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TABLE OF CONTENTS

HOW MERGERS ARE CHANGING BANKING LANDSCAPE.....	1
James B. Bexley, Sam Houston State University	
EXPANDING THE COMPETITIVE PROFILE MATRIX (CPM): INTRODUCING THE FINANCIAL COMPETITIVE PROFILE MATRIX (FCPM).....	9
Charles J. Capps III, Sam Houston State University	
Christopher M. Cassidy, Sam Houston State University	
PROTECTING INFORMATION: ACTIVE CYBER DEFENCE FOR THE BUSINESS ENTITY: A PREREQUISITE CORPORATE POLICY.....	15
Patrick Neal, British Columbia Institute of Technology (BCIT)	
Joe Ilsever, University of Fraser Valley (UFV)	
HOW EMPLOYEES' PERCEPTIONS OF COMPETENCY MODELS AFFECT JOB SATISFACTION? MEDIATING EFFECT OF SOCIAL EXCHANGE.....	36
F. Oben Ürü Sani, Istanbul Arel University	
Ugur Yozgat, Marmara University	
Taha Yusuf Çakarel, Marmara University	
IMPACT OF MOBILE PLATFORM STRATEGY ON PLATFORM GENERATIVITY AND COMPETITION.....	47
Jeehyun Moon, Ewha Womans University	
Seungho Choi, Ewha Womans University	
INVESTMENT ANALYSTS' IMPACT ON CEO APPOINTMENTS.....	62
Joshua S. HERNBERGER, Western Kentucky University	
VIEWING THE MILES AND SNOW FRAMEWORK THROUGH A REAL OPTIONS LENS.....	84
Shawn M. Riley, Kutztown University of Pennsylvania	
Sandra Mau, HGDF Familienholding Ltd. & Co. KG	
Eileen A. Hogan, Kutztown University of Pennsylvania	
SALIENCE OF STAKEHOLDERS AND HUMANISTIC AND SUSTAINABILITY PRACTICES AMONG PHIL. FMCG COMPANIES.....	99
Maria Victoria P. Tibon, De la Salle University	
Divina M. Edralin, De la Salle University	
A RESOURCE-BASED VIEW OF CORPORATE SOCIAL RESPONSIBILITY AND DMNES RISING FROM CHINA'S HIGH-TECH INDUSTRY.....	106
Nini Yang, San Francisco State University	
Caran Colvin, San Francisco State University	
Yim-Yu Wong, San Francisco State University	

HOW MERGERS ARE CHANGING BANKING LANDSCAPE

James B. Bexley, Sam Houston State University

ABSTRACT

Last year, this author examined the three major financial issues impacting the merger of banking institutions and found that median price to tangible equity, median price to earnings, and premium to core deposits were the monetary drivers. While there is no doubt that the financial drivers are important, it has become apparent from examining the literature, factors such as regulatory overreach, low interest rates, problem banks, management succession, and competition have become equally important. The financial issues and the economic issues have created perfect storm to drive more shareholders to seek shelter through the merger of their bank with another bank.

Key Words: *Banks, Mergers, Regulation, Acquisition*

INTRODUCTION

There has been a spike in bank mergers and acquisitions across the country in the past decade. Larger banks are merging, mid-size banks are buying smaller community banks, and community banks are merging with other community banks. What is causing all of this movement and consolidation? Why are there becoming fewer banking options? What are the benefits to these institutions merging? Some banks were acquired because they were in trouble and some were acquired for this reason and that they added market share and assets to larger stronger banks. Some bank mergers occurred to combined assets so that two smaller banks could merge and increase profitability. Increased regulations have also increased the cost associated with banks remaining compliant in today's highly regulated banking environment. Other banks look at mergers and acquisitions as an opportunity to grow and increase shareholder value. The recent economic downturn and the impact it had on the banks has contributed to making this a prime time for banks to be purchased. Recently in 2014 most of the mergers and acquisitions have involved smaller banks that have struggled. Now with the market improving there is a shift where valuations are increasing and stronger banks will also be seeing movement as well.

LITERATURE REVIEW

The literature to support regulation as a factor was driven basically by Cornett, et al (2006) who noted in their study that regulatory burden had a major impact in promoting merger activity. Banks that had problems or sought relief from the issues facing them, tended to look for a merger partner to take the over as note by Jagtiani (2008). Barth, et al (2012) examined the number and value of bank mergers and acquisitions both domestically and globally. While their main focus was global, they found that there were three main variables in completed transactions—the rule of law in the specific country, the level of discrimination, and bank domestic credit. Winkler, et al (2014) noted that the Dodd-Frank Act had given rise to a 41 percent increase in regulatory burden. Genay and Podjasek (2014) indicated that the perfect

storm was brought about by lower interest rates coupled with a slow recovering economy. Kowalik, et al (2015) examined the post crisis merger market and noted that acquired banks tend to be smaller, have lower earnings, regulatory issues, and less capital.

The above literature addresses on the single issues, however, there is no literature to date that addresses both the financial and economic issues as joint causal effects of merger motivation. This study will focus on pulling the issues together.

REGULATORY OVERREACH

The costly regulatory environment for financial institutions to remain compliant and keep up with regulatory operational requirements has drastically increased in recent years. Unfortunately, it is expected to increase as the Dodd-Frank Act is fully implemented. This has put an additional burden on smaller financial institutions. Part of these costs has to do with back office, paperwork, and monitoring requirements attached to the new regulations. Many banks, large and small, are having to hiring additional employees and enhance technology to remain compliant. "The Act imposed 398 new regulations that have thus far added more than \$21.8 billion in costs and 60.7 million paperwork burden hours. These measures have transformed the financial industry, overhauled mortgage lending, and directly affected the availability of credit. With roughly one-quarter of the law still left to implement, it's safe to say that the true economic impacts won't be understood for years." (Winkler, et al, 2014) The increase of cost for this regulation is expected to be around 41%.

While Dodd Frank was implemented to fix abuse and systematic weaknesses in the financial sector, it has had the opposite effect. The burdensome costs have reached beyond the financial sector to consumers and businesses. Due to the increased cost to comply with Dodd Frank, this has driven up fees and loan pricing passed on to the consumer. Part of the reason for increased mergers is with the increase in cost regarding regulations like Dodd Frank, smaller banks are not able to keep the same margins thus sell to stronger banks. This is because under Dodd Frank banks have faced increased cost of compliance, increased cost of raising capital standards, and regulatory uncertainty.

It should also be noted that most of the most expensive regulatory changes have nothing to do with the causes of the economic downturn. Much of the Dodd Frank requirements have to do with paperwork and the cost with the millions of hours of paperwork has not been consistently documented. Due to this, the heavy cost associated with Dodd Frank are often not realized by most people outside the financial industry. Dodd Frank is continually changing from updated revisions. More than 80 percent of banks have reported an increased compliance cost caused by Dodd Frank of 5%. "Increased compliance costs include the need for outside expertise, additional staff, and time spent on additional paperwork. In the survey, many small banks reported the need to trim back or eliminate some products and perks offered to customers, especially with regard to residential mortgages, home equity lines of credit, overdraft protection, and credit cards." (Winkler, et al, 2014).

Expectations are that the new regulations are ultimately going to restrict credit availability due to the risks associated with the uncertainty in these new regulations. This not only affects consumers and small businesses, but also affects the banks' ability to generate income. Dodd-Frank has cost the financial services industry 60.7 million in paperwork burden hours and costing them more than \$21 billion. While Dodd-Frank is supposed to limit risk, most of the smaller firms are paying the price with stagnant job growth and being more susceptible to mergers and acquisitions. The financial industry as a whole has struggled since 2010. What is

interesting is that many of the small financial businesses, small community banks, have struggled since the passage of Dodd-Frank. Yet the larger banks and financial institutions with 1000 or more employees have grown 10.2%. It appears the smaller firms are absorbing and feeling most of the regulatory burden.

Another regulatory change was the implementation of the Consumer Financial Protection Bureau which was started a little over five years ago. This adds additional costs and paperwork hours to the burden placed on banks. The law is becoming increasingly more costly on financial institutions as agencies implement more and more costly rules and regulations. Part of the struggle, especially with the smaller banks is the restriction of products resulting from these new regulations in addition to the increased costs. There is still one quarter of the regulation left to implement so one can only assume the costs and burden will continue to increase. When these regulations were initially passed they were targeting the larger institutions, it is the smaller institutions that are truly being negatively impacted. This has led to smaller banks merging together to increase in size to remain profitable throughout this costly time.

In a study conducted by Peirce, et al (2014) at the Mercatus Center at George Mason University the following data was gathered from a sample of banks surveyed. In regards to increased compliance cost, most of the banks surveyed see Dodd-Frank and more burdensome than the Bank Secrecy Act. Staff typically was increased in small banks from one to two to handle the regulatory aspect. More than a quarter of the banks planned on hiring additional compliance staff in the next year. Smaller banks are planning on cutting products and services due to Dodd-Frank. Mortgage, home equity, and overdraft products are the primary products that are looking to be affected. This also affects revenue. "More than a quarter of respondents anticipate engaging in a merger or acquisition in the near future, which would reduce the number of small banks.. "(2014, Peirce, et al).

Banks are monitored differently depending on their size. Banks under 1B are monitored one way. \$1-5B another way, \$5-50B differently, and \$50B plus all have the unique measures. Sometimes mergers are done not only for economies of scale but to push banks into a different regulatory bracket. Banks also responded noting that regulatory costs rather than helping consumers are negatively impacting customers. Small banks play an important role in serving small communities, small businesses, and borrowers with unique needs and due to these increased regulations are having to merge and be acquired to survive therefore the number of small banks in on the decline.

LOW INTEREST RATES

Financial institutions exist on the spread between what they pay for money and what they can charge for money. As simple as this may sound, it is the driving issue to bank profitability. A good place to begin is with the financial collapse of 2008 and the events leading up to it. Prior to the collapse, both regulations and the free market encouraged as many people to buy homes as possible. A saturated home ownership market and rising interest rates (such as the Federal funds rate hitting 5.25% in 2006) led to a decline in home construction categories. Additionally, the environment forced many subprime borrowers into default as they could not keep up with rising interest rates. As many financial institutions packaged their subprime notes and sold into the secondary market, the defaulting loans had an immediate effect.

In the first quarter of 2007 alone, the world mourned the announcement of the bankruptcy of 25 subprime lenders. Additionally, many investment vessels, such as hedge funds, began announcing major losses as a result of previous investments in the subprime mortgages. By the

end of the year, countries world-wide were coordinating in a way never before seen in an attempt to stave off the impending financial tragedy. The Fed responded in the way they knew best; dropping the Federal funds rate. By 2008, the rate was dropped down to 1%, 4.25% lower than just 2 years earlier.

Banks found it very difficult to make a profit with interest rates so low. This was compounded by the decline of the stock market leaving the public with the only safe place to put their deposits was the banking system. Banks taking the deposits, for the most part had no place to loan their money since the economy had substantially dried up the lending market. The deposits had to be backed by additional capital. Banks suddenly did not need these excess deposits. Without lending sources and low rates, many banks sought a merger partner to bail them out of their problems.

PROBLEM BANKS

Motley and Harahan (2009) in light of the 2008 Financial Crisis evaluated the largest 50 of the 73 de novo banks chartered in 2008 and examined their results after one year of operation. The results were impactful with only three of the banks reporting a profit while in the remaining 47 de novo banks of the 50 total, one bank reported a negative return of 23.33 percent, two others had a negative 9 plus percent return, and most of the remainder on average reported a negative 4.00 percent return. A negative return of average assets over a several year period would erode the capital which would seriously impact a bank's ability to continue to be solvent. The opposite was true of banks in the pre-crisis era resulting in the 50 largest de novo banks in a study prepared by Mazur and Cope (2007) wherein they reported that 20 of the 50 largest de novo banks chartered in 2005 were profitable after one year in 2006. Only one de novo bank reported a negative return on average assets of over 4.00 percent. From these examples, it is obvious that the financial condition was a major factor in post crisis charter de novo banks.

As a result of the crisis, Glasser (2009) noted in an article that the Federal Deposit Insurance Corporation issued a letter to all de novo banks that extended special reporting and examinations from five years to seven years. It was noted that the extension means banks will continue to be subjected to higher capital requirements, supervised lending limits, and more frequent examinations. The issue behind this extension was more than 80 banks failures in 2009 with approximately 20 percent in operation less than 7 years. Regulators believe this extended time close supervision will tend to help reduce de novo bank failures.

Approximately 800 de novo banks opened since 2002, and Terris (2011) found that some 9 percent have failed. He said, "Banks that were established from 2005 through 2007, just before the onset of the deep depression, had slower ramp-ups to profitability than the de novos of previous years. But failures have been more frequent among banks launched from 2002 to 2004. Nearly 17 percent of the banks established in 2003 have failed...." (Page 14). According to Genay, et al (2014) "...the severe recession triggered by the financial crisis and the subsequent slow recovery have led to lower expected real returns from investments." While it is known that low interest rates and flat yield curves can negatively impact banks' profits, what really causes these to impact banks is when they are combined with declining economic conditions. Low interest rates for the long term can have a positive effect on the economy which can drastically increase a banks profit so this ties into what occurred in the past years. The banks that could weather the storm did and now that the economy is improving are going to be in a position to thrive and prosper. This will also make them prime for being purchased as well if they wanted to sell.

MANAGEMENT SUCCESSION

Few organizations, including banking institutions have a firm plan of management succession. Many will note that they do not want to have the staff to know who will succeed the chief executive officer or one of the other “C” level officers. When the time comes due to death, resignation, retirement, or other reasons, most organizations have to rethink whether they have a qualified replacement or whether or not it might be advisable to put the bank on the merger market. Leadership to guide the organization is a very critical issue, as evidenced by seeing banks that lose a leader and cannot seem to keep the bank on course with replacement management.

COMPETITION

Bank expansion has long been a significant cause of bank mergers. Just because a bank has a branch in a large metro market does not mean that it has completed all market expansion in that area. In large cities, it may take many branches to effectively compete for the banking business and further, in order to service the entire market area.

When a bank decides they want to service a new part of the same service area, they must decide many of the same things as if they were moving to a completely new city. In short, they can merge with an existing competitor in the target market, or they can start up a new branch and grow the market share organically. If a bank is looking to quickly make an impact on market share, quickly increase net income, and quickly have a new branch fund its own expenses through the loan portfolio of that target location, then often times the best course of action would be to merge with an existing competitor.

In a similar vein, many banks may consider mergers in order to grow into a completely new market area. A well-capitalized bank that has a strong management team may decide after much research, that the shareholders and directors believe it would be in the bank’s best interest to expand into a new market. At this point, assuming they do not mind paying a premium, their most likely course of action would be to merge with an existing bank group that has branches in all or most of the target market areas in the state.

Another common reason for Merger activity is to protect a bank’s existing market share. For example, a large community bank might enjoy its significant market share in its operating area for a number of years. If some new bank moved into the area and started poaching good customers, the larger, more established bank might consider merging with that bank as a way to prohibit any further loss of market share. However, if the larger bank did not feel the newer bank was a threat, then it might wait and see if that bank can compete. However, this could prove a costly mistake if the larger bank makes any miscalculation. Therefore, banks that act to protect their market share must be very diligent in their research and background information of the target bank.

Still another traditional reason for a bank merger is to correct some banking ratios that may have moved outside of their target ranges. For example, assume that some critical ratios such as its loan-to-deposit ratio, liquidity ratio, net interest margin ratio, or other ratios are out of line.

The bank begins to make a number of internal changes with the aim of dropping the ratio down to the acceptable range. However, these changes will take quite some time to work through the system and the bank executives search for a faster alternative. At this point, the large community bank would attempt to merge with a bank that would balance the ratios, and combine

the new bank's high liquidity with the older, more mature bank's deposit portfolio. If all goes as intended, the result will be a nice return for the shareholders of the acquired bank, a new location or two for the acquiring bank, and a much needed injection of deposits into the framework of the existing larger bank.

Another potential reason for a merger is for income or cost diversification. Jagtiani (2008) summarized the crux of diversification. "...through diversifying mergers, the combined banks would benefit from reduced earnings volatility and default probability. The opposite of this idea is the focusing hypothesis, which predicts that mergers between similar banking firms would create more value by allowing the merging firms to concentrate in the narrow area in which they both do best" (Page 35). In other words, while an example of the focusing hypothesis would be for a niche bank to buy a similar niche bank, diversification hypothesis allows very different banks to merge as a way to increase confidence and decrease risk associated with total income. Merging two different income streams could be likened to why a stock portfolio has multiple stocks, not just one single asset. By diversifying the income streams, shareholders and executives can feel confident that their bank does not live or die based off of one income stream.

The final noted reason for bank mergers is simply take advantages of efficiencies and inefficiencies of separate banks. Generally, the purchasing bank is more efficient across the board, and is looking to purchase an inefficient bank that it can "fix". For example, perhaps a purchasing bank has an extremely efficient loan operations department that has capacity to handle more loan volume. Their target might be an inefficient bank that has good loan production with good asset quality, but high loan operational overhead expenses. By merging with the inefficient bank, the purchasing bank can absorb the existing income while cutting a significant portion of the costs.

Since Jagtiani's article is slightly dated (being published in 2008), a reasonable person might question if his findings, and perhaps all of the listed traditional reasons for mergers, are still applicable to modern times. Kowalik, et al (2015) published an article just this year addressing many of the key traditional reasons for mergers. In short, yes; all of the listed traditional reasons for mergers are still as relevant as ever.

Their conclusions, based on the four years from 2011 to 2014, seem to match exactly what has been seen historically. Kowalik, et al (2015) noted "... the mergers of community banks over the past four years and finds they are consistent with the goals of achieving greater economies of scale and improving efficiencies. Acquired banks tend to be smaller and have a lower return on assets, lower net interest income, and higher non-interest expenses than non-acquired banks. Acquired banks may be less profitable because they tend to have lower loan and higher cash and deposit shares. In addition, the condition of acquired banks tends to be worse than their industry peers in terms of capital, supervisory examination ratings, and problem loans and assets. Among the characteristics that differentiate acquired banks, statistical analysis suggests profitability and efficiency are the most important factors"

CONCLUSION

The current banking environment is unlike anything the industry has seen before. The costly regulatory environment for financial institutions to remain compliant and keep up with regulatory operational requirements has drastically increased in recent years. Unfortunately, it is expected to increase as the Dodd-Frank Act is fully implemented. This has put an additional burden on smaller financial institutions. Part of these costs has to do with back office, paperwork, and monitoring requirements attached to the new regulations. Many banks, large and

small, are having to hiring additional employees and enhance technology to remain compliant. “The Act imposed 398 new regulations that have thus far added more than \$21.8 billion in costs and 60.7 million paperwork burden hours.

Low interest rates impact bank spreads and is the driving issue to bank profitability. A saturated home ownership market and rising interest rates (such as the Federal funds rate hitting 5.25% in 2006) led to a decline in home construction categories. In the first quarter of 2007 alone, the bankruptcy of 25 subprime lenders shocked the nation’s financial system. Additionally, many investment firms, such as hedge funds, began announcing major losses as a result of previous investments in the subprime mortgages. By the end of the year, countries world-wide were coordinating in a way never before seen in an attempt to stave off the impending financial tragedy. The Fed responded in the way they knew best; dropping the Federal funds rate. By 2008, the rate was dropped down to 1%, 4.25% lower than just 2 years earlier. Banks found it difficult to operate profitably at these low rates.

Loans started going bad as the Crisis of 2008 brought about many foreclosures, business closures, and personal bankruptcies. As a result, many banks had reserves that became depleted with all of the loan losses. Banks that had problems were forced to recapitalize, sell, or be closed by the regulatory authorities. Merger, if possible, was probably the best solution.

When the time comes due to death, resignation, retirement, or other reasons, most organizations have to rethink whether they have a qualified replacement or whether or not it might be advisable to put the bank on the merger market. Leadership to guide the organization is a very critical issue, as evidenced by seeing banks that lose a leader and cannot seem to keep the bank on course with replacement management. Again, many banks choose merger with a well-run organization as the best option.

Intense competition exists in the financial arena; therefore it is critical that a bank has all of the tools that it needs to be able to effectively compete. Competition may be the cause for banks to consider mergers in order to grow into a completely new market area. A well-capitalized bank that has a strong management team may decide after much research, that the shareholders and directors believe it would be in the bank’s best interest to expand into a new market. Conversely, a bank that is under-capitalized and limited in its ability to compete may choose to merge with a strong bank.

Mergers will continue to be a major concern for the banking industry as it deals with regulatory burden, problem banks, management succession, low interest rates, and competition. Both financial and economic issues will drive merger activity in the future.

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EXPANDING THE COMPETITIVE PROFILE MATRIX (CPM): INTRODUCING THE FINANCIAL COMPETITIVE PROFILE MATRIX (FCPM)

Charles J. Capps III, Sam Houston State University
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ABSTRACT

Capps and Glissmeyer (2012) proposed an extension to the Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) matrices that included an Internal Competitive Profile Matrix (ICPM) and an External Competitive Profile Matrix (ECPM) that uses a forced ranking which provides greater depth of understanding to the internal and external categories to which organizations must attend. Cassidy, Glissmeyer and Capps (2013) visually mapped an Internal-External (I-E) Matrix using traditional and extended techniques to enable greater comparative understanding of the relative strengths, weaknesses, opportunities, and threats of respective companies in an analogous Company Comparison Internal-External (CCI-E) Matrix. Because of the different points plotted when mapping it seems adjustments are needed using both methods. Due to the additional insights provided by extending the competitive profile matrix (CPM) concepts, a more thorough understanding should be possible by constructing a CPM for each functional area of business. Thus, this paper focuses on the functional area of finance and introduces the Financial Competitive Profile Matrix (FCPM), which provides a greater depth of understanding in the functional area by providing a more detailed analytical matrix tool to the basic strategic management decision-making process, especially if the point of the process is to not overlook something of major importance that may impact the firm.

Key Words: *Performance Measurement, Competitive Profile Matrix, Internal Factor Evaluation Matrix, External Factor Evaluation Matrix, Internal-External Matrix, Strategic Decision-Making, Strategic Decision-Making Analytical Tools*

INTRODUCTION

There is always need to advance analytical tools used in the strategic decision-making process (Fleisher and Bensoussan, 2003, 2007; Chang and Huang, 2006; Bygrave and Zacharkis, 2010; Capps and Glissmeyer, 2012; Cassidy, Glissmeyer and Capps, 2013; Capps & Cassidy, 2015). Capps and Glissmeyer (2012) advanced the strategic decision-making process by creating the ICPM and ECPM for added insight. Cassidy, Glissmeyer and Capps (2013) visually mapped an I-E matrix using both traditional and extended concepts. This produced different plotting points; sometimes the result was also a different cell assignment. These different approaches provided extra insight, but also suggested questions: would a CPM based on a business function provide more insight due to improving the thoroughness of the strategic management decision-making process? And, what should be included in these business functional areas to improve the analytical strategic decision-making process. This paper addresses these two questions and strives for a more in-depth understanding of the strategic decision-making process? We begin

with a review that includes examples of traditional and extended concepts and then introduce the first new functional matrix: the Financial Competitive matrix (FCPM).

EXAMPLE RESULTS OF NEW AND OLD PARADIGMS

When the plotted points are determined using both the traditional and extended methods, outcomes frequently differ and the end result can be another cell assignment when mapped on the Internal-External (I-E) matrix. Please note examples below (See Tables 1 through 5 and Figure 1).

