaction or perceived quality, provide a growing body of evidence that the relationship between quality and firm performance is positive (Cho and Pucik, 2005; Erdil et al., 2010). Firms also promote close relationships with customers that will in turn generate high sales and returns relative to competitors. Organisational capabilities are found to have a link with organisational performance. These capabilities are said to have effect on firm's competitive advantage, market share, profit, costs, sales revenue, and customer satisfaction. This study classifies these performance indicators into financial and non-financial performances (Montes et al., 2005).

Lopez-Cabrales et al., (2006) found out that core employees value and uniqueness has a significant effect on organizational capabilities and hence, the firm's performance. Similarly, Choe et al. (2006) identified that employee skills, organizational structure, which define organisational capabilities is positively related to the firm's performance. Furthermore, Morgan et al. (2009) posits that output-based capabilities with its three dimensions of customer loyalty, quality orientation, and product variety have a positive impact on firm performance. On the basis of the above discussion of capabilities, and how they influence business performance, it is appropriate that this study considers organizational capabilities as one of the scales to determining the market orientation of firms in the stock market.

Internal Marketing

Berry (1981) defined internal marketing as: "viewing employees as internal customers, viewing jobs as internal products that satisfy the needs and wants of these internal customers while addressing the objectives of the organization" (p. 25). In this connection, the primary components of internal marketing are the effects on employees (Ahmed et al., 2003; Ballantyne, 2003; Mudie, 2003); the effects on the organizations (Ahmed et al., 2002; Mudie, 2003; Lings, 2004); external customer satisfaction (Prasad and Steffes, 2002; Ahmed et al, 2003;), and the development of cross functional units within the organization (Ahmed et al., 2003; Ballantyne, 2003). Also, Rafiq and Ahmed (2000) defined internal marketing as a planned effort using a marketing-like approach to overcome organizational resistance to change and to align, motivate and inter-functionally co-ordinate and integrate employees towards the effective implementation of corporate and functional strategies, in order to deliver customer satisfaction through a process of creating motivated and customer orientated employees.

Internal marketing is treating both employees and customers with equal importance through proactive programs in order to achieve organizational objectives (Woodruffe, 1997). It involves giving employees the right type and level of training to perform their jobs, so as to help reduce job and role ambiguities and ensure effective external customer service (Schultz, 2004). Payne suggests that the key aims of internal marketing are the development of internal and external customer awareness and to remove functional barriers to achieve organizational effectiveness (Payne, 1993). Absence of internal marketing may result in lack of organisational commitment, which can lead to poor performance, and high cost of doing business (Caruana and Calleya, 1998). On the other hand the existence of internal marketing results in effective organisational performance, as employees would put in maximum effort to better satisfy the needs and wants of external customers (Sasser, and Arbeit, 1980; Berry, 1981; George 1990;). In connection with this, Hogg (1996) describes internal marketing as the answer to gaining employee commitment, and a better marketing option compared to the traditional internal communications programs. Again, internal marketing has been viewed as a pre-requisite for effective external marketing (Schultz, 2004). According to (Berry, 1981), internal marketing is to make the work of employees attractive, which could lead to employee satisfaction. Employee satisfaction will in turn lead to customer satisfaction; and consequently foster customer loyalty. Also, internal marketing enables the firm attracts the best personnel, retain and motivate them for effective organization's performance (Schultz, 2004).

Many empirical studies on internal marketing have focused on outcomes at the employee level. These include job satisfaction (Ahmed, et al. 2003; Hwang and Chi 2005), work motivation (Bell et al, 2002), and organizational commitment (Mukherjee and Malhotra 2006). Few studies have explicitly examined customer-related outcome of internal marketing, such as service quality (Bell et al., 2002). Previous researches on internal marketing have found internal marketing to ensure that employees are "well-attuned to the mission, goals, strategies, and systems of the company" (Gummesson 1987, p. 24). Again, internal marketing promotes the formation of a corporate identity or collective mind (Ahmed et al., 2003). Finally, internal marketing prepares employees through various training programs through which employees are helped to understand and appreciate their roles in the organisation (Berry, 1981). This means that internal marketing is a very important component of market orientation that fosters business

success of a firm (Ismail, 2009). This justifies why internal marketing is considered as one of the new scales of market orientation in this study. On the basis of the literature reviewed, this study considered the following critical questions:

How strong is the contribution of organizational capabilities to market orientation, relative to known and commonly used scales?

How does internal marketing relate to the antecedents of market orientation, relative to other market orientation components?

How significant is the contribution of internal marketing to business success of listed companies, relative to other components of market orientation?

DATA AND METHODOLOGY

Out of the 37 listed companies, 24 agreed to participate in the survey, which constituted 64% of the total population. Survey was used to collect data from the 24 companies. This sample size was appropriate because it was above the sample requirement suggested by Krejcie and Morgan (1970) in their sampling statistics table (p. 607).Three respondents were selected from each company to participate in the survey. This means, seventy two (72) respondents were used for the survey. Data was collected from August 2011 to September 2011 on the 72 officials, where 43 completed questionnaires were returned in usable form, constituting a 59.7% response rate. Regarding an acceptable response rate, Babbie (1990) quoted 60% as 'good' and 70% as very good. He further advised that interpretation of the adequacy of the response rate be placed in the context of existing literature for the type of study undertaken. A 59.72% rate achieved in this study is good considering the above statement made by Babbie (1990).

In this study, the stepwise multiple regression method was used to analyzed the data. Stepwise regression is a step-by-step method to determine a regression equation that begins with a single independent variable and adds or deletes independent variables one by one (Lind et al., 2008). The use of stepwise multiple regressions aided in determining the significant of variables (antecedents of market orientation) relative to other variables (components of market orientation) (Draper and Smith, 1981). Additionally, the stepwise regression helped improve the equation of every stage, and at the same time minimized the challenge associated with working with many independent variables. The appropriateness of using stepwise regression analysis in this study is supported by the fact that the study aimed at selecting significant variables. Also, the study used some new scales of independent variables which needed stepwise regression technique to screen them, and compare them with existing scales of previous studies.

RESULTS AND DISCUSSIONS

Relationship between Antecedents of Market Orientation and Components of Market Orientation

The findings of Table 1 to Table 4 suggest that the level of market orientation of listed companies, defined by the four components, were determined by ten antecedents. Organizational capabilities were found to contribute to three of the four components that defined the level of market orientation. This is one of the highest contribution made by a single antecedent factor. Other antecedents contributed to one and in some cases two of the components of market orientation.

The Table 1 below presents the results of all the eleven antecedents used in this study and their contribution to internal marketing component of market orientation. Antecedents with insignificant contributions were removed from the regression equation.

Table 1: Antecedents of Market Orientation: Stepwise Regression, Dependent Variable: Internal Marketing

VARIABLE	B	B	t	Þ
Management risk aversion	-0.28	-0.31	-2.2	0.042
Management training	0.32	0.39	2.91**	0.011
Management leadership style	0.4	0.47	3.47**	0.005
Organizational capabilities	0.63	0.43	3.07**	0.006
Organizational culture	0.68	0.53	4.07***	0.001
Organizational politics	0.53	0.45	3.33**	0.006
Centralization	-0.3	-0.4	-2.80**	0.01
Competitive intensity	0.58	0.44	3.14**	0.006
Technological turbulence	0.37	0.42	2.99**	0.013
The state of the economy	0.37	0.37	2.75**	0.015

This Table shows the contribution of antecedents of market orientation to Internal Marketing. The table reflects the contribution each scale makes to Internal Marketing

Table 1 shows that ten factors contributed to the internal marketing of the firms, including organizational capabilities. Management risk aversion (ß= -0.28, Þ<0.042) and centralization (ß= -0.3, Þ<0.01) had negative relationship with internal marketing. Nevertheless, management training(ß= 0.32, Þ<0.011), management leadership style(ß= 0.40, Þ<0.005), organizational capabilities(ß= 0.63, Þ<0.006), organizational culture(ß= 0.68, Þ<0.001), organizational politics(ß= 0.53, Þ<0.006), competitive intensity(ß= 0.58, Þ<0.006), technological turbulence(ß= 0.37, Þ<0.013), and state of the economy(ß= 0.37, Þ<0.015), made a direct positive contribution to internal marketing

Table 2 below presents the findings of all the eleven antecedents used in this study and their contribution to intelligence generation component of market orientation. Antecedents with insignificant contributions were removed from the regression equation.

Tabla 2. Antecedents of Market Orientation: Stepwise Regression, Dependent Variable: Intelligence Generation

VARIABLE	B	B	t	Þ
Management leadership style	0.43	0.44	3.15**	0.005
Organizational capabilities	0.63	0.41	2.86**	0.011
Organizational culture	0.55	0.41	2.87**	0.011
Organizational politics	0.39	0.35	2.41**	0.022
Centralization	0.35	0.44	3.19**	0.006
Competitive intensity	0.58	0.44	2.70**	0.014
Technological turbulence	0.37	0.42	2.79**	0.009

This Table shows the contribution of antecedents of market orientation to Intelligence Generation. The table reflects the contribution each scale makes to Intelligence Generation

Table 2 identifies seven factors that contributed to the intelligence generation of the listed firms, including organizational capabilities. Management leadership style (ß= 0.43, Þ<0.005), organizational capabilities (ß= 0.63, Þ<0.011), organizational culture (ß= 0.55, Þ<0.011), organizational politics (ß= 0.593, Þ<0.022), centralization (ß= 0.35, Þ<0.006), competitive intensity (ß= 0.58, Þ<0.014), technological turbulence (ß= 0.37, Þ<0.009), made a direct positive contribution to internal marketing

The Table 3 below presents the results of all the eleven antecedents used in this study and their contribution to intelligence dissemination component of market orientation. Antecedents with insignificant contributions were removed from the regression equation.

Table 3 revealed that five antecedent factors contributed to the intelligence dissemination component of the firms, without organizational capabilities. Management risk aversion (ß= 0.31, Þ<0.038), organizational culture (ß= 0.44, Þ<0.032), centralization (ß= 0.24, Þ<0.032), competitive intensity (ß=

0.35, Þ<0.021), and technological turbulence (ß= 0.27, Þ<0.016), made a direct positive contribution to internal marketing.

Table 3: Antecedents of Market Orientation: Stepwise Regression, Dependent Variable: Intelligence Dissemination

VARIABLE	B	B	t	Þ
Management risk aversion	0.31	0.32	2.15*	0.038
Organizational culture	0.44	0.33	2.24*	0.032
Centralization	0.24	0.33	2.24*	0.032
Competitive intensity	0.35	0.35	2.41*	0.021
Technological turbulence	0.27	0.37	2.53**	0.016

This Table shows the contribution of antecedents of market orientation to Intelligence Dissemination. The table reflects the contribution each scale makes to Intelligence Dissemination

The Table 4 below presents the results of all the eleven antecedents used in this study and their contribution to intelligence responsiveness component of market orientation. Antecedents with insignificant contributions were removed from the regression equation.

Table 4: Antecedents of Market Orientation: Stepwise Regression, Dependent Variable: Intelligence Responsiveness

VARIABLE	B	B	t	Þ
Top management emphasis	0.33	0.4	3.13**	0.008
Organizational capabilities	0.67	0.44	3.33**	0.007
Organizational culture	0.62	0.46	3.38**	0.003
Organizational politics	0.48	0.41	2.93**	0.014
Centralization	-0.31	-0.39	-2.75**	0.017
The state of the economy	0.36	0.4	2.80**	0.016

This Table shows the contribution of antecedents of market orientation to Intelligence Responsiveness. The table reflects the contribution each scale makes to Intelligence Responsiveness

Table 4 shows that six factors related in one way or the other with the intelligence responsiveness of the listed firms, including organizational capabilities. Tap management emphasis (ß= 0.33, Þ<0.008), organizational capabilities (ß= 0.67, Þ<0.007), organizational culture (ß= 0.62, Þ<0.003), organizational politics (ß= 0.48, Þ<0.014), and state of the economy (ß= 0.36, Þ<0.016), made a direct positive contribution to intelligence responsiveness. However, centralization (ß= -0.31, Þ<0.017), related negatively to intelligence responsiveness.

The findings of Table 1 to 4 apart from organizational culture which contributed to the level of market orientation by affecting all four components, organizational capabilities and organizational politics were the next highest contributors to market orientation. They individually contributed to three of the four components. The rest of the antecedents respectively, contributed to either one or two components. This suggests that the introduction of organizational capabilities as new scale for measuring market orientation and business performance was very appropriate

Relationship between Components of Market Orientation and Business Success

The relationship between components of market orientation and economic success as represented by Tables 4 to 10 indicate that the economic performance of listed companies in Ghana is influenced by the level of market orientation. The findings revealed that two components of market orientation, including internal marketing and intelligence generation, were the only factors that significantly influenced the economic success of listed companies in Ghana. Nevertheless, while internal marketing was found to contribute to all the three economic success constructs, intelligence generation was found to contribute to two out of the three economic success factors.

Economic Success

Economic success of the firms is represented by Tables 5 to 7. Table 5 below is a presentation of the results of contributions of the four components factors to business profitability. Components that made insignificant or no contribution were eliminated from the regression equation.

Table 5: Consequences of Market Orientation: Stepwise Regression, Dependent Variable- Profitability

VARIABLE	B	B	t	Þ
Internal marketing	0.49	0.41	2.90**	0.013
Intelligence generation	-0.43	-0.33	-2.20*	0.034

This Table shows the contribution of components of market orientation to Profitability. The table reflects the contribution each component scale makes to Profitability

As indicated by Table 5 internal marketing (ß= 0.41, Þ<0.01) and information gathering (ß= - 0.33, Þ<0.03) were statistically significant related to profitability. While internal marketing was found to be significant and positively related with profitability; intelligence generation showed a significant but negative relationship with profitability. The other two market orientation components, intelligence dissemination and intelligence responsiveness were dropped from the stepwise regression equation, suggesting that they made no or insignificant contribution. The positive significant relationship between internal marketing and profitability suggest that, when other market orientation components are held constant, with an increase of internal marketing the companies achieve better profitability. On the other hand, the negative significant relationship between information gathering and profitability suggests too much concentration on intelligence gathering might result in reduction of profitability of the listed companies Table 6 below presents the results of contributions of the four components factors to the return on investment. Components that made insignificant or no contribution were eliminated from the regression equation.

Table 6: Consequences of Market Orientation: Stepwise Regression, Dependent Variable- Return on Investment

VARIABLE	B	B	t	Þ
Internal marketing	0.67	0.55	4.24***	0.000

This Table shows the contribution of components of market orientation to Return on Investment. The table reflects the contribution each component scale makes to Return on Investment

Table 6 shows that only internal marketing (ß = 0.55, Þ<0.00) was identified to be statistically and positively significant with return on investment. The other three market orientation components, including intelligence generation, intelligence dissemination and intelligence responsiveness were dropped from the stepwise regression equation, due to their low or insignificant contribution. The positive significant relationship between internal marketing and return on investment suggest how increased level of internal marketing contributes meaningfully to the improvement in returns on investment of the listed companies, assuming that other factors are held constant

Table 7 below is a presentation of the results of contributions of the four components factors to business sales growth. Components that made insignificant or no contribution were eliminated from the regression equation. From the Table 7 the results points out that internal marketing (ß= 0.44, Þ<0.01) and information gathering (ß= 0.34, Þ<0.03) were positively and statistically significant related to profitability. While significant relations were found with the two components of market orientation and profitability, the other two market orientation components, including intelligence 3issemination and intelligence responsiveness were dropped from the stepwise regression equation; due to their low or insignificant contribution. The positive significant relationship of internal marketing with profitability

suggest that, a listed company is in a better position to grow its sales in an environment where there is high level of internal marketing, when other market orientation components are held constant. Similarly, the statistically significant positive relationship between intelligence generation and sales growth, indicates clearly that intelligence gathering is a pre-cursor for growth in sales of listed companies in Ghana.

Table 7: Consequences of Market Orientation: Stepwise Regression, Dependent Variable- Sales Growth

VARIABLE	B	B	t	Þ
Internal marketing	0.5	0.44	3.32**	0.014
Intelligence generation	0.35	0.34	2.33*	0.025

This Table shows the contribution of components of market orientation to Sales Growth. The table reflects the contribution each component scale makes to Sales Growth

The presentation of Tables 5 to 8 suggests that internal market makes a superior contribution to business success than any of the other components. On the basis of the findings it is concluded that in relation to the components used in market orientation studies, one of the critical scale for measuring business success is internal market

Non-Economic Success

Tables 8 to Table 11, which present the correlation between market orientation and non-economic performance, indicate that the non-economic success of listed companies in Ghana is influenced by the level of market orientation. The results suggested that three components of market orientation, including internal marketing, intelligence generation and intelligence responsiveness, significantly influence the employee commitment of listed companies in Ghana. Only one component, including intelligence dissemination was dropped from the stepwise regression equation. Moreover, all four components including internal marketing, intelligence generation, intelligence dissemination and intelligence responsiveness, were identified to significantly influence the espirit de corps of listed companies. Also, three market orientation components, including internal marketing, intelligence generation and intelligence dissemination were identified by the regression equation as statistically determining the customer satisfaction of listed companies; while intelligence responsiveness was dropped by the regression equation. Finally, three market orientation components, including internal marketing, intelligence generation and intelligence responsiveness were found by the regression equation to determine the customer retention of the firms, with intelligence dissemination been dropped by the regression equation. Table 8 below is a presentation of the results of contributions of the four components factors to business employees' commitment. Components that made insignificant or no contribution were eliminated from the regression equation.

Table 8 shows that the employees' organizational commitment of the listed companies in Ghana is a function of internal marketing, intelligence generation, and information responsiveness components of market orientation. The findings of the study suggest that, internal marketing (ß= 0.35, Þ<0.02), intelligence generation (ß= 0.43, Þ<0.01) and intelligence responsiveness (ß= 0.39, Þ<0.02) were found to be statistically and positively related to the employees' organizational commitment, intelligence dissemination was dropped from the stepwise equation because of its low or insignificant contribution. The findings also suggest that, with the one unit increase of internal marketing, employees' organizational commitment was increased by .35 units; with the one unit increase of intelligence generation, employees' organizational commitment was increased by 0.43 units; and with the one unit increase of intelligence responsiveness, employees' organizational commitment was increased by .39 units.

Table 8: Consequences of Market Orientation: Stepwise Regression, Dependent Variable- Employee Commitment

VARIABLE	B	B	t	Þ
Internal marketing	0.29	0.35	2.80**	0.023
Intelligence generation	0.32	0.43	3.08**	0.013
Intelligence responsiveness	0.32	0.39	2.73**	0.017

This Table shows the contribution of components of market orientation to Employees Commitment. The table reflects the contribution each component scale makes to Employees Commitment

Table 9 below presents findings of the contributions of the four components factors to business spirit de corps. Components that made insignificant or no contribution were eliminated from the regression equation.

Table 9: Consequences of Market Orientation: Stepwise Regression, Dependent Variable- Espirit de Corps

VARIABLE	B	B	t	Þ
Internal marketing	0.4	0.45	3.22**	0.007
Intelligence generation	0.36	0.41	2.86**	0.01
Intelligence dissemination	0.28	0.35	2.39*	0.023
Intelligence responsiveness	0.41	0.47	3.35**	0.005

This Table shows the contribution of components of market orientation to Espirit de Corps. The table reflects the contribution each component scale makes to Espirit de Corps

Table 9 suggests that the espirit de corps of the listed companies in Ghana is a function of internal marketing, intelligence generation, intelligence dissemination, and intelligence responsiveness components of market orientation. The findings of the study suggested that, internal marketing (ß= 0.45, Þ<0.01), intelligence (ß= 0.41, Þ<0.01), intelligence dissemination (ß= 0.35, Þ<0.02), and intelligence responsiveness (ß= 0.47, Þ<0.01) were found to be statistically and positively related to the espirit de corps. None of the components was dropped by the stepwise regression equation. Thus, the findings suggest that, with one unit increase of internal marketing, espirit de corps was increased by 0.45 units; with the one unit increase of intelligence, the espirit de corps or teamwork was increased by 0.41 units; with one unit increase of intelligence dissemination the teamwork was increased by 35 units; and with the one unit increase of intelligence responsiveness, the espirit de corps was increased by 0.47 units.

Table 10 below shows the results of contributions of the four components factors to business customer satisfaction. Components that made insignificant or no contribution were eliminated from the regression equation. From the Table 9 it is clear that the three components, including internal marketing, information gathering, and influence the customer satisfaction of the listed companies in Ghana. The results of the study showed that, internal marketing (ß= .36, Þ<0.02), intelligence generation (ß= .33, Þ<0.03), intelligence dissemination (ß= .48, Þ<0.01) were found to be statistically and positively related to the customer satisfaction outcome. Intelligence responsiveness was dropped by the stepwise regression equation. Thus, the findings suggest that, with one unit increase of internal marketing, customer satisfaction was increased by .36 units; with the one unit increase of intelligence, customer satisfaction was increased by 0.33 units; and with one unit increase of intelligence dissemination customer satisfaction was increased by 48 units.

Table 10 Consequences of Market Orientation: Stepwise Regression, Dependent Variable- Customer Satisfaction

VARIABLE	B	ß	t	Þ
Internal marketing	0.35	0.36	2.51**	0.016
Intelligence generation	0.3	0.333	2.24*	0.034
Intelligence dissemination	0.46	0.48	3.50**	0.001

This Table shows the contribution of components of market orientation to Customer Satisfaction. The table reflects the contribution each component scale makes to Customer Satisfaction

Table 11 below indicates the findings of contributions of the four components factors to business profitability. Components that made insignificant or no contribution were eliminated from the regression equation.

Table 11 Consequences of Market Orientation: Stepwise Regression, Dependent Variable- Customer Retention

VARIABLE	B	ß	t	Þ
Internal marketing	0.54	0.48	3.59***	0.004
Intelligence generation	0.43	0.39	2.68**	0.014
Intelligence responsiveness	0.37	0.32	2.19*	0.036

This Table shows the contribution of components of market orientation to Customer Retention. The table reflects the contribution each component scale makes to Customer Retention

Table 11 shows that the customer retention of the listed companies in Ghana is influenced by internal marketing, information gathering, and information responsiveness components of market orientation. The findings of the study suggest that, internal marketing (ß= 0.48, Þ<0.01), intelligence generation (ß= 0.39, Þ<0.01) and intelligence responsiveness (ß= 0.32, Þ<0.04) were found to be statistically and positively related to the customer retention. However, intelligence dissemination was dropped from the stepwise equation because of its low or insignificant contribution. The findings also suggest that, with the one unit increase of internal marketing, employees' customer retention was increased by .48 units; with the one unit increase of intelligence generation, customer retention was increased by 0.39 units; and with the one unit increase of intelligence responsiveness, customer retention was increased by 0.32 units.

Table 1, 2, and 4 illustrate that, organizational capabilities contributed to three of the four components of market orientation (i.e. internal marketing, intelligence generation and intelligence responsiveness. This is an indication that, organizational capabilities significantly contribute to market orientation and business success than most of the antecedents of market orientation. On the other hand, Table 1 showed that internal marketing was determined by ten of the eleven antecedents of market orientation used in the study. This suggests a high level of relationship between antecedents and the overall market orientation. Furthermore, Tables 5 to 11 illustrate that internal marketing was the only component of market orientation that contributed to all the economic and non-economic success of listed companies in Ghana. This demonstrates a high correlation between internal marketing and business performance, relative to the other three components. Thus, on the basis of the findings it is concluded that organizational capabilities and internal marketing are critical moderating factors of business success.

It is suggested in the conceptual framework of market orientation that market orientation of listed companies in Ghana is determined by a set of internal (management and organizational) and external factors. Again market orientation was proposed to influence the economic and non-economic performances of listed companies. In this connection, market orientation is suggested to play both backward and forward integrated roles. While certain factors or antecedents determine market orientation of a firm (backward integration), market orientation in turn determines the business performance or consequences of a firm (forward integration).

CONCLUDING COMMENTS, LIMITATIONS AND FUTURE RESEARCH

The study addressed the issue of the significance of the two new scales introduced. The purpose was to measure the significant contribution these two scales make toward market orientation and business performance. In order to arrive at appropriate conclusions, multiple regression equation was used to measure the contribution of both the existing and new scales. This approach helped to compare the contribution of new scales and that of existing scales. The results justified the introduction of the two scales as moderating factors of market orientation and business performance. The organizational capabilities were found to strongly contribute to three of the four components of market orientation. Of the ten antecedents only organizational culture and organizational politics had similar contributions. Thus, the study supported the introduction of organizational capabilities as significant moderating factor of market orientation. Also, internal marketing was found to relate to all ten antecedents that contributed to market orientation. No other scale of market orientation components had that relationship. This suggests that internal marketing is a key component of determining the level of market orientation. Similarly, internal marketing significantly contributed to the economic and non-economic success of business, a record that no other component matched. This suggests that the contribution of internal marketing to market orientation and business success was very significant. Thus, future research should find it necessary to include as antecedents and components of market orientation respectively, organizational.

The study has some limitations. Since the existing scales are used in the analysis, it would have been ideal if literature were reviewed on them, instead of only the two new scales. However, this could not be done because that would have led to a large volume of a document that might be difficult to contain in a publication of this nature. Further, as the study used executives of the companies instead of the customers to measure customer satisfaction it is possible this would affect the true view of customers. Moreover, the use of informant approach could mean neglect of important views at different levels of management. Future studies may consider using other methods other than the informant method. This should ensure that responses come from a wide range of people from different levels of management of the companies. This could go a long way to ensuring that responses reflect not only the views of top management, but those of the whole organization. Thus, future studies could consider finding a way of using customers as respondents to measure customer satisfaction. Furthermore, future research should find it necessary to include as antecedents and components of market orientation respectively, organizational capabilities and internal marketing, to test the significant contribution made to market orientation and business success by the two scales.

It is important to state that the strengths or weaknesses of a study are always in some kind of comparison with others. Despite the limitations, this study has been significant because it has helped established the necessity of organizational capabilities and internal marketing to be considered alongside existing scales used by previous studies in order to improve the contribution of moderating factors to the level of market orientation, and subsequently to the success of business.

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RECENT ADVANCES IN APPLICATIONS OF MATHEMATICAL PROGRAMMING TO BUSINESS AND ECONOMIC PROBLEMS

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ABSTRACT

It is well known that Mathematical Programming techniques are well-developed and with widespread application. It would be useful for researchers and practitioners in the information systems field to have a categorization that would show the types of problems that have been solved using these techniques. This paper provides this categorization

INTRODUCTION

Application of business, financial and economic problems to mathematical programming is of ongoing interest. Users include insurance companies, mutual funds, farmers and shipping companies. Many fields including the fields of micro-economics and finance have been impacted directly as both private business and governments have made use of Mathematical Programming, and in particular, Linear Programming. Its use in the production and allocation of resources cannot be underestimated. Linear Programming (LP) has been said to be one of the ten most important discoveries of the last century (Dongarra and Sullivan, 2000, and Fourcans and Hindelang, 1974).

Mathematical programming is used when an optimization decision has constraints that limit decisions. For example, a business may use mathematical programming to allocate scarce resources in an optimal way, an insurance company may be required to keep a small percentage of its assets in treasuries and another percentage in fixed income securities and a farmer's crops may require a minimum amount of fertilizer.

In the remainder of this paper we provide a literature review that shows the vast scope of business and economic applications of mathematical programs. We then develop the generic Linear Programming model and then apply the model to a specific application. Finally we conclude with and give a specific direction for future research that we believe would be useful for practitioners.

LITERATURE REVIEW

Applications of optimization problems extend over many fields. For example, in the fields of economics and finance, linear programming may be applied to production problems, shipping problems, asset allocation, crop growing, allocation of sewage, mortgage backed securities portfolios other similar problems.

In the area of crops and resource management, Myers and McIntosh et al (2008) apply optimization techniques to crop rotation for Idaho potatoes. Fritzsch and Wegener et al (2011) discuss linear

programming applied to farm households in Europe. Lu and huang (2010) apply linear programming to water resource management. fan and huamg (2012) model Linear Programs in an environmental context. Hadani and Alwi (2010) apply integer linear programming to optimization of water networks and Zeng and Kang et al (2010) apply it to water management and additionally to agriculture and crop area planning. Similarly, Becker (1990) applies optimization to agriculture on a farm. April, Glover and Kelly (2002) discuss an application of optimization to portfolio optimization for capital investment products. Ho and presantat (2010) provide a literature review for supplier evaluation and selection.

Optimization is also big for financially related problems. Cagan, Carriero and Zenios (1993) apply optimization to pricing mortgage backed securities. We also discussed this topic in the context of the sub-prime mortgage problem (Yarmish, Fireworker and Nagel, 2008). Fourcans and Hindelang (1974) applied optimization to capital management for the multinational firm. Hiller and Schaack (1990) classified bond portfolio modeling techniques and Markowitz (1952, 1959) applies optimization to diversifying a portfolio. Schrage (1994) provides an overview of some financial optimization problems in the context of the LINDO optimization package and Cooper and Steinberg (1974) discuss general methods and applications.

In many applications the coefficients of the modal are not known with certainty. As an example, consider our production example further in this paper. In that example we used $70 and $80 as the profit for selling a bed and a chair respectively. This profit is based on an assumed selling price. In fact, many times a decision must be made now but the actual sale will occur later! Obviously the actual price is subject to supply and demand and using these prices in our model may be an assumption depending on the situation. To address this issue researchers have studied various techniques to deal with mathematical programming under uncertainty. Carino, Kent et al (1994), and Cariño and Ziemba (1998) discuss a model that was built for a large insurance company to balance financial obligation and investment within the context of the many laws governing insurance companies.

These laws were handled via the constraints of a mathematical program. Houck, Hedrich and Cohon (1978) apply stochastic LPs (under uncertainty) to the management of reservoir systems. Zenios (1991) address the uncertainty of mortgage backed security valuation by Monte Carlo simulations and Salmi (1974) focus on trade, production and financial flows in multinational firms. Tintner and Raghavan (1970) discuss a stochastic linear program application to dynamic planning in India. Yarmish, Nagel and Fireworker (2009) address the stochastic programming for asset allocation models. Geng and Chen (2009) apply stochastic programs for capacity planning to semiconductor wafer fabrication.

Many mathematical programs result in very large problems. This is common for the applications the must be solved under uncertainty. Research has focused on the use of parallel computers to solve these problems. Moriggia, Bertocchi and Dupaková (1998) discuss parallel computers in the context of dynamic bond portfolio management. Zenios (1991, 1994) discusses parallel computing application in general. Dantzig, (1988) the founder of linear programming, addresses mathematical programming under uncertainty with the idea of using parallel computers to help solve the large problems. Shu and Wu, (1993) discuss a parallel implementation of those applications the use the revised simplex method, Thomadakis and Liu (1996) discuss a variation for SIMD parallel machines and Yarmish and Van Slyke developed a distributed LP implementation for problems with dense matrices. The literature is vast and the number of applications continues to grow.

MODEL DEVELOPMENT

A standard LP formulation is of the form:

Maximize $\quad c_1 x_1 \quad +c_2 x_2 +c_3 x_3 \quad \ldots \quad +c_n x_n$

Subject to $\quad a_{1,1} x_1 \ +a_{1,2} x_2 + a_{1,3} x_3 \ldots \quad +a_{1,n} x_n \leq \ b_1$

*Constra*int s $\quad a_{2,1} x_1 \ +a_{2,2} x_2 + a_{2,3} x_3 \ldots \quad +a_{2,n} x_n \leq \ b_2$

$$\ldots \qquad \ldots \qquad \ldots \qquad \ldots \qquad \ldots \ldots$$

$$a_{m,1} x_1 + a_{m,2} x_2 + a_{m,3} x_3 \ldots + a_{m,n} x_n \leq \ b_m \tag{1}$$

$$x_j \geq 0 \ for \ all \ j \quad (j=1,\ldots,n)$$

OR

$$Maximize \ \sum_{j=1..n} c_j x_j$$

$$subject \ to \ \sum_{j=1..n} a_{ij} x_j \leq b_i \quad for \ all \ i \quad (i=1,\ldots,m) \tag{2}$$

$$x_j \geq 0 \ for \ all \ j \quad (j=1,\ldots,n)$$

Where c_j, a_{ij} and b_j, are coefficients and x_j are the variables to be solved for j=1..n and i=1..m.

Definition: A constraint is a row of a linear program that restricts the variables to values that would not violate the expression.

Definition: A feasible solution x is a set of x_j, j=1..n that satisfy the constraints.

Definition: An optimal solution x is a set of x_j, j=1..n that both satisfy the constraints and maximize the function.

MODEL APPLICATION

The following describes the general Production Problem. Suppose a manufacturer manufactures j products where each product yields a known profit. Suppose further that there are i resources necessary in the production of all the products and there is a known limit on the amounts of each resource. The problem to be solved is: how many of each of the products should be produced to maximize profit. To make it specific, suppose a furniture company manufactures two items: wooden chairs and beds. The company employs workers skilled in carpentry, painting and upholstery. Suppose that the number of hours of skilled labor and profit per item are as defined in table 1.

Table 1: Production Example Coefficients

	Chair	**Bed**	**Available labor**
Carpentry	6	3	48
Painting	1	1	6
Upholstery	2	6	36
Profit	$80	$70	

This table shows the Constraints and Optimization Coefficients for the Production example. The rows show the three constraints on the available labor hours for employing carpenters, painters and upholstery experts. The columns show the profit per item for chairs and beds.

From the table one notes that 6 hours of carpentry work are needed per chair and 3 hours are needed per bed. There is a maximum of 48 carpentry work hours available. Interpretation of the other rows is

analogous. We know too, that for each chair and bed manufactured one will earn $80 and $70 respectively.

This may be described as the LP problem:

$$
\begin{aligned}
\text{Maximize} \quad & 80x_1 + 70x_2 \\
\textit{Subject to} \quad & 6x_1 + 3x_2 \leq 48 \\
\textit{Constra}\,\text{int}\,s \quad & x_1 + x_2 \leq 6 \\
& 2x_1 + 6x_2 \leq 36 \\
& x_1, x_2, \geq 0
\end{aligned}
\tag{3}
$$

The economic interpretation is straightforward. We wish to determine the number of chairs (x_1) and beds (x_2) to manufacture per day to enable maximization of profits without exceeding available resources. The company is constrained by the number of work-hours per skill to which it has access.

We examine table 1 on a row by row basis. We wish to know how many chairs (x_1) and beds (x_2) to produce in order to maximize the profit $80x_1 + 70x_2$. We must be careful not to violate the constraints designated by the rows:

(9 carpenter-hours)x_1 +(3 carpenter-hours)$x_2 \leq 48$

(1 painting-hour)x_1 +(1 painting-hour)$x_2 \leq 6$

(2 upholstery-hours)x_1 +(9 upholstery-hours)$x_2 \leq 36$

CONCLUDING COMMENTS

In this paper we tried to give the reader an appreciation of the vast array of business and economic applications to mathematical programming in general and to linear Programing in particular. These optimization techniques can be an important tool for the information system professional help businesses and organizations grow.

In our literature review we included a broad spectrum of applications for these optimization techniques. These included production problems, shipping problems, asset allocation, crop growing, allocation of sewage, mortgage backed securities portfolios and many others. Linear programs also occur frequently in such other important applications as wavelet decomposition, digital filter design, text categorization, image processing and relaxations of scheduling problems.