Table 1
TRADITIONAL METHOD TO COMPETITIVE PROFILE MATRIX (CPM) FOR FOUR HYPOTHETICAL FIRMS

Critical Success Factors	Weight	Company 1		Company 2		Company 3		Company 4	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Advertising	0.20	1	0.20	4	0.80	3	0.60	3	0.60
Product Quality	0.10	4	0.40	3	0.30	2	0.20	2	0.20
Price Competitiveness	0.10	3	0.30	2	0.20	4	0.40	1	0.10
Management	0.10	4	0.40	2	0.20	3	0.30	2	0.20
Financial Position	0.15	4	0.60	2	0.30	3	0.45	3	0.45
Customer Loyalty	0.10	4	0.40	3	0.30	2	0.20	3	0.30
Global Expansion	0.20	4	0.80	1	0.20	2	0.40	1	0.20
Market Share	0.05	1	0.05	4	0.20	3	0.15	3	0.15
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Total	1.00		3.15		2.50		2.70		2.20

Table 2
TRADITIONAL METHOD TO EXTERNAL FACTOR EVALUATION (EFE) MATRIX FOR FOUR HYPOTHETICAL FIRMS

External Factors For Success	Weight	Company 1		Company 2		Company 3		Company 4	
		Rating	Score	Rating	Score	Weight	Rating	Score	Rating
The Competition	0.125	2	0.250	4	0.500	3	0.375	2	0.250
Economic Impact	0.125	4	0.500	4	0.500	1	0.125	1	0.125
Social-Cultural-Demo	0.125	4	0.500	2	0.250	4	0.500	2	0.250
Political-Legal-Govt	0.125	3	0.375	1	0.125	3	0.375	2	0.250
Natural Environment	0.125	3	0.375	2	0.250	1	0.125	3	0.375
Technological Change	0.125	4	0.500	1	0.125	3	0.375	3	0.375
Trends	0.125	2	0.250	1	0.125	2	0.250	3	0.375
Market Share	0.125	2	0.250	4	0.500	4	0.500	2	0.250
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Total	1.00		3.000		2.375		2.625		2.250

Table 3
TRADITIONAL METHOD TO INTERNAL FACTOR EVALUATION (IFE) MATRIX FOR FOUR HYPOTHETICAL FIRMS

Internal Factors For Success	Weight	Company 1		Company 2		Company 3		Company 4	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Management Team	0.10	1	0.10	4	0.40	4	0.80	2	0.20
Org Structure/Culture	0.10	4	0.40	3	0.30	1	0.10	1	0.10
Distinctive Competency	0.10	3	0.30	2	0.20	3	0.30	1	0.10
Competitive Advantage	0.10	4	0.40	1	0.10	2	0.20	2	0.20
Operations	0.10	4	0.40	1	0.10	1	0.10	3	0.30
Marketing	0.10	4	0.40	1	0.10	2	0.20	4	0.40
Human Resources	0.10	4	0.40	1	0.10	2	0.20	4	0.40
Finance & Accounting	0.10	1	0.10	3	0.30	3	0.30	2	0.20
Information Tech/Sys	0.10	3	0.30	1	0.10	1	0.10	4	0.40
R&D	0.10	2	0.20	2	0.20	3	0.30	1	0.10
Total	1.00		3.00		1.900		2.600		2.400

The Internal-External (I-E) Matrix is a portfolio management tool used to compare divisions of an organization in terms of revenue and percentage profit with respect to the IFE and EFE matrix scores. The I-E Matrix categorizes IFE as weak, average or strong on one axis, and categorizes EFE as low, medium, and high on the other axis. Revenue and percentage profit are displayed by division based on the size of the divisional marker within the matrix.

To better compare companies using the extended ECPM and ICPM measures, the authors developed a company comparison tool analogous to the I-E Matrix, the Company Comparison I-E Matrix (CCI-E Matrix). The matrix plots each company in terms of its ECPM on the vertical axis and ICPM on the horizontal axis (see Figure 1). In the example provided the relative superiority of each company could be compared to the others in terms of external factors, internal factors, or both. The example below clearly shows that company 1 is superior to company 4 in terms of both external and internal factors. It also shows that company 1 and company 3 are the same in terms of internal factors. A comparison of companies 2 and 3 show that company 3 is superior in terms of internal factors but that company 2 is superior in terms of external factors. Please note the differences between a traditional approach to company strategic analysis and improvements using the ICPM and ECPM in Figure 1. The squares indicate the traditional values obtained using the EFE and IFE values plotted on a standard I-E Matrix. The circles indicate the values obtained using the ECPM and ICPM values. The changes indicate the differences obtained by forced ranking and highlight discernments gained by the technique. Tables 4 and 5 illustrate the calculations of the new ECPM and ICPM. Figure 1 compares the plotted results of the traditional approach and ECPM and ICPM totals to illustrate the differences and benefits of the technique.

In the examples provided the relative superiority of each company using both methods can be compared to the others in terms of external factors, internal factors, or both. The examples show that company 1 is superior to company 4 in terms of both external and internal factors regardless of method used. It also shows that company 1 and company 3 are the same in terms of ICPM scores. A comparison of companies 2 and 3 show that company 3 is superior in terms of ICPM but that company 2 is superior in terms of ECPM. The changes indicate the differences obtained by forced ranking and highlight the additional insights gained by the method. While the same information can be derived from the tabular data provided in Tables 4 and 5, the CCI-E Matrix puts all the information together for ease of visual comparison. As such it provides better

visual communication of data and additional insight for strategic analysts and intended audiences.

Table 4
EXTERNAL COMPETITIVE PROFILE MATRIX (ECPM) METHOD FOR FOUR HYPOTHETICAL FIRMS

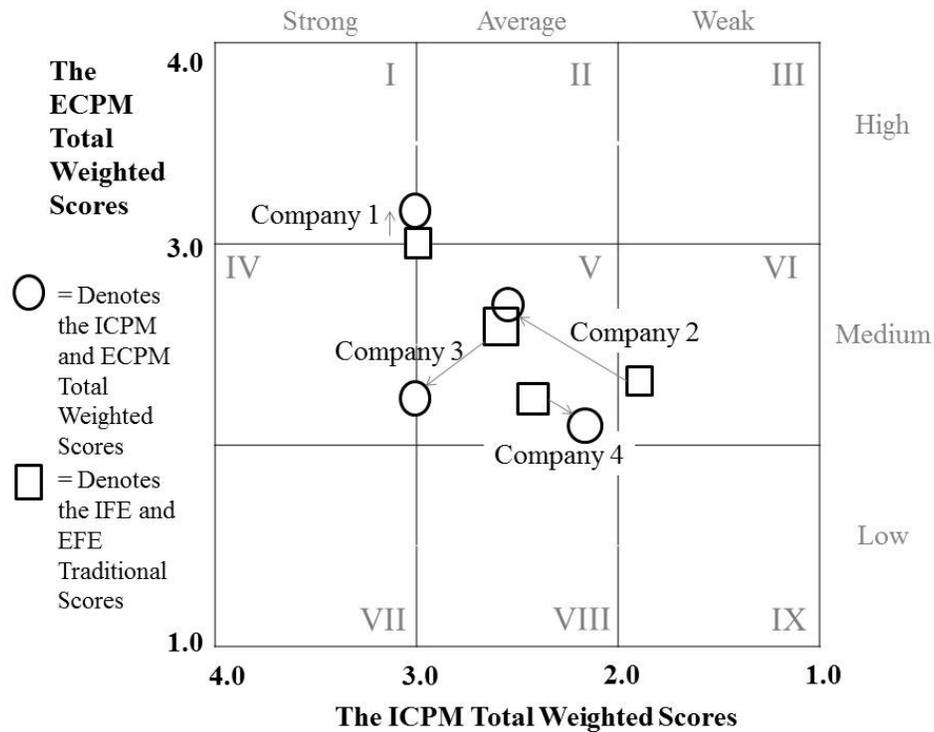
External Factors For Success	Weight	Company 1		Company 2		Company 3		Company 4	
		Rating	Score	Rating	Score	Weight	Rating	Score	Rating
The Competition	0.125	1	0.125	4	0.50	3	0.375	2	0.25
Economic Impact	0.125	4	0.50	3	0.375	2	0.25	1	0.125
Social-Cultural-Demo	0.125	3	0.375	2	0.25	4	0.50	1	0.125
Political-Legal-Govt	0.125	4	0.50	1	0.125	3	0.375	2	0.25
Natural Environment	0.125	4	0.50	2	0.50	1	0.125	3	0.375
Technological Change	0.125	4	0.50	1	0.50	2	0.25	3	0.375
Trends	0.125	4	0.50	1	0.125	2	0.25	3	0.375
Market Share	0.125	1	0.125	4	0.50	3	0.125	2	0.25
	-----		-----		-----		-----		-----
Total	1.00		3.125		2.75		2.25		2.125

TABLE 5
INTERNAL COMPETITIVE PROFILE MATRIX (ICPM) METHOD FOR FOUR HYPOTHETICAL FIRMS

Internal Factors For Success	Weight	Company 1		Company 2		Company 3		Company 4	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Management Team	0.10	1	0.10	4	0.80	3	0.60	2	0.20
Org Structure/ Culture	0.10	4	0.40	3	0.30	2	0.20	1	0.10
Distinctive Competency	0.10	3	0.30	2	0.20	4	0.40	1	0.10
Competitive/ Advantage	0.10	4	0.40	1	0.10	3	0.30	2	0.20
Operations	0.10	4	0.40	2	0.30	1	0.10	3	0.30
Marketing	0.10	4	0.40	1	0.10	2	0.20	3	0.30
Human Resources	0.10	4	0.40	1	0.20	2	0.30	3	0.30
Finance & Accounting	0.10	1	0.10	4	0.20	3	0.30	2	0.20
Information Tech/Systems	0.10	3	0.30	1	0.10	2	0.20	4	0.40
R&D	0.10	2	0.20	3	0.30	4	0.40	1	0.10
	-----		-----		-----		-----		-----
Total	1.00		3.00		2.60		3.00		2.20

The extensions above are logical and theoretically sound, but also need to be validated with empirical data samples and constructed data sets intended to test the utility of the model. However, we recognize the CCI-E Matrix as a valuable strategic analytical matrix tool that complements the expanded CPM matrices developed by Capps and Glissmeyer (2012). It converts the data into a sharper strategic picture that allows for easy comparison of all companies in the analysis. It helps to more easily incorporate and interpret ECPM and ICPM in strategic analysis, so executives can better plan to improve a company's competitive advantage. Please see Figure 1 below:

Figure 1
COMPANY COMPARISON I-E (CCI-E) MATRIX USING ICPM AND ECPM FOR THE FOUR HYPOTHETICAL COMPANIES



Taking the strategic management decision-making process to the next level of analysis requires focusing on all the functional areas of business: operations, marketing, finance, human resources, information technology, and research and development. Thus, the authors begin by introducing the Financial Competitive Profile Matrix (FCPM). Please see Figure 2 below for the Financial Competitive Profile Matrix (FCPM).

Table 6
INTRODUCING THE FINANCIAL COMPETITIVE PROFILE MATRIX (FCPM) FOR FOUR HYPOTHETICAL FIRMS

Critical Success Factors in Finance	Weight	Company 1		Company 2		Company 3		Company 4	
		Rating	Score	Rating	Score	Weight	Rating	Score	Rating
Revenue	0.10	1	.10	2	.20	3	.30	4	.40
Profit Margin	0.10	2	.20	3	.30	1	.10	4	.40
Quick Ratio	0.10	4	.40	3	.30	2	.20	1	.10
Current Ratio	0.10	3	.30	2	.20	1	.10	4	.40
Return on Investment (ROI)	0.10	2	.20	3	.30	1	.10	4	.40
Return on Equity (ROE)	0.10	2	.20	3	.30	1	.10	4	.40
Return on Assets (ROA)	0.10	3	.30	1	.10	4	.40	2	.20
Earnings Per Share (EPS)	0.10	1	.10	3	.30	2	.20	4	.40
Total	1.00		2.00		2.70		2.10		3.20

ADJUSTMENTS AND EXPLANATIONS

The basics of the FCPM are presented above. Adjustments certainly may be made weighting the ten financial factors differently based on industry or uniqueness. The authors' prefer forced ranking when rating the factors. A FCPM forces a more complete standardized evaluation that highlights major differences. The FCPM is useful to strategic management students as they learn to make the strategic management decision-making process more thorough.

SUMMARY AND CONCLUSION

This paper reviewed previous extensions, the ICPM, ECPM and CCI-E. Then the Financial Competitive Profile Matrix (FCPM) was introduced as a logical expansion to a CPM. The authors offered a Financial Competitive Profile Matrix (FCPM) as an example in Figure 2. Our conclusion is simple. We next address all functional areas of business by creating a CPM for each. A CPM for every functional area will provide improved analytical understanding and advance the strategic management decision-making process. The analytical decision-making process is an important aspect of strategic management. Not overlooking data is vital. A FCPM helps prevent this.

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PROTECTING INFORMATION: ACTIVE CYBER DEFENCE FOR THE BUSINESS ENTITY: A PREREQUISITE CORPORATE POLICY

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ABSTRACT

Corporations have the ability to collect a vast array of information, conduct analysis on the information, and profoundly influence the private lives of their customers. Those customers are also citizens. Using social contract theory, cybersecurity, and deterrence theory, this exploratory research examines the interface of citizens, governments, and corporations. It further seeks to determine if the corporate policy makers and managers are prepared to activate counter offensive cyber defence strategies to protect the information asset. This paper considers only the quantitative aspects of measurement that may lead to activation strategies by corporations. In a small sample size, findings indicate corporations have the ability and the technical competency to activate cyber defence strategies, though little hesitant to activate defensive actions due to statutory and legal issues and operational consequences that may be detrimental to the business entity.

INTRODUCTION

We now live in a period of time where the flow of information and protecting that information involves corporations and governments (Castell, 2009; Hood & Galas, 2003; Keyl, 2002). This period of time has been characterized as the “Information Age” (Floridi, 2002). The essence of the Information Age is captured succinctly by Bruce, Hick, and Cooper (2004) in their opening comments about the role of information in contemporary society and its impact within the corporate environment.

Information is the most valuable commodity in the world. It's more valuable than money, for with it one can make money. It's more valuable than power, for with it one can achieve power. It's more valuable than goods, for with it one can build, acquire, and improve goods. In any business, in any industry, in any part of the world, the right information is absolutely priceless. (Bruce, Hick, & Cooper, 2004, p. 11)

Webster (2006) proposed that the “information society” is subject to abuse, threats, and could be used to cause harm to the individuals who surrendered their personal information to the corporation. This harm has been variously estimated to cost each identity theft victim approximately \$1,600 (USD) (Baum, 2007) to recover from identity theft. For corporations the cost of cybercrime is expensive.

According to Ponemon Institute (2012) investigations, incident recovery, and victim payments doubled between 2010 – 2012 (Table 1), and expect to increase for the foreseeable future.

YEAR	Days	COST/DAY	Cost / Incident
2012	24	\$24,475	\$591,780
2011	18	\$22,986	\$413,789
2010	14	\$17,696	\$247,744

Source: Ponemon Institute LLC. (2012). Aftermath of a data breach study. Traverse City, MI: Ponemon Institute.

IBM's 2015 study of the corporate data breach costs "for each lost or stolen record containing sensitive and confidential information increased 6 percent, jumping from \$145 in 2014 to \$154 in 2015. The lowest cost per lost or stolen record is in the transportation industry, at \$121, and the public sector, at \$68. The retail industry's average cost increased exponentially, from \$105 last year to \$165".

In response to these concerns a growing cybersecurity industry, corporations, science and computer science researchers have developed a number of tactical and strategic responses such as firewalls, encryption, and software tools (Hopkins, 2011; Lachow, 2013; Public Safety Canada, 2011) to protect information assets. Despite the level of success, these tactical and strategic responses have caused frustration. The cyber criminals continue to steal information, damage corporate assets, seemingly, without any consequence (Public Safety Canada, 2011). This has caused the corporations to seriously assess the relevancy and effectiveness of their cyber protection policies and possible activation of corporate cyber-defensive strategies against cyber criminals.

One possible alternative to current cybersecurity practices is to develop and utilize an active cyber defence (ACD) strategy. ACD is a series of technological and socially engineered tactics which focus on deterring the cybercriminal. ACD relies on hacker techniques such as hack backs, denial of services attack, malware deployment, and ransomware. In other words corporations and governments would use the same technologies a cybercriminal uses when attacking.

Dogrul, Aslan, and Celik (2011) defined cyber deterrence as the "proactive measures that are taken to counter cyber-terrorism activities. The mission of cyber deterrence is to prevent enemies from conducting future attacks by changing their minds, by attacking their technology, or by more palpable means such as confiscation, termination, incarceration, casualty, or destruction" (p. 39). However, the current legal environment clearly prevents corporations from engaging in ACD.

This paper explored the following questions:

1. Are corporations and governments willing and able to conduct active cyber defence operations?
2. If active cyber defence were legalized would corporate decision makers conduct ACD?

PROTECTING THE INFORMATION SOCIETY

Castell's (2010) study of networked societies and Hopkins (2011) study of protecting the information society revealed that it was necessary to understand how society constructs "cybersecurity" as a social phenomenon. Within the scope of cybersecurity is corporate network security, cybercrime, and information security. All of which consists of someone using technology as a tool to commit a crime against a person, information asset, intellectual asset, or

physical component of society (financial systems, medical devices, automobiles). The scope of the cybercrime, therefore, can include: physically visiting the site and gaining access to the room where the data are stored; virtually or physically moving from one computer network to another computer network; and some form of social contact such as email request for information or a phone call asking for specific usernames and passwords.

Active Cyber Defence

Baker (2013) discussing the ACD as a policy option, told the US Senate Subcommittee on Crime and Terrorism (May 8, 2013) "...we can't defend our way out of this fix.... (n.p.)". Referring to the continued reliance on passive cybersecurity practices such as firewalls, password protecting, and encryption.

Protecting information asset(s) within a corporate entity is accomplished using a robust design of networks and software, and the use of technology such as firewalls, and encryption; human resourcing, and physical security components, is a major challenge. These security tasks include training employees on how to create strong passwords, building rooms and offices which have strong doors, walls, and two or three levels of user authentication to gain access to premises and computer systems. These forms of access typically include user authentication via biometrics (fingerprint scanning, retina scans), special designated keys, and specific permissions to work in secure locations. One other method of protecting in the information society is called, active cyber defence.

Currently, only government organizations have capabilities to conduct offensive cyber operations which are known as active defence operations (Armistead, 2004; West, 2012). Examples of governments conducting these operations include Stuxnet, Russia's alleged involvement in the Estonia cyber-attacks, and China's attack on Google. However, companies have also engaged cybersecurity contractors to conduct active defence operations known as hackbacks (Menn, 2012), even though this may be illegal in United States and other jurisdictions. This decision to hackback appears to be linked to the emerging active defence discourse (Lachow, 2013). To reframe ACD, it is summed up as "attack the attackers".

The extent of ACD use in the corporate environment is subject to debate. While Menn indicated corporations have the ability and capacity to undertake ACD strategies, Bejtlich (2014) and Lachow, (2013) have quantified the extent of this practice. Lachow (2013) claims 36% of the 180 organizations surveyed conducted active defence operations. A detailed analysis of the original article by nCircle (who conducted the survey) shows that nCircle asked "have you ever engaged in retaliatory hacking?" Further analysis of the nCircle (2012) article revealed that the survey sample is from BlackHat conference attendees, not necessarily representing individual organizations. The attendee's statements still reveal an interesting trend; 64% said never, 23% once, and 13% said frequently. A similar study was also completed by Cyber Security Index (Bejtlich, 2014).

Bejtlich (2014) cites the formation of a Cybersecurity Index. This study notes the survey was distributed to approximately 200 corporate members. The authors of the Cyber Security Index confirmed that the survey data is accurate, but the data were not linked to specific demographics. Working from the premise that the survey is valid, the survey has profound implications. 8% of the respondents indicate that they conduct active cyber defence operations. Similarly, cybercrime victims groups such as "Artists Against 419," are mobilizing victims around the world to strike back (Rigakos, 2012). In other words, both surveys confirm active cyber defence is being utilized.

All within the existing of corporations and information security is a component of the social contract referenced by Obama. Is it possible we are now moving to a new model of safety and security as defined by social contact between government, citizens, and corporations?

SOCIAL CONTRACT THEORY: GOVERNMENTS, CORPORATIONS, AND INDIVIDUALS

Social Contract Theory (SCT) encompasses “the view that persons’ moral and/or political obligations are dependent upon a contract or agreement among them to form the society in which they live.”(Friend, 2004, np). SCT evolved from the intellectual movement established by Plato and Aristotle’s original civil society arguments and continued through to the present iteration of Rawls’ Sense of Justice (SofJ) framework (Rawls, 1963; Ritchie, 1891).

Currently, the Internet Security Alliance (2008) report to the Obama Administration and 111th Congress references the “larger social good” that government and industry must address when considering new information security services. These services are designed to protect commerce, food, water, investments, and public interest (p. 2 -5). The implication of this new social contract is not lost government, corporations, and citizens/consumers.

For example, food, water, and shelter are scarce resources which require redistribution so that all members of society may benefit. Extending the scarce resources argument to the information society may seem odd until one reflects on the exponential volume of data which is a representation of food, water, shelter, clothing, natural resources, and law. These data about the public resources are no longer the sole purview of the decision makers who are able to exert State control and security mechanisms to protect data. Instead, the data are now protected and secured predominately by corporations and their decision makers.

Moreover, Arquilla (2012) notes that the interface between government and corporations influences the critical infrastructure (electric power, natural gas, and water dams) which society heavily relies upon. In other words, securing the information is a corporate responsibility which is linked to tactical and strategic objectives within national security domain which is tasked with protecting society at large.

Deterring the Cybercriminal

Criminals who use computers to attack other computer networks or to steal information are called cybercriminals. Given the predominate reliance on information to secure food, water, clothing and shelter deterring the cybercriminal is a critical to ensure a safe and secure information society. This section will introduce the sense of justice framework to model deterrence. The contemporary iteration of SCT, is the Sense of Justice (SofJ) developed by Rawls (2008). According to Krebs (2011), Rawls’ Sense of Justice is an evolutionary process by which individuals or groups “distribute resources in fair ways (distributive justice), to honor the commitments they make to others (commutative justice), to punish cheaters (corrective justice), and to develop effective ways of resolving conflicts of interest and making fair decisions (procedural justice)” (p. 232).

Within the scope of Information Society Rawls SoJ provides a framework to evaluate the safety and security tensions between corporations and government and the role of ACD. Seeking security requires there be a mechanism to promote a civil society through four types of justice. These are distributive, commutative, and corrective. A fourth justice, procedural addresses how

society seeks to apply remedies to some sort of injustice incurred. These are now discussed in detail.

Distributive justice means that someone is responsible for the distribution of goods from a common stock (Pakaluk, 2005, p. 196). In other words, corporations and governments enter into an agreement with their citizens and constituents about how resources are distributed, in terms of principles of equality, equity, reward, and merit. Implicit in this distribution agreement is some form of negotiation. For example, Rawls (1963) and Internet Security Alliance (2008) note a series of trade-offs between what is best for citizens but also what is necessary for government and corporations to fulfill their duties to citizens.

Commutative justice means there are agreements between people and rulers. The agreements are expressed as promises, commitments, and other kinds of social contracts. It is in this context in which crime is committed. For example, people expect the government to provide police services which protect them from criminals. However, how do people seek recourse for identity theft via internet or privacy breaches? Seeking recourse is further complicated when the identify information (name, date of birth, financial records) is held by private corporations often in jurisdictions outside the victim's country. As such, the social contract now extends to include corporations.

Corrective justice, on the other hand, means that there are means for correcting the inequality...created through an act of injustice, by taking goods away from the offender and restoring goods to the victim, or by simply punishing the offender" (Pakaluk, 2005 p. 196). It is within this domain in which deterrence, vengeance, forgiveness, revenge, restitutions, and retribution exist, in other words, the righting of wrongs (Pakaluk, 2005; Ritchie, 1891). The Information Society undermines this tenet because the victim, offender, and the "data" stolen are in different jurisdictions, and the offence may only be discovered through third parties. For this research paper; active cyber deterrence is the corrective measure being considered.

Corporate Decision Makers Demographics

Social contract theory adopts the stance that individuals can make rational choices based on lived experiences, and those choices tend to create a reality which promotes the emancipation of the individual, while seeking the best possible outcome for society.

From this notion then comes the question of what influences the individual decision maker who is tasked with the responsibility of protecting the information society? Researchers have identified a number of factors; amount of information available (Furner,2010; Kennerley & Mason, 2008; von Lubitz et al.,2008); blurring of war, terrorism, and crime (Buzan, Waever, and de Wilde, 1998; Castells, 2009; Webster, 2006). In otherwords; corporate decision makers are now exposed to a risk rich environment, too much information, and seemingly no clear lines of who is conducting an attack against their network.

Complicating this matter further, the demographics of corporate decision makers is a factor to consider. The decision maker's wealth, position of authority (MacCrimmon and Wehrung, 1990). In addition to demographics researchers noted; acute stress linked ambiguity of information did not impair decision making (Pabst, Schoofs, Pawlikowski, Brand, and Wolf, 2013), but, time (Das & Teng, 2001) did. Within the confines of this current research, these factors may have a cumulative effect as decision makers need to link cyber-attacks, victimization, and asset damage which occur in seconds, minutes, hours, days, weeks and months. Similarly, the time between the attack and when victim experiences the harm is measured in weeks or months (Allison, Schuck, & Lersch, 2005).

THE RESEARCH QUESTION(S)

This research proposal intends to contribute to a conceptual analysis and exploration of active defence as a viable information security practice by examining the decision makers who are responsible for protecting the information society. From this examination, we hope that this research can inform ACD policy development at the tactical and strategic level.

The research question which guides this exploration is:

“What are the factors that influence corporate decision-making processes when deciding whether, or not, their organization should engage in active defence?”

The following sub-questions will be used to focus this research:

1. *How does “offensive corporate cyber operation” differ from “active defense?”*
2. *What is (are) the objective(s) of an active defense operation? i) deter, ii) disruption, iii) deference, and / or iv) destruction?*

These questions are a synthesis of nine years of research and investigations into online child pornography cases, fraudulent products being sold online and mass email phishing operations (e.g. Nigerian Prince Letter scam). More specifically, during these nine years, we have noted an emerging discourse amongst law enforcement, justice and public safety, and corporate decision makers. This discourse can be summed up into two thematic questions:

1. *Are we stopping the bleeding?*
2. *Are we slowing the bleeding? (i.e. is the current justice and public safety processes only working sometimes).*

These four sub-questions illustrate the complex balance cybersecurity professionals must attain when considering the goal of ACD operations, and more specifically, the role of deterrence, harm, and threat when securing the internet, securing the information stored on information technology systems, and also managing the situation when there is a cybersecurity incident (war, crime, terrorism) incident.

Traditional cybersecurity research tends to focus on the technological solutions of network security and/or reworking existing information security policies. Such policies generally rely upon conventional deterrence models which consider time/space and proximity of victim to offender. Our research project on cybersecurity adopts a different perspective: technological focused solutions need to be realigned to include a sociological scope. Therefore, this research will utilize the following bodies of knowledge; sense of justice, social contract theory, and related research on corporate decision-making. The next section will summarize the associated literature which is available to date.

RESEARCH METHODOLOGY

The methodology for this pilot study incorporated quantitative measures though a mixed research design may also provide necessary further explanation of the key findings found in this pilot study. For the pilot study, the sample is described first, followed by a discussion of the measures used, including the sampling frame, dependent and independent variables. After the initial data review of the data, we discuss the manipulation of the data set and how the

measurement model may explain the main study results. While multivariate analyses have gained prominence as a social science method, there are critiques of quantitative methodology. The primary critique appears to be quantitative methods impose specific views of causality, measure, and objectivity which do not adequately address the contextual nature of social sciences research (Denzin, 2010; Hesse-Biber, 2010; Maxwell, 2010). One means of addressing this contextual nature is to utilize a quantitative methodology which can explore the contextual nature of risk, harm, threats, and the information society in which offensive cyber operations. Several path analysis models have been generated based on the literature and TAM models above.

Quantitative Methodology – Survey Instrument

Five different survey instruments have been reviewed which allude to or specifically address cybersecurity practices relevant to this pilot research design. These surveys are:

1. Cyber Security Index, January 2014 developed by Geer and Pareek (2013)(as referenced by Bejtlich, 2014) theme question to examining active defence attitudes,
2. nCircle (as referenced in Lachow (2013) article) reference to revenge attacks
3. Public Safety Canada (2011) study of personal attitudes.
4. Ponemon Institute LLC (2012) study of identity breaches, and
5. RAND (2005) study of national security survey.

Our analysis of the five cybersecurity surveys reveal that three of the five surveys (Public Safety Canada, Ponemon Institute, and RAND Corporation) collected demographic data of the person or organization, types of harm (costs, identify theft) and types of attacks. The remaining two specifically asked about some form of offensive cyber operation (Cyber Security Index, nCircle); these two surveys appear to have collected limited demographic information. Furthermore, the audience of all five surveys was corporations and government organizations predominately from the Europe and North America. While the five surveys have made valuable contributions to society's understanding of cybercrime, the different attributes of the surveys do not lend themselves to comparative analysis. Our research will create the opportunity to systematically examine decision makers within corporations who are responsible for protecting the information assets of the information society within a global context.

Sampling Frame (Survey Participants)

The literature revealed many stakeholders who are influenced by the information society. This research will only examine the corporate decision makers who are responsible for protecting the information assets of the organization. According to Armistead (2004) and Singer and Friedman (2014) those responsible for protecting the information assets can be grouped into three broad classifications:

1. Those responsible for deploying the software utilized in active defence.
2. Those responsible for the legal liability and risks of the organization, and
3. Those responsible for the policies and procedures associated with physical security, human resources, and technology / network security.

These specific groups are linked to the risk assessment process and operations (Armistead, 2004, p. 68) or to specific organizational mandates associated with protecting information assets (University of Washington, 2014). Those responsible include Chief

Technology Officer, Chief Information Security office, Chief Information Officer, Legal Counsel for Organization, Chief Financial Officer. And all their associated reporting personnel.

Selecting Industry Sample

Those who have information assets which warrant protection will be identified using the following industry classification schemes. The industry sample will be drawn from the North American Industry Classification System (NAICS)(Statistics Canada, 2012) and the International Standard Industrial Classification of All Economic Activities, Rev. 4 (United Nations, 2008). Industry associations which represent the various industries will be approached to identify random participants.

DATA COLLECTION AND ANALYSIS OF SURVEY DATA

This pilot research utilized a survey instrument which was distributed using online survey software site Fluid Surveys after ethics committee approval. Statistical analysis was conducted using SPSS version 23. The survey used for this study consisted of six factor categories;

1. Protecting Information Society (independent variables)
2. Demographics (independent variables)
3. Social Contract Theory (dependent) & Sense of Justice (dependent)
4. Organizational Information Technology and Information Asset (dependent)
5. Decision Making (dependent)

The survey consists of Likert scale questions with nominal, ordinal, and interval levels of measurements. The analysis consisted of a multivariate design which combined variables to form a composite variable (Meyers et al., 2006). The combining of the variables is possible using factors analysis, multiple regression analysis, and model fitting. As such, multivariate design enables this research to examine multiple variables which are components of harm, threats, or deterrence and then identify specific subsets of each component which are the dominate drivers of that specific component.

The survey was administered to a sample of approximately 500 individuals age 18 and older, with a job title responsible for active defence tactics and corporate strategic practice. The distribution of survey participants is a homogeneous representation of cybersecurity environment.

Data Analysis

All the measurement variables involving corporate decision making and government intervention were included in a factor analytic model so as to measure loading. Table 2 below shows both the raw and scaled communalities (PCA model). Corporate and governmental level of responsibilities for protection of the information study load at .8 and greater. Responsibility of the corporations to lobby the governments for activation of cyber defence strategies is strongly supported at an extraction factor of .874.

Survey Questions	Raw		Rescaled	
	Initial	Extraction	Initial	Extraction
Corporations can protect the information society.	1.007	.478	1.000	.474
Governments and Corporations can help each other protect the information society.	.452	.166	1.000	.366
Governments and Corporations share the same responsibility to protect the information society.	1.668	1.390	1.000	.833
Corporations should lobby the government to actively engage cyberattackers who threaten the information society.	1.176	1.029	1.000	.874
Corporations are socially responsible members who can protect the information society.	1.572	1.340	1.000	.853
Corporations have a social obligation to inform the public about how they will be engaging cyberattackers.	1.072	.646	1.000	.603
Corporations should be empowered with more legal powers to engage cyberattackers.	1.225	.618	1.000	.505

Table 3 shows that three key components constituted from both corporate and governmental level of responsibility for counter defensive strategies that account 69% of the variance, which connotes that the this shared level of responsibility will be the key prerequisite condition to work against the cyber criminals both from the statutory and corporate perspective.

	Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
		Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Raw	1	3.220	39.402	39.402	3.220	39.402	39.402
	2	1.249	15.280	54.682	1.249	15.280	54.682
	3	1.199	14.672	69.354	1.199	14.672	69.354
	4	.912	11.157	80.511			
	5	.808	9.892	90.403			
	6	.623	7.626	98.029			
	7	.161	1.971	100.000			
Rescaled	1	3.220	39.402	39.402	2.464	35.203	35.203
	2	1.249	15.280	54.682	1.056	15.084	50.287
	3	1.199	14.672	69.354	.989	14.134	64.421
	4	.912	11.157	80.511			
	5	.808	9.892	90.403			
	6	.623	7.626	98.029			
	7	.161	1.971	100.000			

The scree plot, Figure 1, demonstrates that the three key components of active defence strategies are impacted by corporate responsibility and governmental intervention on the policy side. These include:

1. Governments and Corporations share the same responsibility to protect the information society.
2. Corporations should lobby the government to actively engage cyber attackers who threaten the information society.
3. Corporations are socially responsible members who can protect the information society.

Figure 1
KEY COMPONENTS OF ACTIVE DEFENCE

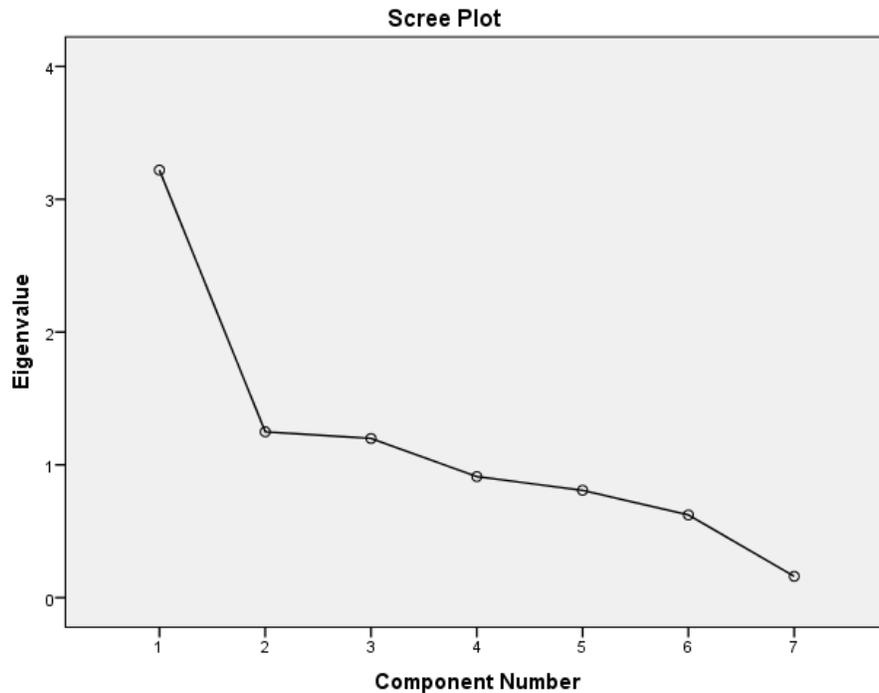


Table 4 further demonstrates the level of significance of the need for governmental leadership in its fiduciary role to ensure the legislative framework will be in place to safeguard the information society and provide the prerequisite platform for the corporation to actively engage in ACD. On both the categories, respondents strongly agree with government intervention in the process.

Variables	Liekert Scale	Mean	Std. Deviation	N
Governments can protect the information society.	Strongly Agree	2.25	1.500	4
	Agree	3.46	1.050	13
	Neutral	3.38	1.408	8
	Disagree	2.80	1.304	5
	Total	3.17	1.262	30
Governments and Corporations share the same responsibility to protect the information society.	Strongly Agree	1.25	.500	4
	Agree	2.85	1.405	13
	Neutral	1.87	.991	8
	Disagree	2.60	1.342	5
	Total	2.33	1.295	30

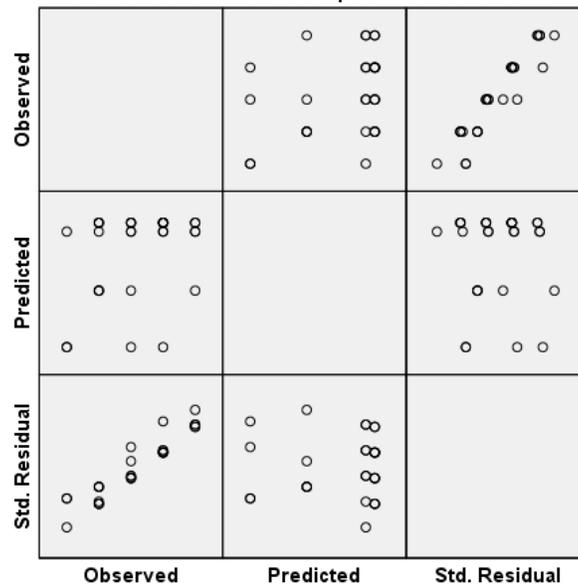
Table 5 shows the results of test of homogeneity of variance violations. These are tests for homogeneity of variance violations for the dependent variables. The evaluation shown for Government and Corporations variable is statistically significant at $p < .05$. The overall government protection of information society is not statistically significant.

Table 5				
LEVENE'S TEST OF EQUALITY OF ERROR VARIANCES^a				
	F	df1	df2	Sig.
Governments can protect the information society.	.499	3	26	.686
Governments and Corporations share the same responsibility to protect the information society.	3.471	3	26	.030
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.				
a. Design: Intercept + V24_ACD_DisruptNetwork				

Figure 2 plots observed vs. predicted values by standard residuals shows the predicted and observed residuals for the dependent variable of Government Protection of Information Society further emphasized the government’s role to protect the societal information asset, which is also inclusive of corporate information assets.

Figure 2
OBSERVED * PREDICTED * STD. RESIDUAL PLOTS

Dependent Variable: Governments can protect the information society.

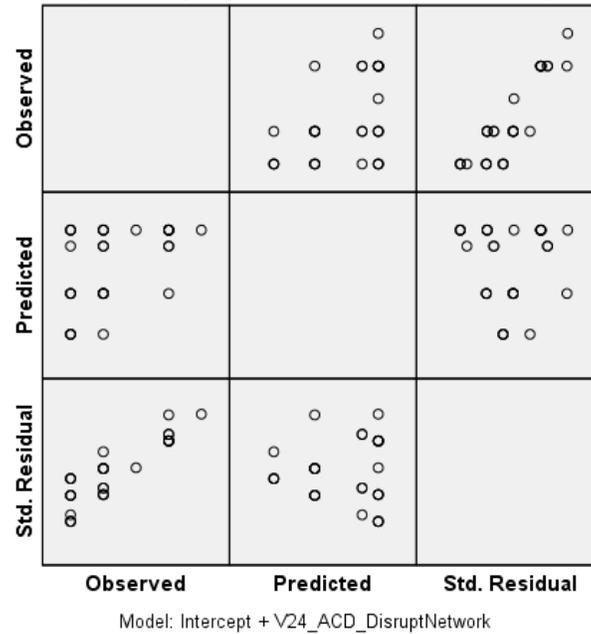


Model: Intercept + V24_ACD_DisruptNetwork

Similarly, Figure 3, the shared responsibility between governments and corporation show similar standard residual errors between observed vs. predicted residuals, attesting to the need that cyber defence and counter offensive strategies display similar error patterns.

Figure 3
OBSERVED * PREDICTED * STD. RESIDUAL PLOTS

Dependent Variable: Governments and Corporations share the same responsibility to protect the information society.



Tables 5 and 6 show an ANOVA model, the model variables are:

Dependent Variable: Corporations should lobby the government to actively engage cyber attackers who threaten the information society.
Predictors: (Constant), Deterrence does not work in cyberspace.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.406 ^a	.165	.134	.933

a. Predictors: (Constant), Deterrence does not work in cyberspace.

The overall model fit at $p < .05$ shows model significance.

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	4.629	1	4.629	5.316	.029 ^b
	Residual	23.509	27	.871		
	Total	28.138	28			

a. Dependent Variable: Corporations should lobby the government to actively engage cyber attackers who threaten the information society.
b. Predictors: (Constant), Deterrence does not work in cyberspace.

Further, Table 7 shows a high level of significance for the cyber deterrence factor at $p < .05$, indicating cyber deterrence may be a significant factor in employing corporate cyber strategies, thus the need to initiate formal cyber defence strategies that can quickly be implemented without delay, before corporations suffer damage to information asset.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.944	.560		1.684	.104
	Deterrence does not work in cyberspace.	.414	.180	.406	2.306	.029

a. Dependent Variable: Corporations should lobby the government to actively engage cyber attackers who threaten the information society.

CONCLUSION

Information is the most valuable commodity in the world ((Bruce, Hick, & Cooper, 2004, p. 11). In any business, in any industry, in any part of the world, the right information is absolutely priceless. (Bruce, Hick, & Cooper, 2004, p. 11). S Webster (2006) proposed that the “information society” is subject to abuse, threats, and could be used to cause harm to the individuals who surrendered their personal information to the corporation since the expansion on online e-commerce business platforms, the number of users have been increasing exponentially. This level of information explosion has necessitated that corporations need to access this new platform and use it as an efficient commerce platform. This increased level of activity has created many opportunities for cyber criminals to target corporate data bases, and where applicable, impact financial damage to corporations, as we have recently seen with Target Corporation, in the USA. Similar cyber-attacks on the Canada Revenue Agency, Bank of Canada. If such attacks are not stopped with counter offensive corporate strategies, monumental damage both monetary and other ways is inevitable. Therefore, cyber-criminal behavior needs to be stopped, counter defended so as to protect the societal and corporate information asset.

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APPENDIX A - SURVEY INSTRUMENT

Dear Information Security and Information Technology Professional, Living in the information age presents a number of challenges to citizens, governments, and companies. The focus of my Doctor of Social Sciences research is to examine one specific question: What are corporate information technology professionals' thoughts on using active defence as a very specific technique to deter cyberattackers? As an information technology professional your participation in this survey will contribute to this debate, and is greatly appreciated. If you wish to establish my credentials, I invite you to contact Dr. Bernard Schissel head of the Doctor of Social Sciences program at Royal Roads University. Dr. Schissel can be contacted at +1 800 788 8028 or via email at Bernard.schissel@royalroads.ca. This survey is voluntary and requires approximately 20 minutes of your time. You are under no obligation to participate and if you choose to participate, you may refuse to answer questions that you do not want to answer. Participants should print a copy of the consent form to keep for your personal records. If you choose to exit the survey at any time during the survey using the Discard button your data will be withdrawn. Please remember, once you submit your survey responses, you will not be able to withdraw from the study given the anonymous nature of your responses. By clicking start you have agreed to participate and provided free and informed consent. Similarly, if you do not submit the survey, then you have withdrawn your consent. Your decision to complete this survey will be interpreted as an indication of your consent to participate. In advance, thank you for participating in this research. Your contribution to this research is appreciated. Should you have any comments or questions about this survey, please email me at Patrick_neal@bcit.ca. If I have missed something that you believe will contribute to this research please add your comments at the end of the survey. Sincerely, Patrick Neal Doctor of Social Sciences Candidate Royal Roads University.

1. How much do you agree or disagree with each statement?
2. Governments can protect the information society.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
3. Corporations can protect the information society.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
4. Citizens do not trust corporations to protect the information society.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
5. Citizens do not trust governments to protect the information society.
 - Strongly Agree
 - Agree

- Neutral
 - Disagree
 - Strongly Disagree
 - n/a
6. Governments and Corporations can help each other protect the information society.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
7. Governments and Corporations share the same responsibility to protect the information society.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
8. Please use this space for additional comments.
-
9. How much do you agree or disagree with each statement?
10. Society needs accurate information to ensure we can meet our basic survival needs (securing food, water, shelter, clothing).
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
11. Information is the life blood of modern society.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
12. Information is a commodity similar to oil and gold.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
13. Corporations should lobby the government to actively engage cyberattackers who threaten the information society.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
14. Corporations should be empowered with more legal powers to engage cyberattackers.
- Strongly Agree
 - Agree
 - Neutral

- Disagree
 - Strongly Disagree
 - n/a
15. Corporations are socially responsible members who can protect the information society.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
16. Corporations have a social obligation to inform the public about how they will be engaging cyberattackers.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
17. Please use this space for additional comments.
-
18. How much do you agree or disagree with each statement?
19. Cyberattackers can be deterred.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
20. Deterrence does not work in cyberspace.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
21. Cyberattackers fear jail time.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
22. Cyberattackers fear being captured.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
23. Attacking a cyberattackers computer network will deter further cyberattacks.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a

24. Attacking a cyberattackers social network will facilitate deterrence.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
25. Please use this space for additional comments.
-
26. How much do you agree or disagree with each statement?
27. Active defence will deter cyberattackers.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
28. Active defence is a systematic disruption of cyberattacker's computer network.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
29. Active defence is a systematic deterrence of a cyberattacker's computer network.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
30. Active defence is a revenge attack on a cyberattacker's computer network.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
31. Active defence can be legislated.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
32. Active defence can be insured.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
33. I would conduct an active defence operation if the corporation has liability insurance.
- Strongly Agree
 - Agree

- Neutral
 - Disagree
 - Strongly Disagree
 - n/a
34. I would conduct an active defence operation if the corporation has the legal jurisdiction to conduct active defence operation.
- Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
 - n/a
35. Please use this space for additional comments.
-
36. What is your age?
Enter N/A if you prefer not to answer.
-
37. What is your sex?
- Male
 - Female
 - Prefer not to answer
38. What is your current relationship status?
- Married
 - Divorced
 - Common Law
 - Single
 - Prefer not to answer
39. How many children do you have?
Enter N/A if you prefer not to answer.
-
40. What is your highest level of education obtained?
- High School
 - College
 - University - Bachelor
 - University - Master
 - University - Doctoral
 - Prefer not to answer
41. What is your primary industry / service sector?
Pick your three primary sectors.
- Accommodation and food services
 - Administrative and support
 - Agriculture, forestry, fishing and hunting
 - Arts, entertainment and recreation
 - Construction
 - Educational services
 - Finance and insurance
 - Health care and social assistance
 - Information and cultural industries
 - Management of companies and enterprises
 - Manufacturing
 - Mining, quarrying, and oil and gas extraction
 - Other services (except public administration)
 - Professional, scientific and technical services
 - Public administration

- Real estate and rental and leasing
 - Retail trade
 - Transportation and warehousing
 - Utilities
 - Waste management services
 - Wholesale trade
 - Prefer not to answer
42. How many years do you have in IT security?
Enter N/A if you prefer not to answer
43. What is your current position on the IT Security Team?
Enter N/A if you prefer not to answer
44. Does your organization have a dedicated IT Security Response Team?
- Yes
 - No
 - Prefer not to answer
45. How many cyberattacks have you witnessed in the past 5 years?
Enter N/A if you prefer not to answer
46. How many cyberattacks have you investigated in the past 5 years?
Enter N/A if you prefer not to answer
47. How many AD operations have you been involved in the past 5 years?
Enter N/A if you prefer not to answer
48. How many AD operations have you witnessed in the past 5 years?
Enter N/A if you prefer not to answer
49. Select the Top 3 Computer Security concerns you have.
- Computer Virus
 - Denial of Service
 - Electronic Vandalism
 - Embezzlement
 - Fraud
 - Theft of intellectual property
 - Unlicensed use or copying digital products
 - Theft of personal information
 - Theft of financial information
 - Other computer security (hacking, spoofing, phishing, sniffing, ping, scanning, spyware, etc)
 - Breaches linked to stolen laptops, cellphones, and smartphones.
 - Prefer not to answer
50. Please use this space for additional comments
51. Thank you for completing this survey and submitting your answers.
52. Please use this space for additional comments.

HOW EMPLOYEES' PERCEPTIONS OF COMPETENCY MODELS AFFECT JOB SATISFACTION? MEDIATING EFFECT OF SOCIAL EXCHANGE

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ABSTRACT

With growing emphasis being placed on human resource competencies as a means to be the indicator of employee potential to produce performance outcomes i.e. employee creativity and in turn organizational innovation, this study seeks to determine if competencies are predictive of employee behavior; determine if there is a relationship between competencies and job satisfaction of employees' perceptions; and determine the mediating effect of social exchange in this relationship. Analyses of 207 employees working in banking, telecommunications, health care, aeronautical and food industries in Turkey show that perceptions of competency model relevance and fairness has a positive effect on intrinsic and extrinsic job satisfaction. Also results show that social exchange partially mediated the relationship between perceptions of competency model relevance and fairness and intrinsic and extrinsic job.