We then developed the linear programming model and followed up with its application to a specific problem.

We presented in this paper only a taste of the breadth of applications but the number of real applications is vast. It is well known that Mathematical Programming techniques are well-developed and with widespread application. It would be useful for researchers and practitioners in the information systems field to have a categorization that would show the types of problems that have been solved using these techniques. Research in this area would be very useful. Practitioners would then be able to use this categorization as a guide to applying proper optimization techniques to their own problems.

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THE INDIVIDUAL AND ORGANIZATIONAL HAZARDS OF LONELINESS ON SALESPEOPLE

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ABSTRACT

The selling process with its various antecedents and consequences is a common focus of research. Emotion-based conditions such as exhaustion and burnout are receiving growing attention due to their tremendous impact on salesperson behavior and performance. Yet, no research currently exists into the physical effects that salespeople are at risk for due to the demanding and isolated nature of their jobs. Such health consequences could subsequently have exceedingly negative organizational drawbacks. Given the importance of Sales to most businesses, a better understanding of these substantial threats is required.

JEL: M310, M51

KEYWORDS: Sales, Salesperson, Physical, Consequences, Turnover

INTRODUCTION

Few occupations are as polarized as that of business-to-business salespeople. As organizational boundary spanners (Castleberry and Tanner, 2010), they get to spend company money, entertain current and prospective clients, travel, as well as possibly receiving a clothing allowance in addition to their regular compensation, which is probably higher than most of their co-workers. However, such privileges come with a price. Salespeople work under a level of pressure, stress, expectation, and demand that would be difficult for anyone without firsthand experience to fully comprehend and appreciate (Moncrief, Babakus, Cravens, and Johnston, 1997). The very nature of their work – establishing, developing, and maintaining professional working relationships with a wide range of personalities (both internally and externally) too often results in situations of role-oriented behavioral issues, emotional exhaustion, burnout, increased absenteeism, and a higher than average rate of turnover (Babakus, Cravens, Johnston, and Moncrief, 1999, Shepherd, Taschian, and Ridnour, 2011). Yet no discernable work exists into either the short- or long-term physical implications of a salesperson's work-style. This is especially important given that one out of every nine Americans works in sales, according to the 2011 United States Labor Bureau statistics (Pink 2013).

Further, most of a salesperson's revenue-generating responsibilities typically involve them spending much time away from direct managerial supervision. Thus, employers may not be as fully aware as they could or should be about the health status of their front-line employees. Salespeople spend a significant portion of their time traveling, on the road, to meet with prospective, new, and established customers. This means time spent being away from professional and personal support bases, hearing rejection from the majority of their social interactions, engaging in poor diet and health habits, rushing to meetings, and obtaining as much market intelligence as possible. It may also mean time spent possibly abusing substances such as alcohol, drugs, or tobacco to stay awake, alert, and gregarious. This lack of immediate supervisory observation may even result in a temptation to practice unethical sales behaviors in an effort to make sales quotas or maybe simply enough commission to cover their monthly mortgage (Ferrell and Gresham, 1985).

Unfortunately, because of these same demands, many field salespeople might meet the criteria for being clinically depressed or chronically lonely (Cacioppo and Patrick, 2008). These particular psychological

states contribute to serious health problems such as heart disease, diabetes, obesity, and more. They could cause irreparable damage, not only to the salesperson, but consequently to the overall organization. Many of the situations that lead to such conditions are either curable or avoidable if addressed directly by both the seller and his or her organization.

This paper presents a conceptual exploration of the existence of a relationship between the work-styles of salespeople, job-related chronic loneliness and serious health problems that could hamper the performance and effectiveness of a company's sales force and, consequently, the company itself. In addition, this monograph will not only instigate a dialogue among sales researchers, but also help stimulate an immediate awareness for the need of quality, in-depth research, both qualitative and quantitative, on and in topics that address physical health risks of field salespeople.

The remainder of the paper first presents contextual information on the area of personal selling, including the responsibilities of traditional, corporate business-to-business salespeople today. After this is a discussion of one of the greatest and most impactful risks among these individuals: occupational burnout. Subsequent to these issues are discussions on the subject of chronic loneliness, its definition and various manifestations, and the potential detrimental effects on both salespeople and their organizations. Last is a summary of the points presented and a call for both dialogue and research in academia.

BACKGROUND

Personal Selling

For many businesses today, the sales force is the lifeblood that generates the revenue to stay in business. As a result, those who undertake this distinctive role receive certain benefits usually not experienced by other employees or even associated with any department other than sales. Additionally, a tremendous amount of care and screening is devoted to the hiring and training of these individuals in an attempt to select the most able and qualified; those who can be of most use to the firm in achieving its goals and ambitions (Castleberry & Tanner, 2010, Vaccaro, 1990). However, the very nature of this position and what it brings to those charged with fulfilling it may not only be endangering them, it may be causing long-term damage to the company itself.

It has been well documented and written that most sales jobs come with what many perceive as benefits not typically found in any other department or division within a firm (Castleberry & Tanner, 2010). Their work is primarily unsupervised. They spend a significant amount of time away from the office. They may have a private office at their company's facility instead of an open cubicle, thus allowing them to meet with clients privately. They socialize, travel, dine, and entertain others at company expense. Perhaps they have a company car or even a wardrobe allowance. They tend to be outwardly gregarious, team players, and very good at socializing.

There is another side to such positional perquisites, however. The responsibilities, stress and demands they face, also typically unshared by (non-sales) co-workers, are numerous and burdensome (Moncrief, et al, 1997, Jones, Chonko, Rangarajan, & Roberts, 2007). For example, working outside of the office and away from direct supervision creates a situation of separation from a professional support system. The nature of the job easily creates a sense of isolationism; that success or failure is ultimately up to the salesperson and no one else. It is their duty to generate a sustaining, and hopefully increasing, level of revenue for the company. Accomplishing this requires managing a myriad of relationships – externally with both existing and prospective customers, plus third-party suppliers as well as internally with their fellow sellers, departmental management, firm management, and all other company employees whose input and cooperation is vital to their success (i.e., shipping, training, production, etc.) (Weitz & Bradford, 1999, Castleberry & Tanner, 2010).

It is crucial for the success of any organization employing salespeople that they perform to the best of their ability (Vinchur, Shipman, & Switzer 1998). A salesperson must be successful in order to keep his or her organization operating and its other employees employed (and perhaps of equal importance in today's environment - insured). Their own unique personal factors are the single greatest determinant of their future success (Churchill, et al, 1985). They expect to face rejection internally and externally on a regular basis. They continually find themselves experiencing role conflict over whether loyalty to their company or their customer is more important. Emotional exhaustion, along with role ambiguity, wavering job satisfaction and questionable organizational support can further add to an already heavy load of stress and isolation (Babakus, et al, 1999). Add to the above that, "perhaps more than any other legitimate occupation, sales has long been linked with "sleazy' activities (Hair, Anderson, Mehta, & Babin 2009). If working conditions such as these do not foster a sense of loneliness and isolationism, what does?

Salesperson Burnout

Over time, an impressive collection of academic research into the areas of salesperson burnout, emotional exhaustion, and other similar conditions has been developed (Hamwi, Rutherford, & Boles, 2011, Jackson, Schwab, & Schuler, 1986, Kemp, Borders, & Ricks, 2013, Strutton & Lumpkin 1993). There is agreement that various forms of stress, such as role conflict or ambiguity, serve as one of the primary culprits behind these psychological afflictions. Maslach and Jackson (1981) conceptualized employee burnout as consisting of three elements: emotional exhaustion, depersonalization, and a sense of low personal accomplishment. The definition of depersonalization is, "the display of negative attitudes toward customers or co-workers," (Hollet-Haudebert, Mulki, & Fornier, 2011, p. 411). Lewin and Sager (2007) found that such a mental state could led to several negative situations, including diminished job performance, decreased client relationships, and increased abuse of substances. Even though this initial study concentrated on what 'helping' professions such as teaching or health care, B2B salespeople are also very susceptible to burnout (Babakus, et al, 1999, Moravac, Collins, & Tripodi, 1990, Singh, Goolsby, & Rhoads, 1994). Yet, surprisingly, until only very recently, research into salesperson burnout was minimal, at best.

Babakus, et al. (1999) focused on the emotional element aspect of burnout in one of the first considered studies into this occupational phenomenon. They found that role-associated stress served as the main antecedent to salesperson burnout. The two components of role stress are role ambiguity and role conflict. Role ambiguity is defined as a lack of clear direction regarding either job or organizational expectations (Rizzo, House, & Lirtzman 1970), while role conflict is defined as an, "incompatibility in communicated expectations that impinge on perceived role performance…when the requests of a customer and supervisor are at odds," (Babakus, et al, 1999, p. 60). Lewin and Sager (2009), suggest that the burnout process for salespeople, "begins as a result of weakening job performance that leads to self- perceptions of diminished accomplishment," (p. 1222). Hollet-Haudebert, et al (2011) report that both burnout and stress can have negative impact on both the condition of an individual employee's health and that of a company's operational well-being. Challagalla, Shervani, and Huber (2000) found that salespeople who do not regularly interact with either their managers or colleagues, or those who perceive they do not receive an adequate level of managerial support (i.e., role ambiguity), experience feelings of isolation.

A recent study by Chen and Kao (2012) focused on the consequences of burnout and colleague isolation among flight attendants. It found that not only were there negative job outcomes, but health problems as well. Like salespeople, flight attendants represent an occupation which requires a high degree of 'emotional labor, in which the expression of organizationally desired emotions is part of one's job," (p. 868). The authors further assert that, "job demands are the main initiators of burnout, which, in turn, impair personal health," (p. 872). The general health problems measured in this study included feeling unaccountably tired, smoking and drinking more than usual, shortness of breath, dizziness, and muscle trembling, among others. Yet, despite recent studies such as these being in seeming agreement that

burnout and its various components can impair both employee performance and health, very little has been done to investigate what happens when such states of mind become chronic and begin to affect the salesperson's physical health. A conceptual framework is presented in Figure 1 below.

Figure 1: Conceptual Framework

NEGATIVE ENVIRONMENT CONDITIONS	→	POOR CHOICES REGARDING DIET and HEALTH	→	INDIVIDUAL PHYSICAL IMPACT	→	ORGANIZATIONAL FINANCIAL IMPACT
Role Ambiguity		Substance Abuse		Hypertension		Loss of sales personnel
Role Conflict		Poor eating habits		Heart disease		Loss of revenue
Isolation		Lack of exercise		Diabetes		Damage to reputation
Loneliness		Lack of medical care		Cancer		Increased insurance costs

This figure shows a framework of how a salesperson's work style and environment can lead to their making potentially harmful decisions concerning their health and diet. These decisions, in turn, can have both a detrimental impact on not only their physical and mental well-being, but also the financial and commercial well-being of their employing company.

Chronic Loneliness/Isolationism

Existing studies on the health effects of social isolation, or loneliness, have shown correlations between individuals' feelings of loneliness (based on the UCLA Loneliness Scale) and a range of health risks including obesity, heart disease, diabetes, and more (Cacioppo & Patrick 2008). These conditions could have dire consequences not only on the individual salespeople, but also on their employers, customers, families, and anyone else directly or indirectly dependent upon their performance ability. Among the potential negative effects are lost work (including any lost knowledge of products, competition, industry developments, etc.), lost sales and the accompanying lost revenues/profits. Not all financial aspects of the salesperson will decrease, however. Health insurance premiums will increase, as will the costs associated with replacing an established salesperson either temporarily while receiving medical treatment or permanently should the affected salesperson decide to seek work either for a different company or a different field altogether.

A review of several on-line databases for existing literature on published studies regarding the determinants of a salesperson's health, or the health risks faced in performance of their jobs, turned up very discouraging results. Porter, Kraft, and Claycomb (2003) conceptualized how a "wellness lifestyle" could benefit a company's sales employees to help combat stress and fatigues. However, it does not address potential root causes of such negative energies, rather acknowledges their existence and suggests a counter approach. Other research focused on how fitness programs can aid an organization by lower health insurance (Gemignani, 1998), reduced turnover (Harrison & Liska, 1994), on overcoming employee resistance to on-site exercise centers (Schwetschenau, O'Brien, Cunningham, & Jex, 2008), and how happy employees are better workers (Mason, 1992).

Not surprisingly, a second, more pinpointed search regarding the relationship between isolation/loneliness and salespeople similarly found no existing literature. Yet, given the nature of sales positions – their importance to the business world and the conditions most salespeople are required to work under - such research would be of tremendous benefit to the fields of sales management, marketing, and psychology.

Several studies were found that characterize the traits and health effects of individuals suffering from chronic loneliness (from the fields of Psychology and Sociology), as well as the desired characteristics of salespeople (from the fields of Management, Marketing, and Sales). It should be noted that although there are scientific explanations as to why human beings are, by nature, social creatures (i.e., how our survival as a species has been dependent upon this characteristic), and how isolationism runs evolutionarily counter to our instincts, they are not directly relevant to the focus of this paper and will not be addressed.

Two of the more applicable studies to this theory of detrimental health conditions among salespeople are the legendary British Whitehall studies (Marmot, Rose, Shipley, & Hamilton, 1978, Marmot, Smith, Stansfield, Patel, North, Head, White, & Grunner, 1991). Over the course of twenty years, these two works investigated the relationship between levels of physical health conditions and employment in over 10,000 civil servants throughout Great Britain. The researchers found than an inverse relationship existed between where an individual ranked in their employment hierarchy and their perceived health conditions. The lower the job status (whether determined by financial compensation, amount of control or satisfaction derived), the worse the health of the employees. Subjects showed increased prevalence of angina (chest pain due to coronary heart disease), ischemia (reduced blood supply to the heart), and chronic bronchitis (inflammation in the lungs).

Additional findings from the Whitehall studies revealed that lower employment graded persons were also more likely to engage in health-threatening behaviors, such as smoking, poor diet, and lack of exercise. For many organizations, despite the surface benefits they receive, the sale force is the front line. They, like the civil servants in Britain, are boundary spanners bridging the spans between company (government) and client (i.e., citizen). However, where these landmark studies fall short is in their failure to put forth any explanation as to why the revealed inequalities existed to begin with.

To begin to understand why, it is worth mentioning the published findings of Cacioppo and Patrick (2008). They report that functional magnetic resonance imaging (fMRI) clearly demonstrates that the part of the human brain that becomes stimulated in response to feeling emotional pain, such as that caused by being rejected by another person, is also triggered in response to physical. Their work also shows that feelings of rejection, loneliness and isolation, when continually experienced – that is, when unmet needs for connection become chronic, as often happens to salespeople – can lead to patterns of engaging in health threatening behaviors such as smoking, lack of exercise, poor diets, and such.

The ability to repeatedly experience rejection from prospects, clients, suppliers, third-party vendors, management, co-workers, etc. yet be willing to endure more is historically one of the foremost qualifications to be a successful salesperson. However, continual exposure to refusals, denials, rebuffs, cannot help but to wear down a person's personal defenses. With the passing of time and increasing experience, successful salespeople learn to control (self-regulate) their emotions as a defense mechanism to such constant negativity (Baumeister & Exline, 2001).

Control theory was once the leading approach to explain the relationship between social isolation and poor health behaviors (House, Landis, & Umbertson, 1988). The premise of this theory is that without some form of personal social support system in place via family or friends, people are more likely to suffer poor health. Yet, this does not explain the results of the Whitehall study discussed earlier (Marmot, et al, 1978, 1991)

As with any hierarchical structure, there are more people grouped together among the lower classifications. Yet, if there are more people in these lower level positions, there should be increased interaction; social isolation should be more predominant in the upper levels where there are fewer individuals. This may be the key application of Cacioppo and Patrick's findings to the world of sales. Research shows that among individuals most likely to obtain entry level sales jobs out of college, those who feel lonely do not spend any less time with others than do those who do not feel lonely. In other words, a lack of friends or social connections is not determinant of loneliness (Russell, Cutrona, de la Mora, & Wallace, 1997). Neither is loneliness reflective of having poor social skills (Cole, Hawley, Arevalo, Yung, Rose, & Cacioppo, 2007). Objective neutral support does not have emotional impact. According to a study reported in 2006, "it was the subjective sense of loneliness – not a lack of objective social support that uniquely predicted depressive symptoms, chronic health conditions, and elevated blood pressure" (Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006). Older "lonely" adults in the study had

more stressors that are objective in their lives, including greater marital strife and "run-ins" with others (Hawkley & Cacioppo, 2007). Cacioppo and Patrick (2008) later assert that people with difficulty in handling social situations, perhaps due to loneliness or social isolation issues, are often unable to advance professionally; such as those in British civil service. They state,

> What seems true for midlevel civil servants regarding a disconnect between effort and reward and a minimal control over one's circumstances seems true for individuals trapped in a persistent feeling of social isolation (p. 102).

Eventually, they conclude that there is no singular explanation as to how loneliness can cause such bad health in people. They surmise that it is a longitudinal wearing and tearing down, a "grinding process" that proceeds down five different routes. The causal paths they discover are: 1) health behaviors; 2) exposure to stressors and life events; 3) perceived stress and coping; 4) physiological response to stress; and 5) rest and recuperation (Cacioppo & Patrick, 2008, p. 99).

Salespeople travel, each of these five roads, many times over, on a daily basis. These channels may explain why salespeople are more susceptible to engaging in poor heath behaviors than others are. Such risks to an organization's front line deserves more attention than they currently receive.

Organizational Impact

The effects of salesperson burnout, whether due to emotional exhaustion, depersonalization, and perceptions of low professional (or personal) accomplishment are well documented (Begum & Wuhan, 2012, Hollet-Haudebert et al, 2011). Increase absenteeism, decreased organizational commitment, higher turnover, adverse morale, damaged relationships with existing customers (some of them potentially strategic partners) as well as with co-workers (Low, Cravens, Grant, & Moncrief, 2001, Yavas, Babakus, and Karatepe, 2008). However, when these conditions fester, potentially leading to more serious physical conditions (diabetes, heart disease including mild or severe heart attacks, hypertension, substance abuse, etc.); the organization will incur greater costs. These extra expenses could involve employee insurance programs, payout of accrued sick or vacation time, possible overtime for non-salaried support staff, additional work for other salespeople to cover the resulting unattended accounts, and the increased risk of burnout among previously unaffected sales personnel. Should the characteristic salesperson work-style result in the infliction of debilitating health conditions, it may send a wake-up call to their colleagues. This could, in turn, result in a decreased exertion of time, energy and effort in the performance of the duties for fear of putting themselves at risk; i.e., a shifting of their priorities away from the organization's needs and more toward their own.

There are ways that organizations can offset the chances of their sales force incurring a type of harmful and damaging illness. Technological advances such as Skype and Google+ could provide salespeople with the opportunity to engage clients in a face-to-face setting, which would be more personal than a letter or phone call, while still allowing them to be home with their family at night (avoiding a range of destructive travel temptations)(Marshall, Moncrief, Rudd, & Lee, 2012). Further, such application of technology could be conducted from their office where their professional support base of management, R&D, shipping, accounting, etc. are only a few steps or so away should their input be needed to help address a client's problems or concerns. Another step that organizational management could take would be to require mandatory physical exams of their sales force members. Such preventive strategies, although available to the salespeople at minimal cost under their insurance plans, are rarely used; time spent at a doctor's office is time not spent selling, i.e., not spent generating revenue and commissions. However, it would appear that a company stands to risk a considerable amount more should possible ailments go undiagnosed and or untreated. Mandatory physicals could be included as part of the annual evaluation criteria of each salesperson. Organizations should want to do everything possible to ensure

that the investments made in the individuals responsible for generating revenue and overseeing strategic relationships, while working unsupervised, are not in futility.

CONCLUSION

Salespeople are at high risk to experience burnout in their jobs because of the emotional exhaustion, depersonalization, and low sense of accomplishment experienced. This paper suggests that due to salespeople being more susceptible to risky health behaviors both organizational out-of-pocket costs and market reputation are at risk. Expenses relating to insurance premiums, temporarily or permanently having to replace an absent (hospitalized?) salesperson, and lost sales decrease the firms' existing and potential revenue streams. It also negatively affects both the seller's job performance, relationships with customers, co-workers, and their own family. Effects such as these could be extremely detrimental to an organization, especially a small one that does not have the resources readily available to react to such a very likely situation.

Although a substantive body of research exists regarding the impacts of physiologically based impairments such as salesperson burnout, emotional exhaustion, and depersonalization, little, if any, is available with respect to the physical impairments and ailments that salespeople are clearly susceptible to contracting. Steady work-styles of internal and external stress, role conflict, role ambiguity, isolationism, loneliness, bad diet, lack of sleep, overindulgences of alcohol, tobacco, and other harmful substances cannot result in a beneficial environment for either the employee or the employer. It is hoped that this conceptual paper will soon encourage sales researchers to begin both qualitative and quantitative research studies to find support (or not) for this possible explanation as to why salespeople may incur greater health risks than non-salespeople and what their employing firms can do to stave off such detrimental impacts. Sellers face a daily barrage of rejection, isolation, depression, demands, stress, and anxiety. This research study could help provide direction to abate these burdensome challenges faced by salespeople every day.

LIMITATIONS / FUTURE RESEARCH

This paper presents solely the authors perceptions regarding a possible connection between two existing areas of research: Sales and Loneliness. There are no existing studies, either qualitative or quantitative, that provide any theoretical or conceptual basis for the existence of such a linkage. It is the hope and goal of the author to stimulate both dialogue and investigation among academic (or clinical) researchers concerning this potential, and extraordinarily important, association. There are a great number of paths available for further investigation into the impact of loneliness on B2B salespeople. The two clearest would be either a study of loneliness' influence or physical manifestations on salespeople (clinical/empirical) or a qualitative inquiry of salespersons' personal experiences with the various characteristics of loneliness; extracting similar themes from the discussions. A third area worth deeper research would be the perspective of buyers who interact with salespeople experiencing this condition.

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FINDING THE DISCOUNT RATE FOR A PRIVATE FIRM USING PUBLIC COMPARABLES

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ABSTRACT

Determining the cost of equity is one of the most difficult problems in corporate finance. In this paper, we present a simple estimation example using an internet start-up company. We use public firm comparables for beta, making adjustments for leverage using Harris and Pringle's (1985) assumptions, rather than Hamada's (1972). While we consider adjustments for size, unsystematic risk, and illiquidity, we argue that significant adjustments to a Capital Asset Pricing Model approach using public comparables may be unnecessary.

INTRODUCTION

In their influential corporate finance textbook, Brealey, Myers, and Allen (2011) say that "[e]stimating the opportunity cost of capital is one of the hardest tasks in financial management" (page 8). In apparent agreement, Pinto *et al.* (2010), writing for the practitioner and academic audience of the CFA Institute, added a full chapter on return concepts to the second edition of their book *Equity Asset Valuation*. This book also contains a full chapter on the valuation of private companies, whose potential illiquidity and opacity compound the problems analysts face with public companies. In this paper, we present a straightforward approach to estimating the cost of equity for a private firm, using an internet start-up company as an example. Students in introductory corporate finance courses may find the cost of equity easier to understand if they work through a real example using real data, while more advanced students can benefit from a consideration of size and illiquidity premiums.

The cost of capital has spawned robust debate ever since Modigliani and Miller (1958) presented their "capital structure irrelevance" propositions. For example, theorists have argued about the importance of the debt ratio to capital costs: how is the cost of capital affected if debt is rebalanced annually, continuously, or held constant? Does the tax shield from interest have the same risk as the debt that generates it (so that it should be discounted at the cost of debt) or as the firm's underlying assets (so that it should be discounted at the opportunity cost of capital)? How does leverage affect the cost of equity? Analysts wishing to value private firms must be conversant with the answers to these questions and be prepared to use an approach appropriate for the valuation case at hand.

Analysts also must be prepared to deal with the complications of nonpublic firms. In some cases, investors will require premiums for small size, the lack of a public market, and the loss of diversification that attends investment in private firms. These sorts of issues are becoming increasingly important as more investors seek to add private equity to their portfolios (Rath, 2010). However, we will argue that not every private-firm investment requires a substantial premium. As Damodaran (2009) notes, the need for a premium depends upon the investor: if an investor is well diversified, he may not demand any premiums at all.

This is the case for our subject company: we argue that our start-up does not need to offer its investor premiums for its small size or illiquidity. Instead, a public-comparables approach should be sufficient.

We do need to adjust our comparables' beta values for leverage, however. We demonstrate and justify this procedure, which is based on Harris and Pringle (1985), rather than the popular Hamada (1972) equation.

The paper proceeds as follows. Following a brief literature review, we outline the example scenario and present the basic Capital Asset Pricing Model (CAPM) approach, including the leverage adjustment. We then address some questions about our approach before considering further adjustments for size, unsystematic risk, and illiquidity. In the last section, we summarize our results and conclude.

LITERATURE REVIEW

To estimate the cost of equity for our example firm, we draw on the traditional discussions of the cost of capital, especially those from Modigliani and Miller (1958) through Harris and Pringle (1985). However, this literature applies to public firms, with observable market values for their securities. For our start-up, therefore, we must also consider factors unique to private firms, as described, for example, in Damodaran (2009).

The seminal work on the cost of capital is Modigliani and Miller ("MM," 1958). In this paper, MM present their famous Propositions I and II: that a firm's market value (and cost of capital) are independent of capital structure, and that the cost of equity rises linearly as the debt-to-equity ratio rises. These results assume no corporate income taxes, a constraint MM eliminate in dramatic fashion in 1963. However, it is also important to remember that MM assume that debt is riskless and fixed in amount, which can limit the application of extensions like Hamada's (1972; discussed below).

MM's 1958 paper only briefly considers corporate income taxes. They revise that discussion in 1963, concluding that the value of a levered firm is higher than that for an all-equity firm, since the levered firm benefits from the tax shield on its debt. Again, they assume that debt is fixed in perpetuity at amount D; that the rate of debt is independent of the degree of leverage; that firms will always be able to take advantage of their tax shields through earnings offsets, carrybacks/carry-forwards, or takeover; and that tax rates do not change. Debt adds value both because it is deductible and because it is "sure." Corporate tax shields have the same risk as the interest payments that generate them, so that discounting the perpetual stream of interest tax shields (which equals the tax rate times the interest payment, or $T_C*[rate_{debt}*D]$) at $rate_{debt}$ gives the value increment from leverage, T_C*D. This appears to rise without limit as leverage increases.

Hamada (1972) uses MM's 1963 scenario to link corporate finance discussions of the cost of capital to the investments literature on the Capital Asset Pricing Model. Retaining MM's assumptions about fixed, perpetual, safe debt (as well as allowing for preferred dividends that are uncorrelated with the market), Hamada determines that the value of an unlevered firm's equity, scaled by its beta (an "asset" beta), equals the value of a levered firm's equity, scaled by its beta (a "levered" equity beta). Using MM's results to define an unlevered firm's equity as $(Value_{levered} - TC*D)$, a substitution results in the "Hamada equation": $\beta_{levered} = \beta_{unlevered} * [1 + (1 - tax\ rate)\dfrac{D}{E_{levered}}]$. This equation allows us to separate the operating risk of a company (reflected in $\beta_{unlevered}$) from its financing risk. It is therefore often employed to help adjust industry-comp betas for differences in leverage. However, despite its popularity, Hamada's equation can only be used properly in situations in which MM's assumptions—especially that debt is fixed and that its beta is zero—hold.

A more general approach to adjusting the cost of capital for leverage comes from the work of Miles and Ezzell (1980) and Harris and Pringle (1985). Miles and Ezzell note that the critical implication of MM's

debt assumption is not that the flows are perpetual, but that they create a constant leverage ratio over time. Thus, it is the debt rebalancing policy of the firm that drives the value of its debt tax shields. If a firm rebalances each period to keep its debt at a constant proportion of firm value, then only the first period's debt can be known with certainty (since the *future* value of the firm—and therefore of its debt—cannot be known with certainty). Thus, in contrast to MM, Miles and Ezzell discount only the first period's tax shield at the debt rate; later shields are subject to the risk of the assets, and therefore are discounted at the unlevered equity rate. This lowers the benefit of debt financing value relative to MM's approach.

Harris and Pringle (1985) come to a similar conclusion. Starting with the "textbook" weighted average cost of capital, they decompose it into two parts: the return required for operating risk, plus the tax benefits of debt financing. This decomposition implies that all tax shields—including the one for the first period—are discounted using the unlevered (asset) return, which lowers slightly their estimate of the benefits of the tax shields relative to Miles and Ezzell's. They justify this discount by pointing both to the risk that a firm may be unable to utilize its tax shield and to the risks of leverage-induced distress in general. The difference is not large, however, and the two approaches are equivalent given continuous rebalancing. (See Cooper and Nyborg, 2004, and Farber, Gillet, and Szafarz, 2007.) As Harris and Pringle point out, both approaches fall between the MM position ("considered too extreme by some because it implies that interest tax shields are no more risky than the interest payments themselves") and Miller's 1977 position incorporating personal taxes ("too extreme for some because it implies that debt cannot benefit the firm at all"). We will use Harris and Pringle's approach, which is advocated in Brealey, Myers, and Allen (2011).

The literature just discussed concerns public firms. Since the firm we will consider is private, however, we may need to consider adjusting the CAPM-based approach for risk factors unique to untraded firms— for example, by adding premiums for size, illiquidity, and/or lack of marketability. Damodaran (2009) discusses various approaches to estimating these premiums. (See also Rath, 2010.) Importantly, however, he notes that these sorts of premiums are not necessary for every small, illiquid firm, since the need for premiums is not a function of the issuer of a security but of its *investor*. If our firm's funding comes from well-diversified investors—as it does—then we may not need to adjust for size and liquidity at all. We will discuss this further, after presenting in the next section the basic leverage-adjusted, comparable firm approach.

EXAMPLE SCENARIO AND CAPITAL ASSET PRICING MODEL ESTIMATION

We will be estimating the cost of equity for an internet travel business owned by "Michael Powers." This start-up provides hyper-local travel-related content for communities along the northwest Pacific coast— for example, ads for hotels and restaurants, local weather, and real estate listings. (See Livingston, 2013.) All of its costs are determined as percentages of revenues; the firm has no financial or operating leverage. Initial funding for the business comes from the owner's father, "Joseph," who will receive 10% of monthly revenue, indefinitely, as compensation. Joseph knows it may take ten years or more for him to recoup his contribution, but he is well diversified and is not investing more than he can afford to lose.

We will begin our estimation of the cost of equity (k_e) for Michael's business using the Capital Asset Pricing Model (CAPM):

$$k_e = r_f + \beta * [E(R_M) - r_f],\tag{1}$$

where r_f is the return on the risk-free asset, $E(R_M)$ is the expected return on a (theoretical) value-weighted portfolio of all the risky assets in existence (the "market"), and β (beta) represents the firm's sensitivity to systematic (market) risk. The CAPM is an ex ante, one-period model that assumes that all investors

are well diversified and share all relevant expectations, and that markets are frictionless. We clearly must make many assumptions to make this model operational.

First, since no asset is truly risk free, we must find a proxy for r_f. It is customary to use a U.S. Treasury security's yield, but there have been two schools of thought on which Treasury rate to choose. (See Table 1.) One camp prefers the shortest-term T-bill rate, since these short-term assets have the least inflation risk, are the most nearly risk-free assets that we have, and therefore are our best proxy for the riskless construct. Short-term rates are also consistent with the one-period horizon of the CAPM. The other camp prefers the long-term T-bond rate, which includes a maturity premium. Advocates for this position assert that, if we are looking for a benchmark for an infinitely lived asset like stock, we want to use a long-term benchmark like the 30-year Treasury. Using a short-term benchmark to price a long-term asset is like comparing apples to oranges.

Table 1: Current Debt Yields

maturity	Treasury	Corporate
3 months	-0.02	
6 months	0.03	
2 years	0.34	1
5 years	1.43	3
10 years	2.91	4
20 years		5
30 years	4.28	

This table provides Treasury and corporate yield data (source: http://www.bondsonline.com; accessed 7/19/11). We will use this data to help estimate the inputs to the Capital Asset Pricing Model.

There are also intermediate positions. Pinto, *et al.*(2010) call the 20-year T-bond a "reasonable" choice, and note that Ibbotson's long-term bond yield is based on a portfolio of bonds with terms averaging 20 years. Recently, even the 10-year T-note has become a popular benchmark, given that the 30-year bond was not issued for several years in the early 2000s. Nonetheless, we agree that, "the analyst should try to match the duration of the risk-free measure to the duration of the asset being valued" (Pinto, *et al.,* 2010), so we will use the 30-year rate of 4.28% for r_f.

The next input to the CAPM is either the expected return on the market($E(R_M)$) or the market risk premium (the quantity ($[E(R_M) - r_f]$). Whichever approach we take, we are forced to use a proxy for the CAPM's "market" construct, which specifies a portfolio of *every risky asset in the world.* Historically, the S&P500 was practitioners' proxy of choice, although the broader Dow Jones/Wilshire 5000 is now often used.

If we choose to estimate $E(R_M)$ directly, we can use a summary of analysts' opinions about the next year's return on our proxy index. However, "analysts tend to be unduly optimistic in their earnings forecasts" (Brealey, Myers, and Allen, 2006), and projections of future market returns can be difficult for students to find. They therefore may turn to historical data, such as that tabulated by Ibbotson and Associates. (Table 2 provides some of the recent Ibbotson data.) This data is widely used and readily available. The Ibbotson data in Table 2 is broken down by asset type and is reported as geometric averages, in contrast to the theory (all risky assets) and assumptions (one-period horizon) of the CAPM. Nonetheless, at least with regard to the use of geometric averages, we note that practitioners often use geometric premiums when estimating equity returns, given that the lower geometric rates have been closer to alternative estimates based on economic theory. (See Pinto, *et al.*, 2010, for their discussion of

the "equity premium puzzle" and their assertion that use of geometric averages is "increasingly preferred" and a "mainstream" choice.)

Table 2: Selected Market Data

Metric	Benchmark/ Asset Class	Period	Value	Source
	small company stocks	1926-2009	11.9%	(1)
		1926-1999	17.7%	(2)
		1925-2004	12.7%	(2)
	large company stocks	1926-2009	9.8%	(1)
		1926-1999	13.0%	(2)
		1925-2004	10.4%	(2)
compound annual return	long-term government bonds	1926-2009	5.4%	(1)
		1926-1999	5.6%	(2)
		1925-2004	5.4%	(2)
	Treasury bills	1926-2009	3.7%	(1)
		1926-1999	3.8%	(2)
		1925-2004	3.7%	(2)
	inflation	1926-2009	3.0%	(1)
		1926-1999	3.2%	(2)
		1925-2004	3.0%	(2)
	common stocks		4.1%	(3)
nominal average annual return	government bonds		5.2%	(3)
	Treasury bills		11.7%	(3)
		1926-1987	7.7%	(12)
	common stocks		1.1%	(3)
real average annual return	government bonds		2.3%	(3)
	Treasury bills		8.5%	(3)
	Treasury bills	1900-2008	7.1%	(4)
historical average arithmetic premium for	Treasury bonds	1900-2007	6.5%	(5)
common stock	Treasury bills	1900-2007	7.4%	(5)
		1927-2011	7.94%	(6)
			5.5%	(7); (8)
expected risk premium			7.0%	(9)
			5.6%	(10)
			5% - 8%	(11)

This table summarizes return and premium data from the following sources: (1) Morningstar, cited in Titman, Martin, Keown (2010); (2) Ibbotson (2004); (3) Dimson, Marsh, and Staunton (2002), cited in Brealey, Myers, and Allen (2006); (4) Dimson, Marsh, and Staunton (2002), updated in Brealey, Myers, and Allen (2011); (5) Dimson, Marsh, and Staunton (2008), in Pinto, et al. (2010); (6) Fama-French factors, quoted in Chi and Fogdall (2012); (7) Welch (2001), cited in Brealey, Myers, and Allen (2006); (8) Fernandez, et al. (2012); (9) Welch (1998), cited in Brealey, Myers, and Allen (2006); (10) Brealey, Myers, and Allen (2006); (11) Brealey, Myers, and Allen (2011); (12) Cooper and Nyborg (2004).