INTRODUCTION

In today's competitive marketplace, firms in every industry are seeking new ways for gaining and sustaining competitive advantage. Human resource competencies are viewed as the critical resource behind a firm's core competencies, and, thus, competitive advantage (Redmond, 2011; Lawler, 1994; Nordhaug & Gronhaug, 1994; Wright, McMahan & McWilliams, 1994). In this context, firms' human resources management should focus on competencies for gaining and sustaining competitive advantage. In human resource management literature, competency is defined as "a set of observable performance dimensions, including individual knowledge, skills, attitudes, and behaviors, as well as collective team, process, and organizational capabilities that are linked to high performance, and provide the organization with sustainable competitive advantage" (Athey and Orth, 1999:216). Competency approach in human resources management is used as a tool for performance evaluation, career development, remuneration and dismissal decisions because competencies is considered to represent an area affecting behavior of individual performance and therefore business success. Hence competency models has gained a great deal of interest and seen as a method of directly focusing on the management system contributing to organizational success and sustainability (Dubois & Rothwell, 2004; Levine, 1997). If employees' competencies, skills, ideas and labor are used effectively in business operations, output and efficiency in terms of business and job satisfaction in terms of employees will be positively affected. It is important both for employees and businesses that employees comprehending the necessity of competency-based approach and employees perceptions about the fair applications of competency models for each employee. Employee's job satisfaction and organizational commitment will be positively affected if employee perceives his/her competencies assessed fairly, in this case both employee's and business performance will

increase (Campion et. al., 2011). The relationship between employees and their organizations are basically conceptualized as a social and economic exchange. Social exchange relationship is emerged when the relationship between employee and organization rely on trust and a high degree of mutual obligation (Shore et. al., 2006). Research show that competency models have positive effects on employee performance and outputs providing transparency about objectives and performance measures set for employees and improving the consistency of human resources applications (Redmond, 2013; Ramlall, 2006). In contrast, there are studies examine the situations of competency models viewed as a source of tension for employees. In these studies, employees' lack of trust in management's strategies and the situations that employees fail to understand their individual fit within a competency framework are discussed. Thereby, the main object of this paper is to examine how employees perceive competency model relevance and fairness and this perception's effect on job satisfaction. In this context, mediating role of social exchange is investigated. For purposes of this study, first, prior theories and research focusing on competency models, job satisfaction and social exchange are reviewed. Second, research hypotheses are developed and research model is presented. Third, discussion of the methods and findings are explained in the light of the research conducted. Finally, discussion about the research results is stated expressly.

LITERATURE REVIEW

Competency and Competency Models

The concept of competency was developed in the 1960s incorporates elements such as leadership and superior performance. The concept of competency including behavior, knowledge and attitudes that enables creation of high performance level consistently and effectively is important for the sustainability of business (Cira & Benjamin, 1998). Today competencies are a significant source of data relating to employees' qualifications at the individual level and in the business. This data is an important criterion in training and development, performance evaluation, career development, remuneration and hiring decisions by human resources management. To this end, many businesses tend to associate the concept of competency with business mission, vision, and objectives. The purpose of determination of competencies depends on the vision that the company wants to achieve, the mission that the company should accomplish and the formulation and implementation of strategies needed for achieving this mission. Competency in terms of human resources is summarized as the knowledge, skills and abilities that distinguish high performance from average performance, as the structures that help to define the knowledge and the skill level, as the observable behavioral characteristics that is important to realize the fundamental responsibility of a role or a job (Schippmann, et. al., 2000; Zemke & Zemke, 1999; Parry, 1998). Competencies owned by a business are a collection of characteristics and skills of the existing workforce. The success of the various functional departments of the company depends on the qualifications, knowledge, skills and competencies of the employees in those departments. The differences in the skills and competencies of employees lead to companies' competencies to be different (Alldredge & Nilan, 2000). Due to the individual-based content of competency concept, individual analysis and the results of this analysis subjected to human resource management in the management of competency provide an opportunity for the creation of action at the organizational level (Lahti, 1999). The potential of employees is associated with their competencies. Identification of individual competencies, also the revelation of the individual's potential, ensure the recognition of the strengths and

insufficient abilities. Identification of competencies, directs individual behavior and the organization in order to get the results wanted. Well-defined competencies that can be measured, allows the assessment of the behavior and attitudes able to achieve superior performance. With this feedback, deficient competencies can be developed. Competencies also make business can be distinguished. Businesses will acquire a different identity from other businesses by their specific competency criteria that they determined. To achieve this, businesses should determine distinctive competencies and should pay attention to alignment of these competencies with the business strategy, goals and the culture. Competencies are integrated with management practices and these competencies can be integrated with functions such as recruitment and performance evaluation, etc. (Smallwood, et. al., 2000). Competency models are developed derived from its strategic importance in terms of employees and businesses. What is meant by competency model is that “a decision tool used in determining and developing the competencies required to perform employees’ jobs and responsibilities undertaken in line with the strategic objectives of the business completely and accurately as expected from employees” (Chen & Naquin, 2006). In this context, the competency model has been described as a systematic process aimed at eliciting both as an individual and organizational level of competence in detail (Mirabile, 1997). Based on the concept of competency, Schippmann et al made efforts to develop competency models. In the literature, research focused on the processes that contribute to the development of competency model and competency model contributing to each of these processes are discussed. Competency models basically serve as employees’ complete and accurate understanding of what is expected from them in line with the objectives of the company. Therefore, it is possible to address the competency model as a descriptive tool providing a consistent framework for all employees (Hill, 2012; Vazirani, 2010; Green, 1999). Competency models has added a strategic dimension to the traditional concept of business analysis, has an important place in human resources practices and particularly played an important role in recruitment, training and development and talent management becoming compliant practices. Identification of competencies and their levels are considered as the first step in the process of creating a competency model. First, competencies should be converted into observable behavior and should be identified and should be measured (Derven, 2008). Only in this way it will be able to benefit from the competencies and competency models. The primary purpose of competency models is to influence strategically aligned behavior by outlining the behavioral themes that are expected and rewarded across all jobs in the organization (Sanchez & Levine, 2009). How the competency models are perceived by the employees in the organization plays an important role on employee outcomes (Serim, et. al, 2014) Employee perceptions of competency models is defined as the degree to which employees perceive the organization’s competency model to be both strategically and personally relevant and that they are fairly rewarded for displaying the behavior outlined in the competency model (Redmond, 2013, 2011). Herein, employees’ perceptions on competency models are based on relevance and fairness: “Relevance” indicates whether employees perceive competency models as important to reaching both organizational and individual goals; “Fairness” refers to employee perceptions of whether competency models are impartial (Redmond, 2013, 2011). Fairness is often assessed along the dimension of distributive justice, referring to the perceived fairness of rewards (Bowen, et. al., 1988). It is important for business that management’s support to the competency models and their practices and employees’ both strategic as well as personal perceptions on competency models as relevant and fair.

Social Exchange

Most of the studies about the exchange relationship between businesses and their employees are based on “Social Exchange Theory” (Masterson, et. al., 2000). “Social Exchange Theory”, under certain conditions, expresses individuals tend to respond in a positive way against the person or persons who benefit them. Positive relational interaction between supervisors and employees are provided through social exchange and in this case the employees are spending more time and energy to their job, and it makes them to be more creative and more responsible. And as a result, it makes a positive effect from various perspectives for the whole organization (Wayne, et. al., 1997; Graham, 1991). Social exchange relationship will be affected positively if employees perceive a fair structure in the organizations they work in. Because social exchange approach is emerged in case of relationship between employees and their organization based on trust and a high degree of mutual obligation. Relations based on social exchange approach can create beneficial effects on behalf of organizations White & Yanamandrama, 2012). Studies about psychological contract, perceived organizational support, and employment relationships reveal that employees respond with more positive attitudes towards positive organizational behavior and show higher performance (Shore, 2009).

Job Satisfaction

Since Herzberg, Mausner, and Snyderman (1959) published their book ‘The Motivation to Work’, many studies about classifying job factors into intrinsic and extrinsic categories have been done. Intrinsic factors are defined as those directly related to the actual performance of the job (i.e., achievement, responsibility, nature of work, etc.), while extrinsic factors are defined as those related to the environment in which the job is being performed (i.e., company policy, working conditions, interpersonal relationships, security, etc.) (Saleh & Grygier, 1969). From this point of view, job satisfaction refers to the employee’s overall affective evaluation of the intrinsic and extrinsic facets of the job (Bettencourt, et. al., 2001). Job satisfaction is the extent to which people like their jobs (Hirschfeld, 2000). In other words, job satisfaction can be described as an affective or emotional reaction to the job, resulting from the incumbent’s comparison of actual outcomes with the required outcomes (Cranny, Smith & Stone, 1992; Locke, 1976). From the literature review, it is seen that job satisfaction is a widely researched topic and many studies relate to the significant associations of job satisfaction with several variables. Namely, it has a positive association with many job outcomes such as employees’ job performance, organizational commitment, organizational citizenship behavior, etc.

RESEARCH METHODOLOGY

Research Goal

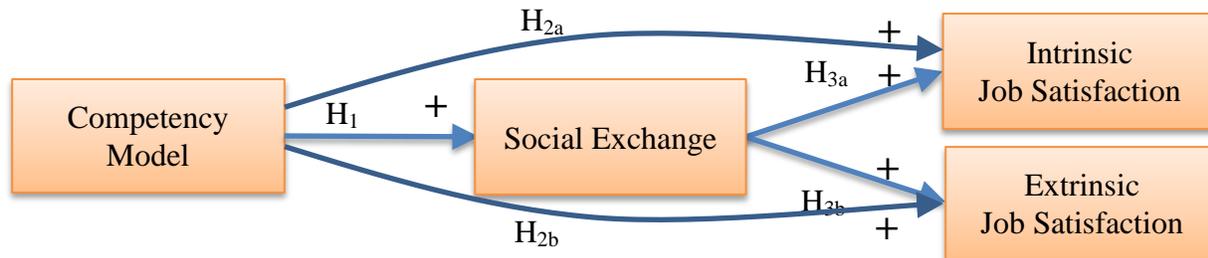
Our research goal is to investigate the mediating effect of social exchange on the relationship between competency model and (intrinsic and extrinsic) job satisfaction. To test the propositions, a field survey using questionnaires was carried out.

Proposed Model

In the current study, we investigated the role of competency model to advance our understanding of how competency model influence job satisfaction and the mediating effect of

social exchange support on competency model – intrinsic and extrinsic job satisfaction relationship. The hypothesized model is shown in Figure 1.

Figure 1
RESEARCH MODEL



- H1: Perceptions of competency model relevance and fairness has a positive effect on social exchange.
 H2: Perceptions of competency model relevance and fairness has a positive effect on job satisfaction.
 H2a: Perceptions of competency model relevance and fairness has a positive effect on intrinsic job satisfaction.
 H2b: Perceptions of competency model relevance and fairness has a positive effect on extrinsic job satisfaction.
 H3: Social exchange has a positive effect on job satisfaction.
 H3a: Social exchange has a positive effect on intrinsic job satisfaction.
 H3b: Social exchange has a positive effect on extrinsic job satisfaction.
 H4: Social exchange has a mediating role between perceptions of competency model relevance and fairness and (a) intrinsic job satisfaction (b) extrinsic job satisfaction.

Sample

This study was conducted in Istanbul by using convenient sampling method on participants working in banking, telecommunications, health care, aeronautical and food industries implementing competency model. A total of 300 questionnaires were provided for distribution, of which 239 (79.7 %) were returned. After deleting the semi-filled ones 207 (69.0 %) questionnaires were analyzed using SPSS statistical program and tested through hierarchical regression analyses.

Measures

Competency model was measured by the scale developed by Bowen and Ostroff (2006). Participants were asked to rate each of the six items using a 5-point Likert scale so that they can select a numerical score ranging from 1 to 5 for each statement to indicate the degree of agreement or otherwise, where 1, 2, 3, 4, and 5 denote “Strongly Disagree”, “Disagree”, “Neither Agree nor Disagree (Neutral)”, “Agree”, and “Strongly Agree”, respectively.

Social exchange was measured eight item scale, as an adopted from English scale used by Shore et al. (2006). Participants are asked to rate each of the items using a 5-point Likert scale (1=strongly disagree, 5= strongly agree). The validity of the in Turkish translated scale has been substantiated by Göktepe (2012).

For measuring **job satisfaction** Weiss et al.’s (1967) scale known as the Minnesota Satisfaction Questionnaire’s short form capturing 12 intrinsic job satisfaction items and 8

extrinsic job satisfaction items were used. In this study, Minnesota Satisfaction Questionnaire translated into Turkish by Oran (1989) was used. All the variables were measured by participant responses to questions on a five-point Likert-type scale ranging from “very dissatisfied” to “very satisfied” for the variable job satisfaction.

Findings

The demographic characteristics of participants were subjected to frequency analysis. Of the 207 participants, 111 (53.6 %) were female. The mean age of participants was 31.10 ($\sigma=7.16$). Education varied at six levels, ranging from elementary level education (1) to doctoral level education (6) ($\bar{x}=3.91$, $\sigma=1.04$). Sector information of participants: 56 (27.1%) banking, 38 (18.4%) telecommunications, 40 (19.3%) were health care, 37 (17.9%) aeronautical and 36 (17.3%) food sector. The average of job tenure was 5.60 ($\sigma=5.91$).

To control for common method bias in line with the original -factor test was conducted, although the explanatory power of it is controversial and no single factor emerged in exploratory factor analysis (EFA) (Podsakoff et al, 2003). In line with Knight (1997), in international studies it is important “to evaluate the dimensionality of the scale” and to control for factor structure and loadings. Two separate EFAs using Varimax Rotation were conducted for the dependent variables (intrinsic and extrinsic job satisfaction), the independent variables (competency model and social exchange) following generally accepted procedures. For exploratory research, a Cronbach α greater than 0.70 is generally considerate reliable (Nunnally, 1978). The results of Cronbach’s alpha, % of variance explained and factors analysis of our study are depicted in Table 1.

	Factor Score	% of Variance	Total	α
Intrinsic Job Satisfaction		25.239	8.581	0.921
IJS15	0.794			
IJS08	0.779			
IJS10	0.775			
IJS07	0.754			
IJS02	0.730			
IJS09	0.706			
IJS01	0.691			
IJS20	0.691			
IJS16	0.681			
IJS11	0.666			
IJS04	0.650			
IJS03	0.611			
Social Exchange		15.385	5.231	0.915
SE3	0.830			
SE5	0.819			
SE6	0.781			
SE2	0.778			
SE1	0.738			
SE8	0.707			
SE7	0.698			
SE4	0.697			

	Factor Score	% of Variance	Total	α
Competency Model		13.928	4,736	0.933
CM4	0.849			
CM2	0.841			
CM1	0.817			
CM5	0.801			
CM3	0.758			
CM6	0.723			
Extrinsic Job Satisfaction		13.488	4,586	0.928
EJS12	0.790			
EJS05	0.772			
EJS13	0.767			
EJS06	0.752			
EJS14	0.684			
EJS19	0.682			
EJS18	0.644			
EJS17	0.600			

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO)=0.915

$X^2_{\text{Bartlett test}}(561)=5360.020 p=0,000$

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Table 2 reports the means, standard deviations and correlations. According to Table 2 most of the respondents expressed the presence of a relatively higher level of intrinsic job satisfaction ($\bar{x}=4.07$). This was followed by extrinsic job satisfaction ($\bar{x}=3.98$) and competency model ($\bar{x}=3.81$). The lowest item is social exchange ($\bar{x}=3.48$). After analyzing the table, we can see that the relations between competency model, social exchange, intrinsic and extrinsic job satisfaction have positive correlations in the level of $p<0.01$.

Variables	Mean	S.D	1	2	3	4
1 Competency Model (CM)	3.81	0.830	1			
2 Social Exchange (SE)	3.48	0.868	0.436**	1		
3 Intrinsic Job Satisfaction (IJS)	4.07	0.928	0.473**	0.372**	1	
4 Extrinsic Job Satisfaction (EJS)	3.98	1.179	0.535**	0.419**	0.671**	1

** $p < 0.01$ (two-tailed tests); $N=207$

As seen in Table 3, the findings from regression analyses conducted to test the first three hypotheses.

Ind. Var.	Dep. Var.	Std. β	t	Adj. R^2	F	P	Hyp.	Result
CM	SE	.436**	6.94	.186	48.14	.000	H ₁	Supported
CM	IJS	.473**	7.69	.220	59.15	.000	H _{2a}	Supported
CM	EJS	.535**	9.07	.283	82.19	.000	H _{2b}	Supported
SE	IJS	.372**	5.73	.134	32.91	.000	H _{3a}	Supported
SE	EJS	.419**	6.61	.172	43.73	.000	H _{3b}	Supported

** $p < 0.01$

A three-step regression analysis suggested by Baron and Kenny (1986) was used to test the mediating effect SE between CM and IJS/EJS relationships. According to this method, to be able mention an intermediary effect, the following conditions are expected to be seen:

- (1) Independent variable (CM) must have an effect on dependent variables (IJS/EJS),
- (2) Independent variable (CM) must have an effect on intermediary variable (SE),
- (3) Intermediary variable (SE) must have an effect on dependent variables (IJS/EJS),
- (4) When intermediary variable (SE) is involved in a regression analysis with independent variable (CM), intermediary variable (SE) must have an effect on dependent variable (IJS/EJS) as the regression coefficient of independent variable (CM) upon dependent variable (IJS/EJS) drops.

The independent variable coefficient of decline was part of the mediation, this relationship completely, the disappearance of an expression with a statistically significant avoid the situation is exactly the mediating relationship is expressed.

Ind. Var.	Dep. Var.	Std. B	T	Adj. R ²	F	p	Hyp.	Result
CM	IJS	.384**	5.73	.251	35.42	.000	H _{4a}	Supported
SE		.204**	3.05					
CM	EJS	.435**	6.82	.322	49.92	.000	H _{4b}	Supported
SE		.230**	3.60					

** p<0.01

The mediating effect of regarding the Baron and Kenny (1986) by the requirements set out in the first three H₁, H_{2a} / H_{2b} and H_{3a} / H_{3b} hypothesis with the adoption has occurred in the last row of the regression model SE be included along with the CM regression coefficient of the decline shown by the SE and, together with the in the model, the effect of significant observed. This conclusion is based on the mediation for the effect of the sought-after in the last circumstance is also occurred; the partially mediating effect of SE was seen between CM and IJS/ EJS. And H_{4a} / H_{4b} hypothesis has been accepted.

CONCLUSION

Human resources' competencies assessed as a factor that creates innovation and value to the organizations is becoming extremely important for organizations. An approach based on the development of competencies; improve the performance of employees in the individual sense; so it will also help to improve the performance of organizations.

In this study, the mediating effect of social exchange on the relationship between competency model and (intrinsic and extrinsic) job satisfaction was investigated in Turkey. As the results of analyses, perceptions of competency model are positively related to intrinsic and extrinsic job satisfaction. Perceptions of competency model relevance and fairness are positively related to intrinsic and extrinsic job satisfaction. In other words, as the employees perceive the competency models applied in organization as fair and relevant, more satisfied employees exist in competency based organizations. These findings are consistent with previous findings about competency models based on relevance and fairness lead to positive job outcomes. On the other hand, results show that social exchange partially mediated between perceptions of competency model relevance and fairness and intrinsic and extrinsic job satisfaction. And these findings

support existing findings in the literature that when employees perceive competency models fair and relevant, social exchange reveals and they have intrinsic and extrinsic job satisfaction. As a result, our findings suggest that competency models perceived as strategically and personally relevant and fair enhance perceptions of social exchange relationships, which, in turn, increase employees' job satisfaction. Accordingly, efforts to increase perceptions of relevance and fairness of the organization's competency model would likely be reciprocated with higher levels of such outcomes (Redmond, 2011). These positive outcomes will increase organizational performance and create competitive advantage for organizations resulting from implementation of competency models in human resource practices.

This study's theoretical contribution is examination of the mediating effect of social exchange on the relationship between competency model and (intrinsic and extrinsic) job satisfaction; proposing new variables in the model and filling this gap in the research. Furthermore, this study's practical contribution is there is lack of research that consists of all stated variables in our model conducted in different industries. And finally, the methodological contribution of this study is investigation of consequences of employee's perceptions of competency model relevance and fairness and job satisfaction in Turkey, a developing country; it shows the external validity of these theories which were tested in Western developed countries.

LIMITATION AND FUTURE RESEARCH

This study was limited and only focused on the effects of employees' perceptions of competency models on job satisfaction and the mediating role of social exchange in this effect of the banking, telecommunications, health care, aeronautical and food industries in Istanbul. This study was not conducted on a single industry. However each industry has its specific conditions which may affect. Therefore, future research may replicate this study in a single industry and should focus on other positive organizational behavior variables.

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IMPACT OF MOBILE PLATFORM STRATEGY ON PLATFORM GENERATIVITY AND COMPETITION

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ABSTRACT

Through convergence, smartphone has become more versatile than any other technological devices in the past. Both hardware device and operating system (OS) have advanced to perform various functions that were performed originally in separate devices. Considering each operating system engages different degrees of openness in its platform strategy, it seems necessary to identify how different mobile platform strategies affect the ecosystem and the affluence of the platform. In this paper, in order to measure the affluence of platform, generativity of platform is discussed as a factor that can influence how the platform ecosystem is governed by the platform owner. This paper addresses the following research question: How does mobile platform strategy affect generativity and competition on the platform? We will analyze the different types of competition on the platform that the platform owner has to face. The relationship between mobile platform strategy, generativity, and competition will be discussed in the following section in order to answer the research question

INTRODUCTION

Through convergence, smartphone has become more versatile than any other technological devices in the past. Both hardware device and operating system (OS) have advanced to perform various functions that were performed originally in separate devices. According to Kenney and Pon (2011), information and communications technology (ICT) firms are entering a new era that is unifying software, hardware, and services. At the center of such dramatic change, there is a mobile platform where services are provided for users. Cusumano (2010) claimed that technological competition is about who has the best platform strategy and the best ecosystem to support the strategy.

Considering each operating system engages different degrees of openness in its platform strategy, it seems necessary to identify how different mobile platform strategies affect the ecosystem and the affluence of the platform. In this paper, in order to measure the effect of platform, generativity of platform is discussed as a factor that can influence how the platform ecosystem is governed by the platform owner. From the platform owner's perspective, it is also essential to attain certain purposed value, either monetary or social; from the platform it is operating (Elaluf-Calderwood, Eaton, Sørensen, & Yoo, 2011). This paper brings a new perspective on mobile platform strategy by incorporating the concept of competition against other platform partakers.

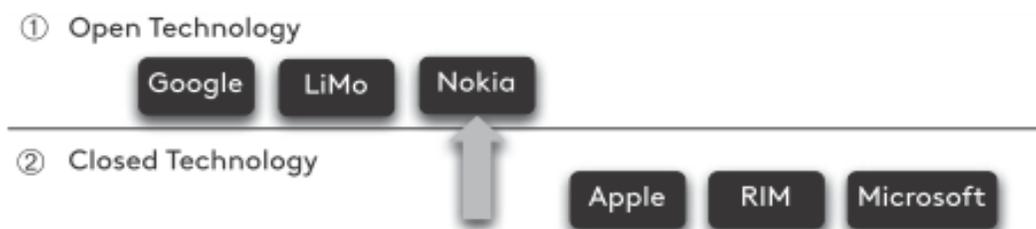
This paper addresses the following research question: How does mobile platform strategy affect generativity and competition on the platform? To answer this question, the paper first reviews previous literatures about mobile platform strategy and generativity in Section II. Section III will analyze the different types of competition on the platform that the platform owner has to face. The relationship between mobile platform strategy, generativity, and competition will be discussed in the following section.

THEORETICAL BACKGROUND

Mobile Platform Strategy

Mobile platform in this paper is defined as platform on which application components and consumers interact through multisided market mechanism (Rochet & Tirole, 2003; Holzer & Ondrus, 2011; Boudreau & Jeppesen, 2015). Mobile platform can be divided into two types: operating system (OS) platform and service platform. OS platform enables software applications to be developed and distributed on the mobile platform, whereas service platform connects the applications to the users. In this paper, mobile platform will be used to refer to OS mobile platform.

Figure 1
MOBILE PLATFORM STRATEGIES BASED ON THE DEGREE OF CONTROL
(HOLZER & ONDRUS, 2011)



According to Holzer and Ondrus (2011), platform owners have taken different approaches which can be identified as closed technology approach and open technology approach (Figure 1). It is true that platforms cannot be put into the binary categorization and a spectrum of varying degree of platform strategies could exist between them. However, such conceptualization of platform strategies can be conducive in comparing the relatively distinguished features of the two most dominant mobile platforms, which are Android and iOS.

Open Platform Strategy

Mobile platform which enforces no or less control over the platform through open API (Application Program Interface) is considered open platform strategy (Remneland-Wikhamn, Ljungberg, Bergquist & Kuschel, 2011). As for platforms that pursue open strategy, there is no central architect who manages the platform. The Android platform of Google can be considered open platform when compared to Apple. By opening the platform for free to device manufacturers, Google has rapidly expanded its user base through network effect even though it joined the OS market later than its competitors including Symbian, Blackberry and Apple. Kenney and Pon (2011) explains that the reason why Google can afford to provide Android for free is that Google's core business is the search advertising business and it supports the mobile platform. As for now in the mobile platform industry, however, this type of platforms allow third party applications to be developed and maintained at a much lower cost, leading to more variety of innovations but less control over them.