Pinto *et al.*'s (2010) discussion of the use of geometric averages actually applies to the equity premium, not to E(R$_M$) directly. Many economists assume that the risk premium, unlike its constituent elements, is relatively stable, so that historical <u>premiums</u> can be good estimates of investors' future requirements. Several historical estimates of the risk premium also are given in Table 2 below. Students who wish to research their own values could start at Kenneth French's website, where he makes decades' worth of market data available (see http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/f-f_factors.html).

The range of values in Table 2 underscores Brealey, Myers, and Allen's (2006) comment that there is "plenty of room for argument about what the risk premium *really* is," and their associated advice: "Do not trust anyone who claims to *know* what returns investors expect." Students therefore should not attempt to identify "the" right answer. They also should avoid the temptation simply to set a high value to be conservative. (While setting a high hurdle rate does weed out poor projects, it may also preclude some good ones. A manager's job is to maximize shareholder wealth, which means leaving no positive-NPV

projects on the table. Biasing our estimates toward increasing our hurdle rate is not consistent with that objective.) Based on the data in the table, and on Brealey, Myers, and Allen's (2006) conclusion that "a range of 5 to 8 percent is reasonable for the risk premium in the United States," we have chosen to use 8% in our analysis of Michael's internet travel company.

The final input to the CAPM is beta. We cannot estimate Michael's firm's beta directly, since it has no return history. We therefore will use publicly traded firms whose businesses are comparable to his. Michael identified five companies as his closest competitors: Google (GOOG) and Yahoo (YHOO) (online search and content providers); and Priceline (PCLN), Expedia (EXPE), and Orbitz (OWW) (online travel-booking sites). Some key statistics for these firms are given in Table 3.

From Table 3, we see that the search firms are defensive (their betas are less than one), while the travel sites are aggressive ($\beta > 1$). Michael's firm is more like the travel sites, so we will assume that it also has more systematic risk than average. OWW, with its negative return on equity and nonexistent (negative) P/E, is not a useful comp. We therefore focus only on Priceline and Expedia.

Table 3: Selected Valuation Statistics for Public Comparables

	PCLN	**EXPE**	**OWW**	**GOOG**	**YHOO**
market cap	26.68B	8.29B	309.72M	194.17B	19.01B
beta	1.15	1.92	2.32	0.92	0.86
price/sales	7.75	2.36	0.41	6.16	3.16
price/earnings	47.43	20.77	N/A	23.40	17.14
total debt	575.21M	1.65B	474.09M	5.10B	40.00M
ROE	37.33%	15.52%	-30.93%	19.16%	9.14%

This table provides key statistics for public firms identified by Michael as being comparable to his online travel business: Priceline (PCLN), Expedia (EXPE), and Orbitz (OWW) are online travel booking sites. Google (GOOG) operates online search and advertising programs. Yahoo! (YHOO) is an internet content provider. (source: Yahoo! Finance: finance.yahoo.com; accessed 7/19/11).

Both of these companies are levered, while Michael's firm is not. Thus, both PCLN's and EXPE's betas include the effects of financial leverage. To estimate their unlevered (asset) betas, which will serve as our benchmarks for Michael's equity beta, we will use the following equation:

$$\beta_{asset} = \beta_{debt} * \left(\frac{D}{D+E} \right) + \beta_{equity} * \left(\frac{E}{D+E} \right). \tag{2}$$

(See Brealey, Myers, and Allen, 2011, and Harris and Pringle, 1985.) To work back to β_{asset}, though, we must have estimates for the betas and market values of the comparable firms' debt. We will assume book value approximates market value (a common assumption; see Brealey, Myers, and Allen, 2006, Chapter 19, and CFA Program Curriculum, Level I, 2007, Vols. 4 and 5). Now, if we simply assume that the debt betas are 0, we have $\beta_{assetEXPE}$ = 1.92*[$8.29B/($1.65B + $8.29B)] = 1.60, and $\beta_{assetPCLN}$ =1.15*[$26.68B/($575.21M + $26.68B)] = 1.13.

Note that assuming that the debt beta is zero does not imply that the debt is risk-free: it simply means that the debt has no *systematic* risk. Nonetheless, as Brealey, Myers, and Allen (2006) note, most corporate bonds do have market risk, since firms are more likely to default when the economy is doing poorly. We might therefore get a better estimate of Priceline's and Expedia's asset betas if we used a more realistic estimate of β_{debt}. We do not have information on the firms' specific debt issues, but we do know the rates on A-rated corporate debt. Assuming a 10-year term, we see from Table 1 that the corporate yield is about 4%. The comparable Treasury yield is 2.91%. Using our market risk premium of 8%, this implies

a debt beta of (4% - 2.91%)/(8%) = 0.14. Substituting this value into (2) for both Expedia and Priceline, we get revised asset betas of 0.14*(0.166) + 1.92*(0.834) = 1.62 and 0.14*(0.021) + 1.15*(0.979) = 1.13, respectively.

The asset betas for Priceline and Expedia are two point estimates for the *equity* beta of Michael's firm, since his firm has no leverage. We could adjust this beta toward 1.0 using Blume's (1971) adjustment:

$$adjusted\ beta =\ (2/3) * (raw\ beta)\ +\ (1/3) * (1.0) \tag{3}$$

or, as Ibbotson does, toward a peer mean beta (Pinto, *et al.*, 2010). However, since Michael's firm is private and may warrant higher returns than its public peers (as discussed in the next section), we will not make any of these sorts of downward adjustments toward an average.

Given the point estimates of 1.60, 1.62, and 1.13, we will (subjectively) choose 1.2 as our estimate of beta. Travel can be considered a luxury, justifying a beta greater than 1. On the other hand, Michael's firm may provide the most value to customers living in the northwest, who would be more likely to consider a vacation closer to home when the economy is down (a "stay-cation"). Therefore, we would not expect a beta *much* higher than 1.

Given these inputs, we can now solve for the cost of equity for Michael's firm as 4.28% + 1.2*(8%) = 13.88%.

COMMENTS ON OUR REBALANCING APPROACH

In this section, we consider three questions about our approach to finding Michael's firm's required equity return: whether we should have used the Hamada equation to unlever the betas for our comp firms, whether our return estimate is "too low," and whether we should have used private instead of publicly traded comps. We begin with our unlevering process.

The approach to unlevering the betas of Priceline and Expedia is the approach outlined in Brealey, Myers, and Allen (2011). (See also Cooper and Nyborg, 2004, and Pinto *et al.*, 2010.) However, many textbooks instead use the Hamada equation, which, in its original form, looks like this:

$$\beta_{levered} * E_{levered,t-1} = \beta_{unlevered} * E_{unlevered,t-1} \tag{4}$$

where the left-hand side multiplies the beta and equity value for a levered firm (with the equity valued at the beginning of the period), and the right-hand side uses the comparable values for an unlevered firm. Since Hamada's work is based on Modigliani and Miller (1963), the value of an unlevered firm's stock equals the value of a levered firm's stock, plus the value of its debt (D), less the value of the debt's tax shield (D times the marginal corporate tax rate, T_C): $E_{unlevered} = E_{levered} + D - D*T_C$. Substituting for $E_{unlevered}$ in (4) and rearranging, we get the textbook Hamada equation:

$$\beta_{levered} = [1 + \frac{D}{E_{levered}} * (1 - Tc)] * \beta_{unlevered}. \tag{5}$$

(See, for example, CFA, 2012.) However, the assumptions underlying the Hamada equation make it unlikely to apply to Michael's case.

The problem with the Hamada equation here is that it, like the Modigliani and Miller work on which it is based, assumes that debt is not rebalanced. Instead, it assumes that debt is a fixed, perpetual dollar amount. This assumption is much less likely to be true than the alternative—that debt varies with assets (constant financing proportions). Brealey, Myers, and Allen (2011) recommend the constant-proportion approach (as do Pinto, *et al.*, 2010, who call the constant-dollar assumption "typically less plausible" than constant-proportion, and Cooper and Nyborg, 2004, who say that the constant-proportion approach is "likely" to be more applicable "in most cases"). We have therefore chosen not to use to Hamada equation when unlevering our comparables' betas. (Note that MM's assumption is not inconsistent with constant proportions; it is a special case of it. The constant debt amount implies a constant leverage ratio, given the perpetual cash flows MM assume. See Miles and Ezzell, 1980. Also note that the existence of corporate taxes does not render our approach invalid: under the constant-proportion approach, taxes are considered when finding the weighted average cost of capital; they are just omitted at the first step—equation (2)—when finding the beta of the assets.)

We now consider the end result of our unlevering process: even if our approach was correct, did we end up with a cost of equity estimate that is "too low"?

Students will undoubtedly argue that Michael's company is a start-up business, whose cash flows are subject to a great deal of uncertainty. It is obviously much more "risky" than an established company like Priceline or Expedia, and investors should therefore demand much higher expected returns from it.

The problem with this argument is that it ignores the potential for investor-level diversification. While Michael's firm may have greater total risk than PCLN or EXPE, an investor in his firm may be concerned only with the nondiversifiable risk, as measured by beta. Combining an investment in a small, private company with a well-diversified portfolio of other assets means that the unique risk of the small firm will be counterbalanced by the movements of the other assets. Investors only demand compensation for risk they actually bear. Thus, well-diversified investors like Joseph need to be compensated only for the market risk of their investment, not for the firm's total risk.

Even if we consider adding premiums for the unique risks of Michael's firm, we would still note that the magnitude of our k_e estimate—even before such adjustments—is not inconsistent with returns expected for other contemporaneous assets. For example, Wilshire Associates Incorporated's "Asset Return Assumptions" for 2012 included an 11.5% expected return for venture capital, 7.5% for a diversified private-markets portfolio, 5.8% for private real estate, and 7% for timberland (all of which would include an illiquidity premium). These are all lower than our estimate for Michael's firm, even before adding any size or illiquidity premiums. Nonetheless, we will consider these premiums further in the next section.

Before concluding this section, we should note that some analysts would disagree with our using public comparables to benchmark a small private business. The lack of direct comparability, of course, drives our consideration of adjustments below. However, we wish here to consider the broader point: should we even start our analysis with public company comparables?

Our income (discounted cash flow) approach is consistent with industry practice, since "…[some] analysts, distrustful of private transaction prices, draw on the market prices of publicly traded companies in the same business, and try to adjust for differences in fundamentals" (Damodaran, 2009). Pinto, *et al.* (2010) also suggest this approach. However, analysts also use market multiples-based approaches, which may use private-company benchmarks such as those provided by subscription databases (Rath, 2010). These databases provide statistics on private-company control transactions, whose businesses may "have more in common with the young business being valued" (Damodaran, 2009). For example, Pratt's Stats' "Private Deal Update" offers "general trend information on valuation multiples and profit margins [medians] for transactions in the Pratt's Stats database" (BVR, 2012). Nonetheless, students may not

have access to expensive databases, and, even if they do, information from databases may not be easily confirmed and may not be relevant to Michael's business (Rath, 2010). For example, Damodaran (2009) points out that private firms may differ on the relative liquidity of the assets they hold, the strength and persistence of the cash flows they generate, and the probability that they will go public in the future. Each of these factors would affect a target firm's valuation multiples—and make private comps less useful.

For Damodaran (2009), private-firm comparisons works best for small businesses that "plan to stay small and private," like doctor's offices and small retail businesses. For "young companies that aspire to… reach a larger market and either go public or be acquired by a public company," he recommends public comps—firms in the same industry that have successfully navigated the early stages of their lifecycles, and whose systematic risk reflects the business risk the target firm must bear. We have taken this approach. Nonetheless, in the next section we consider some adjustments to our public comps.

EVALUATING SIZE AND PRIVATE-FIRM PREMIUMS FOR MICHAEL'S FIRM

There are at least two possible reasons that an investor's required return for Michael's firm would differ from a public company's like Priceline's or Expedia's. First, Michael's firm is much smaller than these "comparable" firms, and so may warrant a "size premium." Second, his firm is a private company, which may justify premiums for nondiversification and/or illiquidity. We consider both of these complications in this section.

Size Premium

Michael's firm's investors may require a higher rate of return than we found from the CAPM, since his is a very small firm—and smaller firms are riskier firms. We could incorporate a size premium into our required return estimate, for example, by using any of the following three approaches:

$$k_e = r_f + b_{market} * (r_{market\,factor}) + b_{size} * (r_{size\,factor}) + b_{book-to-market} * (r_{book-to-market\,factor}) \tag{6}$$

$$k_e = r_f + equity\,risk\,premium + size\,premium + specific-company\,premium \tag{7}$$

$$k_e = r_f + b_{market} * (r_{market\,factor}) + size\,premium. \tag{8}$$

These are the Fama-French three-factor model, the "build-up" model, and the "modified CAPM," respectively. To use these models, we need an estimate of the relevant size inputs. Textbooks often provide information that would allow students to derive these estimates.

For example, Brealey, Myers, and Allen (2011), in their discussion of the Arbitrage Pricing Theory, turn to the three-factor Fama-French model. The authors note that the average annual size premium from 1926-2008 was 3.6%. (Similarly, Chi and Fogdall, 2012, report a statistically significant 3.66% premium from 1927-2011.) Both the model's market factor and the book-to-market factor have higher factor returns (7% and 5.2%, respectively). Of the ten industries whose size-factor sensitivities Brealey, Myers, and Allen provide, only three are positive; computers is one of these, with a sensitivity of 0.22. (Computers is the closest of the ten industries to Michael's firm. The other industries are autos, banks, chemicals, construction, food, oil and gas, pharmaceuticals, telecoms, and utilities. The largest size-factor

loading is 0.46, for construction.) Overall, in seven of the ten industry cases, the three-factor estimate is higher than the CAPM estimate. However, that is not true for computers: there, the CAPM estimate much higher (12.8% v. 6.5%, using a market beta of 1.43 and a book-to-market beta of -0.87).

Pinto, *et al.* (2010), also provide evidence on the Fama-French factors. They report a historical size premium (from 1926) of 2.7%, although they note that the realized premium was only about half that large from 1980-2006. They therefore use a 2% premium in their application of the model to the U.S. equity market.

Pinto, *et al.* (2010) also demonstrate the incorporation of a size premium in equations (7) and (8). Using Morningstar data from 2007, they give the size premiums for the smallest size deciles as 1.67%, (decile 6), 1.62% (7), 2.28% (8), 2.70% (9), and 6.27% (10). They further break down the 10th decile into 10a (defined as having a market cap between approximately \$174M and \$314M), with a premium of 4.35%, and 10b (\$2.3M to \$314M) at 9.68%. (However, they caution that the latter's results, especially, may be tainted by firms in financial distress.)

Given this evidence, an analyst might decide that a size premium of, say, 4% was warranted for Michael's firm, giving a modified CAPM estimate of about 18% for its required return. However, we would prefer instead to have a qualitative discussion with students about the possible effect of any size factor. One introduction to such a discussion would be the following note from Pinto, *et al.* (2010):

> If the CAPM were used to develop the equity required rate of return and similar risks were anticipated for the guideline public companies as for a smaller private company being valued, a small stock premium may not be warranted…the risk would likely be captured in the betas of the guideline public companies. (page 370)

Private Company Premiums

We have used public companies as our comparable firms. Michael identified these firms as his closest competitors. However, since Michael's is a private firm, we will follow Damodaran (e.g., 2009) and consider adjusting the cost of equity for nondiversifiable risk and for illiquidity.

Damodaran suggests that investors who are exposed to the unsystematic risk of a private-company investment should gross up the market beta to find a "total beta":

$$total\ beta_i \ = \ market\ beta_i/\rho_{iM}. \tag{9}$$

The correlation coefficient between the private firm and the market, ρ_{iM}, can be estimated using a sample of comparable publicly traded firms, just as the market beta for the private firm was estimated.

Students can easily find correlations between a market index and Priceline and Expedia. For example, using the six months prior to the decision point (1/3/11-6/30/11), data from Yahoo!Finance allow us to determine that the correlations with the S&P500 are 0.44 for Priceline and 0.20 for Expedia. The average correlation is therefore 0.32 (assuming that we wish to give the companies equal weight). Grossing up Michael's firm's beta of 1.2 thus gives us a total beta of (1.2/.32), or 3.75. Using this total beta, we find a much higher k_e estimate of $4.28\% + 3.75*(8\%) = 34.28\%$.

However, we should take this result with many grains of salt. We have used only a few months' worth of data to estimate the correlations; perhaps our estimates are too low. Wilshire Associates Incorporated's "Asset Return Assumptions" for 2012 gives a correlation of 0.75 for stocks and private markets; using this correlation, total beta is 1.6 and the revised CAPM estimate is 17.1%. On the other hand, if the

relevant correlations are as low as we estimate, then a well-diversified investor like Joseph should welcome such an addition to his portfolio.

More importantly, however, we may not need an adjustment for lack of diversification at all. Private firm valuation is dependent upon the use of the valuation (IPO, litigation, taxation, etc.; Damodaran, 2009; Rath, 2010). Thus, the necessary adjustments to the CAPM k_e depend on Michael's situation—in particular, on Joseph's claim. Joseph is a retired executive of a multibillion-dollar corporation. He has been able to help Michael buy two houses, and he is able to "kiss goodbye" the start-up costs for Michael's new venture. Joseph is undoubtedly a well-diversified investor. We therefore argue that an adjustment to the CAPM beta for unsystematic risk is unnecessary. Debate of this point should be a fruitful opportunity for classroom discussion.

We take a similar stand on the illiquidity of Michael's firm. Private firms are less liquid than publicly traded firms. Damodaran (2009) discusses ways to adjust the valuations of illiquid private firms for this unattractive feature. However, he notes that not all private firms warrant adjustment. Of particular importance for us, he asserts that the necessary adjustment is a function of the nature of the investor:

> The illiquidity discount is also likely to vary across potential buyers because the desire for liquidity varies [across] individuals. It is likely that those buyers who have deep pockets and see little or no need to cash out their equity positions will attach much lower illiquidity discounts to value, for similar firms, than buyers who have less of a safety margin.

Again, we are concerned with Joseph, whom we believe to be a well-diversified investor with no immediate need for the cash he will invest in Michael's business. (We note that a focus on Joseph is consistent with the "investment" standard of value discussed by Rath, 2010.) Thus, for the same reasons discussed above for nondiversification, we have not made an adjustment for illiquidity in our analysis. Again, instructors may choose to explore this topic qualitatively with their students.

CONCLUSIONS

Estimating the cost of equity is never easy, and it can be especially challenging for private firms. In this paper, we present the example of a start-up internet travel service, all of whose expenses (including the payments to its "venture capitalist," the founder's father) are percentages of revenue. We base our estimate of our firm's systematic risk on the betas of two publicly traded firms. We then consider adjustments for small size, illiquidity, and nondiversification. We conclude that such adjustments are not necessary for our case, since we are concerned with the firm's investment value to a well-diversified investor.

Basing an estimate on comparable firms first requires identifying companies with similar business risk. The founder of our firm identified two public comps, Expedia and Priceline, to be his closest competitors. However, since both of these firms use debt, we had to adjust for financial risk by unlevering their quoted betas to find their opportunity costs of capital, or "asset betas." Given our belief that firms are more likely to rebalance their debt over time—keeping a constant leverage ratio rather than a constant dollar debt—we used the Harris and Pringle (1985) method to unlever the betas, rather than the popular Hamada (1972) equation. In addition, we considered the effect of a nonzero debt beta, another deviation from the Hamada approach. Incorporating the resulting asset beta estimate with the current long-term Treasury rate and a historical market risk premium gave us our CAPM estimate for our firm's cost of equity.

We then considered size and private company premiums. Damodaran (2009) and Rath (2010), for example, discuss the differences in risk that can attend investments in private firms, and it is common to hear people assert that private equity investments are much "riskier" than their public counterparts.

However, not every private investment deserves returns in the often-cited 30%-45% range (see, for example, Manigart, *et. al,* undated). Our firm's "venture capitalist," Michael's father, is a well-diversified investor who is willing to wait ten years to recoup his investment, and acknowledges he may never get it back at all. For angels like him, the assumptions of the CAPM may better reflect return requirements than subjective models attempting to adjust for firm-specific risk that may be irrelevant. As investment activity in the private markets continues to grow, we should resist the temptation to reflexively add premiums to the required returns estimated using systematic risk alone; especially in private markets, premiums should be based not only on the characteristics of the investment, but also on the situation of the investor.

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TAX IMPLICATIONS OF A MERGER: A CASE STUDY

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ABSTRACT

This paper considers possible tax implications of the merger between a wholly-owned subsidiary of Domestic Co, Inc. and International Co, Ltd, which took place on November 10, 2008. Even though the merger is structured in a way that it will most likely be respected as a tax-free reorganization under section 368(a), several important representations and warranties are not included in the merger agreement. Specifically, this particular merger agreement does not have a tax warranty requiring the Target Company to file all material tax returns and does not have a warranty requiring the parties to the reorganization to refrain from any actions that would prevent the merger from qualifying as reorganization within the meaning of section 368(a) of the Internal Revenue Code.

INTRODUCTION

Over the last decade, there has been a significant increase in the numbers of cross-border mergers and acquisitions between American, European and Asia companies (Kasipillai, 2004). A merger is a combination of two or more companies, where a new business entity is formed as the result (Kasipillai, 2004). During mergers and acquisitions, numerous tax considerations will arise that will have financial implications for the new entity and its shareholders (Kasipillai, 2004).

In order to comprehend dynamics of merger activities, it is useful to identify the past and current trends of mergers and acquisitions in the United States while investigating such consolidation trends (Yaylacicegi, 2005). American industrial history has been marked by many different merger waves: one in 1890s, one in 1920s, one in 1960s, another in 1980s and 1990s. (Yaylacicegi, 2005).

However, in today's business environment, entrepreneurs are no longer taking the time to examine merger and consolidation transactions in a way that they have in the past (Hurtt, 2000). Today it is almost malpractice not to close the transaction in just several days (Hurtt, 2000). Yet, the volume of the deals and the risk exposure has increased dramatically over the last twenty years (Hurtt, 2000). Therefore, to increase the chances of a successful merger, company management cannot overlook the details and not take the necessary precaution steps (Hurtt, 2000).

While the tax consequences of mergers and acquisitions have been substantially analyzed in previous literature, previous studies fail to consider practical and economic consequences that stretch beyond the theoretical tax-free treatment under IRC section 368. This study elaborates on the practical consequences of a tax-free merger to all of the parties involved and considers potential issues that need to be addressed in the merger agreement (Yaylacicegi, 2005).

The remainder of this paper is organized as follows: The next section examines the related literature and tax law as it relates to the tax-free reorganizations. The next section introduces the Case of an international merger. Section that follows examines the recommendations for improving the merger. The final section concludes.

LITERATURE REVIEW

When companies merge, their management focuses on the deal's positive aspects and contributes significant efforts to complete their due diligence as soon as possible and to ensure that the merger is successful (Sinkin, 2007). However, numerous issues arise during merger negotiations, where some mergers and acquisitions fail even before they reach a formal merger agreement stage, while others will have problems after the agreement is completed (Hurtt, 2000).

In today's business environment, company's management expects their due diligence process to be completed within just days as opposed to months (Hurtt, 2000). *Fortune* magazine (November 8, 1999) reports that in 1995, the typical merger and acquisition transaction took between six to nine months to complete (Hurtt, 2000). Compare to some of the largest deals in 1999, where Proctor and Gample used a time frame of 60 days to acquire pet food maker Iams for $2.3 billion (Hurtt, 2000). Furthermore, the volume of the deals and the risk exposure has increased dramatically over the last twenty years (Hurtt, 2000). For example, merger and acquisition activity in the United States reached a total volume of $880 billion for the first two quarters of 1999 and was expected to match or exceed the 1998's record volume of $1.6 trillion (Hurtt, 2000). Since mergers and acquisitions are now completed more quickly and at record-breaking volumes, company's management cannot overlook the details surrounding the deal and must take the necessary precaution steps to increase the chances of a successful transaction (Hurtt, 2000). During mergers and acquisitions, numerous tax considerations will arise that will have financial implications for the new entity and its shareholders (Kasipillai, 2004). Oftentimes, it is beneficial to structure such a transaction as a tax-free reorganization under Internal Revenue Code Section 368 (Schwartzman, 2005). In IRC section 368(a)(1)(A), the term reorganization includes merger or consolidation (Schwartzman, 2005). Any type of consideration can be used in such transactions (Schwartzman, 2005). Even cash can be exchanged in return for the stock of the target company, as long as continuity of business enterprise and continuity of interest are satisfied (Schwartzman, 2005). In January 2005, IRS issued proposed regulations, which later became final, allowing tax-free treatment for cross-border mergers organized under foreign law, providing a tremendous amount of flexibility in restructuring foreign and domestic businesses (Schwartzman, 2005).

In order to qualify as a tax-free reorganization under IRC section 368, a merger transaction must meet certain requirements. Specifically, the transaction must be structured as prescribed under one of the types in IRC section 368, there must be a plan of reorganization and continuity of business enterprise, continuity of interest and solid business purpose must also be present. If the transaction is structured properly, no gain or loss will be recognized by the acquiring and target companies. A reverse subsidiary or a reverse triangular merger is a process by which an acquiring company merges its subsidiary into the target company. Both the acquiring company and the target company remain in existence after the merger (Figure 1 and 2).

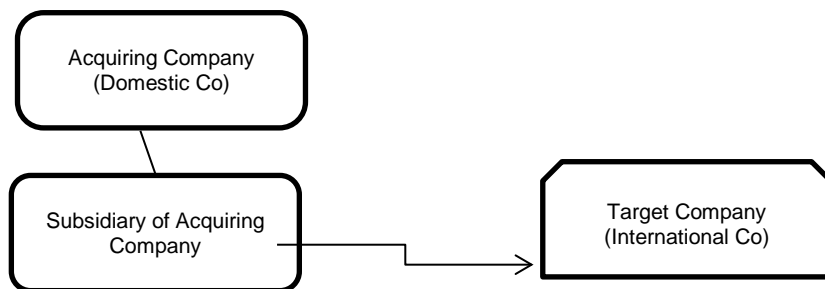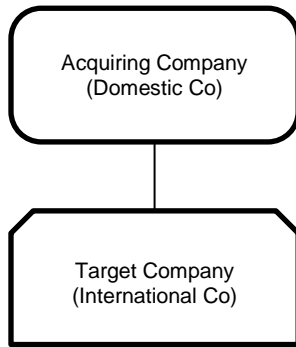Figure 1: Reverse Subsidiary Merger-Before

Figure 2: Reverse Subsidiary Merger After

THE CASE OF AN INTERNATIONAL MERGER

In November of 2008, Domestic Co, Inc. (Parent Corporation) and International Co, Ltd. (Target) entered into an Agreement and Plan of Merger, according to which Subsidiary Co, Ltd., a wholly-owned subsidiary of Domestic Co organized in a foreign country, was to merge with and into International Co, with International Co continuing after the merger as the surviving company and a wholly-owned subsidiary of Domestic Co. Prior to the merger, as of September 30, 2008, it was estimated that the proposed combined company will have pro forma revenues of $55.6 million and gross profit of $39.1 million. However, even though a definite merger agreement was signed and the deal was to close in the first quarter of 2009, the transaction fell through due to another company starting negotiations to purchase Domestic Co and issues needed to be addressed before the Federal Trade Commission due to possible violations of the antitrust laws. Presently, the dispute between Domestic Co and International Co has not been resolved.

Domestic Co, Inc. is an innovative medical device company based out of California focused on the development of minimally invasive technologies for tissue and tumor ablation. Domestic Co had initially concentrated on the development of freezing technologies for the treatment of prostate cancer and believes that its proprietary technologies have broad applications across a number of markets, including the ablation of tumors in the kidney, lung and liver.

Subsidiary Co, Ltd. is a newly formed Israeli corporation and wholly-owned subsidiary of Domestic Co organized for the purpose of completing the proposed merger. It does not conduct any business, has no assets or liabilities of any kind, other than those incidental to its formation and the merger.

International Co, Ltd. is an Israeli corporation and is leading a new era of minimally invasive freezing solutions that enhance patient's quality of life. Since its formation, International Co dedicated extensive research toward increasing the ease of the use of freezing technologies in order for physicians to provide patients with rapid recovery and high quality of life.

In the merger, Subsidiary Co will merger into International Co and terminate. After the merger, International Co will continue as a surviving company and will be a wholly-owned subsidiary of Domestic Co. According to the merger agreement, each outstanding ordinary share of International Co will be converted into common shares of the parent company, Domestic Co, in accordance with the pre-determined exchange ratio. The consideration for this transaction will consist of strictly stock, where no fractional shares and no cash in lieu of those fractional shares will be issued. Following the merger, International Co shareholders will no longer have any interest in International Co, but will have an equity stake in Domestic Co.

Based on the facts described above, this merger transaction qualifies as a tax-free reorganization under section 368(a), specifically, as a reverse subsidiary merger. Immediately after the merger, the existing Domestic Co stockholders are expected to own approximately 52% of the outstanding shares of Domestic Co common stock and former shareholders of International Co are expected to own approximately 48% of Endocare common stock. Thus, the requirements of continuity of business enterprise and continuity of interest seem to be satisfied. According to the prospectus, Domestic Co and International Co were proposing to merge because they believe that the merger will permit a consolidation of resources that will result in greater penetration of the marketplace, will create efficiency opportunities, improve product platform and result in a stronger international position. All of these reasons will probably help establish a valid business purpose for the merger transaction. Furthermore, on the face of the documents filed with the SEC, there is no evidence that the transaction was part of a larger plan that if taken in its entirety would be a taxable transaction. Thus, without any other facts, the step transaction doctrine does not apply. According to the merger agreement, both shareholders of Domestic Co and shareholders of International Co approved the merger transaction.

As the result of this merger transaction, International Co (Target) shareholders will have no gain or loss recognized on the exchange of their stock for the stock in Domestic Co. The Target's shareholders' basis in the new stock will equal to the basis of the old stock that they previously owned. Similarly, Target corporation itself will have no gain or loss recognized on the transfer of its assets to Domestic Co. Likewise, Domestic Co (Parent Corporation) will have no gain or loss recognized on the transfer of its own stock in exchange for Target's stock. Finally, the basis in the stock received from Target shareholders will equal to the Target shareholder's basis in the old shares.

The form selected for this transaction seems to be particularly appropriate. Both the Parent and the Target companies are engaged in almost identical lines of businesses, doing similar research and establishing similar goals. The integration of the Target's business with the business of the Parent Corporation should be smooth and natural. Finally, since the Parent Corporation is interested in the direct control of the Target, the reverse subsidiary merger seems to be the best form for this transaction.

RECOMMENDATIONS FOR IMPROVING THE MERGER

As one of the exhibits to the form S-4 filed with the SEC, there was a legal opinion provided by tax counsel to Domestic Co in connection with the proposed merger transaction. It was a short term opinion establishing that the law firm reviewed the merger agreement and other documents necessary and appropriate for the purposes of this transaction. Furthermore, the opinion stated that there were four basic assumptions made by tax counsel.

Namely, it was assumed that a) the merger transaction will take place exactly as described above, b) representation and warranties made in the merger agreement are true and accurate, c) officer's certificates provided by Domestic Co to the law firm are also true and accurate, and d) any representations made in the officer's certificates are also correct. Therefore, if any of the representations or warranties in the merger agreement were inaccurate or incomplete, the opinion given to Domestic Co could not be relied upon.

Most importantly, the opinion provided that 1) the merger described above will constitute a reorganization within the meaning of section 368(a) of the Code, 2) each of Domestic, Subsidiary, and International will be "a party to the reorganization" within the meaning of section 368(b), and 3) statements made in the merger agreement under section "Material United States Federal Income Tax Consequences of the Merger" constituted their opinion as tax counsel to Domestic Co.
Moreover, the opinion provided that it was only a best judgment of how Internal Revenue Service or a court would conclude if presented with the facts described above. The opinion further stated that no

assurance can be given that a position taken in reliance on the given advice will not be challenged by the IRS or rejected by a court. The opinion stated that it has a limited scope and applies only to the United States tax consequences of this particular merger. Finally, the opinion provided that the law firm had no obligation to update this opinion after it has been issued, even if circumstances affecting the conclusions made in this opinion were to change.

After reviewing the prospectus and the legal opinion, it appears that the amount of disclosure and disclaimers included in the public filing is more than sufficient. The prospectus goes through a very detailed list of common questions that the shareholders could have about the transaction and provides detailed answers. Furthermore, the prospectus goes through a list of reasons for the merger transaction, conditions to completion of the merger, and all of the possible risk factors that could relate to the prospective merger transaction. Among some of the risks identified is a warning that 1) the alliance between Domestic Co and International Co might not prove to be profitable, 2) Domestic might be required to make tax payments that exceed the settlement estimates determined prior to the merger, 3) market price of Domestic's common stock is highly volatile (see table above), 4) issuance of common stock in the merger transaction will trigger an ownership change that will negatively impact Domestic's ability to utilize net operating loss and capital loss deferred tax assets in the future, 5) International has a limited operating history with significant losses, 6) success of Domestic's business is dependent upon the industries acceptance of the new freezing technologies, 7) business success depends on the necessity to obtain regulatory clearances and approvals for the new freezing technologies, and 8) there are risks associated with doing business internationally. The disclaimers described in the prospectus are complemented by those included in the legal opinion and are sufficient to disclose all material risks associated with the merger.

Such tax matters section of the merger agreement constitutes an actual legal opinion given by tax counsel. It provides general tax advise that is neutral to both the buyer and the seller and which alone would probably be insufficient to provide adequate advice to a shareholder in a situation covered by any of the special rules, such as dealers in securities, non-U.S. Holders, banks, mutual funds, insurance companies, financial services entities, tax-exempt entities, and holders who do not hold their shares as capital assets, who acquired their shares through stock option or stock purchase programs or otherwise as compensation, who are subject to alternative minimum tax, or who hold their shares as part of a hedge, straddle or other risk reduction transaction and persons who hold, directly, constructively or by attribution, 5% or more of either the total voting power or total value of the capital stock of Domestic Co immediately after the Merger, or 10% or more of the total voting power of the capital stock of Domestic Co at any time.

Moreover, tax matters section also provides a definition of the U.S. Holder, states that the merger will be a tax-free reorganization covered under section 368(a), and that no gain or loss will be recognized for the United States federal income tax purposes by Domestic Co, Subsidiary, or International Co as the result of this merger. For any of the special rule situations described above, the section states that shareholders should consult their own tax advisors in light of their specific circumstances and the consequences under applicable state, local, and foreign tax laws. Finally, this section also discussed material Israeli tax consequences of the merger transaction, specifying that it will be a taxable transaction under Israeli tax laws unless special exemptions applied or a double-taxation prevention treaty provided otherwise.