Closed Platform Strategy

Platform providers using closed technology approach exercises control over the platform (Remneland-Wikhamn et al., 2011). The iOS of Apple is one of the platforms that take this approach. While taking a vertically integrated and closed platform strategy, Apple maintains high level of control on the entire ecosystem, from even the device to applications on the platform (Kenney & Pon, 2011). Gawer and Cusumano (2002) stated after analyzing Apple that its “closed garden” strategy has maintained the high quality of the component applications and also made it conducive to create favorable environment for its own applications. Kenney and Pon (2011) argue that Apple’s strategy can be more advantageous in the long run, particularly when the platforms start to expand through vertical value chains. Apple already has developed cohesive user experience through platform compatibility, while its competitors with open platform strategy, including Google, would have difficulty in interoperating the platform on diverse technological devices.

Generativity

Generativity refers to “how easy innovators independent of mobile phone vendors and network operators can leverage on the mobile phone as a platform to develop new services and applications” (Nielsen & Hanseth, 2010). While identifying that generativity as a crucial factor for providing favorable environment for innovators, Nielsen and Hanseth (2010) argue that there is a tradeoff between generativity and usability. Whereas usability differentiates and attracts users in the short term, it is generativity that not only gives advantageous to the independent innovators but also meets the needs of the users in the long run.

Generativity and Mobile Platform Strategy

The generativity of the platform is directly or indirectly shaped by regulating the entrance of third parties into the platform (Elaluf-Calderwood et al., 2011). By “shaped”, it means both facilitation and hindrance. According to Remneland-Wikhamn, Ljungberg, Bergquist and Kuschel (2011), it is generativity rather than openness that drives the affluence of platform and generativity is both facilitated and hindered by the control of actors on the platform (**Figure 2**). Openness refers to “an exchange or bargain of ideas and intellectual property with external associates such as customers, suppliers, partners, or competitors” (Remneland-Wikhamn et al., 2011, p.207), which does not equal to the ‘open’ from open technology approach as platform strategy. Based on this openness, it can be said that all mobile platform has openness but the degree of which the platform owner poses its controlling authority over the platform may vary.

Figure2

RELATIONSHIPS BETWEEN PLATFORM STRATEGY, CONTROL, AND GENERATIVITY



Five Factors of Generativity

Zittrain (2006) defines generativity as “a technology’s capacity to produce unanticipated change driven by broad, heterogeneous, and uncoordinated audiences”. Zittrain (2008) suggests five dimensions of generativity as a function of technology’s capacity: capacity for leverage, adaptability, ease of mastery, accessibility, and transferability. Capacity for leverage refers to the extent to which objects can be utilized for accomplishments. If a technology enables more variety of accomplishments, it means that it is generative. Adaptability refers to the extent the technology can be used without modification and also to the extent how flexible the technology can be in order to increase its breadth of use. Ease of mastery reflects how easily the technology can be learned about. Accessibility is determined based on how easily the users can have an access to the use of the technology. Last but not least, transferability means the ability to transfer any technological changes to others.

Remneland-Wikhamn, Ljungberg, Bergquist and Kuschel (2011; 2012) have done a generativity analysis on iOS and Android based on the five factors of generativity (see Table 1).

Table 1 GENERATIVITY ANALYSIS OF GOOGLE AND APPLE			
		Apple (iOS)	Google (Android)
Leverage		iPhone with built-in technologies. Standardized rules and templates. Third party programs look and feel familiar in the system.	Several device manufacturers. Less compulsory standardized rules. Increasing possibility for advancing programs into higher user experience.
Adaptability		Apple as a gatekeeper. Clear guidelines and restrictions. Risk of censorship.	Anyone can develop applications. Huge coordination challenge. Easy to remove and replace apps.
Ease of Mastery	Users	Apple's full control on value chain. Only allows App Store run by Apple as a source of distribution.	Various devices and GUI. No restriction on other sources of program distribution.
	Developers	Gives only one contact: Apple. Under control of Apple.	A stack of different manufacturers. OS and API disclosed.
Accessibility		Standardized tools and methods. Risks of rejection of platform access. Ensures accessibility once permitted to the platform.	More accessible system. System codes mostly revealed. Risks of damaging quality. High competition.
Transferability	Hardware	In-house management of technology.	Discussion with manufacturers.
	Software	Closed operating system. Built-in App Store is the only medium of technology transfer. User-to-user transfer is only possible through jailbreaking.	Based on open source software. User-to-user transfer allowed through various channels.

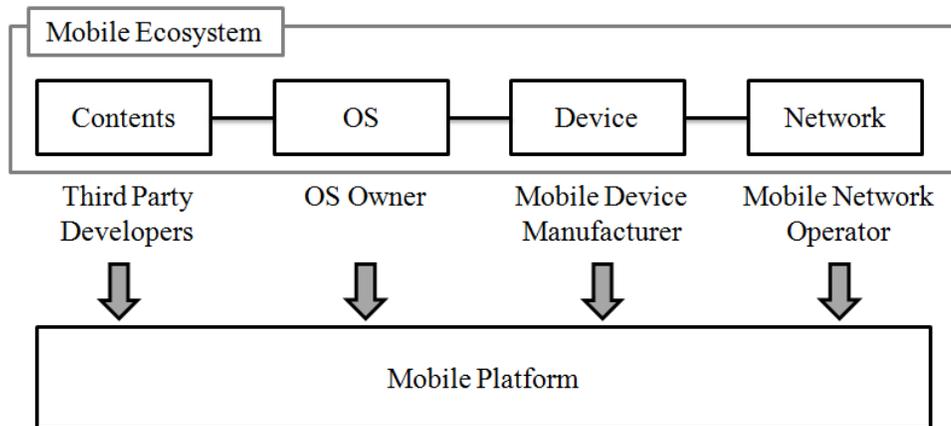
COMPETITION ON THE MOBILE PLATFORM

A. Actors of Mobile Platform

Actors on the mobile platform are identified based on the actors in the mobile ecosystem: third party developers, i.e. Mark Zuckerberg of Facebook, the platform owner, such as Google and Apple, mobile device manufacturers, i.e. Samsung and HTC, and mobile network operator, which greatly differs based on country/region, as shown in Figure 3.

The five dimensions of generativity defined by Zittrain (2008) involve third party developers, operating system owners and device manufacturers as an actor of mobile platform. In this paper, as the Zittrain's analysis on generativity excludes mobile network operators, and the capacity of mobile network operators in each region differs greatly from each other, only third party developers, OS owner, and mobile device manufacturer are further discussed.

Figure 3
ACTORS ON MOBILE PLATFORM



Third Party Developers (TPD)

Third party developers (TPD) are all individual or group developers who are not OS owner or device manufacturer. TPD may include enterprises, institutions, clubs, agencies, and individuals. They develop applications to expand their offline businesses, to provide themselves with the exact application they need, to make profit by pushing advertisements to the app users, to provide civil service, and to prove their capability by complementing their portfolio with it (Boudreau & Jeppesen, 2015). As for example, the most popular social network applications such as Twitter, Instagram, and Facebook are all developed by TPD.

Operating System Owner (OSO)

Operating system owners (OSO) are those who own the OS mobile platform such as Google of Android and Apple of iOS. More or less currently, Android and iOS account for respectively 82.8% and 13.9% of global smartphone OS market share in Q2, 2015, followed by Windows with 2.6% (International Data Corporation [IDC], 2015). To compete against each other and further expand its user base, OSO also develops proprietary applications such as Google Map of Android and iTunes of iOS, those that usually have critical attractiveness, to either attract new users or retain existing users.

Mobile Device Manufacturer (MDM)

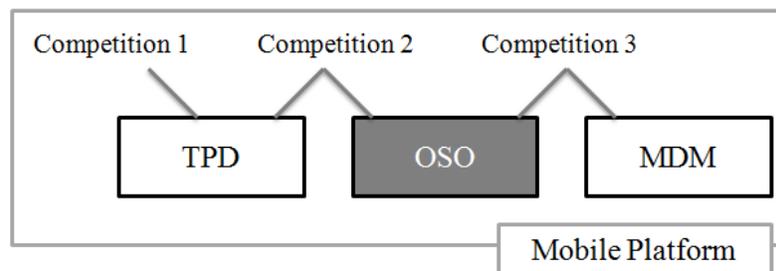
Mobile device manufacturers (MDM) are also a crucial actor in consisting mobile platform because software applications might involve embedded functions of hardware devices.

The importance of MDM as an actor highly depends on the relationship with OSO. Apple, for instance, has vertically integrated to incorporate hardware device manufacture while yielding no room for other MDMs to use iOS through closed platform strategy. However, as for Google, even though it once acquired Motorola to integrate MDM business, it keeps its open strategy so that other MDMs can use Android. Example of application made by MDM includes Samsung Pay, a mobile wallet application.

Competition between Actors

There are three types of competition in a mobile platform (Figure 4). The first kind of competition takes place between the TPD' applications and this area is where variations are continuously generated in order to differentiate oneself from the similar others, resulting in co-evolutionary development. The second kind of competition is identified between TPD's apps and OSO' apps. This type of competition occurs as OSO tries to protect its proprietary apps from those of TPD. The last kind of competition occurs between OSO's apps and MDM's apps. Depending on the platform strategy the platform pursues and the relationship between MDM and OSO, the range and scope of benefits and opportunity costs that OSO will face may vary greatly.

Figure 4
COMPETITIONS IN MOBILE PLATFORMS



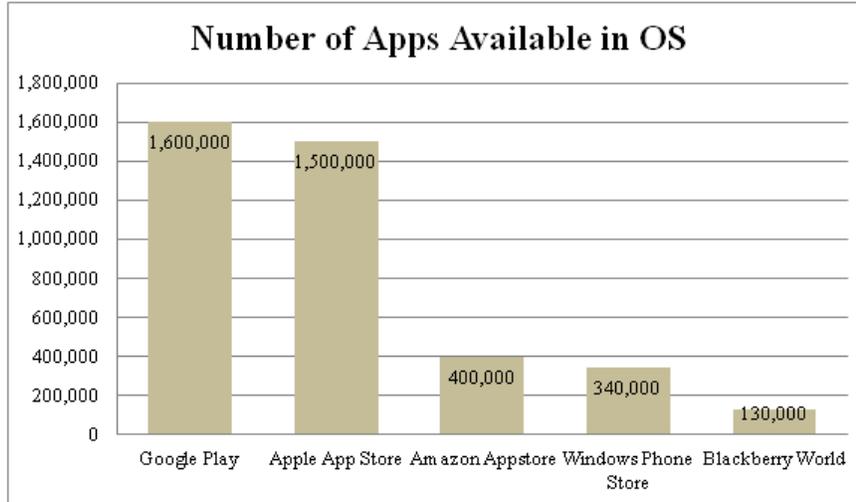
Competition 1: Between TPDs' Applications

Third party developers enter the market with various motivations and purposes. As the number of third parties increases, the variety of applications gets more increases. The increase in the variety of applications increases user base which leads to an increase in the number of complementors through network effect (Boudreau, 2012; Bygstad, 2010). This results in a virtuous cycle of expansion. The continuous expansion of complementors and users is accompanied by competition and cooperation between similar application software on the platform. Generally, an ecosystem consists of complementors competing against and cooperating with each other at the same time, an activity so called co-opetition (Brandenburger & Nalebuff, 2011). Market co-opetition leads to a chain of co-evolution among applications that affect technology innovation.

Different levels of control over the platform based on mobile platform strategy can affect how this type of competition is carried on. Eisenmann, Parker & Alstynne (2008) claim that the more the platform owner opens the platform to the third parties, the higher the rate of which innovations occur becomes. By the number of applications on each operating system, it is also

speculated that Android has resulted in a greater variety of components than iOS due its open platform strategy despite the fact that it is a latecomer in the industry (Figure 5).

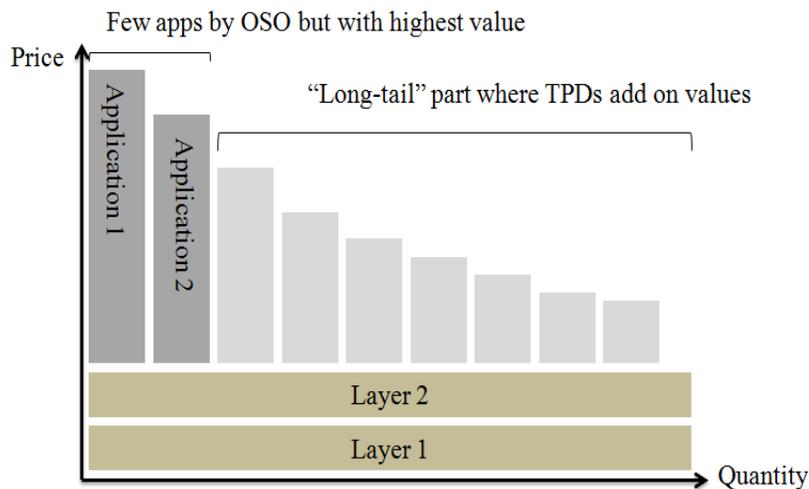
Figure 5
THE NUMBER OF APPLICATIONS ON EACH MOBILE PLATFORM (IDC, 2015)



Competition 2: Between OSO’s Applications and TPDs’ Applications

In order to retain existing platform user base and exploit the users, OSOs develop their own applications and aim to develop killer apps. Depending on which platform strategy the OSO pursues, the ease of competition from the OSO’s perspective varies. Eisenmann et al. (2008) proposed long-tail model of mobile platform as in Figure 6.

Figure 6
LONG-TAIL MODEL OF MOBILE PLATFORM



According to the long-tail model, OSO can only concentrate on few apps with the highest value and thus yields the rest of the space to TPDs to add values on the mobile platform. Eisenmann et al. (2008) further explains that OSO should secure its foundation for profit by absorbing successful applications of TPDs. They suggest two rules in deciding which application to absorb: applications/functions with the highest value in the long-tail (i.e. Apple absorbed e-books and Google added Gdrive to absorb the function of DropBox), and functions that appear to be necessary in many applications on the mobile platform (i.e. PDF viewing function) (Eisenmann et al., 2008).

Competition 3: Between OSO's Applications and MDMs' Applications

Mobile device manufacturers are differentiated from TPD as a hardware provider. They can embed some of their proprietary applications or features into the devices. For example, calculator, note, and voice recorder are some of the MDM's applications that are pre-installed in mobile devices. Furthermore, they can develop more competitive application compared to TPD and OSO through co-developing the app with hardware device to result in differentiated functions.

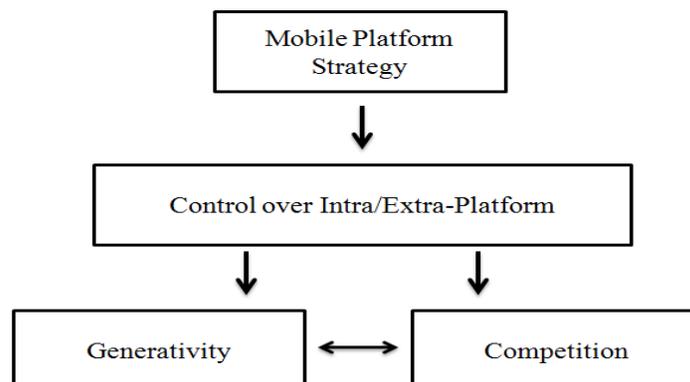
The importance of MDM on the mobile platform differs based on the relationship between the OSOs and MDM. Apple has vertically integrated to accommodate the role of MDM in its value chain and provides its OS to its own devices, thus MDM cannot be discussed regarding iOS. Google, on the other hand, opens its OS to diverse MDMs and also pursues open platform strategy to allow not only TPD but also MDM to develop and distribute its applications on the platform. To further demonstrate this type of competition, Samsung Pay which was suggested as an example of MDM's application, has effectively utilized the functions of Samsung device, including MST (Magnetic Secure Transmission) and fingerprint scanning, to attain higher competitive advantage over not only the OSO's app, Google Wallet, but also that of the competing MDM with different OS, Apple Pay.

COMPETITION AND GENERATIVITY

In Section II, this paper has reviewed the relationship between mobile platform strategy and generativity through **Figure 1** (Remneland-Wikhamn et al., 2011; 2012). In this section, the relationship between generativity and the different type of competition is analyzed. This paper identifies the relationship between the discussed factors as Figure 7.

Figure 7

RELATIONSHIPS BETWEEN PLATFORM STRATEGY, GENERATIVITY AND COMPETITION



iOS and Android's different mobile platform strategies (closed platform strategy and open platform strategy) resulted in different levels of control over intra-platform and also extra-platform (e.g. iOS 's application censorship and Apple's vertical integration of production chain). As discussed in Section II through the generativity analysis of iOS and Android, the varying platform strategy and its control over the platform affect generativity differently. OSO's varying control over the intra/extra-platform results in varying impact on competitions as discussed in Section III. In the case of Apple, it even excluded competition against MDM by vertically integrating its business to include both a function of MDM and OSO. This section will continue the discussion by identifying the relationship between generativity and competition under each operating system.

Open Platform Strategy (Android)

Third Party Developer

TPDs under open platform strategy have very high leverage because the platform owner hardly puts limits on TPDs' activities on the platform, leading to higher variety of application and thus increasing the leverage of users as well. Adaptability is also high to them but within the capacity that is provided by the hardware devices. However, ease of mastery can be quite low because TPDs have to test on diverse mobile devices from different MDMs. As for accessibility, it begins high but ends up quite low because the platform allows every TPDs to join the platform but it involves fierce competition to be accessed since then. Lastly, whereas transferability of hardware is low for TPDs under open platform strategy due to its MDM's control over it, transferability of software is high because existing features and functions are highly diverse, increasing the capacity of recombination and advancement.

Operating System Owner

Even the mobile platform pursues open platform strategy, being the platform owner gives OSO higher generativity than other partakers of the platform. Capacity of leverage and Adaptability is as high as TPD because it is provided with more or less the same environment to leverage on. However, it has higher ease of mastery is than TPD since it has better understanding about the platform and also has the authority to reflect major changes on the platform as platform owner. Accessibility is similar to that of TPD but does not get as low as TPD even after entering the platform because it has an authority to structure the OS to either embed or emphasize its own proprietary application. Transferability for OSO is identified to be similar to that of TPD.

Mobile Device Manufacturer

Mobile device manufacturer shows similar generativity with TPD regarding the factors that hardware devices are not involved. Therefore, leverage and ease of mastery in terms of software are parallel to those of TPD. Adaptability, however, can be higher than that of the other two players because of possibility to further extending the capacity through integrating it with the functions of hardware device. Accessibility is expected to be even higher than OSO. As OSO, it would find it easy to enter the platform under open platform strategy and it can also, to certain degree, embed its own proprietary applications. However, as it can better utilize the hardware functions, it might have more competitiveness than the other two actors to earn higher

accessibility. MDM has the highest hardware transferability while its software transferability is as high as that of the others.

Closed Platform Strategy (iOS)

Third Party Developer

Leverage of the platform is very high under closed platform strategy as well but not to the extent of open platform because the platform owner controls and limits the range of available features of applications on the platform. Meanwhile, adaptability is low under this strategy as the breadth of use is highly regulated by the platform owner. Ease of mastery is high because the mobile platform is provided through devices made by only one MDM, which is also the OS itself, thus providing one standardized system to learn about. Accessibility is low at first because of the control but once it meets the requirements of the platform owner to join the platform, the accessibility gets higher. Therefore, it can be said that the ultimate accessibility of TPD applications is higher under closed platform than open platform. Last, transferability of both hardware and software is high but within the frame set by the platform owner because of standardization and regulation.

Operating System Owner and Mobile Device Manufacturer

In order to analyze mobile platform strategy of iOS, this paper combines the concept of two actors, OSO and MDM, to better reflect Apple's strategy to also control extra-platform factors. In effect, all five factors of generativity are expected to be high for OSO under vertically integrated and closed platform strategy. This is because its strategy grants itself to effectively curb TPD's excessive profits or advantages that can encroach the capacity of OSO, and it has much control over not only the software but also the hardware.

DISCUSSION

Discussions on the relationship between generativity and competition on mobile platform in Section VI can be reorganized as Table 2 and Table 3. These tables illustrate the varying levels of generativity per each actor under open and closed strategy respectively.

GENERATIVITY OF EACH ACTOR UNDER OPEN PLATFORM STRATEGY				
		TPD	OSO	MDM
Leverage		Very High	Very High	Very High
Adaptability		High	High	Higher
Ease of Mastery		Low	High	Low
Accessibility		High → Very Low	High → Low	High → Medium
Transferability	Software	High	High	High
	Hardware	Low	Low	High

Table 3

GENERATIVITY OF EACH ACTOR UNDER CLOSED PLATFORM STRATEGY

		TPD	OSO & MDM
	Leverage	High	Very High
	Adaptability	Low	High
	Ease of Mastery	Low	High
	Accessibility	Low → Medium	High
Transferability	Software	High but within Frame	High
	Hardware	High but within Frame	High

In the Table 3 and Table 4, the actor with the highest generativity in each of the five factors is colored grey. An actor with higher or the highest generativity would have higher possibility of winning a competition. Under an open platform strategy, the strength in each dimension of generativity is comparatively distributed widely between the actors than in closed platform strategy. However, MDM has much more factors of generativity that are the highest among the partakers which implies its competitiveness over the other two, all other conditions being the same. This strategy does not grant OSO to have any special merit of being the owner of the platform other than ease of mastery. TPDs under this strategy generally do not have much competitiveness in nature compared to the other actors in the platform, *ceteris paribus*. This is not contradictory to the preliminary studies – the fierce competition among the TPDs due to no or less control of OSO over the platform possibly can result in the overall lower generativity.

Under closed platform strategy, all dimensions of generativity are higher for OSO & MDM. These show that generativity, from the platform owner's perspective, can be better managed under closed platform strategy even if open platforms lead to much higher diversity of applications and thus higher capacity of recombination and innovation through co-opetition. Having an environment that is more conducive to securing its own profits from TPDs is essential to platform owner. Apple, which is pursuing comparatively closed platform strategy, has effectively managed to control the platform quality and usability while maintaining profitability from the platform. Google, on the other hand, has gained higher diversity of applications and stakeholders through comparatively open platform strategy but has failed to secure its profit structure, bringing doubts on its sustainability.

Nonetheless, it is necessary to discuss the limitations that the above analysis contains. First, it does not provide information about the objective and independent measure on the importance of each factor of generativity to scale the overall generativity of mobile platform. Therefore, it is difficult to assert which platform generativity is better in terms of facilitating the overall generativity. Second, the above method does not reflect timeline, thus it cannot discuss long-term mobile platform strategy which might incorporate other stakeholders or even more diverse features within the existing categories of actors. Third, Apple and Google each has different main business through which they profit from. Therefore it cannot be generalized to, if any, other operating systems with similarly open or closed mobile platform strategy.

Theoretical Implications

Mobile platform operators, who are the OS owners, would seek profit through the platform business. Profitable platform should have a number of users and complementors and a variety of applications – this is critical to the platform since network effect between these factors amplifies the affluence of the platform (Boudreau & Jeppesen, 2015). Generativity of mobile platform is critical in attaining a variety of applications as it implies about the potential of the platform (Tilson, Sørensen & Lyytinen, 2013). Elaluf-Calderwood et al. (2011) therefore argued that a mobile platform operator, should exercise control over the platform, or closed platform strategy, to gain profit from its business. Remneland-Wikhamn et al. (2011) also argue that even though control hinders generativity to some extent as in application censorship, control also facilitates generativity as a certain unified frame is provided for TPDs to develop within. Remneland-Wikhamn et al. (2012) identified both Apple's iOS and Google's Android as a highly generative ecosystem but argued that there is a difference in how the generativity in each platform is configured and governed.

This paper suggests that in order to cultivate platform generativity, closed platform strategy would be more favorable than open platform strategy as it structurally allows the OSO more competitiveness in terms of generativity. Applications with more generativity would attract more consumers than other similar applications developed by other types of actors, which leads to higher competitiveness in the competitions against the other platform partakers. This finding supports the previous researches by Elaluf-Calderwood et al. (2011) and Remneland-Wikhamn et al. (2011; 2012) while at the same time suggests a new perspective that involves the concept of competitions among the platform partakers.

The finding of this paper also supports Hagiu and Halaburda (2010) who stated that uncontrolled platform which heavily relies on the autonomous TPD is not always effective in developing the mobile platform ecosystem. In the same context, Boudreau (2012)'s argument that uncontrolled platform may lead to low quality components which results in rather negative feedbacks from consumers. Wareham, Fox & Giner (2014) further state that applications on the platform can be not only a desirable variance but also an undesirable variance which can negatively affect the overall platform's attractiveness to potential users if produced indiscriminately. The finding of this paper does not consider application quality but assume that all other conditions are the same. However, the finding is still parallel to these previous researches. Wareham et al. (2014) argue that technology ecosystems should implement variance reducing mechanisms to control the quality of available applications on the platform.