The warranties section of the merger agreement contains representations by both Domestic Co and International Co with respect to the merger transaction, including: 1) warranties included are true and correct in all material respects, 2) parties have performed in all material respects the conditions required by the merger agreement, 3) parties had received an opinion from their tax counsel regarding the merger transaction stating that it qualifies under section 368(a) as a tax-free transaction and that no material gain or loss will be recognized by Domestic or International as the result of the transaction, 4) no governmental authority is investigating the merger agreement or its other ancillary agreements, and 5) no government authority had enacted any law that would materially restrain, condition, or make illegal the consummation of this merger transaction.

Warranties section of the merger agreement also specifies that it contains customary representations and warranties of the parties, including tax matters. However, specific tax matters discussed are those requiring the Israeli tax rulings and other Israeli approvals prior to closing. Under this section of the merger agreement, International Co warrants that it will cause its Israeli counsel to prepare, file, and use best efforts to obtain tax rulings that provide full exemption to Domestic Co and International Co from withholding requirements that result from a deferral of Israeli income taxes. No other tax warranties were included in this section covering United States tax consequences, such as a requirement of timely filing of tax returns and a prohibition against actions that could materially affect this merger transaction and cause it to become a taxable event for the United States tax consequences. Therefore, it appears necessary to add both of these warranties. Since International Co is in the business of selling products internationally, it could have some of its income sourced to the United States and be required to file income tax returns or sale and use tax returns that might have been overlooked in the past, particularly since it will now be a wholly-owned subsidiary of the United States parent and its prior tax returns are now more likely to be audited.

For the warranty covering all material tax returns filed by International Co, the following or similar language should be included: "Except as has not had and would not reasonably be expected to have, either individually or in the aggregate, International Co. and its Subsidiaries (a) have duly and timely filed, or have caused to be duly and timely filed, all Tax Returns, including income and sale and use tax returns, required to be filed by any of them (taking into account any extension of time within which to file) and all such Tax Returns are complete and accurate in all respects and were prepared in compliance with all applicable Laws; (b) have paid all Taxes that are required to be paid (whether or not shown on any Tax Return) or that International Co or any of its Subsidiaries are obligated to deduct or withhold from amounts owing to any employee, creditor or other third party, except with respect to matters contested in good faith through appropriate proceedings or for which adequate reserves have been established on the International Co Current Balance Sheet; and (c) have not waived any statute of limitations with respect to United States federal income Taxes or agreed to any extension of time with respect to a United States federal income Tax assessment or deficiency.

Except as has not had and would not reasonably be expected to have, either individually or in the aggregate, there are no audits, examinations, investigations, deficiencies, claims or other proceedings in respect of Taxes or Tax matters pending or, to the Knowledge of International Co, threatened in writing, except with respect to matters contested in good faith through appropriate proceedings. Except as has not had and would not reasonably be expected to have, either individually or in the aggregate, International Co and its Subsidiaries had not received notice in writing of any claim made by any Governmental Entity in a jurisdiction where International Co does not file Tax Returns that International is or may be subject to taxation by that jurisdiction. Except as has not had and would not reasonably be expected to have, either individually or in the aggregate, International Co has not participated, or is currently participating, in a "listed transaction" as defined in Treasury Regulation Section 1.6011-4(b)(2). All copies of United States federal and state income or franchise Tax Returns, examination reports, and statements of deficiencies assessed against or agreed to by International that International has made available to Domestic are true and complete copies. International has not been a member of a group filing Tax Returns on a consolidated, combined, unitary or similar basis (other than a consolidated group of which International was the common parent). Except as has not had and would not reasonably be expected to have, either individually or in the aggregate, International Co does not have any liability for Taxes of any Person (other than International Co) under Treasury Regulation Section 1.1502-6 (or any comparable provision of local, state or foreign Law), as a transferee or successor, by Contract, or otherwise or is a party to, bound by or has any liability under any Tax sharing, allocation or indemnification agreement or arrangement."

For the warranty covering prohibition against actions that might cause material adverse effects to the merger transaction, the following or similar language should be included: "As of the date of this Agreement, International Co, Domestic Co or Subsidiary have not taken or agreed to take any action, nor do International, Domestic or Subsidiary Companies have any Knowledge of any fact or circumstance, that would prevent this Merger from qualifying as a reorganization within the meaning of Section 368(a) of the Code."

Moreover, according to the merger agreement, the representation and warranties of International Co survive for the period beginning on the closing date, which was expected to take place in the first quarter of 2009, through the date of Domestic Company's required filing with the SEC of its Annual Report on Form 10-K for the fiscal year ended December 31, 2009. Such survival period would last, at most, for about one year or a year and three months. It would provide Domestic Co a greater level of protection if International Company's warranties were to survive for at least three years, for a period of the statute of limitations. If any claims were to arise against International Co for breach of any representations or warranties included in the merger agreement, Domestic Co would have a longer time period to bring those actions and recover damages.

Finally, representations and warranties of Domestic Co made in the merger agreement do not survive the closing at all. Again, it would provide International Co a much greater level of protection if Domestic Company's warranties were to survive for at least the period of the statute of limitations. Some of the more important warranties for International Co could be the anti-takeover protections, capitalization, and absence of certain changes and events, which were all warranted by Domestic Co. International Co would only greatly benefit if those protections were to extend beyond the closing date.

Under the terms of the merger agreement, Domestic Co will set up an escrow account to satisfy any possible indemnification obligations. Domestic Co will deposit a number of shares of its common stock equal to 7.5% of the total number of shares of its common stock comprising the aggregate merger consideration rounded to the nearest whole share, which would amount to approximately $1,013,795. Total number of shares to be transferred as consideration, 11,857,248, times 7.5% is 889,294 shares to be deposited in the escrow account; 889,294 times $1.14 price per share (as of November of 2008) of the Domestic Co stock is $1,013,795 to be deposited in the escrow account.

This amount could be used to cover any indemnification claims, including any tax related claims. The merger agreement provides that Domestic Co will be indemnified and held harmless solely out of indemnity escrow against any losses or other liability to the extent arising of any and all taxes of International Co with respect to (x) taxable periods ending on or before the Closing Date or (y) any taxable period that commences before and ends after the Closing Date to the extent attributable to the period prior to Closing as determined pursuant to the Merger Agreement, and (z) reasonable costs and expenses incurred by the Surviving Company in connection with compliance matters relating to taxes for which Domestic Co is entitled to indemnification under the Merger Agreement, including costs and expenses relating to disputes with taxing authorities. However, such escrow account could be insufficient to cover all possible claims including tax liabilities. It would provide Domestic Co a greater level of protection if indemnification provision was not restricted solely to the deposited escrow funds or the amount deposited was increased.

CONCLUDING COMMENTS

In today's business environment, entrepreneurs are no longer taking the time to examine merger and consolidation transactions in a way that they have in the past. Even though mergers have significant tax implications to all parties involved, company management often chooses speed and efficiency over detailed examination of the contractual agreements involved in the merger. Yet, the volume of the deals

and the risk exposure involved has increased dramatically over the last twenty years. As such, to increase the chances of a successful merger, managers must examine specific sections of the merger agreement in great detail.

This paper examines practical tax implications of a tax-free merger under IRC section 368 between domestic and international companies. Specifically, it examines legal opinion and tax matters section of a particular merger agreement to expose its limitations and shortcomings.

Even though Domestic Co and International Co merger is structured in a way that it will most likely be respected as a tax-free reorganization under section 368(a), several important representations and warranties are not included in the merger agreement, which could potentially create future tax liability for the parent company and, therefore, adversely affecting its shareholders. Specifically, this particular merger agreement does not have a tax warranty requiring the International Company to file all material tax returns and does not have a warranty requiring the parties to the reorganization to refrain from any actions that would prevent the merger from qualifying as reorganization within the meaning of section 368(a) of the Internal Revenue Code. Furthermore, the amounts deposited in the escrow account are most likely insufficient to cover all possible claims including tax liabilities. It would provide Domestic Co a greater level of protection if indemnification provision was not restricted solely to the deposited escrow funds or the amount deposited was increased.

The analysis of this paper is based upon a number of assumptions. Namely, it was assumed that a) the merger transaction will take place exactly as described above, b) representation and warranties made in the merger agreement are true and accurate, c) officer's certificates provided by Domestic Co to the law firm are also true and accurate, and d) any representations made in the officer's certificates are also correct. Therefore, if any of the representations or warranties in the merger agreement were inaccurate or incomplete, the analysis of this paper would also have to be reexamined. These factors remain a creative area for future research.

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LOGISTICS MANAGEMENT MODEL FOR SMALL AND MEDIUM-SIZED TEXTILE ENTERPRISES

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ABSTRACT

The worldwide market opening and globalization of supply chains demand a series of structural changes where logistics plays a strategic role. Customers evaluate the quality of the product, its added value and its availability in time and form, which involves making processes more efficient. Some experts have proposed logistic management models to elevate competitiveness in the market. Some of these models are ambitious for Small and Medium-sized Enterprises (SMEs) due to their informal structure and a lack of technical knowledge. Other models make indirect reference to the internal information flows, including a whole disintegration of the system because of the interrelation among the different areas. SMEs represent 4.2% of enterprises existing in Mexico, generate 31.5% of employment and contribute to the Gross Domestic Product. It is important to reinforce their competitive position in the market. Some 85.9 percent of the textile industry in Mexico is SMEs. In this descriptive investigation, we design a logistic management model for textile SMEs.

JEL: L25, M11

KEYWORDS: Logistics Management Model, SME, Textile Manufacture, Supply Chain

INTRODUCTION

A logistics management model for SMEs is different from that used by big enterprise because of the technological resources, language, structure and culture of the model operation (Velásquez, 2003). This difference is due to high levels of training and economic resources in the big enterprise. The logistics sector is important by itself, but also generates a traction effect for private sector development and growth in other economic actors in a country or region. Efficient and accessible logistics constitutes a key aspect so the enterprises in general, and specially SMEs, could successfully compete in a globalization economy.

According to the Logistic Performance Index (LPI), published by the World Bank every two years, Mexico occupies 47th place among 155 countries. According to these data, it has a global logistic performance of 3.06 (World Bank, 2012). SMEs represent 4.2% of all the enterprises existing in Mexico, which generate 31.5% of employment and contribute 37% of Gross Domestic Product. It is important to reinforce their competitive position in the market. The manufacture industry contribution to the Gross Domestic Product (GDP) was 18.1%. The textile industry is included in this percentage representing 1.2% (INEGI, 2011a) and contributing, 0.74% to the GDP in 2011 (INEGI, 2012).

A literature review allowed us to identify different integral models of logistic management to increase competitiveness in the market. Some authors proposed ambitious models for a SME since it has an informal structure and a lack of technical knowledge. Other authors and organisms have developed logistics management models focusing on the characteristics of the SMEs. However, they do not consider the internal information flows necessary for their accurate implementation. This weakens the interrelation among areas involved in the management and breaks up the system as a whole.

The first part of this investigation discusses the importance of logistics management for the competitiveness of SMEs in Mexico with specific reference to the textile industry. The literature review and the data taken from secondary sources permitted us to idetify logistics management models, in a special way for SMEs. As a consequence, a logistics management model was designed to facilitate the integral management of four of the areas identified as the most important ones and the tool application that would improve the logistic performance of the supply chain. Finally, some constraints and suggestions for futures investigations are discussed.

LITERATURE REVIEW

Some specialists have proposed integral models of logistics management to increase competitiveness in the market.

1. The Secretary of Economy (2011) designed a model that considers 16 capacities such as strategy and performance of the organization, customer service, process management, demand management, supply and purchase, proces of customer orders, storage operation, inventory management, transportation, inverse logistics, security in goods transportation, import/export processes, financial capacities, environmental awareness, information systems and data management, organization, personnel and competences.
2. The model of operation reference of the supply chain (SCOR-model: Supply – Chain Operations Reference – model), developed in 1996 by the *Supply Chain Council of North America,* is a standard tool which analyzes and improves the supply chain performance of the organizations. The SCOR identifies five management processes: planning, supply, manufacture, distribution and/or delivery and returning goods.

The previous models are ambitious for a SME since it has an informal structure and lack of technical knowledge. Other authors have developed management models which focus on the specific characteristics of SMEs. Among these authors, we have the following:

1. Díaz *et al.,* (2008) identified three main components in the supply chain: supply, production and distribution. Although they imply the integration of all the supply chain participants, they only study those parts which are susceptible of cost, ignoring the management importance to improve the supply-chain logistic performance.
2. González *et al.* (2012) present a logistic management methodology for the Small Enterprises improvement and identify five opportunity areas, such as supply, storage, distribution, costs and customer service. This work proposes some logistic improvement tools to reduce the logistic costs in each opportunity area. What is important here is that this is not an integral model.
3. Velázquez' logistics management model (2003) identifies, in a first cycle, the production, sales and logistics; in a second cycle, it classifies the material planning, inventory management and raw material storage, purchase plan and the order collocation to the supplier; the third cycle axis is the sale plan and its execution. This investigation describes a logistics management integral model for SMEs; however, this model loses integration force when it tries to identify the indicators to be fulfilled by SMEs: it focuses on the fulfillment of those indicators but in an isolated way.
4. The Dirección General de Política de la Pequeña y Mediana Empresa de España (Instituto PYME, 2007) made a logistic management model derived from the SCOR, where it identifies the following areas: supply, production, storage, transportation and distribution and customer service. This model is designed under the SMEs' characteristics; however, the final work of this investigation is reduced to a logistics good practice guide.

In the models just described, some authors make indirect reference to the internal information flows of logistics management importance. That is why the interrelation among each area of interest is weak. It involves a whole disintegration of the system and a challenge when it is pretended to improve the SME competitiveness.

The Logistic Performance Index (LPI) indicates that Mexico is 47th among 155 countries. According to these data, it has a global logistic performance of 3.06 (World Bank, 2012). These Mexican measurements and positions reveal some improvement opportunities in the different logistics areas that will permit to increase the country's competitiveness.

Table 1: Logistic Performance of Mexico

Performance areas	Grade	Position
Customs	2.63	66
Infrastructure	3.03	47
International shipments	3.07	43
Logistics competence and quality	3.02	44
Timeliness	3.15	55

This table shows the measurement of logistic performance of Mexico, the measuring system is graded in a scale from 1 to 5, where 1 equals the lowest level (or the less efficient) and 5 corresponds to the highest one (or the most efficient). (World Bank, 2012)

Worldwide more than 90% of enterprises are micro, small and medium-sized enterprises and they represent the economic sector providing the highest number of economic units and more than 50% of employment. In Latin America, this stratus represents between 60% and 90% of all the economic units (INEGI 2011b).

In spite of the importance of SMEs in the international and national context, they are lacking with regard to some challenges. They lack a formal structure in most areas (Díaz *et al*., 2012; Domínguez, 2010; Robles, 2003). Because of their size and lack of economic resources, it is common to find non-qualified workers making more than one activity. People managing certain activities are the same people who perform financial planning functions, production, personnel management and commercialization, among other activities. The lack of qualification leads them to develop logistics activities of a low quality due to the lack of technical knowledge and the incorrect supply chain concept application (Inter-American Development Bank, 2011). The different crises that this kind of situations produces have an influence on competitiveness (Daft; 2011; Rodríguez, 2003). Competitiveness is the capacity to attract and keep investments and talent (Executive Council of Global companies [CEEG –acronym in Spanish], 2004; Mexican Institute for the Competitiveness [IMCO], 2010), and the capacity to keep or increase the participation in the market through strategies without any profit sacrifice (Hernández, 2000)

Domínguez (2010) identifies other factors that promote the SME competitiveness. He mentions material factors (IT investment, monetary resources, infrastructure), and non-material factors (owner dynamism; management methods; human talent investment; technological, commercial and competitive security; sporadic investigation and development; administrative processes of the enterprise (Daft, 2011; Hatch, 2006), flexibility, strategic capacity, competitive advantages), among other factors. The organizational structure and processes are key factors to achieve an internal cohesion in the activities; the owners of these enterprises do not always have a clear idea about the strategic order or the appropriate information. Logistics permits to project those activities in an external scenario, visualize the activities and necessary links to commercialize the SME product and increase their competitiveness to a local or national level. The logistics activities are the core for new infrastructure investments. For this reason the integral logistics platforms are a way to link the offer and demand not only in the company context, but also in the national one (Economy Secretary, 2011).

One of the biggest SME challenges in the Mexican textile manufacture domain is the lack of formalization (Díaz *et al*., 2012). The procedures, organized structure, programs and planning lack fall in this category. The economic performance of an enterprise is directly related to its management and efficiency. The last five decades have involve frequent crises due to a gradual transition of a standardized massive production to one oriented to fashion (Vera, 2010). The adaptation process has generated a production, an employment and sales reduction, including a frequent competitiveness loss (ITAM, 2010; Vera, 2010). In the 50's, the textile industry participation in manufacture was of 24.7%; in 1960, it was of 17.4% and in 1970, 12.5% (Vera, 2010). In 2011, this participation was of 1.2% (and 0.74% of GDP); in 2008, it employed about 661,698 people (INEGI, 2011a; INEGI, 2012).

This industry plays a very important role in the national and international context, not only because of its economic contribution and the employment it generates, but also because of the strong cultural and craft tradition of its products, the accumulated infrastructure and the consumables availability to make the most of them in the production, especially in the central region of the country. Vera (2010) affirms that since the early XXI century, the market has been configured in a new "global chain of commodities motivated by the consumer", where certain activities will gain importance such as finished pieces of clothing importation, license of commercial name use and the assembly operation international subhiring (or shared production).

If the textile enterprises got integrated to this chain, especially SMEs, it would be susceptible of being in the market. It is important to look for the process optimization in a systemic way (Hatch, 2006), especially the logistics management in all the supply chain to make faster the information and product flows to the lowest cost and strengthen their competitiveness. There is another approach that recognizes the role that SMEs have as customers and suppliers net members related to big enterprises. This approach claims that the enterprise size is not important, since a micro, small or medium-sized enterprise could be a member of this net.

THE MODEL

This investigation is based on secondary source information which permitted us to design a model that will make easy the integral management of four of the most important areas for the textile manufacture SMEs: Inventories (1), Storage (2), Production (3) and Distribution (4), including the tools application that will improve the logistic performance of the supply chain (Figure 1).

1. Inventories: The purpose of this area is to determine how much material is required and to time orders.
2. Storage is to work under operative standards in order to protect and control efficiently raw materials.
3. Production is to work under a production master program which will satisfy the customer's demands: time, quantity and quality. It is necessary to identify the necessary and feasible continuous improvement tools of application in the transformation process.
4. Distribution: the purpose of this area is to have a high capacity at the lowest cost, including to create value in the supply chain through the optimization of the level of finished product inventory, of transportation and delivery.

Internal customer (I) is a member in the same organization which receives the result of a former process, carried out inside the same organization and being, at the same time, an internal supplier (II) of the following process. It is here where the integration of the internal logistics is conceived.

External suppliers (III) are enterprises that provide consumables to the organizations. On the other hand, the external customer (IV) is a member whose only link with the enterprise is to receive its goods and who has the chance to choose the best supplier. Therefore, the company must make frequent efforts to capture a long term relationship with him and, in this way, guarantee his loyalty. But to achieve the

customer's loyalty, it is also necessary to carry out an exhaustive evaluation and external supplier choice to guarantee quality and have as a result the external and internal customer's satisfaction. This process gives rise to the external logistics (b). However, the internal logistics must function first in order to have an efficient external logistics.

Figure 1: Logistics Management Model for SMEs in Mexico
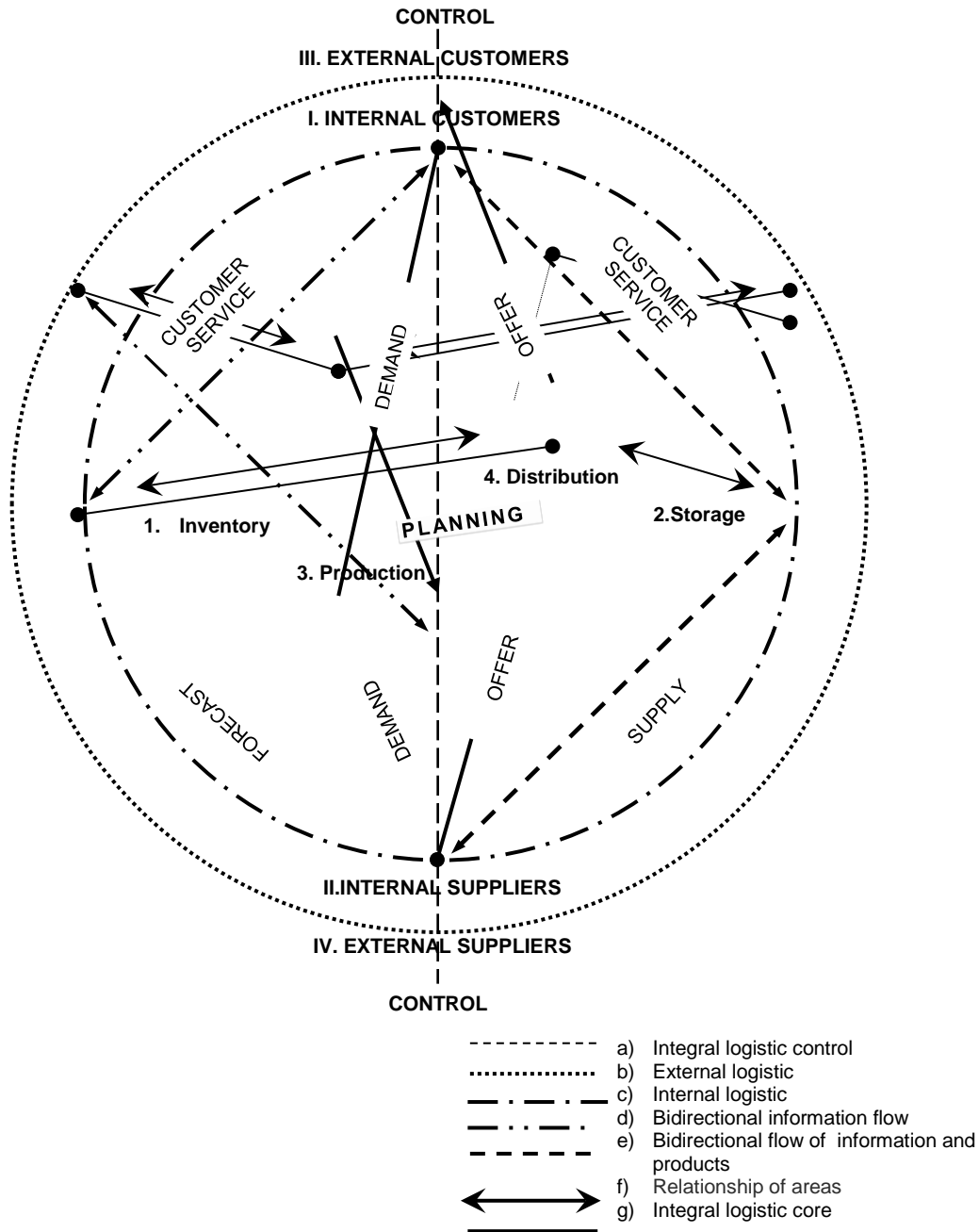
This figure shows a logistics management model for textile SMEs, which indicates the whole integration of a productive system through the information and internal and external product flows. Source: authors' figure.

The core of the model is the synchronized flow of the enterprise customer information to suppliers and vice versa (g); that is to say, the demand which starts in the upper node or the octahedron (external

customers) and the supply in the lower node (internal suppliers). The information and products generate the forecasting demand through the historical sales and the necessary materials supply in the time and place indicated under a just in time approach. These flows are the support to start the four main areas planning the model (1, 2, 3 and 4), which will be related (f), will plan and control (a) as a unit, so that they could impact in the customer level through the information and product flow in the system (d and e). The main characteristic of the model is that it must be able enough to share key information among the different members of the supply chain (from internal/external suppliers to internal external customers), in order to reduce uncertainty, since decisions made in any node of the octahedron will impact others.

A hybrid system of push-pull production control, functioning in an accurate and continuous way, making a combination of advantages between both systems, can achieve a greater effectiveness. The push systems are currently defined with the demand forecasting for the material planning. On the other hand, in pull systems the order quantities are determined taking into account the real demand (Hirakawa *et al.*, 1992).

The model proposed in this investigation will work under an approach based on a hybrid push-pull system in the supply chain: the push process is carried out before the customer demand; that is to say, it is necessary to plan and control the inventory (1) and storage (2) level. The pull process in the chain is carried out as an answer to the customers demand. That is to say, the activity level in the production (3) and distribution (4) area must be planned and controlled. The pull-push system must satisfy the customer concerning the time, place, quality, quantity and service at a low cost.

CONCLUDING COMMENTS

In this investigation, a logistics management model of the supply chain is proposed for implementation in SMEs of the textile sector. As a result of the simplicity in each area, it is feasible to adopt this model as a reference to improve the logistic performance of the supply chain. It is essential to improve technical knowledge, experience, internal and external customers' information to develop, to design new textile products. SMEs belonging to the textile industry can be part of a customer and supplier net linked to big enterprises if they understand the proper operation of work through the 'consumables global chain' schema and the 'whole package' schema for some products. A Logistics Management Model, as it is proposed in this work, permits a firm to face regional and international market challenges. Although integrating the combination of resources, abilities and systems required to achieve accurate logistics is challenging, However, if it is difficult to achieve service improvement, competitors will duplicate that integral capacity.

Although the textile industry has undergone some crises, it is still possible to improve the available infrastructure, knowledge and consumables, including the great tradition and craft experience in the production of some pieces of clothing.

In future investigations, an application of the proposed model in any SME of textile manufacture from Puebla-Tlaxcala is suggested in order to evaluate the model appropriateness. Evaluating each actor and variable taking part in the internal processes (those ones concerning the enterprise culture, training, human talent, information technologies, market intelligence systems and managing information systems) increases the efficiency in the production and the consumable global chain management.

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DYNAMICS OF THE ENTREPRENEURIAL PROCESS: THE INNOVATIVE ENTREPRENEUR AND THE STRATEGIC DECISIONS

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ABSTRACT

Literature regarding to the process of firm´s start-ups has supported the idea that the entrepreneur fulfills a key role in the economic development, because of his strategic vision to make innovations. Recent empirical studies have mainly tackled the process from the demand perspective, with focus on institutional aspects that favors or hinders the development of the entrepreneurial capacities. However, the entrepreneur's role, his skills, decisions and actions have been less observed from the economical field and from the strategic decision area. Even though the debate about the importance of recognizing the subjectivity forecasting of the key drivers that impact and define the observed phenomenon is increasing. The aim of the article is to understand the innovative entrepreneur's role in the entrepreneurial process by using a biographical design method, to identify throughout his life the way he decides to start a firm, how he experiences the process and evaluates its performance. It is proposed to analyze Enrique Eskenazi's entrepreneurial life, Grupo Petersen's President, one of the leading economic groups in the Argentinean business arena. His public recognition is associated to the YPF S.A's shares purchase in 2008 – the Leader oil company in the Argentinean market -, which has been recently nationalized.

JEL: M10- M20

KEYWORDS: Entrepreneur- Biographic Design Method- Strategic-Decision Making

INTRODUCTION

Several authors have investigated aspects related to the firm's start up's process, its stages, moments and subsequent performance (Reynolds 1991; Reynolds et al. 2005, Acs, 2006, between others). The relevance of understanding this process lays in the predominant role that fulfills the entrepreneurs in the capitalist system development, given its skills to innovate and create employment and economic growth. Literature's evolution has shown the different models that explain this phenomenon. In a first stage, the firm's start up theory based on the supply's perspective (*pull factors*), that is to say, relating psychological elements, natural traits and personal motivation/incentive that drives an individual to begin its entrepreneurship (Mc Clelland, 1961; Gartner, 1989). Recently, especially due to the Global Entrepreneurship Monitor's creation (GEM) and the development of statistic information that permits a comparison of the entrepreneurial activity in different countries and regions, the theoretical and empirical contributions have been focused in the analyses of push factors. That is, institutional and market conditions that attract entrepreneurial vocations to certain environments and no others (Álvarez and Urbano, 2012). In this sense, it is observed an important peak of the institutional analyses of entrepreneurship associated to an empirical investigation's enforcement carried out through aggregated and quantitative information. Even though the scope of statistics favored the comparison and the development of politics for entrepreneurs, these restrains the entrepreneur's approach from an comprehensive and holistic view that integrate his actions and intentions, its natural and personal traits and his relationship with the environment where he socializes and detects entrepreneurial opportunities.

The purpose of this article is to connect the hypothesis of the entrepreneurial risk management and agile style management as a fuel to economies in the world. In order to expand this, it is proposed to analyze Enrique Eskenazi's entrepreneurial life, Grupo Petersen's President, one of the leading economic groups in the Argentinean business arena. His public recognition is associated to the YPF S.A's shares purchase in 2008 – the Leader oil company in the Argentinean market-, which has been recently nationalized. Because of that, this paper proposes to implement a narrative approach, identifying the principle events that define his entrepreneurial career. The novelty and contribution that provides this method is its limited use in the entrepreneurial arena, even when relevant authors in the field have emphasized its relevance (Gartner, 2010). The paper is structured in the following way. In the first place, we resume the main theoretical lineaments from the Austrian perspective that analyzes the entrepreneur's figure from an active role. In the second place, we briefly describe the method, but also the entrepreneur's analyze and the results obtained from the given data. Finally, an entrepreneurial decision model is developed and its conclusions.

LITERATURE REVIEW

Several authors have defined entrepreneurs as individuals who have the ability to identify a business opportunity and, therefore, pursue the resources in order to start up a firm (Carton et al. 1988; Miller, 1983; García and García, 2006; Venkataraman, 1997). The main attributes related to entrepreneurial skills are the talent to materialize ideas into projects and the resolute behavior to assume risks, react to uncertain contexts and solve problems. Definitely, all the effort is oriented to exploit market's opportunity (e.g. innovations in products and services, processes and materials and/or access to unexplored markets). Those innovations constitute the key elements to develop and consolidate productive models in the context of the "new economy". In fact, new ventures and innovations are important to improve employment conditions, social cohesion and consequently, economic development. (Reynolds et al. 1995; Drucker, 1998; Baumol, 2003, 1993; Audretsch, 2004).

Since the beginning of the marginalism revolution, the Austrian perspective has emphasized on the relevance of human action in explaining economic decisions. In fact, Mises (1980) built a theory based on *praxeology*. The idea of this perspective is that individuals take decisions according to their objectives, subjective valuations and specific knowledge about the world. Furthermore, those characteristics imply a dynamic and uncertain context that often is not in equilibrium, where knowledge is disperse, pragmatic and tacit. Therefore, is not possible to explain economic relations considering a static and deterministic context as neoclassic economy sustained their arguments.

Moreover, Austrian economists pointed the following traits that describe economic agents: 1) specific knowledge of their preferences and opportunities; 2) subjective interpretation of the economic facts and other agent´s behaviors; 3) subjective expectations of future events; 4) active engagement in new unexploited opportunities. Summarily, market competence is promoted by different agents that know different things, manage disperse and incomplete information, sometimes in an adversarial mode. As Hayek (1998) argued, market competence is a discovery process. The searchers of new opportunities (new products or incremental innovations of existent ones) are entrepreneurs. Therefore, market competition is an entrepreneurial process; profit maximization is the exploitation of a new economic opportunity and the entrepreneur, the key economic agent in the economic system.

Grebel et al. (2003) consider that it is necessary to change the concept of "homo economicus" into "homo agens". The homo agent subjectively built a mental representation of the reality according to their own perceptions. In order to construct those mental models they must learn. Because of this, there is heterogeneity among individuals. Only by social interaction agents coordinate their action with others. So, the concept of "homo agens" implies the recognition of the relation between the social and economic context but also of personal behavior. According with this assumption, it is possible to explain

entrepreneurial failures. In fact, entrepreneurial errors are the origin of market disequilibrium and, consequently, the source of new market ideas.

According to Kirzner (1973), sellers and buyers act in and entrepreneurial mode. That is, they exercise the competence of taking decisions, searching for new products and changes to pursue and maintain economic benefits. As neoclassic explanations ignore the consequences of the existence of uncertainty, the market competence is unreal. Knight's ideal (1933) situation of perfect competence has omitted the consequences that emerge from uncertainty's existence, being the intelligence and the entrepreneurial capacity the responsible of its existence "in situations in which there are no correct proceedings so as to decide what to do". Individuals should create their own structures to comprehend a decision and it is not a rational choice's process but it depends on human intelligence's traits (Loasby, 2006: 33). In this sense, Knight joins the entrepreneurial function, a human intelligence's trait, with uncertainty or non insurable risk. In fact, this author calls entrepreneur to who decides in a company, without being the owner, because he assumes the chance that this independent entrepreneur may not invest capital in his business, just providing his work in such a sense that the capability of gaining money is his principal guarantee.

From a similar perspective, Kirzner (1973) assumed that Mises's human action is an entrepreneurial action, in the sense that is capable of discovering, innovating, predicting or appreciating opportunities in a dynamic and competitive world, where agents purchase their personal interests. The entrepreneurial activity and profits arise from instability conditions from different individuals plans; conditions that the entrepreneur captures and tries to manage with his actions. Consequently, his entrepreneurial activity is basically a coordination activity of the different personal projects, owed to his imagination and audacity. Thus, for Kirzner (1998), the entrepreneur is the agent who is seeking for opportunities and throughout his intervention reestablishes equilibrium in the market.

Therefore, the entrepreneurial function basically consists in opportunity's perception, assigning an active role to the entrepreneur, as a key agent for market equilibrium's evolution and attainment. According to Kirzner (1999), the entrepreneur's role is essentially creative, develops new information where he perceives that there is a profit opportunity that the market notifies through prices, in the sense that agents learn the way they should act; coordinating their activities. In this sense, Buenstorf (2007) considers that the opportunities' structure of a region can be created throughout human actions. From this perspective, the markets' dynamic and opening create new business opportunities. So, there are two ways to analyze start ups. On the one hand, with an objective nature, like is presented in Casson's model (2003), where given a structure of opportunities, start ups depend on the individuals' alertness to recognize and exploit them. On the other hand, a dynamic and idiosyncratic view, that introduces in the analyses of opportunities' nature, the endogenous changes and differences between industries and regions. Hence, start up process are related to the exploitation of an idea, that is to say, recognizing an opportunity is a subjective process (Shane and Venkatamaran, 2000).

These authors classify these opportunities in categories. In the first place, the ones associated to the development of new information that consists in technology's inventions. In the second place, market's inefficiencies exploitation, as a result of the existence of asymmetric information, that occurs in a determined space and time. And, at last, the ones associated to changes in relative costs and benefits that arise from the use of alternative resources, being these changes related to political and demographic aspects. The idea that lies beneath in this approach is that the economic system is constantly in disequilibrium. The process that links the individual with the chance's gathering, in the business arena, is analyzed in three stages: 1) discovery's phase (perspicacity to visualize new ideas towards others individuals); 2) running of the opportunity (entrepreneurial decision to get involved in a business project); 3) way of materializing it (entrepreneur's estimations of costs and risks).

Finally, recent literature argues that there are four factors associated to the process of business venturing: a) entrepreneur's vision; 2) new business's characteristics; 3) the economic context and 4) the actions executed by the entrepreneur in order to exploit the opportunity. Gartner (1989) describes each dimension associated to the start up process considering the following variables: entrepreneur, innovation, organization, value creation, profits, growth, uniqueness and property. The following table resumes the main attributes related to theses factors.

Table 1: Main Dimension Associated to the Start-up Process

Entrepreneur	Innovation	Organization	Value creation
▪ Take organizational risks ▪ Take financial risks ▪ Effort ▪ Perseverance ▪ Tolerance towards uncertainty ▪ Take psychological risks ▪ Need of achievement ▪ Take rapid decisions ▪ Self control ▪ Autonomous ▪ Creativity ▪ Vision ▪ Self employment	▪ Service innovation ▪ Reach demand in a creative way. ▪ Product innovation ▪ Market innovation ▪ Technology innovation ▪ Create a new idea or readapt an existent one ▪ New strategy for assigning resources. ▪ It can occur in establish firms ▪ Intrapreneurship ▪ *Corporate Entrepreneurship* innovation in big firms	▪ Assignation on resources ▪ Settle opportunities y resources to create products and services. ▪ Gather resources. ▪ Add value. ▪ Mobilize resources. ▪ Generation of incremental wealth. ▪ Develop new companies. ▪ Set up business that adds value.	▪ Transform a business to add value. ▪ Create a new business. ▪ Manage a firm's strategy for growth. ▪ Process to break traditional procedures. ▪ Destroy status quo. ▪ Create wealth. ▪ Requires special talent from entrepreneur.
Profits ▪ Creation of a business not based in profits. ▪ Creation of a managed organization.	**Growth** ▪ Involved in fast growth. ▪ Assume an attitude guided by growth. ▪ Create profits. ▪ Financial leverage in the acquisition. ▪ Self-centered behavior. ▪ Start up with the intention of growing.	**Uniqueness** ▪ A special way of thinking. ▪ A vision of attainment for the company. ▪ Create a competitive advantage. ▪ Markets' identification. ▪ Provide a product or service. ▪ Create a unique combination. ▪ Understand requirements to achieve goals. ▪ Identifying others to associate. ▪ Ability to decode situations into unsatisfied needs. ▪ Understand the way governmental regulations affect business.	**Property** ▪ Develop its own business. ▪ Create a business life's style ▪ Acquire an existent company. ▪ Activities associated with becoming a business's manager and owner.

Source: Gartner (1989).

In this sense, Casson (2003) assimilates the figure of an entrepreneur to a coordinator of resources, a strategist, an innovator and an economic agent who can detect opportunities in turbulent contexts. Foss et al. (2006) define as the main attribute of an entrepreneur, his capacity to evaluate and judge market opportunities and their profitability. In addition, Schumpeter (1964) highlights the key role of the entrepreneur to innovate and, consequently, set barriers to competence and gain extraordinary profits. The linking key between entrepreneurial actions and the entrepreneurs is the availability of information (Casson y Wadenson, 2007).

DATA AND METHODOLOGY

We develop a biographical study combining primary data (in-depth interview) and secondary one (documents) highlighting the main aspects related to entrepreneurial decisions. The method of research allows us to deeply understand Enrique Eskenazi's leadership strengths (Gartner, 2010; Watson, 2013), covering his first years as a child, providing educational and family values to all his career stages/experiences. Placing as specific lends on risk management as well as companies' acquisitions.

In-depth interview made to this role model of entrepreneurship and also based on the documentary analysis of his autobiography, it clearly lays out the key factors that impact in the process of start up, its restructuring, expansion and diversification. By describing the different moments in his business's life and of each decision of new firms' acquisitions, this research inquires in the model of decision making that defines the entrepreneurial dynamic, the key elements in the process and the entrepreneurial qualities shown in each observed moment. The results show that behind the decision of firms' purchase there is a innovative entrepreneur leader that is constantly seeking for new opportunities in the market, and agile and innovative style that makes the big difference in business growth, manages information and networks, assumes risks, faces challenges of solving problems, makes strategic planning, makes innovation in process through companies' restructuring and devotes his life to develop his entrepreneurial personality assuming challenges when entering to diversify markets. Therefore, innovative entrepreneurs have great impact on economic growth in any market, industry or global business context.

The interview was done in February 2012 in YPF´s Company. For analyzing the decisions strategy we identify the central categories using Glaser and Strauss (1999) methodology. Firstly, doing an axial codification analysis and, secondly, a selective codification with the main categories. The validation is guaranteed by the saturation of categories, the transcription of the interview, the triangulation of researchers and sources of information for the interpretation of data.

RESULTS

Enrique Eskenazi's career for sure started when he was ten years old. As we know family values are key to drive behaviors. His father, Isaac Eskenazi, gave him a tray full of toys, and said "*if you want to buy any candies or magazines, you should sell those toys in the neighborhood*". This upbringing approach taught Enrique Eskenazi how to manage efficiently his working capital since he was very young, and early injected him his entrepreneurial decisions. He would also define himself, as a "*curious and naughty*" whom would love to call people's attention, so temper is relevant as well.

Another important piece of his life was that his parents had migrated from Istanbul to the province of Santa Fe, Argentina, so from this experience he internalized the concept of risk and a complete change of the family life. *"The concept of risk thrills me, I believe that if there is someone who exposes is the person who migrates, because abandons its roots over a dream's base…"*

Nevertheless, not everything diminishes to taking risks. In the interview shared with us, he, very humbly mentioned that although he acquired knowledge after some unsuccessful episodes, luck has also been on his side. "*It is impossible to deny that before, during and after everything I could say, there is a factor that installs, a kind of diva between factors, that is the good luck. It is only in hazard's function –that neither philosophies, nor economists - can explain some results of entrepreneurial life*".

We also understand, in this paper that formal education, training and experience in big companies are fundamental to consolidate the skills and capabilities for an innovative leader of this nature. He took up chemical engineering in *the Universidad Nacional del Litoral*, (UNL) and the good chance of requiring a trainee gave him the opportunity to have his first and foremost contact with the multinational Bunge & Born group (first multinational company in Argentina). Starting off with his twenty four years he drove his whole career in this group to get to the general manager position. His almost thirty years gave him the chance to expand his knowledge as a businessman, take advanced courses in the USA, manage diverse industries, and in this way gave him more confidence and expertise in the enterprise arena. In this period of his life, he got married with Sylvia who has relentlessly supported him around his career life.

It is natural in human beings to stay in the comfort zone, but a true entrepreneur challenges this concept, in the very best professional momentum Enrique Eskenazi had as a general manager in Bunge & Born he

decided to resign and focus his entrepreneurial instinct to new business path and fulfilling his dream of becoming an independent businessman. *"It came a time in my career, where I had reached to the general manager's position, I was a guy with prestige and I said I want to make my ultimate stage of my career as an entrepreneur"*. Giava FBR S.A, was the company that pushed Enrique Eskenazi in his entrepreneurial dream come true -A food machine's consultancy, manufacture and sale company-,it was partnered with Italian businessmen. Though the company was very well managed, the economical and political instability didn't help, so he continued seeking for further opportunities. *"The food industry's businessmen knew me and also I'd been one of the founders of an organization that was called COPAR, that for the very first time I gathered together all the food industry and all that gave me an affection with honesty, prestige and also an upright mainstream, typical from Bunge & Born"*.

At that moment, Enrique Eskenazi met Carlos Alberto Petersen, owner of Petersen, Thiele & Cruz Arquitectos & Ingenieros, a very important firm that was on the edge of bankruptcy, and offered him the management of the company. Because of his knowledge in the subject and the prestige reached in the field, the management of the company is given to this innovative entrepreneur. At the same time, this entrepreneur visualizes a great opportunity, buying stock from shareholders that withdrew from the company. Finally, Carlos Alberto Petersen and Enrique Eskenazi remain as partners and owners from this company. It is interesting to go in depth in this purchase's decision, considering that thereafter, this innovative entrepreneur generated big decisions, completely restructured and turned around the company. The results, for assuming such a risk, have been extremely satisfactory for the entrepreneur. Each businessman needs to have the accurate balance of risk management, he must recognize were and how to play with it on his daily decisions. *"I remember that in certain moments of crisis some of the stockholders wanted to sell stock because they were exhausted. So I started to buy them because I honestly saw that Petersen had an excellent future in the mid- term"*.

As per this new job, he starts expanding in new and different fields. The first diversification carried out by Enrique Eskenazi from Grupo Petersen is related to the financial area. This innovative entrepreneur identified as essential to support the different Argentinean economic areas such as agrarian and mining industry by creating a regional bank. There are several reasons for that: due to costs reduction, a specialized bank for different industries. Furthermore, profits would stay in the area and reinvested in the sector and would not be rerouted to the city. In line with this strategy he didn't hesitated about the decision of acquiring San Juan's bank in 1996; since then a multiple bank acquisitions: *Banco de Santa Cruz* in 1998, *Nuevo Banco de Santa Fe* in 2003, *Nuevo Banco de Entre Rios*, in 2005. More importantly is to mention, that these acquisitions had been made in a critical context of the financial sector. The '90, was a decade in which the financial sector had a really poor profitability. Moreover, state-owned companies have started being privatized. So, this entrepreneur, with his team takes the opportunity to participate in these biddings behind bank acquisition and thereafter having restructured. Within this financial move, he modified the name of the company as Grupo Petersen. Another relevant strategic driver is a very smart networking within the business arena, Enrique Eskenazi shows how important is, with a wide spread of examples within his experience throughout strategic associations with investors.

"We began to develop the idea of organizing a regional bank so the money didn't continue flowing to Banks in the city of Buenos Aires or to the Gran Buenos Aires. These were absorbing an important percentage of the profits that were produced by the country. That is, the concept was that the capital stayed in the region where it was produced for, from there, obtaining profits for the simple fact that in the regional banks the money has no other chance than being re-invested in the area. The key consists in retaining the money in the province's area."

Consistent with his innovative thinking process, he enters in the agricultural wine production industry, Santa Sylvia, approximately in the year 2000. He was foreseeing a strong global demand with the entrance of Asian countries. It is interesting the way, at the in-depth interview, the entrepreneur rescues

the role of farmers, supporting the idea that they are the real innovative entrepreneurs, who take constant risks. What demonstrates also, that this innovative entrepreneur value the person who is capable of taking risk. This is, for him, a fundamental and necessary trait that has to have an innovative entrepreneur. *"Argentina is a country with great possibilities because there are four riches. There are agrarian riches that are the Argentinean basis because it is a combination of capable people, that even they seem to be ignorant they assume risks, that are the true entrepreneurs, that are the agricultures, big, small, medium-sized....and that they give a mainstay to Argentinean growth, with the world's needs and more now with the inclusion of the Asian countries. The other riches are mining, energy and education."*

In line with the idea exposed above, the decision of entering to the energetic industry becomes the third stage of Grupo Petersen's diversification. It is a quantum leap that Enrique Eskenazi makes, the acquisition's decision, in this case, of YPF S.A shares in 2008. Is extremely important, because of the dimension of the transaction but also because of it is a national emblem for Argentina. Repsol owned approximately 85% of the stock; first Enrique Eskenazi acquired 10%, and then, in 2011 acquired an additional 15%. YPF S.A. (*Yacimientos Petrolíferos Fiscales*) was established in 1922 as a state-owned company. The company has dedicated, from its establishment, to exploration, distillation and oil sale. Afterwards, in 1992 the company is privatized. Therefore, six years later, Repsol, a Spanish company, makes the acquisition. Since May 3rd of 2012, the company returned to the government's hands. This generated an international commotion not only between the governants from different countries, that showed their annoyance but also from others that demonstrated their support to this decision. Enrique Eskenazi explained the dimension of this transaction, and background of YPF S.A. historical data. *"The decision of acquiring YPF meant a great leap for our company: we joined up to one of the most important energetic companies in Latin-America. Diversifying in a key industry, with an important growth potential for the country's development....This activity represents a sustainability base of commodities food's industry that characterize the country".* Taking into account the interpretation and the obtained elements from the interview and the documentary given by the entrepreneur, we could analyze Enrique Eskenazi's life stages as well as professional and business milestones. It is summarized in the following comparative table.

Table 1: Decision-Making Strategies and Personal Traits

C1	C2	C3	C4	C5
Decision	**Decision's Description**	**Entrepreneurial Traits**	**Opportunities' Detection**	**Extract That Relates C3 & C4**
Decision N°1: becoming a businessman	Giava FBR S.A -A food machine's consultancy, manufacture and sale company-,it was partnered with Italian businessmen.	risky brave network persistent freelance independent	FBR, Italian firm - dedicated to machine's manufacture for the food industry- proposes an association with Enrique Eskenazi, because of its prestige and knowhow acquired in Bunge & Born.	*"The food industry's businessmen knew me and also I'd been one of the founders of an organization that was called COPAR, that for the very first time I gathered together all the food industry and all that gave me an affection with honesty, prestige and also an upright mainstream, typical from Bunge & Born".*
Decision N°2: Great challenge	Petersen, Thiele & Cruz Arquitectos & Ingenieros, a very important firm that was on the edge of bankruptcy offered him the management of the company.	challenging seeker knowhow prestige working capability network	This entrepreneur visualizes a great opportunity, buying stock from shareholders that withdrew from the company.	*"I remember that in certain moments of crisis some of the stockholders wanted to sell shares because they were exhausted. So I started to buy them because I honestly saw that Petersen had an excellent future in the mid- term".*
Decision N°3: Diversification 1° stage: FINANCE	The first diversification carried out by Enrique Eskenazi from Grupo Petersen is related to the financial area. In line with this strategy he didn't hesitated about the decision of acquiring San Juan's bank in 1996.	seeker determined creative forward looking approach	This innovative entrepreneur identified as essential to support the different Argentinean economic areas such as agrarian and mining industry by creating a regional bank. There are several reasons for that: due to costs reduction, a specialized bank for different industries. Furthermore, profits would	*"Resuming Grupo Petersen's idea of creating regional banks, the group supports the idea of unifying banks, either by acquiring banks or by making strategic associations, because our goal is to work in common services...for reducing costs through the centralized services purchase"*

				stay in the area and reinvested in the sector and would not be rerouted to the city.
	Santa Cruz Bank in 1998	networker		*"...the idea of investing in the Patagonia excited me, because I intuited its revolutionary's role in Argentina. There was a promising future over there: oil and gas industry, mining and fish industry and tourism..."*
	Nuevo Banco de Santa Fe in 2003, Nuevo Banco de Entre Rios, in 2005.	networker		*"We began to develop the idea of organizing a regional bank so the money didn't continue flowing to Banks in the city of Buenos Aires or to the Gran Buenos Aires. These were absorbing an important percentage of the profits that were produced by the country. That is, the concept was that the capital stayed in the region where it was produced for, from there, obtaining profits for the simple fact that in the regional banks the money has no other chance than being re-invested in the area."*
Decision N°4: Diversification 2° stage: AGRARIAN INDUSTRY	He enters in the agricultural wine production industry, Santa Sylvia and Xumek, approximately in the year 2000 in the province of San Juan.	seeker resolute sense	He was foreseeing a strong global demand with the entrance of Asian countries.	*"Argentina is a country with great possibilities because there are four riches. There are agrarian riches that are the Argentinean basis because it is a combination of capable people, that even they seem to be ignorant they assume risks, that are the true entrepreneurs, that are the agricultures, big, small, medium-sized....and that they give a mainstay to Argentinean growth, with the world's needs and more now with the inclusion of the Asian countries. The other riches are mining, energy and education."*
Decision N°5: Diversification 3° stage: ENERGY	Entering to the energetic industry becomes the third stage of Grupo Petersen's diversification. It is a quantum leap that Enrique Eskenazi makes, the acquisition's decision, of YPF S.A shares in 2008.	risky network	Related to context, Enrique Eskenazi mentions the developed prestige by the Grupo Petersen that gave them support from Swiss, US, Brazilian and Mexican banks, that permitted Grupo Petersen to enter to YPF S.A. but also it should be taken into account that de Repsol demonstrated its selling intentions.	*"The decision of acquiring YPF meant a great leap for our company: we joined up to one of the most important energetic companies in Latin-America. Diversifying in a key industry, with an important growth potential for the country's development....This activity represents a sustainability base of commodities food's industry that characterize the country"*

Source: Author's own *Table 1 shows the main categories analyzed for each entrepreneurial decision taken throughout Eskenazi's life. For that, personal traits were indentified and the ones associated with business opportunities. Additionally, it is illustrated with a piece so as to improve the interpretation and validity. The decisions taken by the entrepreneur reflect in a chronological mode, the entrepreneurial career's evolution, and the industries where he developed his skills and the relevant variables that describe that entrepreneurial stage.*

Furthermore, the following figure resumes the elements that have an impact in the entrepreneurial decision model of this entrepreneur from a naturalized and dynamic perspective.

Figure 1 synthesizes the principal elements that define the entrepreneurial decisions from the entrepreneur Enrique Eskenazi. Following the analysis's logic proposed by several authors that give an active role to the entrepreneur in the dynamic start up's process (Casson, 2003; Gartner 1989; Casson and Wadenson, 2007; Buenstorf, 2007 and Shane and Venkatamaran, 2000). From the entrepreneur's active role, we indentify as main personal traits the following: assumes risks, alertness, creative, coordinator, resolute and determined, forward looking approach, challenger, brave, persistent, networker, and strategist. Additionally, it stresses his capability to innovate, considering that he recognizes the influence of changes in the environment. On the other hand from his actions, his abilities to evaluate and judge the market's opportunities are stressed, his capability for assigning scarce resources and his skills for entering to dynamic industries, with strategic scope and of key impact for the economic and social development of the country.

The link between the actions and this entrepreneur's profile is the information availability, which is the access way to those exogenous opportunities. The network and relations developed by the entrepreneur, determined element in the entrepreneur's decision making model, reduces the chance of committing two mistakes. On the one hand, by losing a profitable business opportunity or on the other hand, by carrying out and idea that he considers profitable presumptively and then it is not. This model considers an indispensable requirement to obtain information that allows detecting profitable business opportunity; information that maximize the entrepreneur's profits. In this case, the opportunities' structure it is not only an exogenous element, where alertness of individuals determines its exploitation, but also can create those opportunities through human actions.

Figure 1: Entrepreneurial Decision Model from Austrian's Perspective
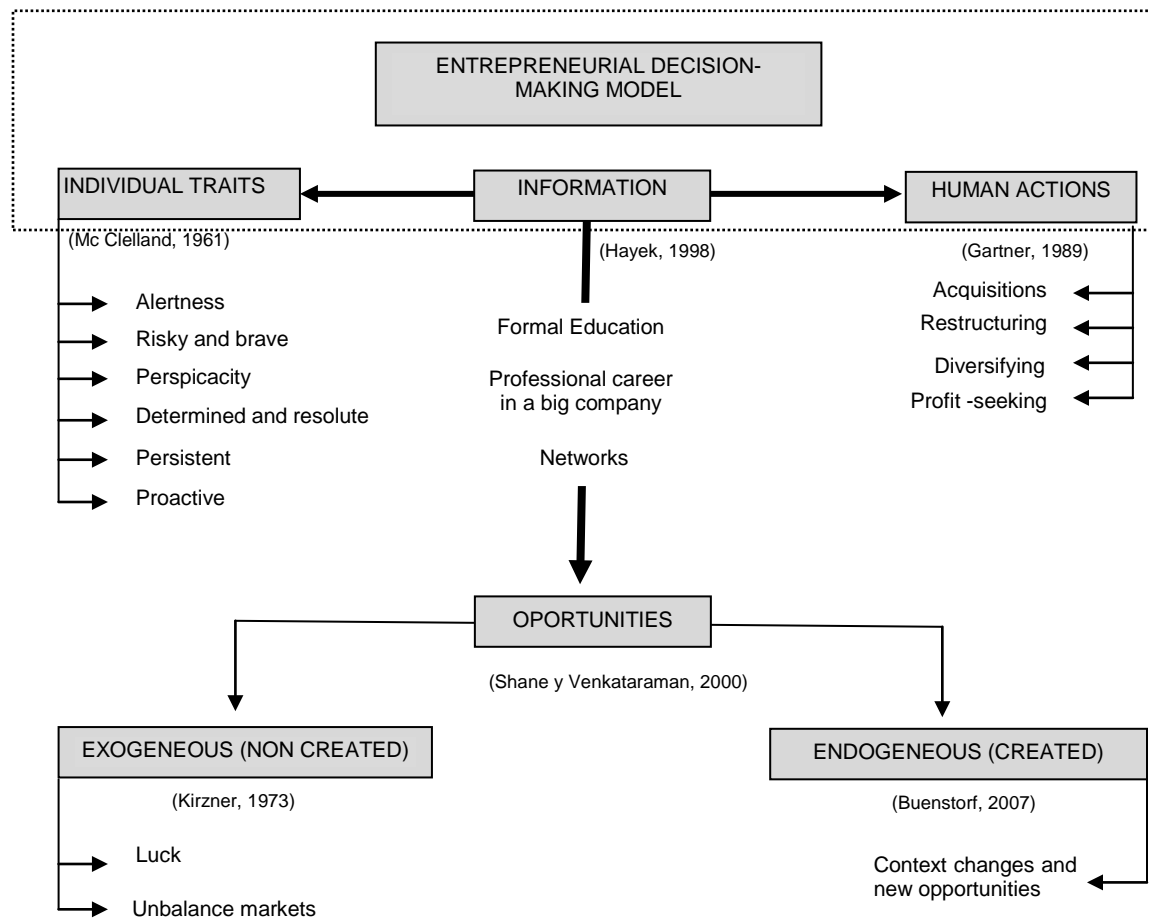
Source: Author´s own.*The previous figure presents in a schematic form the relations between the swamped variables in the analyzed case and literature. It is based on results obtained from the in-depth interview, but also from documents and theoretical hypothesis formulated for entrepreneurial process.*

From this perspective and in concordance to what was expounded by the interviewee, the market's dynamic and opening constantly generate new business opportunities, and as Buenstorf (2007) defines "like company's development, industries evolution changes the nature of the existent opportunities and also creates new ones". In this way, exist two ways to analyze new companies' arising. The first one, with an objective character, where given the opportunities' structure, firm's start up depends on the alertness of individuals to recognize and exploit them (Casson, 2003). The other view is peculiar and dynamic, as it is defined by Buenstorf (2007), and where the evolutionary perspective allows including the analysis of

opportunities' nature, the endogenous changes and differences between industries and regions. So, when there are diverse paths in the markets, are these markets that mark their development and dynamic. The companies that take part in it not only can exploit the existent but not exploited opportunities but also by creating new opportunities, according to their own experience and learning process.

CONCLUDING COMMENTS

In this article we've proposed to investigate the entrepreneurial process from a dynamic and interpretative perspective, using the biographical; method to comprehend personal traits, market and environmental aspects that define entrepreneurial decisions and its dynamic entrepreneurial impact. Therefore, we've analyzed Enrique Eskenazi entrepreneurial case, an emblematic person in political and business arena in Argentina, whose entrepreneurial career is based in companies' acquisitions, re-structuring and expansions from different strategic industries from Argentinean economy. Hence, we employed an introspective method, with the execution of an in-depth interview with the businessman and the autobiography' analyzes, that allowed us to enquire in implied issues that are difficult to understand through traditional methods usually applied in the field.

In this sense, we have illustrated that the opportunities' recognition is a subjective process, even when its existence is an objective phenomenon that it is not perceived for all the individuals neither in any moment. The entrepreneurial opportunities cannot be exploited having as a reference the optimization action because the range of options as a result of new products' introduction is unknown, excluding the possibility of making mechanic calculation for valuing the alternatives. Then, we are able to say that entrepreneurial decisions involve the identification of means and goals previously not detected by the agents in the market. The process that links the individual with the business opportunities' capture is being analyzed in three stages: 1) Discovery's phase; 2) opportunity's running, and 3) the way to materialize it. The discovery's phase is related with the ability of some individuals to capture new ideas towards others that doesn't have that kind of ability. This asymmetry produces entrepreneurial opportunities and it depends on personal traits and abilities, the management of information and the implemented measures that the entrepreneur develops in a specific moment, that it is not a standardized layout in the population. It is also important to point out the value that the entrepreneur gives to that opportunity; assessment which is comprehended by its capacity of foreseeing its profits and its acceptance in the market. We believe that these entrepreneurs are essential in the business arena because they forge throughout their decisions and actions, building up plans in regions and countries simply with their own dreams, ideas and traits, that mean solid structures for future generations and most importantly, they are the driving force for up and coming entrepreneurs. This entrepreneurial style propels individuals to take risks and seek for their personal interests.

We emphasize two considerations about the investigation's potentialities. In the first place, the reappearance of the Austrian theoretical approach so as to analyze entrepreneurial phenomena. Considering that the positivist paradigm is dominant in research fields demonstrates that in changeable environments, opportunities arise and blow-out in a vertiginous way and it is necessary to comprehend the entrepreneur's active role in start ups, in innovation's dynamic in markets and these individuals' strategic role, that are reliable agents of change and development. In the second place, the analysis of singular and illustrative cases (of extensive analysis in media but with difficult access for academic research) and the use of biographical method as an investigation tool, demonstrates the relevance of understanding the agents' subjectivities and perceptions, developing new visions and realities from the use of new approaches. Thereon these potentialities, we propose to continue in future lines of investigation on the following questions: which differences may present this entrepreneurial dynamic based in acquisitions and transformation of existent companies towards the entrepreneurs that create and seek its own productive resources so as to star up a new company?

Which is the role that assumes the environment when it is time to acquire entrepreneurial capacities to go in depth in aspects related to the relevance of systematic education, entrepreneurial culture of the region and informal networking (political, social, labor and family) for the development of novice entrepreneurs? To what extent the applied decisions are developed by accumulated knowledge and certain conditions in the exercise of entrepreneurship and which ones emerge as a response to changes and characteristics of the exploited opportunities? Finally, we believe that these types of studies expound the relevance of placing the entrepreneur in his historical and contextual reality because each entrepreneurial process is embedded of idiosyncratic characteristics that are indispensable to appreciate. There are no replicable models; there are real businessmen that can provide motivating examples for future entrepreneurs. Thus is important to tell their stories.

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OUTBOUND LOGISTICS MANAGEMENT IN MANUFACTURING COMPANIES IN GHANA

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ABSTRACT

The optimization of outbound logistics operations through consolidation and collaboration using a third party logistics provider has potential to contribute to the profitability of an organization by lowering the cost of warehousing and transportation. The purpose of this paper is to assess outbound logistics of a manufacturing company (Guinness Ghana Breweries Limited) using the services of a third party logistics provider (DHL). Empirical research was employed to explore outbound logistics performance of the manufacturing company. Structured questionnaires were used to capture the perception of staff of GGBL regarding outbound logistics performance of the services of the third party logistics provider. The study revealed there was not much significant change in the supply chain performance measure of outbound logistics activities for the services of DHL to GGBL. Suggestions for improving the issues captured are provided. The performance measurement construct obtained from the study can be used by management of GGBL to perform routine assessment and evaluation of outbound logistics activities to improve supply chain performance of the organisation.

INTRODUCTION

Emerging global competition has made it possible for logistics companies to improve their warehousing and distribution services. Most organizations have made it clear by designing and operating a customized warehousing and distribution service that deliver great benefits. There has been more focus on operational excellence which implies you must consistently deliver quality service across all operations. Many manufacturing companies are now outsourcing their outbound logistics, because they cannot do it themselves and remain competitive. They began to look to third party specialist to perform activities that were not a part of their core competency (Grant et al., 2006). A company like DHL global has the know-how and experience necessary to design and manage warehouse and distribution processes, so product flows are optimized and supply cost are driven down. Customers can reduce their stockholding and increase service levels, while maintaining the flexibility required for meeting fast-changing market demands. Brewery has a long supply chain management processes from inbound, operations and outbound logistics activities. Most third party logistics providers in Ghana specialize in warehousing and distribution as their core business. Being motivated by the rapid increase in warehousing and distribution services in Ghana and worldwide, the research seeks to identify how this is managed in a third party logistics company. The logistics provider restructures warehousing activities as well as distribution network to gain a competitive advantage for itself and the outsourcing company.

Most third party logistics company like DHL have experienced some challenges managing warehousing and distribution services in some manufacturing companies like breweries. It is necessary to study challenges in the outbound logistics of a manufacturing company and develop strategies to overcome challenges. Most manufacturing companies have not been able to successfully maximize their potential in

outbound logistics in terms of warehousing and distribution. They have not critically assessed the performance of their outbound logistics efficiency. It is essential to conduct scientific research to identify know how warehousing and distribution is managed and also understand all associated challenges and how they are resolved. It is important to know whether manufacturing companies benefit when they engage third party logistics in their warehousing and distribution activities.

The study examined how DHL manages the warehousing and distribution of a brewery like Guinness Ghana Breweries Limited (GGBL). In May 2011, GGBL outsourced the outbound logistics activities to DHL. It is essential to know how these activities have impacted the business performance of GGBL. The paper begins with an overview of the brewery supply chain system and the unique problem that it presents in Ghana. A review of the literature regarding supply chain will then follow. The paper then presents the data and methodology for the study. The results and the discussion section follow with analyses of the data. The conclusion and recommendation section follows respectively.

LITERATURE REVIEW

<u>Overview of Logistics and Supply Chain Management</u>

The term supply chain management (SCM) was introduced in the early 1980's and subsequently attracted a great deal of attention. The council of supply chain management professionals defines supply chain management as encompassing, the planning and management of all activities involved in sourcing and procurement, conversion and all logistics management activities. According to Gunasekaran et al. (2004), supply chain management has been a major component of competitive strategies to enhance organizational productivity and profitability. Supply chain management includes coordination and collaboration with channel partners, which could be suppliers, intermediaries, third party service providers, customers (Lambert et. al., 2006). Within the organization, supply chain management refers to a wide range of functional areas. These include supply chain management-related such as inbound and outbound transportation, warehousing, and inventory control. Sourcing, procurement, and supply management also fall under the supply chain umbrella. Forecasting, production planning and scheduling, order processing and customer service all are part of the process as well. It also embodies the information systems necessary to monitor these activities. Simply stated, ''the supply chain encompasses all of those activities associated with moving goods from the raw materials stage through to the end user'' (Zigiaris, 2000).

Generally, in the brewery industry, the supply chain process starts from sourcing, procuring and receiving the raw materials from the suppliers into the warehouses. Raw materials are then transported to the brew house for the brewing process. After brewing, the product is transferred to be packaged and transported with forklifts into various warehouses. Finished products are transported and distributed to the various key distributors who are managed by DHL as a third party logistics provider. The supply chain processes includes, inventory management, quality management, maintenance management, production planning and scheduling, and customer service management, Order processing, purchasing management, information systems (using ERP as SAP & Warehouse management systems). The SAP is used to manage the supply chain processes from raw materials to finished product as well as distribution to key distributors.

Logistics management is the governance of supply chain functions. Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand planning, and management of third party logistics services providers. To various degrees, the logistics function also includes customer service, sourcing and procurement, production planning and scheduling, packaging and assembly. Logistics management is part of all levels of planning and execution: strategic,

operational and tactical. It is an integrating function that coordinates all logistics activities. It also integrates logistics activities with other functions including marketing, sales manufacturing, finance, and information technology. The definition includes the flow of materials and services in the manufacturing and services sectors. (Lambert et. al., 2006)

<u>Outbound Logistics Systems – Physical Distribution</u>

We focus our attention upon physical distribution or outbound logistics systems. Physical distribution management is an attempt to systematically manage a set of interrelated activities including transportation, distribution, warehousing, finished goods, inventory levels, packaging and materials handling, to assure the efficiency of delivery of finished goods to customers. The focus of physical distribution management is to manage finished goods distribution in a way that meets customer expectations at the lowest possible cost. In addition to transportation, physical distribution management involves close liaison with production planning, purchasing, order processing, material control and warehousing. All these areas must be managed so they can interact with each other to provide the level of services that the customer demands and at a cost that the company could afford. The distribution process begins when a supplier receives an order from a customer.

<u>Transportation</u>

Transportation physically moves product from where they are produced to where they are needed. This movement across space or distance adds value to products. This value is often referred to as place utility. Transportation is also a factor in time utility, it determines how fast and consistently a product moves from one point to another (Lambert et al, 1998). According to Chopra et al (2007), we can think of a transportation network as a collection of nods and links. Transportation originates and ends at nodes and travels on links. For most modes of transportation, infrastructure such as ports, roads, waterways, and airports are required as a good throughout the world. It is important that infrastructure be managed in such a way that monies are available for maintenance and investment in capacity needs. Transportation is the most significant area of logistics because of the impact on customer service level and cost structure. In general or profession terms, transport involves covering distances or changing the location of cargo through the use of transportation. A distinction must be made here between internal transport within an operation and external transport. For instance, internal transport takes place from one production line to another in a factory or between different departments in a warehouse. External transport, on the other hand, is a shipment from the supplier to the customer, between various factories or between warehouses of a company. External transport consists of the cargo, the means of transport and the transport process.

<u>Warehousing</u>

Warehousing is an integral part of every logistics system. There are almost one million warehouse facilities worldwide, including state of the art, professionally managed warehouses, as well as company stockrooms, garages, self-store facilities and even garden sheds. Warehousing plays a vital role in providing a desired level of customer service at the lowest possible total cost. Warehousing activities are an important link between the producer and the customer. Over the years, warehousing has developed from a relatively minor facet of a firm's logistics system to one of its most important functions (Grant et al, 2006). Grant et al (2006) define warehousing as that part of a firm's logistics system that stores products (raw materials, parts, goods – in- progress, and finished goods) at and between point of origin and point of consumption, and provides status information to management. A warehouse, for example, can also be used to redirect goods to other routes within the network, even without having to store any goods at all. Various warehouses have been designed to support these functions. Blanchard (2004) also notes that, the basic function of a warehouse is the movement, storage and information transfer. A major objective is to provide an ideal product flow and acceptable level of service between the producer and the

customer by providing warehouses at designated locations with various inventory level based on local demand.

Generally speaking, a warehouse is a hub in a logistics network where goods are temporarily stored or rerouted to a different channel in the network. A basic distinction can be made among supply, handling and distribution warehouses. However, mixed forms may also be used. Supply warehouses are usually part of the production operation and are used to store raw materials, auxiliary supplies and other resources needed for production as well as semi-finished products and finished goods used during particular seasons. Transshipment warehouses house goods for short periods between their transfers from one means of transportation to another. They are frequently operated by logistics providers and retail companies. With cross-docking, manufacturers send goods that have been pre-picked for particular retail outlets to the retailer's warehouse. Here, shipments from various manufacturers for the respective retail outlet are batched and then delivered together. This dispenses with the need to pick goods bound for separate retail outlets in the retailer's central warehouse.

The composition of the flow of goods is changed in the distribution warehouse. Distribution warehouses are classified into central, regional and local distribution warehouses depending on the area it serves. Central distribution warehouses are generally referred to as central warehouses, while decentralized regional or local distribution warehouses are called supply or delivery warehouses. In supply warehouses, goods from various suppliers are collected and distributed to one or more production or retail operations. In delivery warehouses, goods from production are stored before being delivered to customers. Thousands of the different types and forms of goods could be stored simultaneously in the same warehouse. To optimally use this costly space and enable a specific item to be retrieved quickly, a clear, coordinated organization of storage space is necessary. This is the only way to economically and efficiently operate a warehouse. Storage space can basically be organized in two different ways: fixed storage space allocation and completely free or random space allocation.