On the other hand, the theory of network effect (Boudreau, 2012; Bygstad, 2010) was more conducive to explain Android of Google's rapid expansion and it better supported no or less control over the platform for generativity, or open platform strategy. However, more generativity of the platform does not necessarily mean more profit for the mobile platform operator. Elaluf-Calderwood et al. (2011) claim that the balance between control and generativity is crucial for OSOs to take economic/social/technical advantage from the platform business. The less the control over the platform, the more the variety of the applications available, which in turn might contribute to the platform affluence. However, the less the control over the platform, the less the easiness for the mobile platform operator to manipulate the system for its own profit it gets.

Future Research

The identification of three types of competition on the mobile platform and how competitiveness of each actor in terms of generativity relates to the competitions suggest several avenues for future research.

There is a possibility that competition between the TPDs has been over-generalized despite the variance among TPD's applications as also stated in the researches by Wareham, Fox & Giner (2014). In particular, some TPDs are companies with their own business that already has a considerably large consumer base which makes it comparatively easier for them to attract users on the mobile platform. For example, mobile payment applications are mostly developed by the relevant financial institutions such as a bank or a credit card company. Some TPDs are an individual or a group who does/do not have an existing user base from outside the platform. For example, a simple note application or a camera application can be developed by an individual or a group without a existing consumer base. A further research on competitions among the different types of TPDs would contribute to the better understanding of the phenomenon on the platform.

A further research can be done to identify the level of each dimension of generativity in more detail with an objective and independent measure. This would allow scaling of the overall generativity of mobile platform and a comparison between the two mobile platforms. An objective measure of generativity would also relate to the impact of other strategies pursued by the mobile platform operators, Google and Apple in this case. The business strategies of the two corporations are not a factor that can be neglected when discussing the profitability of mobile platform. For example, even though Android seems as it is not as much reasonable as iOS to sustain its platform business, as a company with much content and information, Google might find having its own mobile ecosystem for its own cluster of applications. In addition, not having its own platform but relying on Apple's iOS or other platforms can be more expensive and riskier than having Android. Relating such strategies to objectively analyzed platform generativity would give a more rationalized insight on the relationship between the two factors and further on the competition between the platforms.

How competition, cooperation, and co-opetition appear in each type of competition among the actors would be another possible research topic. Particularly, how cooperation and co-opetition affect generativity and, if applicable, how the generativity in these two cases are different from that in competition would be a contributive research topic for analyzing the generativity under more various platform activities. Furthermore, it would be also meaningful to analyze the generativity of the platform in relation to the long-tail approach illustrated in **Figure 6** in Section III. How would the two principles of the long-tail approach affect the platform generativity and overall health?

CONCLUSION

Competition between OSOs are also taking place regardless of the different objective to operate the mobile platforms. The applications developed by the OSOs are often complementary of each other, which means that they are provided as a software package that interoperates. For example, Google, which has had its main business in search engine and advertisement business prior to the invention of mobile internet, offers Google Map, Gmail, and Youtube applications on Android connected through a single account. Apple is also well-known for its ecosystem of interoperable applications which include iBook, iTunes, and iCloud applications. Lee, Venkatraman, Tanriverdi & Iyer (2010) state that customers prefer to use

software product as a system of complements than as individual products due to the convenience coming from interoperability. The more actively the personal data such as schedule, photos, and social networks are input, the higher the switching cost becomes. This results in lock-in effect within the ecosystem that helps retain the existing users.

Mobile platform owners, ought to make the most out of its platform to obtain consistently higher competitiveness against each other for sustainability. Furthermore, for sustainability of the platform, it is crucial to consider the generativity as explained in Section II. In this regard, this paper might bring a new insight in analyzing how the generativity affects the competition on the platform and how the mobile platform owner with different level of platform openness can have an advantage out of it by better managing the generativity.

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INVESTMENT ANALYSTS' IMPACT ON CEO APPOINTMENTS

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ABSTRACT

The appointment of a new CEO is among the most pivotal and visible decisions made by the board of directors. Yet while much research explores how firm performance, governance structures, and types of succession affect the appointment decision, we have less understanding of the influence of contextual factors such as external constituents. This paper is the first to explore how one key constituent – investment analysts – may shape the appointment decision, specifically through serving as an information intermediary for the board. Because CEO succession creates uncertainty regarding the firm's future leadership and its strategic direction, I propose that investment analysts, as knowledgeable experts who provide research coverage on the firm, provide the board with information that is likely to influence their selection of a new CEO. In addition, I argue that because analysts are recognized as having expertise regarding the future performance of the firm, the board is likely to select a CEO in order to appease these critical stakeholders. Using panel data on S&P 500 companies for the 2000-2005 periods, I find evidence that analyst recommendations convey information about a firm's top management and the appropriateness of its strategy that is reflected in the appointment decision. Specifically, I find that more negative analyst ratings lead to a higher probability that the board will appoint an outsider CEO and also make the board more likely to appoint a high status CEO.

INTRODUCTION

The appointment of a new CEO is among the most pivotal and visible decisions made by the board of directors. The CEO serves as the most critical bridge between the firm and its environment by setting the strategic direction that determines the firm's actions in response to external factors (Andrews, 1971; Child, 1972), and a newly appointed CEO can be a particular catalyst of organizational change (Bigley & Wiersema, 2002; Boeker, 1997; Kesner & Sebor, 1994; Westphal & Fredrickson, 2001). A significant body of research has explored various factors that may influence the board's choice of CEO. Zajac and Westphal (1996) found that the power of the board vis-à-vis the incumbent CEO influenced how different the new CEO would be from his/her predecessor. Other research has shown that the type of CEO succession influences the board's selection of a new CEO, with outsiders predominating after CEO dismissal (Parrino, 1997). Still other studies have found that board independence and firm performance influenced the board's likelihood to promote from within or recruit from outside the firm (Boeker & Goodstein, 1993; Cannella & Lubatkin, 1993; Cannella & Shen, 2001). Zhang and Rajagopalan (2003) found that higher firm performance, larger firm size, and more insiders on the board led to the appointment of an insider, while strategic conformity led to the appointment of a CEO from outside the firm, but from within the firm's industry.

Although these studies provide insight into our understanding of the firm-specific factors influencing the selection of a new CEO, we know less about the role played by contextual factors. Research has shown that CEO appointments influence investors in their evaluation of the future prospects of the firm (Bonnier & Bruner, 1989; Lee & James, 2007; Shen & Cannella,

2003). In addition, research has found that firms experience an increase in stock price volatility after CEO succession, and that this heightened volatility lasts for up to two years (Clayton et al., 2005). Due to this uncertainty as well as to the scrutiny and potential impact that the appointment of a new CEO has on the firm, I propose that investment analysts are likely to play an important role in this decision. Investment analysts have “prominent and legitimate platforms for rendering assessment of firms and the individuals associated with them” (Wiesenfeld et al., 2008, p. 234) and can influence the board for two major reasons. First, the board is likely to turn to experts, whose job it is to evaluate the firm, its competitive position, and its future prospects – e.g., investment analysts. Prior research has found that investment analysts, as prominent information intermediaries in the financial market, may serve as a key external source of information that may be used by the board of directors to evaluate a firm’s leadership (Farrell & Whidbee, 2003; Puffer & Weintrop, 1991), including the decision to retain or dismiss the CEO (Wiersema & Zhang, 2011). As a result, investment analysts may be an important information intermediary that can influence the board’s choice of a new CEO. In addition, I propose that boards may be sensitive to how their CEO appointment decisions will be perceived by the investment community. The selection of a new CEO is probably the most visible and one of the more important decisions made by the board (Dalton & Kesner, 1985; Parrino, 1997), and can have significant financial ramifications (Bonnier & Bruner, 1989; Lee & James, 2007; Shen & Cannella, 2003). Since the selection of a new CEO can influence both the investment community’s perception of the firm, as well as the board’s reputation and legitimacy as a governance device, I propose that the board will consider this constituent when selecting a CEO.

I examine how investment analysts influence whether the board will promote from within or recruit from outside, as well as whether the board will appoint a high status CEO. I argue that the information provided by analysts in their stock recommendation as well as the board’s concern to appease this important constituent in the capital market, will influence their choice of a new CEO. To examine this question I draw from a population of large, widely held public firms that have extensive investment analyst coverage and thus are heavily monitored by external constituents.

My study departs from the internal focus of prior research, and is the first to show that investment analysts influence the board in their selection of a new CEO. It thus provides new insights into the contextual factors that may influence executive succession. My findings and theoretical insights contribute to our understanding of executive succession and to the importance of investment analysts as a constituent that influences the firm. While past research has shown that high status appointments increase the valuation of IPOs, my study indicates that legitimacy concerns may also influence executive succession in large, publicly traded firms. My study suggests that the board may not only be affected by the information conveyed by investment analysts, but may even look to appease this important constituent in their selection of a new CEO.

THEORY AND HYPOTHESES

Investment Analysts and CEO Succession

Making executive succession decisions is among the primary duties of the board of directors, along with evaluating the performance and establishing the compensation of the firm’s top executives. In light of the importance of the succession decision for the future of the firm, it is highly scrutinized by external and internal stakeholders. CEO succession can affect a firm’s

stock price (Davidson et al., 1990; Denis & Denis, 1995), and the characteristics of the newly appointed CEO can influence investors' opinions about the firm's future prospects (Lee & James, 2007; Shen & Cannella, 2003; Tian et al., 2011). Investors in general make inferences about the firm based on who is in charge. Research has found that two of the most important factors explaining analysts' stock recommendations are the "quality" of the firm's top management and the "ability" of management to execute on strategy (Groysberg et al., 2011). Given the importance that investment analysts attach to management quality, I propose that investment analysts serve as an external constituent likely to influence the board's selection of a new CEO in two major ways. First, due to their lack of complete and perfect information, the board may be influenced by additional credible sources of information, such as that conveyed by the reports and stock recommendations of experts – investment analysts. Second, investment analysts are a "legitimizing authority" (Khurana, 2002, p. 40) and represent an important and critical constituent that the board aims to appease since the CEO appointment decision will reflect on the future prospects of the firm, as well as on the effectiveness of the board.

Selecting a CEO requires an understanding and assessment of the competitive challenges the company faces particular to its industry context, and what these challenges imply for the capabilities desired in a new CEO. Since boards are mostly comprised of outside directors, who meet infrequently for short periods of time, they lack the strategic understanding of the business that management has (Carter & Lorsch, 2004). With increased compliance demands resulting from the 2002 enactment of the Sarbanes-Oxley Act, boards have even less time to devote to non-performance related issues (Linck et al., 2009). The board's lack of full information extends both to the firm – its performance and competitive position – as well as to the firm's top management, a potential source for the next CEO. Almost 50% of directors say that they have a moderate or worse understanding of the strengths and weaknesses of potential internal CEO candidates (Conference Board, 2014). Although boards are technically responsible for evaluating the firm's top management and executive succession, in reality they do not spend much time on this. Given this context, I propose that investment analysts, by serving as an important and credible information intermediary, may influence the board's selection of a new CEO. Analysts are highly trained research experts who provide research coverage and issue stock recommendations based on detailed analysis of a firm's strategic and financial situation (Rao et al., 2001). Analysts' stock evaluations incorporate an assessment of the firm's top management, which provides valuable information that can significantly influence assessments of a firm's future prospects (Chugh & Meador, 1984; Groysberg et al., 2011; Pincus, 1986). While analysts may be biased towards issuing positive stock recommendations (Hong & Kubik, 2003; Michaely & Womack, 1999), extant research has shown that boards use analysts' earnings forecasts as a metric for evaluating CEO performance (Farrell & Whidbee, 2003) and can influence the board's decision to retain or dismiss the CEO (Wiersema & Zhang, 2011), which indicates that analyst recommendations do provide information to directors. Investment analysts, through their stock recommendations, convey information to the board about the capabilities of the firm's current top management as well as an assessment about the firm's strategy that can provide insight into the requisite managerial capabilities to consider in selecting a new CEO.

For publicly traded firms, investment analysts constitute a prominent and legitimate authority because of their perceived expertise (Zuckerman, 1999), independence (Fogarty & Rogers, 2005), and the wide dissemination of their opinions (Groysberg & Lee, 2008; Michaely & Womack, 1999; Pollock & Rindova, 2003; Stickel, 1995). Legitimacy is a type of social evaluation (Bitektine 2011) that is conferred upon organizations by influential social actors

(Deephouse, 1996), and is granted to firms that comply with the “ideas, models, practices, etc. that are assumed to be correct” (Zimmerman & Zeitz, 2002, p. 424). The audience that confers legitimacy may differ for different types of organizations, with analysts largely determining what is appropriate and correct for publicly traded firms (Zuckerman, 1999). When an important external constituent such as investment analysts question the firm’s legitimacy, the board may seek to take actions to conform to analyst expectations of appropriate firm behavior (Suchman, 1995; Wiersema & Zhang, 2013). The appointment of a new CEO is one such action that provides the board with a unique and visible opportunity to enhance firm legitimacy as well as to influence the board’s own reputation and legitimacy. The selection of a new CEO is likely to have an impact on the reputation of the board since it is one of its most important and visible duties. The firm’s board may use such an appointment to “reassure stakeholders that the firm’s future prospects are bright” (Wade et al., 2006, p. 644), thereby engendering investor confidence.

Since investment analysts largely determine what is considered appropriate for publicly traded firms (Benner & Ranganathan, 2012; Zuckerman, 1999), CEO selection can reflect poorly on the firm and its board if their appointments are not favorably received. The way in which “analysts are likely to react to a new CEO has become a principal concern of directors conducting a search” (Khurana, 2002, p. 78). The board’s concern over the impression that a CEO candidate will make means that directors are likely to conduct “informal soundings” on how they are likely to be received (Stiles, 2001). Since directors are concerned about how their selection of a new CEO is likely to be perceived in terms of the firm’s future prospects as well as their own reputation, I propose that boards will seek to appease the investment community and investment analysts in particular, when they select a new CEO.

In summary, investment analysts are an important information intermediary that may influence the board’s choice of a new CEO. In addition, the board may be sensitive to how their choice of CEO is perceived by the investment community, and thus will seek to appease this important and critical constituent in their appointment decision.

Analyst Stock Recommendations and the Appointment of an Outsider CEO

One major consideration when the board selects a new CEO is whether to promote from within or to go outside the firm. I propose that investment analysts are likely to influence this decision. One of the more important functions of investment analysts is to “assess the performance of management” (Moyer et al., 1989, p. 505). Analysts believe that meetings with management “enable them to make judgments about the breadth and quality of the top management team” (Chugh & Meador, 1984, p. 43). Thus, analysts’ recommendations convey not only an evaluation of the firm’s future prospects but also the degree of confidence they have in the firm’s current leadership and its strategic direction. Both of these factors are likely to play a role in whether a firm’s board of directors will choose to promote from within or go outside for the firm’s new CEO.

Negative stock recommendations reflect a lack of confidence in the firm’s leadership and the future earnings prospects of the firm. When faced with negative recommendations, I propose that the board will seek to conform to expectations about appropriate behavior and will select a CEO that is not associated with the firm’s current strategy to appease this important constituent. In identifying whether or not a CEO is likely to adhere to the firm’s current strategy, prior research has shown that a CEO’s origin (insider or outsider) is an important predictor (Tushman & Romanelli, 1985; Wiersema, 1992). An individual’s strategic orientation or frame of reference

evolves from past organizational experiences (Daft & Weick, 1984; Fiske & Taylor, 1991; Lyles & Schwenk, 1992). The resulting “cognitive map” of a CEO in turn influences the identification of strategic issues as the basis for future action (Dutton et al., 1983). Consequently, because “executive commitment to the status quo derives from both the individual’s preferences as well as from knowledge” (Hambrick et al., 1993, p. 404), executive tenure shapes strategic preferences and intentions in predictable ways (Boeker, 1997; Hambrick & Mason, 1984; Ocasio, 1994; Tushman & Romanelli, 1985). The longer top managers have worked at a firm, the greater their commitment to the status quo, and, as a result, the greater the firm’s strategic persistence, i.e., “the extent to which a firm’s strategy remains fixed over time” (Finkelstein & Hambrick, 1990, p. 491). Thus, an insider CEO candidate, by virtue of his/her experience and involvement in past decisions (Hambrick et al., 1993; Miller, 1991), is more likely to support the firm’s current strategic direction. On the other hand, outsider CEO candidates lack prior involvement in the decision-making that led to the firm’s current strategy, and are thus less likely to be convinced of its correctness (Barr et al., 1992). Since insider CEO candidates are associated with the firm’s current strategy, I propose that negative evaluations by investment analysts will influence the board to appoint an outsider CEO.

H1a An increase in the percentage of investment analysts that issue a sell or underperform recommendation for the firm’s stock prior to CEO succession will be positively related to the appointment of an outsider CEO.

H1b A decrease in the average analyst recommendation for the firm’s stock prior to CEO succession will be positively related to the appointment of an outsider CEO.

Analyst Recommendations and the Appointment of a High Status CEO

Investment analyst stock recommendations reflect analysts’ assessment of how successful the firm’s strategy will be in generating future earnings given the competitive conditions in the industry. Negative stock recommendations raise questions regarding the future earnings prospects of the firm. When faced with negative stock recommendations, I propose that the board will seek to address legitimacy concerns regarding the appropriateness of the firm’s strategy by selecting a high status CEO.

Prestigious executive appointments can enhance a firm’s legitimacy by conforming to the beliefs that investors and analysts have regarding what constitutes appropriate and desirable top executives (Zimmerman & Zeitz, 2002). Due to their affiliations with prestigious organizations, high status executives are perceived to be more capable (Chen et al., 2008; Pollock et al., 2010), even when there is little direct evidence of such capabilities (D’Aveni, 1990; Higgins & Gulati, 2006). The prestige of the firm’s executives and directors may provide a signal of organizational legitimacy (Certo, 2003; Cohen & Dean, 2005; Higgins & Gulati, 2006; Lester et al., 2006). Empirical research has found that the appointment of prestigious executives to firms about to go public has a positive impact on the firm’s market capitalization (Lester et al., 2006; Pollock et al., 2010). Chen et al. (2008) found that the board will recruit more prestigious executives as the date of a firm’s IPO filing nears, in a “final push to add to their perceived legitimacy and its market appeal” (Chen et al., 2008, p. 958). Pollock et al. (2010) argue that investors infer from the prestige of a firm’s executives that they bring both experience and knowledge from their prior employers as well as providing the firm with substantive resources that can improve its performance.

Negative analyst stock recommendations, by questioning the appropriateness of the

firm's strategy and leadership, convey a loss in legitimacy. When an important external constituent such as investment analysts question the firm's legitimacy, the board may seek to take actions to conform to analyst expectations of appropriate firm behavior (Suchman, 1995; Wiersema & Zhang, 2013). The appointment of a new CEO is one such action that provides the board with a unique and visible opportunity to enhance firm legitimacy. As an executive's prior employment, board and educational affiliations are easily observable, and as executives with prestigious affiliations will be perceived as being highly capable and competent (Chen et al., 2008; Pollock et al., 2010), I propose that negative evaluations by investment analysts will influence the board to appoint a high status CEO.

H2a An increase in the percentage of investment analysts that issue a sell or underperform recommendation for the firm's stock prior to CEO succession will be positively related to the appointment of a high status CEO.

H2b A decrease in the average analyst recommendation for the firm's stock prior to CEO succession will be positively related to the appointment of a high status CEO.

METHODS

Sample

This study utilizes a sample from firms listed on the S&P 500 over a six-year period, from 2000 to 2005, in order to gather a sufficient number of CEO succession events. The S&P 500 differs from other lists of leading firms such as the Fortune 500, which ranks firms based on their annual revenue. In order for a firm to be eligible for inclusion in the S&P 500 it must be U.S. domiciled, have a market capitalization of at least \$4.0 billion, trade on either the NYSE or NASDAQ, trade at least 250,000 shares in a six-month period, and has at least 50% of its stock publicly listed. S&P 500 firms are considered the leading companies in important industries, and thus are highly visible and likely to be covered extensively by investment analysts.

The annual surveys on CEO succession compiled by Booz Allen and Hamilton, as well as the "Who's News" section of the Wall Street Journal, were utilized to identify CEO succession events. Once identified, these succession events were then verified by company news announcements. The final sample consists of 302 CEO succession events for 292 firms (48 in 2000, 43 in 2001, 40 in 2002, 46 in 2003, 64 in 2004, and 61 in 2005; 10 companies experienced more than one CEO succession event during the six year period).

Dependent Variables

Outsider CEO

Outsider CEO was measured as a binary variable coded as a "1" if the CEO came from outside the firm (had less than one year of experience at the firm), and as a "0" otherwise (Boeker & Goodstein, 1993; Dalton & Kesner, 1985). I collected data on the work experience of the newly appointed CEOs from Who's Who in Finance and Business and Bloomberg Business Week's Company Insight Center (CIC), online databases that contain employment and biographical information on over one million executives. For my sample, 83 (27%) of the newly appointed CEOs came from outside the firm, while 219 (73%) were promoted from within.

High status CEO

Status has been conceived of as largely based on one's affiliations (Podolny, 2005). High status executives are thus those who have ties to prestigious organizations, such as prominent firms and elite educational organizations (Certo, 2003; Chen et al., 2008; Pollock et al., 2010). I examined each CEO's ties to elite universities as well as prior employment or board seats held at elite companies, as defined by the S&P 500. The S&P 500 consists of the "500 stocks that are most important in the U.S. stock market" (Arnott & Kuo, 2011, p. 41). Firms listed in the S&P 500 are among the largest and most popular firms in the United States (Arnott & Kuo, 2011), and thus they are considered to be highly prestigious (Pollock et al., 2010). Based on this prior literature and following Acharya and Pollock (2013) I used S&P 500 board and employment as well as ties to prestigious universities for the measure of high status. The list of elite universities consists of the 29 universities that are considered elite by Finkelstein (1992), as well as the 25 business schools that have been listed at least once in Businessweek's rankings of the top 20 graduate business schools since 1988, the first year the rankings were published. Thus, I measure "high status CEO" as a binary variable coded as a "1" if the newly appointed CEO had one or more of the following: 1) held an executive position at an outside firm listed in the S&P 500 immediately prior to the appointment; 2) was a member of the board of directors of an S&P 500 firm (other than the focal firm) at the time of the appointment; or 3) graduated from an elite educational institution. Otherwise, high status CEO is coded as a "0".

I collected data on a CEO's employment history, board membership, and educational degrees from Who's Who in Finance and Business and Bloomberg Business Week's Company Insight Center (CIC). For my sample, 187 (62%) of the newly appointed CEOs had high status: 37% of the newly appointed CEOs held degrees from elite universities, 30% had prior employment at an outside S&P 500 firm, and 22% had a board seat on an outside S&P 500 firm.

Explanatory Variables

I use two measures of investment analysts' stock recommendations: change in percentage of sell and underperform recommendations, and change in average recommendation. I calculated each of the analyst measures with data collected from the Institutional Brokers' Estimate System (I/B/E/S) Summary Statistics database, which consists of consensus analyst data compiled monthly. I/B/E/S uses a five-point recommendation scale, in which a recommendation of 1 means "strong buy", 2 means "buy", 3 means "hold", 4 means "underperform", and 5 means "sell". Thus, in the I/B/E/S scale, higher scores mean lower recommendations.

Change in Percentage of Sell and Underperform Recommendations

Change in percentage of sell and underperform recommendations was measured as the difference between the percentage of recommendations that are rated as either underperform (4) or sell (5) in the six month lag period (t-1 to t-6) and the seven to 12 month lag period (t-7 to t-12) to the CEO succession event. To calculate this variable, I first collected the percentage of sell and underperform recommendations for each of the 12 months prior to CEO succession from the I/B/E/S Summary Statistics database. In order to account for variation in the analysts providing coverage each month, I calculated a weighted average of the percentage of sell and underperform recommendations for both the six-month lag period and the seven to 12 month lag period, weighing the percentage of sell and underperform recommendations by the number of analysts

who provided coverage each month. Finally, to obtain the change in percentage of sell and underperform recommendations, I subtracted the weighted average for the seven to 12 month lag period from the weighted average of the six-month lag period. Thus, a positive value indicates an increase in the percentage of sell and underperform recommendations in the six-month lag period while a negative value indicates a decrease in the percentage of sell and underperform recommendations in the six-month lag period. For my sample, the change in percentage of sell and underperform recommendations ranges from -22.34 to 33.62, with a mean of 0.84.