Logistics Outsourcing

During the 1980's, many organization began to recognize that they could not effectively and efficiently do it all themselves and still remain competitive. They began to look at third- party specialists to perform activities that were not part of their core competency. This engagement is known as outsourcing, in which an organization hires an outside organization to provide a good service that it had traditionally provided itself, because this third party is an expert in efficiently providing this services or goods while the organization itself may not (Grant et al, 2006). Outsourcing is the subcontracting of a company's non-core function such as product design of manufacturing company to a third-party company. It is the activity that involved mainly two parties. The clients company who outsource logistics activities and the outsourcing service provider who performed the outsource activities. The decision to outsource is often made in the interest of lowering a firms cost and conserving energy directed towards the core functions of the firm , in other to make more efficient use of labor, capital , technology and resources (Vallespir and Kleinhans, 2001; Quinn and Hilmer, 1994).

Outsourcing has been an area of growing interest and activity since the early 1990s. It often involves third party warehouses and use of public or contract transportation carriers. Outsourcing offers the opportunity for organization to use the best 3rd party logistics (third party logistics) service providers available to meet their needs (Lambert et al, 2006). According to Harrison et al. (2002), the importance of outsourcing becomes particularly evident when companies look critically at their internal structure and resources. Outsourcing provides companies with greater capacity for flexibility especially in the purchase of rapidly developing new technologies. By outsourcing logistics activities, firms can save on capital investment, and thus reduce financial risks. Investment on logistics assets, such as physical distribution centers or information networks, usually needs large lump sum of money, which involved high financial risk.

Managers in a firm are accepting the concept of partnering or establishing close, long-term working relationships with suppliers of goods or services, customers and third party providers.

The Brewery Industry Outbound Logistics –Opportunities and Challenges

According to Fchuki (2006), modern technology continues to offer the distributor new and sophisticated solutions to overcome even the worst logistics problems. As industry territories expand as a result of consolidation and distribution systems are bogged down with an increasing number of products, daily operations run more and more ineffectively. The problems cropping up in industries are numerous and include: 1.) Many operations can't get all of their trucks loaded on time every day, 2.) Finding drivers willing to handle product and deal with customers is increasingly difficult, 3.) Employing technology to give the sales and distribution system a competitive edge is foreign to most distributor operations, and 4.) Increasingly large territories increase the drive times and reduce the capacities of delivery drivers. Many wholesalers are adding routes just to cover longer miles.

The brewery industry could benefit from other food and beverage direct store delivery industries that have already experienced consolidation, geographic expansion, and SKU explosions and have figured out how to effectively get products to retail over vast territories while retaining high quality of service and product. The standard Monday-through-Friday sales and delivery schedules are finally being abandoned in favor of more innovative schedules with opportunities to improve customer service, reduce distribution costs, and improve overall logistics costs. Innovations include but are not limited to: 1.) Expanding order cycles for "next day / 24-hour" to everything from "same day" to "next scheduled delivery day," and 2.) Using merchandisers to manage inventories and write orders in large bulk stops (including Sundays to build Monday delivery volumes).

Distributors should consider carefully using route-management technology to control the consistency of driver-retailer relationships, squeezing unnecessary wasted capacity out of the route distribution system, and holding sales reps accountable for adhering to well-designed customer service schedules. Consolidation offers an opportunity to increase the geographic area serviced by each warehouse in the system. The brewery industry's relatively dense warehousing network now can contribute to logistics cost savings by: 1.) Centralizing inventory in fewer locations and reducing inventory investment, stocks-outs, and freshness quality problems, 2.) Reducing delivery driver "long-haul" time. This makes it possible to increase the hours, and therefore the capacity, a driver has in the market to make additional stops. Cross-docking pro-picked side bay loads from a centralized warehouse via transport and shuttling "double-bottom" side-bay trailers to drivers are methods of accomplishing more delivery capacity per unit despite an increased amount of territory covered.

The Key Indicators of Efficient Warehousing Management

Operating figures are needed to evaluate a warehouse's efficiency and effectiveness. In the process, quantitative indicators for both capacity utilization and movement processes must be used. Expenditures include the warehouse's capital costs, equipment and payroll. The tasks of a warehouse can be divided into time-bridging processes when the goods are stored and movement processes associated with storage. These must be depicted in a system of key indicators to determine efficiency and effectiveness. The resulting efficiency indicators are storage capacity, the number of available storage positions and stock movements. On the input side, they are matched by performance measures of warehousing costs, that are divided into personnel costs and operating costs.

Supply Chain Operations Reference Model (SCOR Model)

The supply chain council has developed the supply chain operations reference (SCOR) model, which considers the performance requirements of the partner firms in the supply chain (Stewart, 1995). The SCOR-model has been developed to describe the business activities associated with all phases of satisfying a customer's demand. The model itself contains several sections and is organized around five primary management processes of Plan, Source, Make, Deliver and Return. Each component has its own measurement criteria on; 1) Reliability 2) Responsiveness/flexibility 3) Costs and 4) Asset. The model has been able to successfully describe and provided a basis for supply chain improvement for global projects as well as site-specific projects. However, the SCOR model was developed to focus on manufacturing processes. The model is far from readily applicable for measuring the supply chain performance in the context of outbound logistics services as warehousing and transportation. Furthermore, research has not examined logistics performance measurement in the industry. This research focuses on this area by reporting the results of study of the effects of outbound logistics in the industry.

Empirical Review

The case study organization GGBL has three sites of operations. These are Kaasi and Ahinsan site in Kumasi and Achimota site in Accra. The study focuses on the assessment of outbound logistics for all three sites. GGBL has its depots in all the ten regions in Ghana. Finished products are shipped from the brewery warehouses to various key distributor locations. The choice of GGBL was justified by the fact that it has currently engaged DHL as a third party Logistics Company to manage it outbound logistics activities which was necessary in addressing the main objective of this research study. Many manufacturing companies are engaging third party logistics companies to manage their logistics activities as a management strategy and also using the supply chain performance measurement for improving performance. It is therefore prudent to assess the outbound logistics performance of GGBL who have engaged DHL as a third party Logistics Company. The target population comprises the managers, assistant managers and staff of production, logistics, finance and procurement departments of GGBL because they were the key stakeholders involved in the outbound logistics activities with DHL. These populations were targeted because they possessed the required knowledge and experience of the logistics performance activities pertinent to the research study

DATA AND METHODOLOGY

The target population comprised of managers, assistant managers and staff of production, logistics, and finance and procurement departments of GGBL. The sample population was selected by both convenience and purposive sampling techniques i.e. without any prior criteria except that the person should be a manager, assistant manager or junior staff of the company and also ensuring heads of departments was included.

Data for the study was obtained from interviews and questionnaires as well as secondary sources like GGBL reports, journals, books and the internet. Questionnaires and interviews were developed based on the outlined objectives and served as the main instruments for data collection. Primary data were obtained using questionnaires, personal observations and interviews with the management of the four departments of GGBL and the third party logistics provider. The method used for data collection was a self-administered questionnaire. This helped collate information on the performance of GGBL with regard to outbound logistics when they engaged the services of the third party logistics. The questionnaire was structured such that it contained both closed and opened questions. This then focuses on the assessment of outbound logistics of GGBL and how it can be improved.

All the measurement items of supply chain performance (adopted from the Supply Chain Operations Research (SCOR) Model) for assessing the outbound logistics of GGBL, included in the questionnaire were assessed on five point likert scale rating from 1- more worse than previous, 2- worse than previous, 3- same as previous, 4- better than previous and 5- much better than previous. Having tested and modified the questionnaire, they were then sent to collect the data. Data collection was undertaken for all GGBL sites. The entire data collection, which was cross-sectional, lasted for ten working days. The data for the study was collected in April 2012 by the researcher.

RESULTS AND DISCUSSION

It was revealed that GGBL in implementing service efficiency for perfect order fulfilment, their outbound logistics is better than previous engagements. This reveals that order fulfilment is not best experienced with GGBL in relation to DHL. Service efficiency in relation to full order delivery at GGBL from the study revealed that it has not changed. Also, service efficiency relating to delivery performance to customer commit dates indicated that an outbound logistics operation does not affect this factor. For delivery in perfect conditions, the enumerated respondents indicated that it was same as prior to implementation by majority of the respondents. However, a few indicated that there has been improvement in delivery conditions with respect to the condition of the items. Reliability in service effectiveness relating to documentation accuracy at GGBL to DHL was revealed to be better than previous operations. Hence, it could be said that reliability of service effectiveness in GGBL in their outbound relationship with DHL is quite remarkable. However, there is the need to facilitate strong communication links so as to make their operations much better and more effective and reliable.

The results show that GGBL, in implementing responsive service effectiveness in terms of delivery fulfilment cycle time, produced the same outbound logistics as previous operations. In similar context, responsive service efficiency in relation to loading truck cycle time at GGBL it is the same as previous operations. The same response was given when they were asked about responsive service efficiency in picking product cycle time. Again, with respect to reducing order management costs, service efficiency was not responsive as most of the respondents stated that GGBL's relation to DHL is worse than previous operations. In addition, responsive service efficiency was examined using order delivery cost as a metric if it could be reduced in GGBL outbound logistics operations with DHL. The study revealed that it was worse than previous operations.

The results show that reduction in order management cost is worse than previous operations. Order delivery cost reduction, was same as previous operations. In a similar context, cost reduction associated with facility/equipment /manpower at GGBL is better than previous engagements. Reduction in warehousing cost is much worse than previous operations as indicated by majority of the respondents. However, a few opined that it is better than previous operations. From the study, cost reduction in relation to logistics administration cost indicated that outbound logistics operations is same as previous engagements. Reduction in transportation cost was the same as the previous commitment.

It was revealed that improvement in the cash to cash cycle time is the same as previous arrangements with DHL. This means that cash to cash cycle time in GGBL outbound logistics with DHL has not really changed and they could put measures in place to improve performance. With respect to improvement in the rate of utilization of facilities, equipment and labour, the study revealed that it was same as previous operations. Similarly, cost reduction associated with facility/equipment /manpower at GGBL from the study revealed that it is same as previous engagements. Improvement on net asset returns did not change as indicated by majority of the respondents. It is clear that there has not been any major improvement on net asset returns.

Inquiry into improvement on inventory days of supply for finished goods indicated that outbound logistics operations has either remained the same or has been better than previous operations. With regard to improvement on excess inventory, the respondents indicated that it was either same as or worse than the previous situation. Finally, asset dimension operational efficiency of key distributors of GGBL to DHL in terms of improvement on defective inventory was mostly the same as the previous as indicated by a sizeable number of the respondents.

Service Effectiveness – Satisfaction

Satisfaction shows the extent of third party logistics firms meeting expectations has been the same as previous engagements. This shows GGBL has much to do to improve upon the efficiency of relationship with third party logistics to promote satisfaction among all parties involved. In addition, with respect to the level of satisfaction with third party logistics firms as a whole, there was divided opinion as a number of them indicated that it has been the same as previously done and the same percentage of respondents also opined that there is more satisfaction than previously. This shows there is the need for GGBL to foster a good relationship between DHL and other third party logistics firms

CONCLUSION

Outbound logistics performance as well as other types of performance in supply chain operations requires assessment and evaluation models which will reveal opportunities to improve the performance of an organisation. This study identifies how a third party logistics company could support the outbound logistic of a manufacturing company effectively and efficiently. We identify how a third part Logistics Company could help a manufacturing company reduce its cost of goods sold and identify whether there is evidence to suggest the hiring of a third party logistics is economically efficient. Finally we provide recommendations that will guide the choice and appointment of a third party logistics provider in the manufacturing industry. The method used for the data collection was a self-administered questionnaire. This was analyzed using the supply chain operations reference (SCOR). With respect to reducing order management cost, service efficiency was not much responsive as most of the respondents stated that GGBL's relation to DHL is worse than previous.

In addition, responsive service efficiency was inquired using order delivery cost as a metric if it could be reduced in GGBL outbound logistics operations with DHL. The study revealed that it was worse than previous operations. Similarly, it was revealed that improvement in the cash to cash cycle time is same as previous arrangements with DHL. This means that cash to cash cycle time in GGBL outbound logistics with DHL has not really changed and they could put measures in place to improve performance. In terms of satisfaction, the extent of third party logistics firms meeting expectations equals previous engagements as indicated by majority of respondents. This shows GGBL has much to do to improve upon the efficiency of its relationship with third party logistics to promote satisfaction among all parties involved.

The results show that GGBL in implementing service efficiency for perfect order fulfillment, their outbound logistics is better than previous engagements. This reveals that order fulfillment is not best experienced with GGBL's relation to DHL. Service efficiency in relation to full order delivery at GGBL from the study revealed that it is the same as previous operations. As a result, the study has enabled us identify and validate the criteria in the context of the SCOR model which are important in the assessment of the outbound logistics activities of GGBL with the services of DHL as the third party logistics provider. The results will serve as a basis and initial benchmark of reference for any manufacturing company in their attempt to assess the outbound logistics operations which will improve supply chain performance. The study also reveals some challenges which the third party logistics provider was encountering which has an impact on GGBL outbound logistics operations. Some of these challenges were noted as; 1.) Intermittent issues on forklift availability for outbound logistics operations which have

impact on loading of trucks as well as causing production downtimes, 2.) There were also clear issues on capability of staff not having in-depth knowledge on the GGBL operations and ways of work, 3.) Intermittent issues on truck availability of the outbound logistics operations affecting turnaround time, 4.) Warehousing capacity and storage of product outside has also been a big challenge during lean seasons, 5.) There were issues of traceability which makes it difficult to trace product when there are quality problems. 6.) Pilfering was also noted as one of the challenges encountered by the third party logistics provider.

However, regardless of the third party logistics providers taking up the challenge to enhance the outbound logistics performance or not, the management of GGBL must be aware of these factors that they can use to monitor and measure the performance of the supply chain operations which will then improve the company's performance and profitability.

RECOMMENDATION

The performance measurement construct obtained from the study can be used by the management of GGBL to perform routine assessment and evaluation of their outbound logistics activities to improve the supply chain performance of the organisation. Addressing the issues of forklift availability should be important for the third party logistics provider because of its impact on the loading and warehousing. Third party logistics providers should ensure that there are enough spares to repair any broken down forklifts. Also forklift mechanics should be stationed on site to ensure quick response to all issues. There should be more than enough forklifts on standby to avoid delays.

Concerns regarding capabilities of the staff of the third party logistics provider were also on the radar and efforts should be made to address this situation. There should be proper induction and training plans for all the staff. This should involve, understanding the operations of GGBL and ways of work to gain alignment. Also, experienced staff that were working for GGBL and have been made redundant can be employed by the third party logistics provider to help improve operations efficiently.

Occasional issues on truck availability and delays have to be reviewed because this has affected the truck turnaround time in term of responsiveness. There should be a good strategy in place to manage the maintenance of trucks as well as replacement. Also, there should be enough trucks to avoid any delays. Warehousing capacity and storing of product outside has always been a challenge during the lean season. It is important for GGBL to build new warehouses at the Ahinsan brewery site since there is enough land and space to resolve this situation.

It was difficult to trace product when there is quality problems. This was because the length of chain in the SAP system is longer than before. GGBL should ensure that the dispatch note is always included in all batch details. Quality assurance in GGBL must train the staff of the third part logistics provider on what is critical to track and trace the entire finished product.

Arresting pilfering was also important in the outbound logistics activities. This normally happens during loading and distribution to the key distributors. There should be CCTV cameras located clearly at all loading points to capture and arrest any act of pilfering. Supervisors should be extra vigilant to ensure effective loading of trucks. Also, installing Vehicle Telematrics Systems (VTS) on all trucks will help monitor the movement of these trucks.

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CROSS-CULTURE INTEGRATION AND GLOBAL NEW PRODUCT DEVELOPMENT

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ABSTRACT

The increasing globalization of businesses presents many challenges including the challenges of cultural integration and cross-cultural conflicts. Utilizing the seminal work of Nakata and Sivakuimar (1996) linking national culture and new product development, this paper further explores the challenges of cross-cultural integration and new product development offering an extension of their model integrating additional aspects of culture structure and their influences on new product development in the international arena.

JEL: F69, M11, M14

KEYWORDS: Culture, New Product Development

INTRODUCTION

There exist many challenges to firms as a result of the globalization of business and cross-border trading and investment: emerging markets, changing markets, technological obsolescence, government regulations, legal systems, mode of entry, currency exchanges, international accounting concerns, and many others. One overarching concern is new product development (NPD) and marketing across borders; developing new products for different types of markets can keep the firm competitive and aid long term survival. NPD is a complex process within a domestic business. The process at its simplest level requires the integration of many functional divisions within the company especially its R&D, marketing, and manufacturing divisions. Different divisions may have different perspectives on what they think is important to their survival and that of the company as a whole. The R&D division may want to design the most technically advanced product, manufacturing is interested in cost reduction and facility utilization, marketing wants a product that matches the markets as closely as possible. At its most basic level, NPD requires successful cross-functional integration within overall corporate structure. However, business activity in any aspect across borders includes whole new set managerial challenges. To maximize efficiency and react to the market in real time many multinational company's (MNC) locate various divisions in different countries. For example, Sony may set up a manufacturing plant in china, keep its R&D while focus its marketing basses in America.

Not only is cross-functional integration an important part of success, the added element of operating in a different culture is added to the process. The results of these managerial actions are mixed. On the one hand, such operations may allow Sony to focus on value to customers, reduce costs, improve quality and remain competitive; on the other hand, cross-border business and management activity is complex: the conditions mentioned above come in to play as well as the cultural and sub-cultural divides across countries; businesses; managerial philosophies; domestic cultural tastes and preferences; employee orientations, values, and motivations that influence cross-border business activity. With cross-border business activity, there exists the real potential for both cross-functional and cross-cultural conflicts that may mitigate success. The upshot of these concerns: NPD for the MNC is a process that demands both cross-functional and cross-cultural integration at many levels. With ever increasing globalization of business, these processes are becoming ever more complex.

Nakata and Sivakumar (1996) documented the importance of new product development to MNC's, reviewed the literature on the nature of national culture and dimensions of national culture, and proposed a model relating these dimensions to certain procedural steps in NPD. This article is an extension of their work where we expand on their model and include the influence of national culture on both NPD task-team subculture and corporate culture.

LITERATURE REVIEW

National Culture

Culture is defined in many ways. Edgar Schein (1992) defined culture as "a set of basic assumptions: shared solutions of universal problems of external adaptation and internal integration which have evolved over time and are handed down from one generation to the next". Hofstede (1994) defined culture as the collective programming of the mind in one group that varies from group to group. Parsons (1972) perceived culture as a common system of meaning in a society. Jan (2001) proposed that national culture refers to profound beliefs, values and practices that are shared by the vast majority of people belonging to a certain nation.

Organizational/Corporate: Culture Organizational culture (OC) or corporate culture has many and varied interpretations. Some suggest that OC is the result of the collective influence of the history of the organization, organizational values, leadership styles, and management practices as they become disseminated, shared, and inculcated throughout the organization. OC Influences such behaviors as superior/subordinate relationships, orientation of employees to their corporation, and general views of employees and management about their destiny, goals, and purpose and their place in it (Trompenaars,and Hampden-Turner, 1997).

New Product Development

NPD is defined as the process of conceiving and creating a new product and the outcome of that process (Urban and Hauser, 1993). Johne (1984) suggests that the NPD process may be simplified into two major stages/phases: (1) initiation stage covering idea generation, screening, concept testing, and (2) implementation, embracing product development, test marketing, and product launch.

Task-Team Subculture

It is common for many organizations to develop teams to explore the development of new products; they may be viewed as temporary/permanent teams that are given the tasks to assess new products ideas and implement them as described above. It is common for a MNC to have members from different functional divisions within corporate as well as members from different divisions of subsidiaries in different countries. Dealing with such a project team is a complex task: languages differences may intrude, work philosophies may diverge. For example, a Chinese engineer may be very analytical and wants to complete all documents before starting to work; an American engineer may be more action-oriented and wants to start work immediately. Differences in empowerment across nationalities may complicate things as well: American workers may be more personally empowered as compared to workers from Asian countries. A task-team subculture must develop that will allow the different task-team members to communicate, become oriented to common goals, contribute collectively to the NPD process. The literature on group behavior and dynamics, leader styles, group norms and values comes into play here.

RESEARCH MODEL

Nagata and Sivakumar (1996) showed that national culture may variably influence the NPD process stages. We extend their work by postulating that corporate/organizational cultures and task-team subcultures intermediate the direct relationship between national culture and NPD process stages as suggested by Nagata and Sivakumar (1996) We also postulate that national culture has a direct relationship to task-team subculture as well (see figure 1). We suggest that NPD becomes a cross-culture integration process involving task-team members from different countries with different cultures; the national culture of task-team members directly influences the development of the task-team subculture and the NPD process (see Figure 1). We also postulate that national culture influences OC; OC is shown to intervene between national culture and task-team subculture as well.

In this research, we postulate that Hofstede's (2001) four dimensions of culture may be a useful tool to study the effects of national culture on both task-team subcultures and organizational/corporate cultures. We also suggest that Hofstede's cultural dimensions are useful to study organizational/corporate cultures as they may influence task-team subcultures and NPD stages. Hofstede's (2001) conclusions are primarily based on a sample of IBM employees from 53 countries. In 2001, Jan did an empirical study in ten countries and validated the measures as reflecting the corresponding national cultures as described by Hofstede's (2001).

Hofstede's Dimensions of Culture

Power distance: With low power distance, society believes in equality of people, and superiors and subordinates regard one another as equal. In high power distance situation, society accepts different amounts of power held by people, and hierarchical boss-subordinate relationships. In Hofstede's study, USA (40) and Japan (54) have similar medium range scores on the power distance dimension. Japan is slightly more tolerant of unequally distributed power.Low power distance may encourage the participation in decisions and delegation of authority, which may stimulate the idea proliferation regardless of a person's position in organizational hierarchy. Thus, low power distance may facilitate the initiation stage of new product development. However, at the implementation stage, when control is needed to ensure the multiple and complex efforts unite to generate a new product on timely and cost-effective basis, high power distance is perhaps more helpful.

Uncertainty avoidance: For this dimension, society in low index countries feels comfortable with ambiguous situations. They're tolerant for risks; eccentric behaviors and activities are allowed. In high index countries, society feels threatened by ambiguous situation, and tries to avoid risks in decisions; the laws and procedures are strict. On the uncertainty avoidance dimension, Japan has very high scores (92), and USA falls little below mid-range (42). This implicates that US employees are more tolerate of uncertainty than Japanese employees. Low uncertainty avoidance may manifest itself with risk taking. Some research revealed that technological breakthroughs are stimulated by systems that encourage risk taking and even reward failure. At the initiation stage, risk taking is required for generating ideas and supporting a few of them for the costly proceeding steps. Nevertheless, high uncertainty avoidance may express itself as the control and planning such as doing many jobs on market research, market forecasting, and predicting customer demand to minimize market uncertainty, which may facilitate implementation through close scrutiny of decisions and execution.

Individualism-Collectivism: In collectivistic society, groups are paramount in social relationships; the will and welfare of the group is dominant over those of individual. In individualistic society, people tend to look after themselves and immediate family; individual initiative and achievement are considered important. On this dimension, USA falls in top-range of all countries (91), with Japan in middle (46) in the study. The USA is a very individualist country while Japan tends to be more of a collectivist society.

In the initiation stage, many different perspectives are treasured so as to produce more value to the innovation. Therefore, individualism may be an asset at this stage. In contrast, during implementation, new product participants must work cooperatively and closely with one another to ensure that budgets, schedules, and objectives are met. Thus, collectivism may contribute more.

Masculinity-Femininity: In a feminine country, concern and care for others are emphasized; interpersonal relationships are important; quality of life is important. In a masculine country, people tend to be assertive, and achievement & material accumulation are oriented. Here, Japan score is very high (95), USA is bit above mid-range (62). USA tends to be more masculine. Low masculinity, with its focus on people and establishing a warm, supporting environment, may be optimal for initiation. High levels of masculinity-as expressed by goal orientation and formalization-positively contribute to implementation.

The Model and its Interactions

In 1996, Nakata and Sivakumar developed a model that directly linked national culture to stages in the NPD process of a MNC with different divisions in different countries. For this study, we postulate that this linkage between national culture and NPD is confounded by the mediating variables of corporate culture and NPD task-team subcultures. First, we propose that corporate culture is influenced by the national culture of corporate. Second, we propose that corporate culture mediates between national culture of corporate and the task-ream subculture involved in the NPD process. Third, we propose a direct and independent effect of national culture on the task-team subculture involved with the NPD process. We suggest that national culture of the NPD task-team members, organizational/corporate culture, and national culture of corporate collectively influence task-team subculture; task team subculture then influence the variable dimensions of the NPD process stages. At every juncture in the model, cross-cultural integration is a must. Moreover, particularly at the task-team stage, cross-cultural integration should be purposefully managed to facilitate the NPD process.

Figure 1: Research Framework
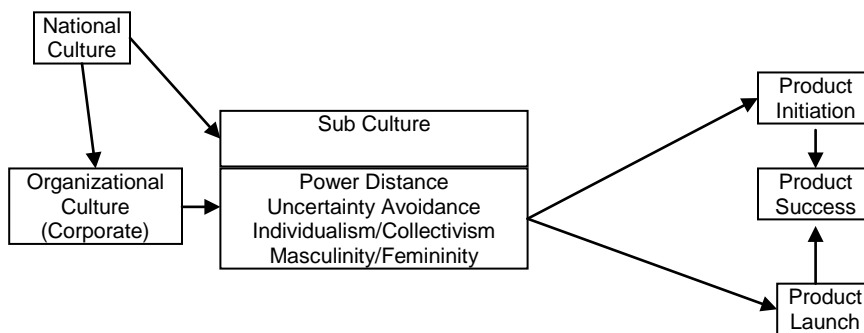
IMPLICATIONS AND DISCUSSION

Using Hofstedes (2001) four dimensions of culture, the independent effects of any sequence of independence and dependence can be studied for their contributions. For example, national culture of corporate headquarters can be assessed at to its societal/cultural influence on corporate/organizational cultures of domestic businesses in the same industry or across different industries. What is the relative influence of national culture on corporate cultures of different business that might vary by age, size, technology, product lines, innovation history, etc.? Corporate culture of the same MNC can be studied as to its overall strength to influence task-team subcultures in different countries. Corporate cultures of

different business/industry can be studied as to their influence on NPD task-team subcultures in a common country or across countries. Moreover, corporate culture of an MNC can be studied to show its impacts on task-team subcultures within different functional divisions of the same company/industry.

National culture can be assessed as to its independent influence on task-team members and the emergence of the task-team subculture. Moreover, the relative effects of both national culture and corporate culture on NPD task-team members and subcultures can be studied as well. As Nakata and Sivakumar (1996) have shown, some nationalities may be more adept than others in one phase of the NPD process and thus a more effective choice for that phase. It may be possible for management to select task-team members, team leaders, and carefully bring out the best of the multi-cultural group at different stages in the NPD process. There is much work that can be done assessing the impacts of task-team subculture variations on different stages of the NPD process, emerging group leadership and management dynamics, and overall success of developing new product ideas.

<u>Summary</u>

A corporate culture is constrained by its national culture/societal context. No organizational culture can exist without the base of its national or societal culture. For instance, a national culture in which the persons in power, such as parents or managers, are highly respected and deferred to, will lead to a form of organizational communication in which subordinates hesitate to express disagreement with their bosses. Such things happen most in Japanese companies. We also suggest that corporate culture, influenced by national cultures, may be a very powerful influence on NPD task-team subcultures. For instance, the hierarchy of Sony Company in the USA is different from that of General Electric in the USA. In the Sony-America subsidiary, managers may have more authority, and the rules are clear and must be followed. Strictly speaking, we postulate that Hofstede's national culture dimensions as they influence NPD task-team machinations are a function of national culture of corporate country, corporate/organizational culture, national culture of task-team members, and task-team subculture.

Nakata and Sivakumar's (1996) study revealed that some culture may be more adept than others in one phase of the new products development process and thus more effective choice for that phase. So it's probable for management to select team members, team leaders, and carefully handle and bring out the best in a multi-culture group at different stages of new product development. For instance, individualism may be beneficial in the initiation stage of new product development. But if some team members are from Japan – the society of collectivism, they may not question those in authority. Then poor suggestions will likely be implemented without question. Thus, in practice, American managers should insure that Japanese employees fully understand the difference in suggestion and directions.

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CONSTRUCTING A CASH BUDGET AND PROJECTING FINANCIAL STATEMENTS: AN EXERCISE OF SHORT-TERM FINANCIAL PLANNING FOR ENTREPRENEURS

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CASE DESCRIPTION

This case presents a teaching tool that equips students with an essential skill of short-term financial planning for entrepreneurs. Short-term financial planning concentrates on a venture's cash needs, the lifeblood of an entrepreneurial venture, so these ventures can better survive the early stages of operations. In this case, students are required to build up a cash budget by utilizing payment schedules of sales, inventory purchases and wage-and-commissions. Other tasks demanded by this challenging case include projecting the following: monthly income statements, balance sheets and statements of cash flows over a four-month period. Students who take on this case should possess a solid understanding of the interrelationship among income statements, balance sheets and statements of cash flows. This case is suitable for a graduate-level finance course or an upper-level undergraduate class of entrepreneurship in either finance or accounting departments. Students might be assigned to work individually or in groups on this case. Completion of the case requires 10-15 hours outside of class. Class discussion should be about 2-3 hours.

JEL: M13, M41

KEYWORDS: Entrepreneurial Finance, Cash Budget, Financial Statements

CASE INFORMATION

John Smith is the founder and owner of the Best Oxygen Corporation, which has only recently begun operations. It offers the following products: (1) home-based oxygen concentrators; (2) portable oxygen systems; and (3) oxygen concentrator components and accessories. Some of its products are equipped with patent-protected technologies owned by Best Oxygen. Smith believes that the products Best Oxygen provides, along with its patents, are unique and can create a successful business model.

Best Oxygen started its sales with a modest amount of inventory in March and generated revenue of $82,000. It is currently March 31, 2013, and the following table reflects actual sales for March and the sales department's projected sales for the next five months.

Month:	Sales (US$)
March (actual sales)	$82,000
April	$105,000
May	$174,000
June	$128,000
July	$105,000
August	$82,000

In addition,
(1)   Best Oxygen will spend $5,900 cash to buy a delivery truck on April 1.
(2)   The Company expects to pay miscellaneous cash expenses equal to 5% of the current sales.
(3)   The current location costs Best Oxygen $3,600 per month for rent.

(4) The insurance policy costs $400 per month and Best Oxygen has fully paid its one-year policy on March 31, 2013. Best Oxygen will not write another check to pay for insurance prior to the expiration of the current policy. Prepaid insurance on March 31 therefore amounts to $4,800.
(5) Depreciation is estimated to be $1,050 per month, including the truck.
(6) Best Oxygen does not anticipate paying any tax expense.
(7) Wage expense is a fixed payment of $5,750 per month. It is paid twice a month. The first payment is disbursed in the middle of month and the second payment falls on the first day of the following month. (Note: The first of the two payments made each month is thus the second payment from the previous month.) In addition, 15% of sales are paid as a variable commission for each salesperson. These commissions are likewise paid twice per month, first in the middle of the current month and then on the first day of the following month. (Note: For ease of calculation, assume that each commission payment is for half of the commission owed for the appropriate month.)
(8) Best Oxygen's inventory policy is to begin a month with sufficient inventory, which it defines as a cushion of $36,000 plus 56% of the estimated current-month's sales (e.g., April's estimated sales are the basis for the inventory target at April 1). The Company pays half of its current-month purchases and leaves the other half to be paid in the following month. The inventory balance at the beginning of March was recorded as $77,520.
(9) The cost of goods sold amounts to 70% of sales.
(10) Best Oxygen's sales are generated with 70% cash and 30% on accounts receivable. These accounts receivable are collected in the following month. There are no overdue accounts and Best Oxygen anticipates this situation to continue in the near future.
(11) Best Oxygen's only available credit line is from founder Smith, who agreed to lend the Company money at 1.5 percent interest per month to cover any monthly shortage of cash for the next two years. On March 31, 2013, he put $22,000 cash into the Company's checking account in exchange for his 100% equity position (not a loan) in Best Oxygen. An additional agreement with the founder stipulates a $22,000 minimum cash balance at the beginning of each month in Best Oxygen's checking account. This means that the Company borrows from Smith (as needed) only at the end of the month, and subsequently also repays any loans at the end of the month, as conditions warrant. Interest is equal to 1.5% of the previous month's ending loan balance. No loan is outstanding as of March 31, 2013.
(12) Best Oxygen will borrow $29,835 from Smith in April, and then three repayments will be made, one in May of $2,871, one in June of $21,199, and one in July of $5,765.
(13) Gross property, plant and equipment on March 31 amounts to $75,100.
(14) Accumulated depreciation is recorded at $29,440 on March 31.

QUESTIONS

1. What do the monthly schedules of sales, inventory purchases and wages-and-commissions look like from April to July? (Hint: use March's numbers if needed.) In addition, construct a cash-budget table to explain the various items that affect monthly cash inflows and outflows under the current projection of business operations.

2. What do Best Oxygen's monthly income statements look like from March to July? In addition, aggregate the line items of these monthly statements and construct an income statement for the four-month period from April to July.

3. What do Best Oxygen's monthly balance sheets look like from March to July?

4. From April to July, what do Best Oxygen's monthly statements of cash flows look like?

5.   Profit-making ability can be seen on income statements, while the changed composition of balance sheets over time can reveal how cash is used or where it is sourced from. Regarding the cash balance at the end of July, after examining the cash impacts from income statements and balance sheets, which of these two is the major factor that affects Best Oxygen's cash position in this four-month period?

CONSTRUCTING A CASH BUDGET AND PROJECTING FINANCIAL STATEMENTS: AN EXERCISE OF SHORT-TERM FINANCIAL PLANNING FOR ENTREPRENEURS

TEACHING NOTES

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CASE DESCRIPTION

This case presents a teaching tool that equips students with an essential skill of short-term financial planning for entrepreneurs. Short-term financial planning concentrates on a venture's cash needs, the lifeblood of an entrepreneurial venture, so these ventures can better survive the early stages of operations. In this case, students are required to build up a cash budget by utilizing payment schedules of sales, inventory purchases and wage-and-commissions. Other tasks demanded by this challenging case include projecting the following: monthly income statements, balance sheets and statements of cash flows over a four-month period. Students who take on this case should possess a solid understanding of the interrelationship among income statements, balance sheets and statements of cash flows. This case is suitable for a graduate-level finance course or an upper-level undergraduate class of entrepreneurship in either finance or accounting departments. Students might be assigned to work individually or in groups on this case. Completion of the case requires 10-15 hours outside of class. Class discussion should be about 2-3 hours.

GENERAL COMMENTS

Cash is the lifeblood of an entrepreneurial venture. Without sufficient cash, a venture cannot stay alive. Short-term financial planning as introduced in this case concentrates on a venture's cash needs and involves constructing the schedules of sales, inventory purchases and wages-and-commissions in order to build up a cash budget. Monthly financial statements including income statements, balance sheets and statements of cash flows over a four-month period are also projected. Furthermore, it stipulates the major contributor for the cash position during this four-month period. This case provides training in essential skills that will better equip entrepreneurs to anticipate coming cash needs in order to survive the early stages of their ventures.

To accomplish this challenging task, small steps are arranged in an orderly fashion and presented in the following solutions. Forecasted sales are employed with an assumption regarding the composition of credit and cash sales for constructing monthly cash collections. Payment policies regarding inventory purchases and wages-and-commissions are guidelines for projecting cash outlays each month. Additional cash outflows given in this case include paying rent and purchasing insurance and a truck. Cash receipts, together with items related to cash disbursements, build up a cash budget. After interest expenses are derived from the cash budget, monthly income statements are further projected based on an assumption of the cost of goods sold and other provided information. To derive monthly balance sheets, relevant line items are established and various numbers for these line items on these sheets are taken from the previously derived schedules and tables. As the balance sheets are indeed balanced, the correctness of the cash budget, income statements and balance sheets is confirmed. Based on the figures from the income statements and balance sheets, monthly statements of cash flows are further derived. As the ending cash balances on these monthly statements of cash flow match those on cash budget and balance sheets, this challenging exercise of short-term financial projection is thus properly completed.

QUESTIONS

QUESTION 1: What do the monthly schedules of sales, inventory purchases and wages-and-commissions look like from April to July? (Hint: use March's numbers if needed.) In addition, construct a cash-budget table to explain the various items that affect monthly cash inflows and outflows under the current projection of business operations.

SOLUTION 1: To understand the Company's cash position, the major items related to receiving and spending cash first need to be identified. The collections from sales are the obvious major cash inflows. Although cash through financing (borrowing) is also a contributor, the setting of this case requires the case-solver(s) to project cash inflows from regular business operations prior to considering cash through financing. Regarding cash disbursements, buying inventories (capital) and paying wages and commissions (labor) are apparent items of cash outflows. In addition, there are cash outlays for (1) miscellaneous expenses, (2) rent and (3) buying a truck (the truck purchase belongs to the conventional accounting line item of Property, Plant and Equipment (PP&E)). Since the payment schedules for these three spending items are straightforward, they will be considered when constructing Best Oxygen's cash budget.

Other impacts on cash flows are less simple due to an assumption made regarding the composition of sales and also because of the Company's payment policy for inventories and wages-and-commissions. Therefore, building schedules for sales, inventory purchases and wages-and-commissions is beneficial in matching actual cash flows to appropriately corresponding months. The following lists required tasks in each step in order to accomplish a cash budget.

Step 1: Projecting Cash Inflows from Sales:

These are the sources of monthly cash inflows from sales: (a) cash received from the current-month sales and (b) accounts receivable (AR) from the previous month. Table 1 (below) details these projected cash inflows. By using the forecasted sales for the next four months and an assumption regarding the composition of sales (70% cash sales and 30% AR sales), we can project these two components of sales in each month (listed on Schedule 1 below). Adding the current-month cash sales to the collections of receivables from the previous month, cash inflows occurring in each month are thus projected. For example, April's cash inflows, consisting of cash sales of $73,500 that are equal to 70% of the sales forecasted for April (= 70% * $105,000 = $73,500) and the AR sales from March (= $24,600 = 30% of March's Sales = 30% * $82,000), are projected to be $98,100. Following the same method of calculation, Schedule 2 shows that the cash received in May, June and July is estimated at $153,300, $141,800 and $111,900, respectively.

Table 1: Projected Cash Inflows from Sales: Best Oxygen's Sales Schedule

		March	April	May	June	July	August	April to July
Schedule 1: Sales Forecast		82,000	105,000	174,000	128,000	105,000	82,000	512,000
AR sales	30%	24,600	31,500	52,200	38,400	31,500		
Case sales	70%	57,400	73,500	121,800	89,600	73,500		
Schedule 2: Cash Collections								
Cash sales for this month			73,500	121,800	89,600	73,500		
100% of credit sales from last month (AR)			24,600	31,500	52,200	38,400		
Total collections			98,100	153,300	141,800	111,900		

Note: This table lists schedules of sales compositions and cash collections from April to July. In addition, based on an assumption regarding the composition of sales (70% cash sales and 30% of AR sales each month), monthly cash collections on Schedule 2 are set to equal to the current-month cash sales plus the AR sales from previous month.

Step 2: Projected Cash Outflows from Purchasing Inventory

Best Oxygen's inventory policy states it will begin a month with sufficient inventory, defined as stocking a cushion of $36,000 plus 56% of the that month's projected sales. This policy will determine the beginning inventory balance each month. However, this is NOT the dollar amount of spending required to purchase inventory for the current month, as the Company pays half its monthly inventory purchases in the current month and half in the following month. To calculate each month's inventory purchases, we first need to estimate what the target inventory level is for the end of that month. We then add the projected cost of goods sold (70% of sales) for the month to this ending target inventory in order to project the "Total Needed" inventory level. Deducting the month's beginning inventory balance from the "Total Needed" will then result in the projected inventory purchases for the current month.

Accounting rules stipulate that the ending inventory balance in the current month be the same as the beginning inventory balance for the following month. Therefore, March's ending balance is April's beginning balance. For Best Oxygen, April's beginning balance is based on the Company policy whereby the beginning balance is targeted to be equal to a $36,000 cushion plus 56% of April's sales. Table 2 (below) presents the Company's scheduled inventory purchases and shows that this policy projects $94,800 as April's beginning target balance ($36,000 plus 56% of April's $105,000 projected sales), which will be March's ending balance as well. Following the process indicated in the previous paragraph, to this $94,800 month-end target inventory we add March's cost of goods sold (= 70% of $82,000 (March sales) = $57,400) to project March's "Total Needed," which is $152,200. Deducting the beginning March balance of $77,520, March's inventory purchases are found to be $74,680.

To project April's inventory purchases, each step of the calculation illustrated here should again be followed. April's beginning balance, however, is no longer "given" (as March's was), but is based on March's ending balance as calculated by the student(s): $94,800. Recall that this calculation was the first step we took when projecting March's inventory purchases. Table 2 below lists monthly inventory purchases from March to July based on this method of calculation.

Table 2: Best Oxygen's Inventory Purchases Schedule

Schedule 3: Purchases		March	April	May	June	July	April to July
Ending target inventory = (1) + (2)		94,800	133,440	107,680	94,800	81,920	
(1) 56% of next-month sales	56%	58,800	97,440	71,680	58,800	45,920	
(2) Cushion	36,000	36,000	36,000	36,000	36,000	36,000	
Plus cost of goods sold (=70% of current-month sales)	70%	57,400	73,500	73,500	89,600	73,500	358,400
Total needed		152,200	206,940	229,480	184,400	155,420	
Minus beginning inventory		77,520	94,800	133,440	107,680	94,800	
Purchases		74,680	112,140	96,040	96,040	96,040	

Note: This table projects the current-month inventory purchases from March through July. Ending target inventory is first estimated as the sum of 56% of the next-month sales and a desired cushion of $36,000. Projected cost of goods sold, which is equal to 70% of the current-month sales, is then added to this ending target inventory. This addition will result in "Total needed" inventory. Deducting the current-month beginning inventory from this "Total needed" inventory will generate inventory purchases for each month from March to July.

Payment for these inventory purchases are spread over two months. Only half of the current-month purchases is paid in the current month. The other half is left as accounts payable on the current-month books and paid off the next month. Table 3 (below) illustrates the effects of this purchasing policy on projected cash outflows and indicates that actual monthly cash outflows are the sum of 50% of this month's purchases and 50% of the last month's purchases (i.e., Inventory accounts payable from the previous month). For example, April's disbursements for purchases are estimated to be a total of 50% of March's purchases (= 50% * $74,680 = $37,340) and 50% of April's purchases (= 50% * $112,140 = $56,070), which amounts to $93,410 (= $37,340 + $56,070). Table 3 below projects monthly cash outflows from inventory purchases from April to July.

Table 3: Projected Cash Outflows from Purchasing Inventory

		March	April	May	June	July
Schedule 4: Purchase Disbursements						
50% of last month's purchases	50%		37,340	56,070	48,020	38,360
50% of this month's purchases	50%	37,340	56,070	48,020	38,360	30,310
Disbursements for purchases			93,410	104,090	86,380	68,670

Note: This table projects monthly cash outflows from April to July, due to the disbursements from purchasing inventory. Best Oxygen's payment policy states that inventory purchases will be paid in two parts: half in the current month and the other half left to be paid in the following month. This means that in each month, there will be cash payments for 50% of last month's purchases and also for 50% of this month's purchases.

Step 3: Projected Cash Outflows from Paying the Expenses of Wages and Commissions

Table 4 (below) demonstrates the Company's cash outflows related to wages and commissions. Monthly wage expenses are estimated to be $5,700 per month for the next four months. Adding an additional 15% of the current-month sales as commissions will provide the monthly wages-and-commissions expenses at Best Oxygen. Schedule 5 in Table 4 projects these expenses. For example, March sales were given as $82,000. The wages-and-commissions expenses allocated to March are thus calculated as $5,750 + (15% * $82,000) = $18,050. Following the same method, these monthly expenses are projected to be $21,500 in April, $31,850 in May, $24,950 in June and $21,500 in July. Best Oxygen's wages-and-commissions payment policy (half is paid in the middle of the current month and the other half on the first day of the following month), however, causes cash outflow calculations to differ from simple wages-and-commissions calculations for each month. For example, on Schedule 6 of Table 4 shows that April's cash outflows under this policy are equal to $19,775, which is the total of the second half of March's expenses (50% * $18,050 = $9,025), paid on April 1, plus the first half of April's expenses (50% * $21,500 = $10,750), paid in the middle of April. Note that this $19,775 cash outflow is different from the projected wages-and-commissions expense for April of $21,500 (see above). This same method of projection generates cash outflow estimates of $26,675 for May, $28,400 for June and $23,225 for July.

Table 4: Best Oxygen's Projected Cash Outflows from Paying Wages-and-Commissions Expenses

		March	April	May	June	July	April to July
Projected sales		82,000	105,000	174,000	128,000	105,000	512,000
Schedule 5: Wages and Commissions							
Wages, all fixed		5,750	5,750	5,750	5,750	5,750	
Commissions (=15% of current-month sales)	15%	12,300	15,750	26,100	19,200	15,750	
Total expenses		18,050	21,500	31,850	24,950	21,500	99,800
Schedule 6: Disbursements - Wages and Commissions							
50% of last month's expenses	50%		9,025	10,750	15,925	14,475	
50% of this month's expenses	50%	9,025	10,750	15,925	12,475	10,750	
Total			19,775	26,675	28,400	23,225	

Note: This table projects monthly wages-and-commissions expenses from April to July. Then based on Best Oxygen's payment policy, the cash outflows of this expense item are scheduled. Monthly wages is a fixed figure of $5,750 while commissions are set at 15% of the projected sales each month. The payment policy for this expense item states that disbursements in the current month are equal to 50% of last month's expenses plus 50% of this month's expenses.

Step 4: Cash Budget

This is the final step to determine Best Oxygen's cash budget for the four coming months. Table 5 (below) illustrates this process by assembling previous projections to produce a Cash Budget. Generally speaking, in order to obtain the results in this cash-budget table, the estimates derived from Step 1 to Step 3, together with the additional cash outflows used to pay for rent, insurance and a truck, are all essential. Line items related to total cash receipts and disbursements are also constructed. Additionally, as Best Oxygen desires $22,000 to be available in its checking account at the beginning of each month, the line item "Total Cash Needed" is projected. As total cash inflows do not always cover Total Cash Needed, additional financing from the founder with a monthly interest rate of 1.5% is accounted for (see April).

The repayment schedule ($2871 in May, $21,199 in June and $5,765 in July) and the interest payments based on the loan balance at the start of each month will be taken into account to decide the "Total Effects of Financing." Based on this case-setting, the end-of-period cash balance is thus equal to the sum of these three items: (1) $22,000 (required minimum balance) in checking account; (2) "Excess of Total Cash" (= "Total Cash Balance before Cash Outflows and Financing" – "Total Cash Needed"); and (3) "Total Effects of Financing."

To illustrate this cash-budget table further, Table 5 starts with $22,000 as the beginning balance in April (this information is given in the case-setting). Adding collections from customers in April ($98,100), the line item of "Total Cash Balance before Cash Outflows and Financing" arrives at $120,100. Regarding cash disbursements, these line items are all relevant: (1) inventory purchases; (2) wages and commissions; (3) miscellaneous cash expenses (= 5% of current-month sales); (4) rent ($3,600 per month); and (5) truck purchase (one-time occurrence of $5,900 in April). Items (1) and (2) are the major cash outflows for most business operations. For Best Oxygen, these monthly cash outflows have already been scheduled on Tables 3 and 4. Items (3), (4) and (5) come from the background information given for this case. Considering all items from (1) to (5), total cash disbursements amount to $127,935 in April.

Adding the minimum cash balance of $22,000 to total cash disbursements of $127,935, the line item of "Total Cash Needed" is $149,935. Deducting this "Total Cash Needed" of $149,935 from the "Total Cash Balance before Cash Outflows and Financing" of $120,100, the line item of "Excess of Total Cash" is –$29,835. This negative sign indicates a shortage of cash and a need for financing. (If the sign of "Excess of Total Cash" is positive, then there is no need for additional financing, which is projected to be the case in May, June and July.) Net borrowing of $29,835 is projected to take place at the end of April, resulting in a cash inflow of that amount in "Total Effects of Financing." The cash balance at the end of April is thus projected at $22,000, which is the sum of the items mentioned in the previous paragraph: (1) $22,000 (required minimum balance) in the checking account; (2) "Excess of Total Cash" (= "Total Cash Balance before Cash Outflows and Financing" – "Total Cash Needed") of –$29,835; and (3) "Total Effects of Financing" of $29,835.

This end-of-period cash balance of $22,000 in April will then become the beginning cash balance in May. Also, the $29,835 borrowed from founder Smith at the end of April will be the beginning loan balance in May. Numbers for all line items of cash inflows and outflows in May are recorded following the same fashion described above for April. "Excess of Total Cash" in May is projected at $10,235. The positive sign of this number indicates no need for additional borrowing. However, since there is a loan balance of $29,835 that starts in May, repayment of $2,871 and an interest payment of $448 (= 1.5% of $29,835) are scheduled to be paid.

These two items are cash outflows under "Total Effects of Financing" and are estimated to be –$3,319. The end-of-period cash balance is again equal to the sum of the aforementioned three items: (1) $22,000 (required minimum balance) in the checking account; (2) "Excess of Total Cash" of $10,235 (= "Total Cash Balance before Cash Outflows and Financing" – "Total Cash Needed"); and (3) "Total Effects of Financing" of –$3,319 (= –$2.871 – $448). The same calculation routine will then apply to June and July, with a June end-of-period cash balance of $24,333 and a cash balance of $29,637 by the end of July. This July balance is $7,637 greater than the target ending cash balance of $22,000. However, whether this increased cash balance is a result of profit-making by the regular business operation at Best Oxygen will need to be determined by examining the projected income statements in these four months.

Table 5: Best Oxygen's Cash Budget from April to July

	April	May	June	July
1) Beginning Cash Balance	22,000	22,000	28,916	24,333
Cash receipts:				
Collections from customers	98,100	153,300	141,800	111,900
Total cash balance before cash outflows and financing	120,100	175,300	170,716	136,233
Cash disbursements:				
Inventory purchases	93,410	104,090	86,380	68,670
Wages and commissions	19,775	26,675	28,400	23,225
Miscellaneous cash expenses (=5% of current-month sales)	5,250	8,700	6,400	5,250
Rent	3,600	3,600	3,600	3,600
Truck purchase	5,900	0	0	0
Total cash disbursements	127.935	143,065	124,780	100,745
Add: Minimum cash balance desired	22,000	22,000	22,000	22,000
Total cash needed	149,935	165.065	146,780	122.745
2) Excess of Total Cash				
= "Total cash balance before cash outflows and financing" minus "Total cash needed"	(29,835)	10,235	23,936	13,488
Financing:				
Net borrowing	29,835	0	0	0
Repayments	0	2,871	21,199	5,765
Loan balance	29,835	26,964	5,765	0
Interest (=1.5% per month* the beginning loan balance in current month)	0	448	404	86
3) Total Effects of Financing	29,835	(3,319)	(21,603)	(5,851)
Cash Balance				
= 1) Desired cash flow ($22,000) + 2) excess of total cash + 3) total effects of financing	22,000	28,916	24,333	29,637

Note: This table projects Best Oxygen's monthly cash positions from April to July. This table is constructed from top to bottom and then from left to right. Cash balance starts at $22,000 in April. Then the major line items of "Total cash balance before cash outflows and financing" and "Total cash needed" are created. "Collections from customers" are based on Schedule 2. The numbers for "Inventory purchases" are taken from Schedule 4 and the "Wages and commissions" figures come from Schedule 6. Adding the minimum cash balance desired of $22,000 to "Total cash disbursements" results in "Total cash needed." Deducting "Total cash needed" from "Total cash balance before cash outflows and financing" will yield "Excess of Total Cash." If this number turns out to be negative, this amount will need to be financed; otherwise, there is no need for borrowing. "Total Effects of Financing" is equal to "Net borrowing" minus the sum of "Repayments" and "Interest." The cash balance in the end of each month is set to be the sum of 1) desired cash flows ($22,000) + 2) excess of total cash + 3) total effects of financing.

QUESTION 2: What do Best Oxygen's monthly income statements look like from March to July? In addition, aggregate the line items of these monthly statements and construct an income statement for the four-month period from April to July.

SOLUTION 2: Having monthly interest expenses derived from the cash-budget table, constructing income statements for these four months becomes feasible. Table 6 (below) demonstrates these monthly income statements. While the conventional line items of an income statement stay unchanged, operating expenses in this case include (1) wages and commissions, (2) rent, (3) miscellaneous cash expenses, (4) insurance and (5) depreciation. In addition, since this case assumes no tax (due to the fact that at the early stage of most entrepreneurial ventures, companies generally do not expect to make enough profits to exceed the zero-percent tax bracket, and even they do, the amount of tax owed is small enough to ignore at this point), pretax income is the same as net income.

Wages-and-commissions expenses are projected and taken from Schedule 5. Rent is a fixed amount of $3,600 per month. Miscellaneous cash expenses each month are set as 5% of projected sales and appear already on the cash budget. Insurance is expensed at $400 per month and depreciation is estimated to be $1,050 per month. Interest expenses figures have already been projected and are taken from the cash-budget table. Table 6 below projects the monthly income statements. The income statement for the four-month period is also listed after July.

Table 6: Best Oxygen's Projected Income Statements

	March	April	May	June	July	April to July
Sales	82.000	105,000	174,000	128,000	105,000	512,000
Cost of goods sold (=70% of current-month sales)	57,400	73,500	121,800	89,600	73,500	358,400
Gross profit	24,600	31,500	52,200	38,400	31,500	153,600
Operating expenses:						
Wage and commissions	18,050	21,500	31,850	24,950	21,500	99,800
Rent	3,600	3,600	3,600	3,600	3,600	14,400
Miscellaneous cash expenses (=5% of current-month sales)	4,100	5,250	8,700	6,400	5,250	25,600
Insurance	400	400	400	400	400	1,600
Depreciation	1,050	1,050	1,050	1,050	1,050	4,200
Total operating expenses	2,720	31,800	45,600	36,400	31,800	145,600
Income from operation	(2,600)	(300)	6,600	2,000	(300)	8,000
Interest expense	0	0	448	404	86	938
Net income	(2,600)	(300)	6,152	1,596	(386)	7,062

Note: This table projects monthly income statements from March to July. While the conventional line items of an income statement stay unchanged, operating expenses in this case include (1) wages and commissions, (2) rent, (3) miscellaneous cash expenses, (4) insurance and (5) depreciation. Wages-and-commissions expenses are projected and taken from Schedule 5. Rent is a fixed amount of $3,600 per month. Miscellaneous cash expenses each month are set to be 5% of projected sales and appeared already on Table 5 of the cash budget. Insurance is expensed at $400 per month and depreciation is estimated to be $1,050 per month. Interest-expense figures have already been projected and are taken from the cash-budget table. Assuming no expense for tax, pretax income is then equal to net income.

From Table 6 (above), it is easy to see that Best Oxygen operates at a loss in the first two months. However, net income in May turns positive due to its large sales and is projected at $6,152, the highest number in these four months. The net income in June is projected to be a positive figure of $1,596, but is a much lower number than the one seen in May. The July profit turns to be a negative figure of –$386. Overall, these projected profits demonstrate a positive correlation with forecasted sales. To conclude, for this four-month period, Best Oxygen is projected to make a total profit of $7,062. With an increase of cash balance amounts to $7,637 in these four months, the main contributor of this cash increase is evidently due to these positive flows of net income. These profits are projected to contribute 92% (=$7,062/$7,637) of the cash increase during this four-month period.

QUESTION 3: What do Best Oxygen's monthly balance sheets look like from March to July?

SOLUTION 3: Based on the information given in this case, line items included under current assets are (1) cash, (2) accounts receivable, (3) merchandise inventory and (4) prepaid insurance. Line items of gross fixed assets and accumulated depreciation are listed below total current assets and their numerical values on March 31, 2013, are given in this case: Gross property, plant and equipment (listed as "Gross fixed assets" in table below) is $75,100 and accumulated depreciation amounts to $29,440. Current liabilities contain (1) accounts payable, (2) accrued wages-and-commissions payable, (3) loan (from founder). There is no long-term debt in this case. Adding owner's equity to total current liabilities will then equal "Total liabilities and equity." Table 7 (below) lists these monthly balance sheets from March to July.

Per the case-setting, the cash balance on the March 31 balance sheet is $22,000. This amount is further confirmed by the case-setting regarding the founder of Best Oxygen putting this amount in the company's checking account on March 31 in exchange for receiving an equity position. For the rest of the months from April to July, numbers from the ending cash balances on the last line of the cash budget are used for the "Cash" line item on the monthly balance sheets. AR numbers are obtained from the "AR Sales" line item on Schedule 1 and the figures for merchandise inventory are taken from the "Ending target inventory" on Schedule 3. Insurance costs $400 per month. Best Oxygen has, however, prepaid a one-year premium on March 31, 2013. So on March 31, 2013, the Company has a current asset of prepaid insurance that is valued at the 12-month premium of $4,800 (=12*$400). This implies that on April 30 this asset of prepaid insurance will have been consumed for one month and will thus be worth $400 less,

becoming $4,400 (=11*$400). This $400 reduction will continue to apply to May, June and July. Based on this calculation, $4,000 is projected for May, $3,600 for June and $3,200 for July.

Table 7: Best Oxygen's Projected Balance Sheets

	March	April	May	June	July
Current assets:					
Cash	22,000	22,000	28,916	24,333	29,637
Accounts receivable	24,600	31,500	52,200	38,400	31,500
Merchandise inventory	94,800	133,440	107,680	94,800	81,920
Prepaid insurance	4,800	4,400	4,000	3,600	3,200
Total current assets	146,200	191,340	192,796	161,133	146,257
Gross fixed assets	75,100	81,000	81,000	81,000	81,000
Accumulated depreciation ($1,050 per month)	29,440	30,490	31,540	32,590	33,640
Net fixed assets	45,660	50,510	49,460	48,410	47,360
Total assets	191,860	241,850	242,256	209,543	193,617
Current liabilities					
Accounts payable	37,340	56,070	48,020	38,360	30,310
Accrued wages and commissions payable	9,025	10,750	15,925	12,475	10,750
Loan	0	29,835	26,964	5,765	0
Total current liabilities	46,365	96,655	90,909	56,600	41,060
Owner's equity	145,495	145,195	151,347	152,943	152,557
Total liabilities and equity	191,860	241,850	242,256	209,543	193,617

Note: This table projects monthly balance sheets from March to July. Cash in March is given from this case-setting and the numbers for the rest of the months come from the last line of the cash budget. AR numbers are obtained from the line item "AR sales" from Schedule 1. The figures of merchandise inventory are taken from the "Ending target inventory" on Schedule 3. Prepaid insurance has a 12-month value in March. It is reduced by $400 per month. Gross fixed assets in March are given by this case-setting. With a purchase of a truck in April, this line item is increased by the purchase amount of $5,900 and stays unchanged thereafter for May, June and July. Accumulated depreciation is increased by $1,050 per month. Taking numbers from the last line item of "Purchases" on Schedule 3 and dividing these numbers by 2, these numbers

Regarding gross fixed assets, the March number is given at $75,100. On April 1, Best Oxygen purchases a truck for $5,900 and there is no more capital spending recorded for this line item in the other months. This means that gross fixed assets in April will be increased by this additional $5,900 purchase and become $81,000. This number will then stay unchanged thereafter for May, June and July.

Depreciation is estimated to be $1,050 per month. This includes the depreciation applied to the purchased truck. This information indicates the accumulated-depreciation line item will be increased by $1,050 per month. Therefore, accumulated depreciation is projected to be $30,490 in April, $31,540 in May, $32,590 in June and $33,640 in July.

Regarding accounts payable, since Best Oxygen only pays half of its current-month purchases and leaves the other half as accounts payable for the current month, we will simply divide the last line item of "Purchases" on Schedule 3 by 2, thus accounting for the AP line item from March to July. The wages-and-commissions payment policy at Best Oxygen follows the same payment schedule as inventory purchases. For each month, it pays half of its current-month expenses and leaves the rest as "accrued wages-and-commissions payable." Therefore, to project this line item, we again take numbers from the "Total expenses" line item from March to July on Schedule 5 and divided them by 2. These wages-and-commissions payable are projected to be $9,025 in March, $10,750 in April, $15,925 in May, $12,475 in June and $10,750 in July.

The loan balance at the end of March is zero, as given in the case-setting. The numbers for other months are taken from the "Loan balance" line item on the cash-budget table. At this point, the major aggregated lines of balance sheets – total current assets, total assets, total current liabilities, and total liabilities and equity – can be calculated. Special attention should be paid to March. March's owner's equity will need to be derived by using "total asset = total liability ("total current liabilities" in this case, since Best Oxygen does not have long-term debt) + owner's equity." March's total current liabilities of $46,365

plus owner's equity (unknown at this point) equal the total assets of $191,860. Owner's equity is then derived at $145,495 (= $191,860 – $46,365). The calculation of owner's equity for other months, however, will follow the basic accounting rule and be equal to the owner's equity of the previous month plus the current month's net income. (As there is no dividend payout, net income is the same as Addition to Retained Earnings.) Taking April as an example, after adding April's net income (= –$300) to March's owner's equity ($145,495), April's owner's equity is then projected at $145,195 (= $145,495 – $300). Adding this equity ($145,195) to the "total current liabilities" ($96,655) then results in "total liabilities and equity" of $241,850 (= $145,195 + $96,655). Estimates of owner's equity for the other months are obtained by following this rule. Adding owner's equity to total current liabilities results in the same numerical values as total assets each month, indicating that these balance sheets pass an insanity check: "Total Assets = Total Liabilities plus Owner's Equity." Thus, the financial statements derived up to this point are constructed correctly.

QUESTION 4: From April to July, what do Best Oxygen's monthly statements of cash flows look like?

SOLUTION 4: With correctly constructed income statements and balance sheets, projecting statements of cash flows becomes an easy task. Table 8 (below) lists these statements of cash flows from April to July. Cash inflows or outflows for a business come from three major activities: (1) operating activities; (2) long-term investing; and (3) financing activities. For operating activities, the main item (or contributor) for cash flows will hopefully be net income. As depreciation expense on income statements is a non-cash expense, this expense should be added back to net income to reflect the economic reality of a business in terms of its ability to generate cash. Furthermore, building "cash-free" current assets or leveraging from "debt-free" current liabilities will affect each current-month's cash position. For example, spending cash in building inventory requires cash outlays in the current month, while delaying payments until the following month, i.e., increasing payables accruals, will increase the current cash position. These effects will also need to be considered when deriving "Net Cash Flow from Operating Activities." Furthermore, since numbers on balance sheets are the end-of-period balances, in order to generate the flow measures from these balance sheets so they can be used in statements of cash flows (or be comparable to the figures on income statements), the first difference in numerical values from current to previous month will be adopted. For example, a line item of "An Increase in AR" in April is equal to (April AR– March AR). The calculated number of "An Increase in AR" could be either positive or negative, but it should always use the current month's figure minus the previous month's number. For example, "An Increase in AR" in April (= $6,900 = $31,500 – $24,600) is equal to April's AR ($31,500) minus March's AR ($24,600).

For Best Oxygen, these line items are the components of the "cash-free and debt-free" working capital: (1) increase in AR; (2) increase in inventory; (3) increase in prepaid insurance; (4) increase in AP; and (5) increase in accrued liabilities. The size of this working capital will affect cash flows in addition to the effects of net income and depreciation expense. Items (1) to (3) are with a negative sign as an increase in building these current assets will result in cash outflows and a decrease in these assets (divesting or selling) will increase cash inflows. Items (4) and (5) have a positive sign as an increase in AP or accrued liabilities implies payment obligations are postponed to the next month, which results in a higher cash balance in the current month. Conversely, a decrease of AP or accrued liabilities indicates that payment obligations are lighter as they have been paid out in the current month.

Regarding Table 8 above, estimates of net income and depreciation expense come from the monthly income statements on Table 6. Numbers for line items (1) to (5), which relate to the "cash-free and debt-free" working capital, are taken from the monthly balance sheets on Table 7 and are constructed in the difference form. The "Net Cash Flow from Operating Activities" line item indicates that operation activities in April fail to contribute positively to the Company's cash position, but those occurring in May, June and July do have positive impacts on Best Oxygen's cash inflows.

Table 8: Best Oxygen's projected Statements of Cash Flows from April to July

	April	May	June	July
1) Operating activities:				
Net income	(300)	6,152	1,596	(386)
+ Depreciation expense	1,050	1,050	1,050	1,050
– Increase in accounts receivables	6,900	20,700	(13,800)	(6,900)
– Increase in inventory	38,640	(25,760)	(12,880)	(12,880)
– Increase in prepaid insurance	(400)	(400)	(400)	(400)
+ Increase in accounts payable	18,730	(8,050)	(9,660)	(8,050)
+ Increase in accrued liabilities	1,725	5,175	(3,450)	(1,725)
Net cash flow from operating activities	(23.935)	9,787	16,616	11,069
2) Long-term investing activities:				
Capital expenditures (= an increase in gross fixed assets)				
(= an increase in net fixed assets + current-month depreciation expense)	5,900	0	0	0
Net cash flow from long-term investing activities	(5,900)	0	0	0
3) Financing activities:				
+ Increase in equity	0	0	0	0
– Dividends	0	0	0	0
+ Increase in debt	29,835	(2,871)	(21,199)	(5,765)
Net cash flow from financing activities	29,835	(2,871)	(21,199)	(5,765)
Summary:				
Net change in cash	0	6,916	(4,583)	5,304
Beginning cash balance	22,000	22,000	28,916	24,333
Ending cash balance	22,000	28,916	24,333	29,637

Note: Following a standard format for constructing statements of cash flows, the above table projects monthly statements of cash flows for Best Oxygen from April to July. The numbers for net income, depreciation expense and dividend (zero in this case) are taken from monthly income statements on Table 6 and the rest of the figures on this table come from the monthly balance sheets on Table 7. For the summary panel on the bottom of this table, net change in cash is calculated as the sum of (1) net cash flow from operating activities, (2) net cash flow from long-term investing activities and (3) net cash flow from financing activities. Beginning cash balance in April is given as $22,000 per the case-setting.

The second type of business activities that impact cash are "long-term investing" activities. These activities refer to spending funds in buying long-term assets or receiving funds by disinvesting (selling) long-term assets. In this case, capital expenditure is defined as "an increase of gross fixed assets" and refers to the $5,900 Best Oxygen spent in buying a truck. Capital expenditure could also be calculated as "increase of net fixed assets" plus "current-month depreciation expense." For example, in April this "increase of net fixed assets" is $4,850 (= $50,510 of net fixed assets in April – $45,660 of net fixed assets in March). Adding this $4,850 to $1,050, April's depreciation expense, will also result in $5,900. This spending is the only long-term investing in these four months for Best Oxygen and the line item of "Net Cash Flow from Long-term Investing Activities" comes with a negative sign as it is obviously a cash outflow.

A company's financing activities will impact its cash position. For example, a company could strengthen its cash position by issuing additional equity or selling partial ownership to an interested investor or raising new debt. Conversely, buying back its own stock and retiring existing debt will weaken its cash position. In addition, dividend payout, a flow measure that appears on income statements, is obviously a cash outflow and, according to GAAP, it is a line item that belongs to the financing activities on the statement of cash flows. In addition, since interest expense is deducted on the income statement when net income is generated and it later becomes the first line item appearing on the statement of cash flows, this expense, although related to financing activities, should not be listed as one in order to avoid double-counting.

In this case, there is no new equity issued or dividend payout made in these four months. The only fund-raising activity Best Oxygen engages in is its borrowing of $29,835 from its founder in April to cover its "Total Cash Needed" (see cash budget on Table 5). This is the only cash inflow recorded regarding financing activity during this four-month period. A positive number of $29,835 is thus projected for the

"Increase in debt" line item for April. Three repayments of this loan, $2,871 in May, $21,199 in June and $5,765 in July, are obviously cash outflows and recorded with a negative sign for this line item in these months.

The sum of net cash flows from operating, long-term investing and financing activities will yield the "Net Change in Cash" line item on this financial statement. For Best Oxygen, it is at zero in April, $6,916 in May, –$4,583 in June and $5,304 in July. Adding "Net Change in Cash" to "Beginning Cash Balance" will generate "Ending Cash Balance." For example, in April, zero is added to "Beginning Cash Balance" of $22,000 (taken from the "Cash" line item in March's balance sheet), which amounts to $22,000 for the "Ending Cash Balance" in April. This April "Ending Cash Balance" will later become the "Beginning Cash Balance" in May. Adding "Net Change in Cash" in May to May's "Beginning Cash Balance" will result in May's "Ending Cash Balance" ($28,916). Continuing these calculations, the ending cash balances in June ($24,333) and July ($29,637) are found. As these ending cash balances match the numbers from the "Cash" line item on the income statements and the "Cash balance" line item on the cash-budget table, the correctness of these monthly statements of cash flows is confirmed.

QUESTION 5: Profit-making ability can be seen on income statements, while the changed composition of balance sheets over time can reveal how cash is used or where it is sourced from. Regarding the cash balance at the end of July, after examining the cash impacts from income statements and balance sheets, which of these two is the major factor that affects Best Oxygen's cash position in this four-month period?

SOLUTION 5: Table 9 (below) presents the cash impacts from income statements and balance sheets over this four-month period. Cash is projected to increase by $7,637 for this period. The cash impact from the income statements from March to July amounts to $7,062 (Net income – Dividends), which contributes 92% of the overall cash increase. This leaves an 8% contribution from the changes made on balance sheets during this period. Thus, the major contributor to Best Oxygen's cash position is the net income generated in this four-month period, which is a positive sign for Best Oxygen at this early stage of operations.

Table 9: Composition of Cash Impacts

	Increase	%
Cash balance:	7,637	100%
Cash impact from income statements over this four-month period (Net income – dividends)	7,062	92%
Cash impact from balance sheets over this four-month period (Use/source of cash)	575	8%

Note: This table presents the cash impacts from income statements and balance sheets over this four-month period. Cash is projected to increase by $7,637 for this period. The cash impact from income statements from March to July amounts to $7,062 (Net income – Dividends), which contributes 92% of this cash increase. This leaves an 8% contribution from changes made on the balance sheets during this period.