Change in Average Analyst Recommendation

To measure this variable, I first collected the mean analyst recommendation (of all analysts who cover a firm) for the 12 months prior to the CEO succession event from the I/B/E/S Summary Statistics database. To make the measure more intuitive, I reverse coded the monthly mean recommendation by subtracting it from 6 so that a higher score means a higher recommendation. Additionally, because the number of analysts providing coverage for a firm can vary from month to month, I calculated a weighted average of the monthly mean recommendation, weighted by the number of analysts who provided coverage for the firm in a given month; in both the six month lag period (t-1 to t-6) as well as the seven to 12 (t-7 to t-12) month lag period. I therefore had two weighted averages for a given firm: the six-month lag period average and the seven to 12 month lag period average. To calculate the change in average analyst recommendation I subtracted the seven to 12 month average recommendation from the six-month average recommendation. Thus, a positive value indicates that the average analyst recommendation was upgraded in the six-month lag period, while a negative value indicates that the average analyst recommendation was downgraded. For my sample, the change in average analyst recommendation ranges from -1.30 to 0.66, with a mean of -0.06.

Control Variables

Type of Succession

Past studies have found evidence that the nature of succession (routine versus dismissal) has a strong influence on the board's choice of a CEO. Specifically, research has shown that an outsider is much more likely to be appointed after a CEO dismissal than after a routine succession (Cannella & Lubatkin, 1993; Parrino, 1997; Zhang & Rajagopalan, 2004). Identifying whether or not the CEO was dismissed can be problematic because many firms do not fully disclose the nature of the succession. To identify the nature of CEO succession, I follow the procedure as described in Wiersema and Zhang (2011), in which I investigate firm announcements, news articles, and the timing of CEO succession events. Following this approach, I determined that 105 (35%) of the 302 CEO succession events were dismissals, while 197 (65%) were routine successions.

Firm Size

Firm size has also been found to influence the board's choice of a CEO, with larger firms more likely to promote CEOs from within by virtue of having greater managerial depth (Datta & Guthrie, 1994; Parrino, 1997). Firm size was measured as the log of the firm's market capitalization at the end of the year prior to the CEO succession. I collected this data from the

Center for Research in Security Prices (CRSP) Monthly Stock database. For my sample, firm size ranges from \$360 (millions) to \$602,000 (millions), with a mean of \$26,000 (millions).

Firm Financial Performance

A firm's financial performance has been found to have a strong influence on the board's choice of a CEO (Finkelstein et al., 2009; Zajac & Westphal, 1996). Firm financial performance was measured using an accounting measure as well as a stock return measure. First, a firm's industry-adjusted ROA was measured as a firm's return on assets in the year prior to the CEO succession minus the median firm ROA (excluding the focal firm) in the firm's core industry. I collected this data from the COMPUSTAT Fundamentals Annual database. For my sample, industry-adjusted ROA ranges from -0.40 to 0.44, with a mean of 0.05. Firm stock return was measured as the firm's total return to shareholders for the six-month lag period (t-1 to t-6) from the date of the CEO succession. I collected this data from the Center for Research in Security Prices (CRSP) Monthly Stock database. For my sample, firm stock return ranges from -0.80 to 1.23, with a mean of 0.02.

Percentage of Outside Directors

The percentage of outside directors has been found to influence the board's choice of a CEO (Cannella & Shen, 2001; Davidson et al., 2002; Zajac & Westphal, 1996), and is a widely used measure of a board's independence (Tian et al., 2011; Zahra & Pearce, 1989). Percentage of outside directors was measured as the ratio of a firm's independent outside board members to the total number of board members. I collected this data from the Riskmetrics' *Directors* database. For my sample, the percentage of outside directors on a firm's board ranges from 14% to 94% with a mean of 69%.

Prior CEO Tenure

The tenure of the prior CEO has been found to have a positive influence on the probability of an insider appointment (Farrell & Whidbee, 2003). I collected data on this variable from Who's Who in Finance and Business and Bloomberg Business Week's Company Insight Center (CIC). For my sample, prior CEO tenure ranges from 0 to 38 years, with a mean of 8.95 years.

Prior CEO Duality

Prior CEO duality captures whether or not the prior CEO was also the chairman of the board under the supposition that a CEO who is also the board chairman may have greater power to influence the appointment of his/her successor (Zajac & Westphal, 1996). Prior CEO duality was coded as a "1" if the prior CEO was also chairman and a "0" otherwise. I collected data for prior CEO duality from the Riskmetrics' *Directors* database. For my sample, 255 (84%) of the prior CEOs were also board chairmen, while 47 (16%) were not.

Prior CEO Stock Ownership

Stock ownership is one of the main sources of CEO power (Finkelstein, 1992), and prior CEOs' power has been found to influence the choice of a new CEO (Cannella & Shen, 2001;

Zajac & Westphal, 1996; Zhang & Rajagopalan, 2004). Prior CEO stock ownership was measured as the percentage of shares held by the prior CEO in the year preceding CEO succession. I collected data for prior CEO stock ownership from the Riskmetrics' Directors database. For my sample, prior CEO stock ownership ranges from 0.01% to 18.41%, with a mean of 1.34%.

Prior CEO Origin

Prior CEO origin was measured as a binary variable coded as a "1" if the prior CEO had less than one year of experience at the firm at the time of his/her CEO appointment, and as a "0" otherwise. I collected data for prior CEO origin from Who's Who in Finance and Business and Bloomberg Business Week's Company Insight Center (CIC). For my sample, 67 (22%) of the prior CEOs came from outside the firm, while 235 (78%) were promoted from within.

Industry Munificence

Like prior research, I control for industry differences across the companies in the sample (Mooney et al., in press; Zhang & Rajagopalan, 2004). Utilizing Dess and Beard (1984) I measure industry munificence as the five year sales growth within the industry (3 digit SIC) of the firm's largest business divided by the mean value of industry sales. I collected this data from the COMPUSTAT Fundamentals Annual database. For my sample, industry munificence ranges from -0.16 to 0.28, with a mean of 0.05.

Industry Dynamism

I also control for industry differences utilizing industry dynamisms (Dess & Beard, 1984) which is measured based on the five year volatility of sales growth within the industry (3 digit SIC) of the firm's largest business. I collected data for industry dynamism from the COMPUSTAT Fundamentals Annual database. For my sample, industry dynamism ranges from 0.00 to 0.14, with a mean of 0.05.

Outsider CEO

Since high status is determined by affiliations to prestigious organizations, including one's prior employment, a high status CEO is more likely to be from outside the organization. Thus, in the models examining the probability of appointing a high status CEO, I controlled for outsider CEO. For my sample, 80% (66/83) of outsider CEOs have high status, while 55% (121/219) of insider CEOs have high status.

Analysis

Table 1 presents the means, standard deviations, and correlations for my sample of 302 CEO succession events during the 2000-2005 time periods.

In this study, I examine how increases in the percentage of investment analysts that issue a sell or underperform recommendation, and changes in the average analyst stock recommendation, influence the probability that the board will appoint an outsider or high status CEO. As such, my analysis must take into consideration previous findings that a firm's prior performance influences both analyst stock recommendations (Block, 1999; Bradshaw, 2004), as

well as the board's choice of a new CEO (Finkelstein et al., 2009; Zajac & Westphal, 1996). To address the resulting endogeneity issue, I follow the approach in Wiersema and Zhang (2011) and Yu (2008) and use a two-stage process to create a proxy for the analyst measures that are uncorrelated with the firm's financial performance. First, I estimate the following model: Change in analyst recommendation (change in the percentage of sell and underperform recommendations and change in average analyst recommendation) = firm size + industry-adjusted ROA + stock return + time (year dummies). I then test the hypotheses using the residuals from the models as proxies for the change in percentage of sell and underperform recommendations and change in average analyst recommendation. As shown in Table 2, which presents the regression results that generate residuals to be used as proxies for my investment analyst measures, both models are highly significant. The change in percentage of sell and underperform recommendations is negatively related to stock return while the change in average analyst recommendation is positively related to stock return. The residuals from these models can be considered a component of the change in the firm's analyst recommendations that is uncorrelated with firm size, time period, and the firm's prior financial performance (Wiersema & Zhang, 2011; Yu, 2008). By utilizing these residuals as proxies for the explanatory variables, I address the potential endogeneity between the firm's analyst recommendations and prior financial performance.

Table 1
DESCRIPTIVE STATISTICS AND CORRELATIONS

	Variables	Me an	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Outsider CEO	0.27	0.45	1.00														
2	High status CEO	0.62	0.49	0.22	1.00													
3	Type of succession	0.35	0.48	0.34	0.14	1.00												
4	Firm size	23.02	1.26	0.12	0.07	0.01	1.00											
5	Industry adjusted ROA	0.05	0.11	0.05	-0.08	0.14	0.24	1.00										
6	Stock return	0.02	0.28	0.14	-0.04	0.22	0.14	0.11	1.00									
7	Percentage of outside directors	0.69	0.15	0.02	0.02	0.03	0.13	0.09	0.10	1.00								
8	Prior CEO tenure	8.95	6.87	0.09	0.00	0.22	0.10	0.06	0.04	0.16	1.00							
9	Prior CEO duality	0.84	0.36	0.02	-0.05	0.19	0.04	0.09	0.03	0.25	0.19	1.00						
10	Prior CEO stock ownership	1.34	2.51	0.07	-0.12	0.10	0.02	0.03	0.08	0.21	0.32	0.10	1.00					
11	Prior CEO origin	0.22	0.42	0.10	0.02	0.11	0.07	0.09	0.13	0.16	0.20	0.03	0.10	1.00				
12	Industry munificence	0.05	0.07	0.07	0.03	0.02	0.12	0.04	0.05	0.10	0.08	-0.11	0.03	0.02	1.00			
13	Industry dynamism	0.03	0.02	0.04	-0.02	0.05	0.09	0.22	0.03	0.07	0.01	0.02	0.03	0.01	0.21	1.00		
14	Change in percentage of sell and underperform recommendations	0.84	6.29	0.17	0.14	0.13	0.14	0.01	0.15	0.06	0.03	0.05	0.05	0.09	0.09	0.08	1.00	
15	Change in average analyst recommendation	0.06	0.26	0.17	-0.14	0.23	0.09	0.09	0.29	0.01	0.03	0.04	0.04	0.08	0.12	0.04	0.67	1.00

n = 302

Correlations larger than 0.11 are significant at the level of $p < 0.05$ and those larger than 0.15 are significant at the level of $p < 0.01$.

	Change in percentage of sell recommendations	Change in average analyst recommendation
Constant	11.23† (6.47)	-0.18* (0.25)
Firm size	-0.50† (0.28)	0.01 (0.01)
Industry adjusted ROA	4.09 (3.19)	0.02 (0.12)
Stock return	-3.19** (1.08)	0.22** (0.04)
Year 2001	0.15 (1.25)	-0.07 (0.05)
Year 2002	0.97 (1.27)	-0.18** (0.05)
Year 2003	5.69** (1.23)	-0.28** (0.05)
Year 2004	0.49 (1.12)	-0.06 (0.04)
Year 2005	-0.56 (1.14)	-0.05 (0.04)
R-square	0.17	0.26
F-statistic	7.45**	12.54**

All models also include time dummies.

Standard errors are reported in parentheses.

n = 302

Significance level: † p < 0.10, * p < 0.05, ** p < 0.01

RESULTS

Since both dependent variables are dichotomous, I employ a logit regression (Cohen et al., 2003). Table 3 presents the results testing the probability of the appointment of an outsider CEO. Model 1a is the control model and indicates that, as predicted, CEO dismissal is positively related, while firm size is negatively related, to the appointment of an outsider CEO. As shown in Model 1b, the coefficient for change in the percentage of sell and underperform recommendations is positive and significant ($b = 0.06$, $p < 0.05$). Since my model is a limited dependent variable model, it is “intrinsically non-linear” (Wiersema & Bowen, 2009, p. 681), and therefore the variable’s coefficient is not equal to its marginal effect on the dependent variable (Wiersema & Bowen, 2009). Thus, to test the hypothesis, I also need to analyze the direction and significance of the marginal effect of change in the percentage of sell and underperform recommendations on the appointment of an outsider CEO over all values of the model variables. I perform this additional analysis and find that the marginal effect proposed in Hypothesis 1a is indeed positive and significant ($b = 0.01$, $p < 0.02$). Thus, Hypothesis 1a, that

an increase in the percentage of investment analysts that issue a sell or underperform recommendation for the firm's stock prior to CEO succession will be positively related to the appointment of an outsider CEO, is supported.

As shown in Model 1c, the coefficient for the change in average analyst recommendation is negative but only marginally significant ($b = -1.09$, $p < 0.10$). I ran additional analysis to examine the direction and statistical significance of the marginal effect of change in average analyst recommendation on the appointment of an outsider CEO for all values of the variables in the model. The value of the marginal effect is marginally significant ($b = -0.19$, $p < 0.10$) when computed at the mean of all variables. These results provide marginal support for Hypothesis 1b, that a decrease in the average analyst recommendation for the firm's stock prior to CEO succession will be positively related to the appointment of an outsider CEO.

To test Hypotheses 2a and 2b, I ran a logistic regression model on high status CEO. I present the results in Table 4. Model 1a, the control model, shows that firm size is positively related to the appointment of a high status CEO, while prior CEO stock ownership is negatively related to the appointment of a high status CEO. In addition, Model 1a indicates that outsider CEO is positively related to the appointment of a high status CEO, and thus, as expected, a board that appoints an outsider CEO is more likely to select a CEO with high status.

As shown in Model 1b, the coefficient for change in the percentage of sell and underperform recommendations is positive and significant ($b = 0.06$, $p < 0.05$). In supplementary analysis examining the direction and statistical significance of the marginal effect of the change in the percentage of sell and underperform recommendations on the appointment of a high status CEO over all values of the model variables, I find that the value of the marginal effect is positive and significant (mean of $b = 0.01$, $p < 0.03$). Thus, Hypothesis 2a, that an increase in the percentage of investment analysts that issue a sell recommendation for the firm's stock prior to CEO succession will be positively related to the appointment of a high status CEO, is supported.

As can be seen in Model 1c, the change in average analyst recommendation is negatively and significantly correlated with the appointment of a high status CEO ($b = -1.25$, $p < 0.05$). Supplementary analysis examining the direction and statistical significance of the marginal effect of change in average analyst recommendation on the appointment of a high status CEO over all values of the model variables finds that the marginal effect is negative and significant (mean of $b = -0.29$, $p < 0.05$). These results provide support for Hypothesis 2b, that a decrease in the average analyst recommendation for the firm's stock prior to CEO succession will be positively related to the appointment of a high status CEO.

	1a	1b	1c
Constant	5.64† (3.10)	6.00† (3.14)	5.77† (3.11)
Type of succession	1.77** (0.32)	1.78** (0.33)	1.73** (0.33)
Firm size	-0.32* (0.13)	-0.33* (0.13)	-0.32* (0.13)
Industry adjusted ROA	0.79 (1.43)	1.09 (1.45)	0.88 (1.45)
Stock return	-0.76 (0.56)	-0.66 (0.56)	-0.57 (0.57)
Percentage of outside directors	-1.61 (1.08)	-1.75 (1.09)	-1.48 (1.09)
Prior CEO tenure	-0.02 (0.02)	-0.01 (0.02)	-0.02 (0.02)
Prior CEO duality	0.35 (0.43)	0.22 (0.44)	0.30 (0.43)
Prior CEO stock ownership	0.10† (0.06)	0.11† (0.06)	0.11† (0.06)
Prior CEO origin	0.31 (0.35)	0.27 (0.35)	0.25 (0.35)
Industry munificence	-0.43 (2.36)	-0.73 (2.43)	-0.72 (2.38)
Industry dynamism	-1.67 (6.66)	0.73 (6.87)	-1.23 (6.75)
Residual of change in percentage of sell and underperform recommendations		0.06* (0.03)	
Residual of change in average analyst recommendation			-1.09† (0.67)
Log likelihood	-148.24	-145.04	-146.86
Pseudo R-square	0.17	0.18	0.17
Chi-square	58.68**	65.07**	61.44**

All models also include time dummies.

Standard errors are reported in parentheses.

n = 302

Significance level: † p < 0.10, * p < 0.05, ** p < 0.01

	1a	1b	1c
Constant	-4.67† (2.70)	-4.34 (2.73)	-4.58† (2.72)
Type of succession	0.15 (0.31)	0.17 (0.31)	0.11 (0.31)
Firm size	0.22† (0.11)	0.21† (0.11)	0.22† (0.11)
Industry adjusted ROA	-2.08† (1.23)	-2.08† (1.27)	-2.15† (1.27)
Stock return	0.09 (0.50)	0.19 (0.50)	0.26 (0.51)
Percentage of outside directors	0.45 (0.94)	0.36 (0.96)	0.51 (0.95)
Prior CEO tenure	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Prior CEO duality	-0.19 (0.40)	-0.29 (0.41)	-0.21 (0.40)
Prior CEO stock ownership	-0.12* (0.06)	-0.12* (0.06)	-0.12* (0.06)
Prior CEO origin	0.13 (0.33)	0.09 (0.33)	0.08 (0.33)
Industry munificence	0.94 (2.07)	0.40 (2.10)	0.30 (2.11)
Industry dynamism	-0.11 (6.55)	1.73 (6.64)	0.45 (6.6)
Outsider CEO	1.34** (0.35)	1.26** (0.36)	1.30** (0.35)
Residual of change in percentage of sell and underperform recommendations		0.06* (0.03)	
Residual of change in average analyst recommendation			-1.25* (0.62)
Log likelihood	-181.77	-179.18	-179.70
Pseudo R-square	0.09	0.11	0.10
Chi-square	37.79**	42.97**	41.92**

All models also include time dummies.

Standard errors are reported in parentheses.

n = 302

Significance level: † p < 0.10, * p < 0.05, ** p < 0.01

DISCUSSION

This study sought to develop a richer understanding of the board's appointment of a new CEO by considering the influence of investment analysts. Since executive succession leads to increased uncertainty regarding the strategic direction and leadership of the firm, investment analysts, as knowledgeable experts with "prominent and legitimate platforms for rendering assessment of firms and the individuals associated with them" (Wiesenfeld et al., 2008, p. 234), are likely to influence the board's appointment of a new CEO in two ways. First, they provide a board composed predominantly of outside directors, who lack a full understanding of the competitive challenges facing the firm or the capabilities of its top management team, with additional information that can facilitate the board's ability to assess the requisite capabilities needed in the next CEO. Second, because of their perceived expertise and independence, analysts constitute a visible and legitimate authority and as a result, the board will select a CEO to appease this important constituent.

This study contributes to the CEO succession literature by examining the role of investment analysts in influencing the board's selection of a new CEO. As prominent information intermediaries in the financial market, investment analysts are known to influence the board's assessment of the firm's leadership (Farrell & Whidbee, 2003; Puffer & Weintrop, 1991). While prior research has shown that analysts' recommendations can be influential in the board's decision to dismiss or retain the firm's CEO (Wiersema & Zhang, 2011), my study is the first to show that analysts' recommendation can also influence the board's selection of a new CEO. Specifically, negative recommendations by conveying a loss of confidence in the strategy of the firm and its leadership, as well as questioning the appropriateness of the firm's strategy, is more likely to lead to the appointment of an outsider CEO. Prior research has shown that poor firm performance, CEO dismissal, as well as board independence increase the likelihood of the appointment of an outsider CEO (Cannella & Lubatkin, 1993; Cannella & Shen, 2001; Denis & Serrano, 1996; Parrino, 1997; Wiersema, 2002; Zhang & Rajagopalan, 2004). Independent of these firm-specific factors, this study finds that investment analysts play an influential role in the board's decision to promote from within or recruit externally.

In addition, because of their perceived expertise and independence, analysts constitute a prominent and legitimate authority. Since negative recommendations convey that the firm's strategy may not be appropriate, it poses a threat to the firm's legitimacy, which is likely to influence the board in their selection of a new CEO. To conform to expectations of appropriate behavior, and thereby enhance the firm's legitimacy, the board will be more likely to appoint a high status CEO. Specifically, a small downgrade in the average analyst recommendation (i.e., strong buy to buy, buy to neutral, neutral to underperform, and underperform to sell) leads to a 24% increase in the probability of an outsider appointment and a 28% increase in the probability of a high status CEO appointment. A 25% increase in the percentage of sell and underperform recommendations leads to a 32% increase in the probability of an outsider appointment and a 26% increase in the probability of a high status CEO appointment. Whereas past research has shown that high status executive appointments may be used to enhance a firm's legitimacy prior to going IPO (Cohen & Dean, 2005; Higgins & Gulati, 2006; Lester et al., 2006), this study indicates that legitimacy concerns may also influence executive succession in large, publicly traded firms.

My study also contributes to the executive succession literature by incorporating the role of status. Prior research has focused on organizational origin (i.e., insider versus outsider) and industry background of newly appointed CEOs (Davidson et al., 2002; Zhang & Rajagopalan,

2003). This study indicates that an executive's status – as indicated by affiliations with prestigious institutions – is an important attribute that boards also take into account. Since high status individuals are afforded respect and esteem by others (Magee & Galinsky, 2008), are perceived to be competent (D'Aveni, 1990; D'Aveni & Kesner, 1993), and are prominent (Anderson et al., 2001), the board is likely to be sensitive to this attribute in selecting a new CEO. When the appropriateness of the firm's strategy is questioned due to negative analyst recommendations, the board may seek to conform to expectations of acceptability by appointing a high status CEO. Given that boards are under immense pressure in selecting the firm's next CEO, a high status CEO appointment may mitigate concerns over the appropriateness of their choice. In this way, my research serves to highlight the role that status can play in executive succession and thus raises attention to its importance in management research (Chen et al., 2012).

In focusing on the role of contextual factors on executive succession, my study sheds light on one of the most important decisions made by the board – who to appoint as the company's CEO. The findings provide evidence that investment analyst stock recommendations play a significant role in these appointments in that they can influence whether the board promotes from within or recruits externally. When investment analysts are less positive about the firm, the board is more likely to appoint someone from outside the firm, who is not tainted or held accountable for the company's current financial and competitive situation. In addition, the findings reveal that boards are sensitive to the prestige or status of the individual that they appoint as CEO. When the firm suffers a decline or lower assessment by investment analysts, an executive with an elite educational degree, board seats or prior employment at an S&P 500 firm is more likely to be appointed. Thus, my study provides insight into the consideration and evaluation that the board conducts prior to the appointment of a new CEO.

FUTURE RESEARCH AND CONCLUSION

This paper's findings, that investment analysts' stock recommendations play a role in a board's selection of a new CEO, suggest several intriguing avenues for future research. For instance, I argue that investment analysts can influence a firm's board of directors due to their expertise (Zuckerman, 1999), independence (Fogarty & Rogers, 2005), and the wide dissemination of their opinions (Groysberg & Lee, 2008; Michaely & Womack, 1999; Pollock & Rindova, 2003; Stickel, 1995). Future research may examine how other stock market participants who are considered experts, independent, and whose opinions on the future prospects of firms are widely known, influence the appointment of a new CEO. In particular, future research on the role of institutional investors (e.g., university endowments, insurance companies, investment banks, pension funds) on the appointment of a new CEO might yield new insights, given their expertise on firms' future prospects (Nofsinger & Sias, 1999; Wermers, 1999), and their importance in the stock market (Gillman & Starks, 2007; Gompers & Metrick, 2001; Hotchkiss & Strickland, 2003) and firm governance (Jensen & Roy, 2008; Westphal & Bednar, 2008).

Future research may also examine whether analysts differ in their impact on the appointment of a new CEO. Research has found that prestigious investment analysts (i.e., those listed on Institutional Investor magazine's annual list of top analysts) have a greater influence on executives (Westphal & Clement, 2008), board members (Westphal & Graebner, 2010; Wiersema & Zhang, 2011), and other investment analysts (Hernsberger & Spiller, 2016) than non-prestigious analysts. Future research that analyzes the impact of these especially influential investment analysts on a board's selection of a new CEO may provide new and important insights.

Finally, future research may help us gain a better understanding of CEO appointments by disaggregating the various components of managerial prestige: prestige derived from employment affiliations, board affiliations, and educational affiliations. While this paper follows extant research in the measurement of an executive's prestige by aggregating the various sources of managerial prestige into a single measure (Chen et al., 2008; Pollock et al., 2010), scholars have begun to speculate that the sources of managerial prestige may have a differential impact on an executive's prestige (Acharya & Pollock, 2013). Future research examining each of the components of managerial prestige independently may help us gain additional insight into the influence that outsiders have on the board's appointment of a new CEO.