BIOGRAPHY

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FLOW OF FUNDS FOR SUSTAINABLE ROAD MAINTENANCE IN KENYA

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ABSTRACT

Kenya established the Road Maintenance Levy Fund in 1993 to finance road maintenance. The Kenya Roads Board is at the centre of the Fund's administration and accomplishes this by working in collaboration with various implementing agencies. However, through professional experience, we have learnt that the flow of funds to road agencies is inconsistent, due to various factors, which this study aimed at documenting to justify reforms towards sustainable road maintenance. We applied the cross-sectional survey design to source information from 146 key informants. The study found that delay in allocation committee meetings (33.0%) and requisition of the Authority to Incur Expenditure (71.3%); lengthy disbursement channel (84.0%), lack of a proper tracking system (47.9%) delay in external auditing (56.4%) and weak financial management system (24.5%) were the key factors constraining the flow of funds. The constraints affected the implementation of work plans (73.4%), maintenance backlog (60.6%) and encouraged procurement malpractices (57.4%), among other issues. The study recommends the need for electronic fund transfer to agency accounts, follow-up communication to track disbursements; enforcement of adherence to provisions of the Public Officer Ethics Act and the Public Procurement and Disposal Act, commercial accounting practices at the agency level and additional audit staff.

JEL: O16

KEYWORDS: Road Maintenance Levy Fund, Kenya Roads Board, Road Maintenance Agency, Sustainable Road Maintenance, Disbursement of Funds, Procurement Gaps and Accountability

INTRODUCTION

Road transport plays in important role in the development of the Kenyan economy. It accounts for over 80% of land freight and passenger traffic in Kenya (Kenya Institute of Public Policy Research and Analysis [KIPPRA], 2001; World Bank, 2011; Government of Kenya [GoK], 2012). An efficient road infrastructure is a prerequisite for socio-economic development, particularly in agricultural economies. In this regard, a well-developed road network is necessary to facilitate the transportation and marketing of farm produce (Heggie, 1995; Nyangaga, 2007).

As noted by the Central Bank of Nigeria (2003), bad roads impede the movement of commodities and services from producers to consumers and farm produce from rural areas to urban centres. Bad roads also lead to loss of person-hours, with far-reaching consequences on motor vehicle maintenance costs, as well as the emotional and physical health of citizens. Similarly, Nyangaga (2007) points out that a poor road network increases the cost of farm inputs, production and access to markets, which in turn, makes the cost of living unbearable for low income-earners. Bad roads also constrain access to essential services such as healthcare, education and emergency responses in the event of disasters (GoK, 2012).

The development of a road network cannot be complete without a sound and sustainable program for its maintenance. In Kenya, the Road Maintenance Levy Fund (RMLF) came into existence in 1993 through

an Act of Parliament and its objective was to facilitate the maintenance of public roads. The Kenya Roads Board (KRB), which came into existence through the Kenya Roads Board Act No. 7 of 1999, administers and manages the disbursement of RMLF resources. In this regard, KRB oversees and coordinates the development and maintenance of the road network in the country (GoK, 2006; Kenya Anti-Corruption Commission [KACC], 2007).

To achieve this, KRB has works in collaboration with various agencies and sub-agencies to carry out the actual maintenance of roads (Nyangaga, 2007; Government of Kenya, 2012). At the time of this study, the agencies included the Roads Department at the Ministry of Roads and Public Works (MoRPW), District Roads Committees (DRCs), Kenya Wildlife Service (KWS) and local government authorities across the country. Whereas the Department of Roads deals with international and national highways as well as trunk roads (Classes A, B and C, respectively), DRCs deal rural access and feeder roads (Classes D and E), while KWS focuses on the construction and maintenance of the roads in national parks and game reserves (GoK, 2006; KACC, 2007).

The Kenya Revenue Authority (KRA) is the Government agency mandated to collect revenues and remit the same to KRB accounts periodically. Upon receipt of the funds, a special committee at KRB headquarters sits and deliberates on allocation to various agencies across the country. A formula that is outlined in the Kenya Roads Board Act guides the exercise, in which case, 57% goes to the Department of Roads; 24% goes to DRCs, local authorities and KWS; 16% goes to constituencies through DRCs and 3% goes towards overhead costs at KRB headquarters (KACC, 2007; GoK, 2012).

Once allocations are complete, KRB forwards the minutes and instructions from the Permanent Secretary, MoRPW to the Chief Engineer (Roads) to support the requisition of Authority to Incur Expenditure (AIE) from the Chief Finance Officer in the same Ministry. The finance officer then prepares and forwards AIEs to the Principal Accounts Controller for commitment and feeding into the Integrated Finance Management Information System (IFMIS). Besides, KRB disburses funds to various agencies through a cheque, which goes to district treasury accounts, from where each agency receives new cheques as per AIEs (KACC, 2007).

Nevertheless, our engagements with road agencies in Nyanza and Western Provinces of Kenya revealed that the system was not efficient. Quite outstanding among the challenges was the inconsistency in the flow of funds from KRB to road agencies, due to bureaucratic bottlenecks and financial misappropriation at various levels of the disbursement channel.

In some instances, the agencies received funds as late as a few weeks to the end of the Government fiscal year, when they should compile and file their annual reports, as well as return unused funds to the treasury. These circumstances affected the implementation of action plans, leading to an increasing maintenance backlog. In view of this, about 47% of the road network in Kenya is in poor condition, a situation that the Kenya Poverty Reduction Strategy Paper 2001-2007 attributes to, among other issues, lack of routine maintenance (GoK, 2001; KACC, 2007).

A review of pertinent literature reveals that most developing countries established road funds between 1990 and 1999, as part of their quest for a sustainable funding mechanism for road maintenance. Furthermore, the review noted that the disbursement of road funds was done following three main methods – the first method is where funds are disbursed directly to agencies; the second method involves direct payment of contractors and suppliers upon certification of the work done; while the third method is the disbursement of funds to road agencies within a decentralized framework on the condition of accountability, which is followed by technical and financial audits at the end of fiscal year to facilitate subsequent disbursements (Heggie, 1995; 1999; Kumar, 2002). We have explored details of these methods under the literature review section of this paper.

The efficiency of road funds varies significantly across countries, depending on the disbursement method used, scope of road network covered and programmatic design. Various studies in a number of countries assessed the efficiency of road funds, including the disbursement methods. For instance, in Mozambique, de Richecour (1994) found that direct disbursement of funds to road agencies was successful in terms of sound procedures for controlling work. Consequently, the system was efficient in the utilization of public resources and eliminating maintenance backlog (de Richecour, 1994). However, the system is too demanding in terms of qualified and experienced personnel to supervise and oversee each project (Heggie, 1995).

In Ghana, Bahl (1992) and Heggie (1995) indicated that the second method of disbursements was associated with issues such as lack of stringent financial control measures and possible abuse by cartels within parent ministries. The third method of disbursement, which operates within a decentralized system of road maintenance, associates with shortcomings such as bureaucratic inefficiencies and financial misappropriation, as found in Tanzania and Zambia (Heggie, 1995; 1999; Kumar, 2002).

In Kenya, the review revealed a paucity of systematic academic investigations on issues arising from the method, which KRB adopted to disburse funds to road agencies. In view of this gap, the purpose of this study was to identify key lessons that may justify necessary reforms to improve the flow of funds from KRB to the agencies for sustainable road maintenance. We conducted the study in Kisumu, Siaya, Nyando, Kisii and Migori Districts in Nyanza Province of Kenya. The remainder of this paper covers sections on literature review, data and methodology used in the study, results and discussions as well as conclusions.

LITERATURE REVIEW

There is no doubt that road transport plays an important role in the development of the global economy. For this reason, the development, rehabilitation and maintenance of the road network is highly prioritized in terms of policy, legal frameworks and funding. Consequently, all countries are increasingly investing substantial resources in the roads sub-sector to improve road network, thereby, enhance user comfort and safety; as well as reduce production costs and commodity prices (Heggie, 1995).

Being a capital-intensive initiative, the growth in human population and expansion of budgetary allocation to the social sector have seen the funds available for road development, rehabilitation and maintenance dwindle over the years. A growing budgetary deficit implies an increasing maintenance backlog, which may turn to be more costly in the long run (Zietlow & Bull, 2002). Although multilateral funding agencies, especially the World Bank, have supported the construction of roads in developing countries, addressing the recurrence of maintenance expenditure was a key challenge prior to the 1990s. The search for a more sustainable funding solution for road maintenance prompted the establishment of road funds, mainly financed through fuel levy, weighbridge toll collections as well as bridge and canal toll collections (Heggie, 1995).

Many developing countries established their road funds in the 1990s. For instance, the Ghana Road Fund came into existence in 1996 to finance routine maintenance and rehabilitation of public roads (Bahl, 1991). In Honduras, the Road Maintenance Fund came in 1993; while Costa Rica did so in 1998. In addition, Armenia passed the Roads Fund Legislation in 1998; Tanzania initiated the Road Fund in 1992 to finance urban and district roads; while Kenya established the Road Maintenance Levy Fund (RMLF) in 1993, just to mention a few (Zietlow & Bull, 2002; Kumar, 2002; Central Bank of Nigeria, 2003; Heggie, 1995).

The objectives of road funds include providing a regular flow of funds to support spending on road maintenance, keeping revenues apart from the government's consolidated account, and accounting for the use of funds. Whereas, some road funds only finance national or main roads, others focus on state, provincial and regional roads while others target urban road only. However, in most developing countries, road funds finance all expenditures for road maintenance, irrespective of scope of grade (Heggie, 1999).

The literature reveals that even though central boards manage road funds, they have to operate in collaboration with various agencies at the national, district and community levels. In Kenya, the central entity is the Kenya Roads Board (KRB), whose mandate is to oversee and coordinate the development and maintenance of the road network in the country (Nyangaga, 2007). KRB works in collaboration with various agencies, including the Roads Department in the MoRPW, DRCs, KWS and local authorities. Whereas the Department of Roads deals with Class A, B and C roads, including international highways, national highways and trunk roads, DRCs target Class D, E, and other roads, including rural access and feeder roads; while KWS focuses on the construction and maintenance of roads in national parks and game reserves (Nyangaga, 2007; GoK, 2012).

The central boards disburse funds periodically to the agencies to enable them carry out their maintenance work. The literature review reveals three distinctive procedures through which funds flow to road agencies. In this regard, the central board can either: disburse funds directly to road agencies, settle bills periodically after certification a contractor/supplier has completed the satisfactorily, or disburse funds on a conditional basis and undertake technical and financial audits *ex post* (Heggie, 1995; Kumar, 2002).

Under the first method, central boards disburse funds directly to road agencies, who should to account for expenditure within the usual government audit framework (Heggie, 1995; 1999). In this regard, the financial audit of disbursed funds simply checks to ensure that funds-in match funds-out. Under this arrangement, the agencies are not accountable to the road fund, but to their parent ministries. The latter ensures that road agencies spend funds on road maintenance and upholds quality workmanship (Moeller, 1993).

For instance, in Ghana, the Government splits road fund revenues at the source and pay directly into the accounts of the Ghana Highway Authority, the Departments of Feeder Roads and Urban Roads. Each agency has to demonstrate to the Ministry of Roads and Highways that it has used the resources efficiently. The central board thus plays no part in checking to ensure that funds produce value for money (Bahl, 1991; Heggie, 1995). Uganda is yet another country applying this method of disbursing funds to road agencies (KIPPRA, 2001). Although this procedure appears simple and devoid of bureaucratic inefficiencies, which may affect the flow of funds, it is deficient in terms of stringent financial management discipline. Consequently, it is subject to abuse by cartels within parent ministries (Heggie, 1995; Kumar, 2002).

Contrastingly, the second method provides opportunity for central boards to oversee the utilization of disbursed funds. In this regard, the central board disburses funds on a regular basis, but it only does so after certification that contractors/suppliers have completed work according to specification (Heggie, 1995; 1999). However, the effectiveness of this procedure depends on the availability of elaborate work programs, together with a system of technical and financial audit. Several countries, including Benin, India and Mozambique have applied the method to disburse funds to road agencies (Heggie, 1991; 1992).

On the same note, de Richecour (1994) notes that Mozambique is one of the countries with sound procedures for controlling work at the provincial and district levels. In this regard, the central board appoints an inspector for each road project to supervise the contractor, administer terms of contract and certify payments. Under this arrangement, contractors submit monthly statements of complete work,

which inspectors certify for payment within fifteen days of presentation (de Richecour, 1994). Again, the success of this system depends on the sufficiency of qualified and experienced inspectors to oversee each project. Whereas the system remains one of the most efficient in Africa, it involves a great deal of field inspection; thus, may only be appropriate for major road projects (Heggie, 1995).

The third method for disbursing road funds is operates in a decentralized framework of road administration (Heggie, 1995; 1999). In this system, central boards allocate funds directly to each road agency, on a monthly, quarterly or biannual basis and then audits the use of such funds at the end of each financial year. Subsequent disbursements depend on the findings of audit reports; in this regard, where audit reports agree with agency disclosures, subsequent disbursement go as per schedule. However, discrepancies between audit reports and agency returns are a cause for delay, as central boards investigate and address elements of financial misappropriation. Consequently, the continuous flow of funding largely depends on how well the agencies use previous disbursements (Heggie, 1999).

In view of this, Kumar (2002) notes that Tanzania is one of the countries using this system to channel funds to urban and rural district councils (Kumar, 2002). In this regard, the central board channels funds through the Regional Development Director who audits road works to ensure that road agencies use funds efficiently to achieve quality workmanship (Kumar, 2002). Zambia is another African country applying the method to disburse funds to road agencies. The intention is to subject road works to thorough financial and technical audit and to use results to decide on matching grants for subsequent budgetary period (de Richecour, 1994).

Even though this method is appropriate for any number of road projects, it associates with various shortcomings, including bureaucratic inefficiencies and financial misappropriation by agencies, which contribute towards inconsistent flow of funds. This has significant negative consequences on the development and maintenance of public roads, in view of evidence from countries such as Tanzania, Zambia and Costa Rica (Heggie, 1995; 1999; Kumar, 2002; Zietlow & Bull, 2002).

DATA AND METHODOLOGY

We applied the cross-sectional survey design, with both quantitative and qualitative approaches to source, process and analyze the requisite information. The study targeted key informants, which included staff at MoRPW, DRC members, contractors, suppliers, consultants and local authority staff. Inclusion in the sample depended on voluntary participation. We successfully interviewed all the 146 key informants, which we contacted. We collected primary data in May 2009 and the process involved identification of eligible participants, consenting and interviewing. We applied purposive sampling to select participants based on their incumbency at the time of the study. Identification and appointments with the targeted groups was facilitated was District Roads Engineers and District Public Works Officers.

We also applied a key informant interview guide with structured and semi-structured questions to source the data. In social sciences, the intensity of a social problem within an institutional setting is determinable through the perception of staff members. Frequent encounter with such problems inform and shape staff perceptions. In view of this, we gauged the seriousness of the challenges experienced by road agencies by requesting participants to rate their perceptions on a three-point scale of 'not serious', 'serious' or 'very serious'. The intention was to source information that would facilitate prioritization of the challenges and justify the need for mitigative interventions.

Furthermore, we employed quantitative and qualitative techniques to process and analyze the data. In this regard, quantitative analysis that we obtained frequency distributions with percentages and cross-tabulation with Chi-square tests, we also transcribed, clustered into nodes and explored qualitative data for patterns and meaning to the flow of the funds. Detailed description of the design and approaches that

we used in this study are available in following publications (Nachmias & Nachmias, 1996; Bryman & Cramer 1997; American Statistical Association, 1999; Owens, 2002; Rindfleisch, Malter, Ganesan & Moorman, 2008).

RESULTS AND DISCUSSIONS

The study covered 146 key informants, which included 29 (19.9%) staff of the Ministry of Roads and Public Works (MoRPW), 6 (4.1%) engineer consultants, 22 (15.1%) members of District Roads Committees (DRCs), 10 (6.8%) contractors, 16 (11.0%) suppliers and 63 (43.2%) staff of local authorities. Among other findings, the results indicated that delay in allocation committee meetings, delay in requisition of the Authority to Incur Expenditure, lengthy disbursement channel and lack of a proper tracking system for disbursements were the key factors affecting the flow of funds to road agencies. Other factors included delay in external auditing of the financial accounts and weak financial management systems. We have presented and discussed details of these findings in the subsequent paragraphs in this order: flow of funds, factors affecting consistent flow of funds and the implications of inconsistent flow of funds.

We requested participants to indicate their opinion regarding the consistency of Road Maintenance Levy Fund (RMLF) disbursements over the preceding two years period based on their experiences. Even though 52 (35.6%) out of 146 participants affirmed that disbursements had been consistent over the reference period, more than two-thirds [94 (64.4%)] hinted a contrary opinion regarding the consistency of disbursements. This finding suggests that funding inconsistency was a critical challenge among a significant proportion of road agencies. Across the districts, disbursements were likely to be more consistent in Kisumu and Kisii, than in Migori and Siaya Districts. Table 1 shows that in Kisumu District, up to 13(50.0%) participants were of the view that disbursements were consistent.

Table 1: Perceived Consistency of Disbursements across the Districts

District	Consistent		Inconsistent		n
	Frequency	*Percent*	*Frequency*	*Percent*	
Migori	7	24.1	22	75.9	29
Kisumu	13	50.0	13	50.0	26
Nyando	9	33.3	18	66.7	27
Siaya	8	22.9	27	77.1	35
Kisii	15	51.7	14	48.3	29
Overall	**52**	**35.6**	**94**	**64.4**	**146**

This Table shows the perceptions of key informants regarding the consistency of Road Maintenance Levy Fund disbursements across the five districts. Overall, a higher proportion (64.4%) believed that disbursements were not consistent, suggesting that the challenge was experienced by a significant proportion of agencies. Across the districts, Kisii had the highest proportion (51.7%) affirming that disbursements were consistent, followed by Kisumu (50.0%). Contrastingly, in Siaya and Migori Districts, only 22.9% and 24.1%, respectively, affirmed that disbursements were consistent.

In Kisii District, 15 (51.7%) participants were of the view that disbursements were consistent. However, in Siaya and Migori Districts, only 8 (22.9%) and 7 (24.1%) affirmed that disbursements were consistent. Based on this, the analysis obtained a computed χ^2 value of 15.606, 4 degrees of freedom and a p-value of 0.035, which was significant at 0.05 error margin. This suggests up to 95% chance that districts were not homogenous in terms of the consistency of disbursements, as some districts appeared to be more favored than others were. Participants linked the inconsistency of disbursements with an array of factors at various levels of the disbursement channel.

The results presented in Table 2 show that 79 (84.0%) out of 94 participants cited the lengthy disbursement system as a key factor constraining the consistency of disbursements. Regarding the extent of seriousness, 47 (59.5%) out of 79 participants indicated that lengthy disbursement system was a serious

constraint, while 29 (36.7%) participants described the challenge as very serious. On aggregate, up to 96.2% rated the constraint as serious, at least at the very minimum.

In this regard, participants pointed out that KRB disburses funds to the districts through cheques upon receiving such from Kenya Revenue Authority (KRA), the collection agency. The District Treasury, which coordinates all public funds at the district level, receives disbursements and issues new cheques to various agencies as per the Authority to Incur Expenditure (AIE) from the Chief Finance Officers at the MoRPW headquarters. The study found that funds could stay at the District Treasury for as long as it took the Chief Finance Officer to prepare and remit the AIEs.

Table 2 further shows that lack of a proper tracking system for disbursements was another factor affecting the consistency of funding flow, as indicated by 45 (47.9%). Besides, out of 45 participants, 23 (51.1%) described lack of a proper tracking system for disbursements as a serious constraint, while 14 (31.1%) rated it as 'very serious'. Based on this, participants said that some agencies did not receive their disbursements in time due to lack of follow-up communication from KRB headquarters. Quite often, agencies were not aware of the goings-on at KRB headquarters regarding the time of disbursements and the time when agencies were to receive their cheques from the district treasury. Without follow-up or alerting communication agencies, funds could lodge at the district treasury for longer than necessary, even when the MoRPW issued AIEs in good time.

In relation to lack of a proper follow-up system, participants cited cases where senior public officials at the district level diverted funds to private investments to earn profits. In an instance, a staff of an agency colluded with senior public officials at the district treasury, opened a bank account using the agency name, cashed the cheque and drained funds to a private account, without the knowledge of agency authorities. At the time when the authorities discovered the incident, the suspect had already resigned and relocated to another country. Participants attributed such incidents to lack of regular communication from KRB to agencies, especially at the time of disbursements, as well as a week after disbursements to establish if the funds had reached intended recipients.

Table 2 further shows that 53 (56.4%) participants mentioned delay in external auditing of the agency financial accounts as an impediment to consistent flow of funds. Besides, 36 (67.9%) out of 53 participants rated the challenge as serious, while 7 (13.2%) believed that the challenge was very serious. Participants indicated that the Auditor General's office was responsible for evaluating the utilization of road funds at the agency level. External auditors submitted their reports to KRB to support decisions regarding subsequent disbursements, the guiding criterion being lack of financial irregularities. Consequently, delay in external auditing or delays in the transmission of resultant reports to KRB, affected the timeliness of subsequent disbursements. Participants attributed delay in external auditing to understaffing at the Auditor General's office.

Furthermore, Table 2 indicates that weak financial management system at the agency level was a key factor affecting the consistency of disbursements. This was stated by 23 (24.5%) out of 94 participants. Besides, up to 13 (56.5%) were of the view that the challenge was 'serious', while 9 (39.1%) said the challenge was very serious. Improving the financial management systems at the agency level by providing new or upgrading existing information and communication technology (ICT) facilities and programs would be an important step towards improving funding consistency. Nonetheless, participants pointed out that even though external auditing processes repeatedly documented issues related to the appropriateness of financial management systems at the agency level, the Government was yet to address the issues to improve the management of road funds.

Table 2: Challenges to Funding Flow and Perceived Seriousness

Constraints to funding flow	Perceptions	Frequency	Percent
	Yes	79	84.0
	No	15	16.0
	Total	**94**	**100.0**
Lengthy disbursement system	Not serious	3	3.8
	Serious	47	59.5
	Very serious	29	36.7
	Total	**79.0**	**100.0**
	Yes	45	47.9
	No	49	52.1
	Total	**94**	**100.0**
Lack of tracking system for disbursed funds	Not serious	8	17.8
	Serious	23	51.1
	Very serious	14	31.1
	Total	**45**	**100.0**
	Yes	53	56.4
	No	41	43.6
	Total	**94**	**100.0**
Delays in external auditing of agency accounts	Not serious	10	18.9
	Serious	36	67.9
	Very serious	7	13.2
	Total	**53**	**100.0**
	Yes	23	24.5
	No	71	75.5
	Total	**94**	**100.0**
Inconsistency between annual returns and audit requirements	Not serious	1	4.3
	Serious	13	56.5
	Very serious	9	39.1
	Total	**23**	**100.0**
	Yes	31	33.0
	No	63	67.0
	Total	**94**	**100.0**
Irregular meetings of the allocation committee	Not serious	10	32.3
	Serious	13	41.9
	Very serious	8	25.8
	Total	**31**	**100.0**
	Yes	67	71.3
	No	27	28.7
	Total	**94**	**100.0**
Delay in requisition of Authority to Incur Expenditure (AIE) by Kenya Roads Board	Not serious	12	17.9
	Serious	33	49.3
	Very serious	22	32.8
	Total	**67**	**100.0**

This Table indicates the challenges to funding flow from Kenya Roads Board to road maintenance agencies and perceptions about the seriousness of each constraint. Notably, up to 84.0% identified the stages involved in the disbursement channel as a key factor affecting the consistent flow of funds, while 47.9% mentioned lack of a proper tracking system for disbursements. Up to 56.4% of the participants indicated that delay in external auditing was a key factor affecting the consistency of disbursements for road maintenance, while 24.5% cited weak financial management system as one of the constraints. Besides, up to 33.0% of the key informants stated delays in the allocation committee meetings, while 71.3% felt that delays in requisition of AIE was a key constraint to the flow of funds.

Participants hinted that when KRA releases funds, an allocation committee at KRB convene to discuss and allocate funds as per agency work plans. However, the meetings were not consistent as pointed out by 31 (33.0%) participants. When asked to share opinion regarding the seriousness of the matter, Table 2 shows that 13 (41.9%) said it was 'serious', while 8 (25.8%) felt that it was 'very serious'. Delays in the allocation committee meetings directly affected the consistency of funding, as KRB could not disburse funds before approval by the allocation committee. Participants indicated that the composition of the committee included the public and private sectors, which contributed towards the difficulty of raising quorums for meetings. Even the committee had a fixed schedule of meetings, the delay was noted

particularly when members are required for special sessions to discuss and allocate funds for agencies whose accounts are reconciled and reinstated.

Furthermore, Table 2 indicates that 67 (71.3%) participants identified delays in the requisition of AIE as one of the constraints to consistent funding. Regarding the seriousness of the challenge, up to 33 (49.3%) participants described the constraint as 'serious', while 22 (32.8%) felt that it was 'very serious'. Participants indicated that once the committee has allocated funds, KRB used the minutes and other documentation to support requisition for AIE from the Chief Finance Officer at the Ministry of Roads and Public Works (MoRPW). In this regard, participants cited delays of up to two months in before AIE arrives at the District Treasury.

The study also found that inconsistent disbursement of funds affected the activities of road agencies in various ways. Table 3 shows that out of 94 participants who indicated that disbursements were inconsistent, 69 (73.4%) mentioned delay in work plan implementation as the main challenge resulting from inconsistent flow of funding. Each fiscal year, road agencies develop and submit work plans to KRB for funding consideration. Inconsistent disbursements affected the implementation of such work plans, forcing the agencies to carry forward unimplemented work to subsequent financial years. However, participants pointed out that reconciling overflowing work with new maintenance projects was a key challenge in the implementation of subsequent work plans.

Again Table 3 indicates that 57 (60.6%) cited procurement malpractices as a key challenge arising from inconsistent flow of funds. Participants indicated that in some instances, they received funds very late towards the end of financial year, when they were supposed to compile and file their financial reports. To avoid audit queries arising due to unspent funds, some agencies embarked on rushed expenditure to exhaust their allocation. This culminated in irregularities such as emergency procurement and single sourcing of contractors and suppliers. Emergency procurement conveniently avoided the necessary procedures for selecting contractors and suppliers based on time constraints. Even though emergency procurement does have economic sense under such circumstances, some agencies or their senior staff took advantage of the situations to award tenders to contractors with inadequate capacity, resulting to poor workmanship and wastage of public resources.

Table 3: Challenges Resulting from Inconsistent Funding Flow

Valid responses	Frequency	Percent of responses	Percent of cases
Delay in work plan implementation	69	26.7	73.4
Maintenance backlog	54	20.9	57.4
Procurement malpractices	57	22.1	60.6
Poor workmanship	30	11.6	31.9
Cancellation of contracts	21	8.1	22.3
High cost of repair	27	10.5	28.7
Total	**258**	**100.0**	**274.5**

This Table presents the challenges resulting from inconsistent disbursement of the Road Maintenance Levy Fund at the agency level. The first column from left indicates valid responses. We computed the proportions in the last column as a ratio of the frequency distribution in column two and the sample size of key informants reporting that funding flow was inconsistent (n=94). The main challenges resulting from inconsistent funding flow included delay in work plan implementation (73.4%), maintenance backlog (60.6%) and procurement malpractices (57.4%).

Emergency procurement also provided opportunity for nepotism and favoritism in tender awards, which in most cases, resulted to poor workmanship [30 (31.9%)] and loss of public resources. In this regard, participants alluded to the possibility of some senior officers along the disbursement channel, deliberately delaying the release of funds to agencies, with the intention of creating situations that would favor emergency procurement and single sourcing of particular contractors and suppliers. In such cases, selected tenderers are people with business or family ties with senior public officials directly or indirectly

involved with the road fund, which is contrary to provisions of the Public Procurement and Disposal Act, 2005.

Moreover, participants noted that due to lack of a proper tracking system, the funds laying at District Treasury accounts were at risk of diversion to private investments by senior public officials. During emergency procurement, some agencies split orders to defeat the threshold (KShs. 5,000,000) for open tendering, according to the procurement regulations. In this regard, the agencies split orders into small units of less than the legal threshold. This practice provided opportunity for financial misappropriations. Participants also linked procurement malpractices to overpricing of materials and works, because of collusion between some public officials and providers.

As indicated in Table 3, up to 54 (57.4%) participants indicated that inconsistent funding flow resulted to a backlog of maintenance works. This logically arises from the fact that some agencies implemented work plans half-way, while in other situations, some agencies failed to implement work plans altogether. In relation to this, participants indicated that backlogs complicated the prioritization of the roads for maintenance works when funds became available. Backlogs also resulted to further deterioration of the road network, resulting to a higher cost of repair, as reported by 27 (28.7%) participants. In relation to this, participants indicated that at the time when funds became available, the cost of repair had overshot the budget included in work plans.

Under such circumstances, incomplete sections of the road network often raised serious audit queries, thereby, putting agency staff under pressure and scrutiny. Again, harmonization of work plans for subsequent years to incorporate pending work from previous work plans was a key challenge for agencies. In some districts, excessive delays led to the cancellation of contracts between the agencies and tenderers, according to 21 (22.3%) participants. In a particular incident, tenderers sued an agency for breach of contract, resulting to heavy court fines.

CONCLUSIONS

This aim of this study was to identify key lessons that may justify necessary reforms to improve the flow of funds from KRB to road agencies for sustainable road maintenance. The findings and conclusions of this study may also be relevant to other African countries; consequently, this article may also stimulate other developing countries to improve the operational efficiency of their road funds, within a decentralized framework.

The study found that disbursements were inconsistent for most road agencies (64.4%), which posed a challenge to many road agencies regarding road maintenance. Across the districts, disbursements were likely to be more consistent in Kisumu and Kisii, than in Migori and Siaya Districts. There is no doubt that the initiation of the road fund was a noble idea, aimed at providing a sustainable mechanism for road maintenance in developing countries, more particularly in the SSA countries. In Kenya, the disbursement of consistent flow of road fund is constrained by inefficiencies throughout the disbursement channel. This study revealed a few of the issues constraining the flow of funds to road agencies. However, this is by no means exhaustive of the challenges affecting disbursement consistency. At the national level, the consistent flow of funds is constrained by delays in allocation committee meetings (33.0%) and requisition of the Authority to Incur Expenditure (71.3%).

Even though the tracking of disbursements is largely a responsibility of the national oversight, authority (KRB), its effect on funding flow manifests more at the district level. In this regard, the lengthy disbursement channel (84.0%) and lack of a proper tracking system for disbursements (47.9%) were the issues impeding the flow of funds at the district level. At the agency level, delay in external auditing of the financial accounts (56.4%) and weak financial management system (24.5%) were the key issues

constraining the flow of funds. The constraints affected routine maintenance of roads in various ways, for instance, by delaying the implementation of work plans (73.4%), increasing maintenance backlog (60.6%) and encouraging procurement malpractices (57.4%), among other issues.

The distribution of the challenges along the disbursement channel necessitates a multi-tier approach in addressing the issues to enhance operational efficiency. Being a system that involves many stakeholders, the approach to addressing the issues should be multisectoral, including the fund oversight authority, line ministries and departments, anticorruption authority, procurement oversight authority, road agencies and the civil society. The forum should identify appropriate measures and implementation modalities.

In this era of technological advancement, disbursing funds from the national level to a road agency at the community level should not take more than four workdays. Taking the shortest duration possible to reach road agencies should be reduce the risk of diversion and ensure that work plans are implemented as scheduled and backlogs kept minimal. For this reason, enhancing efficiency in the transfer of funds to road agencies is a matter of priority to ensure consistency in the flow of funds. Consequently, the stakeholders should consider changing the mode of disbursement of funds from cheques to Electronic Funds Transfer directly to agency accounts. This is likely to avoid the possibility of deliberate delay at some stations, which may create a crisis to the benefit particular individuals. Again, depending on the magnitude of projects, KRB should adopt a mixed model of disbursing funds to include advance transfer to agency accounts for small projects or direct payment to tenderers upon completion and certification of work for bigger projects.

However, while still using the current disbursement channel, KRB should initiate a strong system for tracking the flow of disbursements. KRB may achieve this by alerting all agencies the moment funds are disbursed and making follow-up communication with the agencies and district treasury officials to ensure that funds reach the designated recipients in the shortest time possible. Equally important is the need to expedite requisition for AIEs. In this regard, appropriate supervisory measures should be in place to ensure the finance department prepare and release all AIEs to the districts within twelve days of requisition. This further calls for the upgrade and round-the-clock maintenance of the Integrated Financial Management System (IFMIS) to capture and guarantee AIEs within the shortest time possible.

The proposed measures target the KRB and the Ministry headquarters. The implementation of such measures very much depends on the will of the Permanent Secretary in the Ministry of Roads and Public Works. To enhance accountability, the auditing process should not target road agencies only; rather it should cover the operation efficiency at the national level to avoid unnecessary audit queries. A more comprehensive auditing report should track the operational procedures and efficiency right from the time of allocations to the time funds reach agency accounts. The auditing process should enhance efficiency and accountability at all levels of the system, much to the advantage of road maintenance projects.

The current disbursement system relies on the district treasury to coordinate the distribution of funds to various agencies working in a district. In this regard, efficiency at this level of the disbursement channel is critical for the success of the road fund. The Public Service Commission and the Kenya Anti-Corruption Commission should ensure that all public officials conduct themselves within the provisions of the Public Officer Ethics Act Cap 183 of 2003 to enhance discipline in handling public funds. Part V, sections 36, 37 and 39 of the Act outlines the procedures for dealing with public officers using their offices for personal enrichment.

The District Tender Committee, whose membership includes senior public officials and political leaders, coordinates procurement activities. The procurement of works and materials for road maintenance is a critical area that requires illumination to award road maintenance tenders to qualified contractors with adequate capacity. Although the law already exists – Public Procurement and Disposal Act of 2005, enforcement remains a key gap. The Public Procurement Oversight Authority and the Kenya Anti-

Corruption Commission should step up their roles by conducting procurement activities in accordance with the procedures.

The Government should upgrade the financial management systems at the agency level with new Information and Communication Technology (ICT) equipment and programs to improve the accuracy of financial statements. A stronger system of financial management is indispensible for budget control and informed management decisions. Consequently, the agencies should move towards regular commercial accounting practices, including standard income and expenditure statements as well as balance sheets. The income statements should specify amount received from KRB, proceeds from sale of contract documents and government grants.

As noted by Benmaamar (2006), financial accounting systems should present a clear picture of the road agency's overall financial health and be capable of producing the financial data needed to plan expenditures, compare alternative strategies, monitor implementation, and account for the way funds are used. Effective financial management should enhance managerial accountability, minimize chances of financial misappropriation and improve accuracy to avoid issues arising from the auditing process. In this regard, proper accounting systems are likely to improve the consistency of funding flow and enhance time management.

External auditing is also an important tool for strengthening managerial accountability. The Government's audit office is responsible for routine evaluation to ensure no agency exceeds work plan budgets and that all agencies handle the funds in accordance with Government expenditure guidelines and procedures. However, the timeliness of the exercise remains paramount to ensure that road agencies receive their allocations in time. Improving the staffing level at the Government's audit office is a key step towards ensuring timely auditing of agency accounts to facilitate subsequent disbursements.

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