In conclusion, this study is the first to examine the role of investment analysts' recommendations in influencing the board's selection of a new CEO and highlights the importance of investment analysts as both knowledgeable experts and as legitimating authorities. The selection of a new CEO is a highly visible and important board decision that is fraught with uncertainty. Due to the board's lack of complete knowledge and information regarding the firm's future prospects as well as the capabilities of its top management, analysts' recommendations provide the board with credible and valuable information that can assist the board in their selection of a new CEO. In addition, because analysts are a prominent legitimizing authority on the firm, the board is likely to select a CEO to appease this important constituent. My research thus provides new insights into the importance of contextual factors that may influence these appointments.

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VIEWING THE MILES AND SNOW FRAMEWORK THROUGH A REAL OPTIONS LENS

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ABSTRACT

Research has demonstrated that the use of real options can benefit firms. Real options – sometimes known as strategic options – are situations firms create that give them flexibility in that they have the possibility of pursuing a certain course of action but not the obligation of doing so. The concept of real options is similar to that of financial options, in that in both cases the firm has a right to act in a particular way, but is not required to do so. Despite findings that the use of real options can benefit firms, few managers actually employ this approach, in large part because they find the concept vague and difficult to apply. The present article seeks to narrow the gap between the theoretical benefits to managers and firms of employing real options, and their limited use in practice by viewing the Miles and Snow framework of organizational strategy through a real options lens. A model is developed identifying types of real options that are likely to be more effective for different organizational types in different environments. Opportunities for further research are discussed.

INTRODUCTION

Over the past three decades scholars from both strategic management and corporate finance have explored the topic of “real options.” A real option is a situation in which a firm has a right but not an obligation to pursue a particular course of action. As opposed to financial options, in which a firm has the right to buy or sell a particular subject for a certain period of time at a certain price, a real option represents a strategic path that the firm may take. Examples of real options include joint ventures, platform investments in new technologies, and the development of new organizational capabilities. In each of these examples, the firm has the freedom (option) to take (or not take) certain actions in the future.

Researchers have shown an increasing interest in using the concept of real options to explain phenomena and build theory. It has been argued that the option value contained within real (non-financial) investments should supplement traditional NPV analysis (Myers, 1977; Trigeorgis, 1996). Several studies have examined how real options can be used to reduce risk and or provide flexibility in uncertain environments. Research has examined how real options can be used to understand joint ventures and other equity partnerships (Kogut, 1991; Folta & Miller, 2002), social uncertainty in alliances (McCarter, Mahoney & Northcraft 2011), the choice of governance mechanisms (Folta, 1998; Folta & Miller, 2002), network effects (Chintakananda & McIntyre, 2014), and entrepreneurship (McGrath, 1999; O’Brien, Folta & Johnson, 2003).

However, these theoretical contributions have often failed to be adopted by practitioners. Many managers do not have a clear understanding of what real options are, and how they can be applied to increase firm effectiveness. Part of the problem is that real options seem to be a vague concept that is difficult for people to “get their mind around.” Also, there is not yet a widely

agreed upon “Theory” for real options or when they should be applied. As long ago as 2004, it was suggested that a widely agreed upon theory for real options and when they should be applied had not been developed (Adner & Levinthal, 2004a). Such is still the case. The purpose of this paper is to clarify what real options are, describe the types of real options, and, through use of an organizational framework, develop a model that will make real options a more tractable concept for practicing managers to apply.

The Miles and Snow organizational framework – developed to help academics and practitioners alike to better understand organizations – is used to illustrate the concept and utility of real options (Miles & Snow, 1978). This paper seeks to show how understanding an organization will allow managers to better recognize and appropriately utilize real options when allocating resources under conditions of uncertainty. As managers better understand the adaptive cycle and the strategy typology as described by Miles and Snow (1978), and as they understand how to view their organizations from a real options perspective, they will be better able to allocate resources and invest in changing technological, market and competitive environments. In these situations, real options allow managers to limit the downside without limiting the upside potential of their investments, preserve strategic and operating flexibility and improve firm performance.

WHAT ARE REAL OPTIONS?

Most people probably know the term “option” with regard to Financial Theory. At its simplest, an option is the right, but not the obligation, to take some future action. From a financial perspective the underlying subject that is connected to an option is usually a stock, bond or a certain commodity. Financial options may be either call or put options. A put option is the right but not the obligation to sell a particular subject at a certain price for a certain period of time. A call option is defined as the right but not the obligation to buy a certain subject at a certain price for a certain period of time. These options may be either “American” or “European.” American options can be exercised anytime up to the expiration date, while European options can only be exercised at the expiration date.

A firm may also adopt strategic options, which are known as real options. Theoretically, following our earlier definition of financial put and call options here, we would say that real options provide the owner of such option with the right but not the obligation to make future decisions related to real (non-financial) assets.

Valuing Real Options

The formal real options pricing theory borrows its logic and mathematics from the Black-Scholes options pricing formula in Financial Economics (Black & Scholes, 1973). A complete analysis is outside the scope of the present discussion, but briefly we can say that the formula states that the value of an option (a call option) can be determined from the following variables: The present price of the underlying asset, the exercise price of the option, the variance in returns, the time to maturity, and the risk-free interest rate. Two keys here are 1) that the variance in the returns on the investment are positively correlated with the value of the option, and 2) that the length of time also has a positive correlation with the value of the option. In short, the more uncertain the returns on the investment, the more value the option has. In addition, the longer you can maintain an option on an uncertain investment, the more value that option has.

Myers was the first to borrow the concept of a financial option and introduce it to the management literature (1977). He recognized that an investment today in an uncertain environment not only provides the present value of the expected cash flows, but also provides valuable “growth opportunities” (Myers, 1977: 150). Similar to financial options, downsides could be limited, upsides could remain unlimited, and options would be more valuable when there is more variance in the expected return on an investment.

As a result of Myers' observations, others recognized that NPV analysis had its shortcomings when applied to management decision making (Hayes & Garvin, 1982). Trigeorgis (1993) attempted to improve what by then had been recognized as deficient NPV analysis. Trigeorgis, though, made his suggestions explicit with what he called an “expanded (strategic) NPV” formula. While the full details of the formula are not necessary for this discussion, they entail taking the traditional (static) NPV formula and adding to it the value of options that could be achieved due to active management (Trigeorgis, 1993: 203).

Types of Real Options

Real options vary with regards to whether they are analogous to American call options and therefore “upside-potential”, or whether they are analogous to American put options and “downside-protecting” (Trigeorgis, 1993: 203). In addition, real options differ with regards to whether they are “incremental” in nature and require additional future investment (after learning has occurred) in order to exercise the option, or whether they are “flexibility” options requiring upfront investment but providing future product or process flexibility (Sharp, 1991). Although multiple categorizations of real options exist, Trigeorgis' seven categories are the most widely recognized (Mahoney, 2005). They are the following: 1) option to defer investment, 2) option to default during staged investments, 3) option to alter operating scale, 4) option to abandon, 5) option to switch inputs or outputs, 6) option to grow, and 7) multiple interacting options.

The option to defer is analogous to an American call option. Here, management holds a lease or option to buy valuable land or resources or can wait to decide whether or not to build a new plant until after learning whether output prices would justify such an investment. These “upside-potential” options are common in natural resource extraction industries, farming, and real estate development, and are most valuable when uncertainty is great and the initial projected cash flows that would be lost due to postponing investment are small (Trigeorgis, 1996: 2; Mahoney, 2005: 210).

The option to default during staged investments is an incremental, “downside-protecting” option in which capital investment is staged as a series of outlays over time. This creates valuable options to default at any given stage if new information is unfavorable. These options are common in pharmaceuticals and other R&D intensive industries, in long-development construction projects, and in venture capital financing.

The option to alter operating scale consists of three related options – the option to expand, the option to contract, and the option to shut down / restart operations. The first, the option to expand, is an incremental “upside-potential” option providing the firm the ability to expand production if market conditions become more favorable than expected. The second, the option to contract, is an incremental “downside-protecting” option providing the firm with the ability to contract the scale of operations if market conditions become less favorable than expected. The option to shut down / restart operations can be thought of as an incremental “upside-potential” option on the cash flows to be gained by restarting operations after they have

been halted temporarily. These options are common in mining, construction in cyclical industries, fashion apparel, consumer goods, and commercial real estate.

The option to abandon is a “downside-protecting” option providing management with the ability to permanently shut down operations if market conditions decline severely. In this situation, capital assets would be sold for their salvage value in secondhand markets. These options are common in capital-intensive industries such as airlines and railroads, in financial services, and in new product introductions in uncertain markets. As Mahoney (2005: 213) notes, this option should not be exercised lightly, as abandonment could result in the erosion of valuable organizational capabilities that could be put to use elsewhere in the business. The erosion of expertise and organizational capabilities could also prevent a firm from participating in new technological developments, and the abandonment could lead to the loss of goodwill with customers.

The option to switch inputs or outputs is a “downside-protecting” flexibility option providing management with either process or product flexibility. Process flexibility can be achieved through technology, for example by building a facility capable of switching among alternative energy inputs. It can also be achieved by maintaining relationships with multiple suppliers and by maintaining the ability to produce in multiple locations. This flexibility is of value because it allows the firm to switch among various inputs and suppliers as their relative prices change. The ability to switch manufacturing between multiple countries as a response to changes in real exchange rates has also been shown to have option value (Kogut & Kulatilaka, 1994a). These options are common in feedstock-dependent facilities, crop switching, and in the electric power and chemical industries. Product flexibility allows the firm to change output mix according to changes in market price or demand. This flexibility is valuable in industries where differentiation and product diversity are important and/or demand is volatile. Examples of these industries include consumer electronics, toys, and automobiles.

The option to grow is an incremental “upside-potential” option in which an early investment is a prerequisite for later investment opportunities. For example, a firm may not be able to invest in the second generation of a high-tech product without first having invested in the first generation. The experience and knowledge gained and infrastructure developed during the first generation make the second generation possible. This option also applies to international expansion. A firm’s first expansion beyond its domestic market may be a challenging experience, but learning how to adapt and overcome trade, regulatory, cultural, and supply chain issues will make later international expansion into additional product and geographic markets more successful (Chang, 1995). These options are common in high-tech industries such as computers and pharmaceuticals (McGrath & Nerkar, 2004), and in multinational operations.

Multiple interacting options – real-life projects may involve a collection of options that are both “upside-potential” and “downward-protecting.” Their combined value to the firm is not simply the sum of the option values, but depends upon their interactions. Interactions may also occur with financial options possessed by the firm. These interacting options occur in most of the industries listed above.

Real Option “Reasoning”

While the above categories of real options are predominantly viewed from the perspective of formalized (quantitative) option pricing theory as proposed by Trigeorgis (1996), some management scholars have proposed that simplified decision-making heuristics be

developed (Bowman & Hurry, 1993; McGrath, Ferrier & Mendelow, 2004; Li, James, Madhavan & Mahoney, 2007). Viewing resource investment decisions with a real options “lens” provides an “economic logic for the behavioral process of incremental resource investment” (Bowman & Hurry, 1993: 760). In using a real options “lens”, also referred to as real options “reasoning”, managers take into account the value of preserving the right to make future choices under uncertain conditions without attempting to perform extended net present value or other calculations. Managers develop a way of thinking where they are more willing to undertake risky projects, more likely to sequence investments in multiple phases, and more likely to be proactive in preserving flexibility.

Importance of Real Options to Organizations

So why are real options important to organizations? As stated previously, they can help firms to manage the risks inherent in their investments. They do this by limiting the downside of investments, but not limiting the upside. Certain types of real options also emphasize helping the firm to remain flexible. This might be accomplished by, for example, a firm establishing a variety of possible manufacturing locations, or employing a highly-skilled workforce. In short, real options may provide a firm with a variety of methods for “keeping its options open” in uncertain environments, and by doing so allow firms to remain flexible, preserve their ability to grow, expand into new markets, explore new technologies and markets, and even divest unattractive investments.

Why are Real Options Underutilized in Practice?

Despite the potential benefits to firms in terms of managing uncertainty, preserving operating and strategic flexibility, and assisting managers in allocating resources and making decisions to improve firm performance, real options are underutilized in practice. In their review of several recent surveys, Krychowski and Quelin (2010: 66) find that, although 75-85% of firms used traditional NPV analysis for their investment decisions, only 6-27% of firms used real option analysis. Similarly, Ragozzino and Moschieri (2014) find that firms seldom apply the real options logic of staging their investments in the context of mergers and acquisitions.

Why this disconnect between theory and practice? First, the analogy between financial options and real options may be imperfect (Ragozzino & Moschieri, 2014: 31; Bowman & Moskowitz, 2001: 774-775). For example, financial options have a precise strike date or expiration date while real options generally do not. It has been argued (Adner & Levinthal, 2004a) that this lack of an expiration date may make managers susceptible to escalation of commitment and other decision making biases when implementing real options. Also, the formal option models that have been borrowed, and expanded upon, from financial economics have become increasingly complex. It is quite understandable then that “managers – and even many academics – do not have the mathematical skills necessary to use real option valuation models comfortably and knowledgeably” (Krychowski & Quelin, 2010: 72; Lander & Pinches, 1998).

Complexity arising due to interdependencies between a firm’s real options may also make this concept less tractable and more difficult to apply in practice. For example, in the face of industry uncertainty, managers may be caught between the “option to defer” and the “option to grow” (Folta & O’Brien, 2004). The option to defer would argue against entering a new industry in the face of uncertainty, while the option to grow may argue in favor of more

aggressive entry, particularly when first mover advantages exist. In addition, when a firm possesses multiple real options, the total value of these options to the firm will not be additive, but will depend upon interactions between the options (Anand, Oriani & Vassolo, 2007).

Additional implementation issues have to do not with computational complexity, but with difficulty managers have in recognizing the many decisions and opportunities they encounter with option-like characteristics (Krychowski & Quelin, 2010; Bowman & Hurry, 1993). This may at times be caused by a lack of awareness, but it may also be caused by uncertainty and ambiguity surrounding the concept and lack of consensus as to what constitutes a real option that makes it difficult for managers to internalize this concept and develop a real options mindset. It is also possible that this lack of clarity with regards to what constitutes a real option causes managers to doubt their value, and causes organizations to not develop the structures and managerial know-how required using real options.

In conclusion, when boundedly-rational managers are faced with the uncertainty and complexity surrounding real options, it appears that underutilization of this often valuable concept will result. What is needed then is a model that will organize and simplify the organizational and competitive environments that managers face. This will lessen the demands on bounded rationality, thereby allowing managers to better recognize decisions and investments with option-like characteristics. It will furthermore assist managers in making more judicious decisions with regards to when to acquire, and when to exercise, these real options. We use the Miles and Snow Framework to assist in the development of such a model.

THE MILES AND SNOW FRAMEWORK

In 1978 Miles and Snow made two major contributions. First, they identified an adaptive cycle that organizations need to move through, involving three "problems" that organizations need to solve. Second, they developed a framework that can be used to categorize companies into four different strategic types of organizations: Defenders, Prospectors, Analyzers and Reactors. An organization's effectiveness is in part a function of the match of its strategy to environmental characteristics. Also, according to Miles and Snow, an organization's strategy determines how it deals with each of the stages of the adaptive cycle.

The Adaptive Cycle

Miles and Snow describe a dynamic process by which organizations continually adjust to their environments (Miles & Snow, 1978: 11). This adaptation can be thought of as a cycle because an organization might first solve its entrepreneurial problem (of choosing a domain), then solve the associated engineering problems, and finally solve the administrative problems, which involves finding the proper systems to coordinate and manage the structures and processes that have been implemented. Eventually, the organization will perceive the need to solve new entrepreneurial problems, and the entire process will be repeated – thereby creating a cycle.

The Entrepreneurial Problem

According to Miles and Snow, the entrepreneurial problem involves choosing an “organizational domain: a specific good or service and a target market or market segment” (Miles & Snow, 1978). Miles and Snow state that it “becomes evident” when management has accepted a solution to the entrepreneurial problem because there will be a commitment of resources.

When viewed through the real option lens, this “commitment of resources” is seen as an opportunity to employ real options. Since the entrepreneurial problem is primarily considered in a growing or innovative environment, when there is a perceived need to adapt (Fjeldstad, Snow, Miles & Lettl, 2012), this implies that there may be an opportunity to use real options (changing environment, uncertain payoff to investment in underlying asset) (McGrath & MacMillan, 2009). One method of using real options to solve the entrepreneurial problem is to use joint ventures (Kogut, 1991). Instead of top management deciding on a solution (in this case an acquisition), campaigning throughout the company for its approval, and then making a major commitment of resources, they can take another approach. A joint venture may be a less expensive, safer approach, which often has the properties of an option (Kogut, 1991; Folta & Miller, 2002; Bowman & Hurry, 1993), since it preempts rivals and facilitates a future acquisition of the joint venture partner (*if* this becomes a more attractive investment).

The Engineering Problem

The engineering problem can be characterized as “throughput processing” (Hambrick, 1983) and as “operationalizing management’s solution to the entrepreneurial problem” (Miles & Snow, 1978). When management chooses a new product-market domain (entrepreneurial solution), there will often be a concurrent need for a new technology and/or process (engineering solution) to help implement it.

This is another instance where real options may prove useful. Clearly, solutions to this problem will often involve a major allocation of resources, and at a time of change for the organization involved. One example of how real options could benefit an organization in this case would be if management used a lease with an option to buy (or any contractual arrangement which postponed a major financial commitment to the new technology until after it had proven to be effective). Another example of how organizations could benefit from real options would occur when the engineering problem of choosing a new process is being solved. If two different processes have similar levels of efficiency, but one has the added benefit of providing future flexibility, then this flexibility will be taken into consideration. To illustrate this point, in the auto industry there are various levels of automation in the different firms. More-automated production and less-automated production have been shown to have similar levels of efficiency, with more-automated production being marginally better under optimal conditions. In the past (and still), many auto makers have invested heavily in automation in an effort to gain a marginal increase in productivity. More recently, though, Toyota Motor Company has begun to realize both the short-term and long-term flexibility that can be provided by maintaining less-automated production capabilities (Trudell, Hagiwara & Jie, 2014).

The Administrative Problem

Solving the administrative problem involves “two somewhat conflicting functions” (Miles & Snow, 1978). First, the organization needs to reduce uncertainty by rationalizing the activities which are currently in place, and which are currently successful at solving problems. Second, the organization should ideally be able to ensure that by rationalizing the current activities they are not losing their ability to adapt in the future (Miles & Snow, 1978).

Real options can be particularly helpful when the organization is attempting to perform this second function (preserving the ability to adapt in the future). Perhaps here some relatively minor investments in human capital (Kogut & Kulatilaka, 1994b) can serve as an option. Employee training that taught flexible skills, as well as promoted a flexible mindset could have the properties of an option. The small current investment in training gives the organization the future ability to implement whatever future systems will be most efficient.

The Miles and Snow Typology

Miles and Snow identified four organization types, each with its own strategy for responding to the environment, and each with a particular configuration of technology, structure, and process (Miles and Snow, 1978: 29). The three main strategic types (Prospector, Analyzer, Defender) are often described as though they are discrete, but they actually exist on a continuum that ranges from innovativeness (Prospector) to efficiency (Defender). We can describe the “pure” types of each strategic type, but there are likely to be many instances where innovation should be a priority, but where some degree of attention should also be paid to maintaining efficiency, and vice versa. In terms of the adaptive cycle, all strategic types face all the problems (entrepreneurial, engineering, and administrative), but to different degrees, which vary as a result of environmental demands.

Prospectors

At the most innovative end of the Miles and Snow typology are Prospector firms. Prospector firms are often the “creators of change” (Miles & Snow, 1978; Hambrick, 1983) in their industries. They focus on innovation, and on solving their entrepreneurial problems. The managers of Prospector organizations perceive more change and uncertainty in their environment than do Analyzers and Defenders, and are frequently looking for potential opportunities, whether it is in their current domain, or in some new market.

This high degree of perceived uncertainty can be self-fulfilling. Since they perceive uncertainty and the need to innovate, Prospectors increase the rate of change in their industry. As the formerly slow-moving industry begins to change at a faster rate due to the activities of the Prospector, the uncertainty and the potential opportunities will also increase.

Prospectors require flexibility when solving their engineering problems. They seek to avoid long-term commitments to a single technology, and will only do so when new products have been well-developed (Miles & Snow, 1978), thereby reducing the uncertainty of the entrepreneurial problem.

Similarly, the administrative system of Prospectors develops as a result of the need to remain flexible and promote change in the organization. In contrast with other types of organizations, in which management may seek to increase control or efficiency, the Prospector

realizes that it must enable the organization to deal with the constant change that is being introduced.

Prospector organizations are not always successful. In fact, the study conducted by Hambrick (1983) shows that Prospector organizations are not the most profitable, and that, except for certain innovative industries, they are actually the least profitable organizations. It may very well be that, as Prospector strategies were employed at the time of Hambrick’s study, they were in fact “overpaying” for their flexibility, and “buying” market share (Hambrick, 1983). Clearly a strategy should be suitable for its environment, and a pure Prospector strategy would not be the most effective in a mature, non-innovative industry.

There are many ways in which real options can be used to reduce uncertainty and/or increase upside potential of investments made by Prospector organizations (see Table 1). In fact, the Prospector organization is likely to be the most frequent user of real options. Hambrick (1983) states that there are times when the Prospector is overpaying for the flexibility and level of innovation that it employs, and concluded that the Prospector strategy was generally the least effective. If real options could be employed in a way so that the flexibility and innovation were maintained, but the resource allocation and expense were reduced, then the Prospector organization would become more profitable relative to the other types of organizations described by Miles & Snow.

Table 1				
REAL OPTIONS AND THE MILES & SNOW FRAMEWORK				
Adaptive Cycle “Problems”	Strategy Typology			
	Prospectors	Analyzers	Defenders	Reactors
Entrepreneurial	<ul style="list-style-type: none"> • Option to grow • Option to default • Option to defer 	<ul style="list-style-type: none"> • Balanced approach (see Prospector and Defender columns) 	<ul style="list-style-type: none"> • Option to abandon • Option to alter scale • Option to grow 	<ul style="list-style-type: none"> • Unstable org. type • Can options help? Depends upon reasons for instability.
Engineering	<ul style="list-style-type: none"> • Option to switch • Option to defer • Option to abandon 		<ul style="list-style-type: none"> • Option to defer • Option to abandon • Option to grow 	
Administrative	<ul style="list-style-type: none"> • Option to switch • Option to grow 		<ul style="list-style-type: none"> • Option to alter scale • Option to grow 	

Where this analysis differs from that of Hambrick (1983) is in its emphasis on using the Prospector strategy to the correct degree and in the most efficient manner possible, using real options where possible. For example, although the Prospector often experiments with several possible new products or technologies when it is searching for the next innovation, this is not always done in the most efficient manner. In some instances, real options could be employed to preserve the future possibility of entering an innovative market without allocating a significant amount of resources during the early, uncertain stages of development. Also, this

experimentation would be more efficient, and would be more option-like, if it were conducted in stages, as opposed to a single (large) investment (Bowman & Hurry, 1993; McGrath, 1997).

Defenders

At the other end of the innovation-efficiency continuum are Defenders. In many ways, the Defender is the exact opposite of the Prospector. This organization prospers in a stable environment, and considers its entrepreneurial problem a problem of figuring out how to carve out a niche and keep competitors away from its share of the market. The primary focus here is on solving the engineering problem. These organizations know that they will be developing few innovative products, so when solving their administrative problem, they focus on finding ways to minimize costs and maximize efficiency. Production specialists are employed, along with formal hierarchical channels and other methods of ensuring strict control.

It is a common belief in strategic management that the Defender strategy is an effective strategy to employ in a stable environment (Miles & Snow, 1978; Hambrick, 1983). The reasoning is that there is greater current profitability than with a Prospector strategy, while being exposed to little danger due to the lack of flexibility. In Hambrick's study (1983), he concludes that the Defender strategy is generally more effective (higher performance) than the Prospector strategy, except perhaps when increased market share is a primary goal.

As with any strategy, the Defender strategy involves tradeoffs. The question is how much current profitability should be sacrificed in order to maintain the future flexibility of the organization? Or, how much flexibility should be sacrificed (in an environment that is perceived to be stable) to improve current profitability?

Organizations need to analyze many factors before answering these questions. They need to analyze the environment, the competition, possible future changes in the market, along with considering the strengths of the organization. In addition, the organization needs to determine its goals and priorities. Do they want to maximize current profits at any expense? Do they want stability? Protection? Flexibility which will allow them to capitalize on possible future opportunities?

One consideration that is often overlooked in the literature is the time value of money. Prospectors and Defenders perceive different levels of uncertainty and opportunity in the environment, which means that they are at least implicitly applying different discount rates when comparing current to future streams of revenue. In situations where a high discount rate causes the present value of future revenue payments to be low and there is a stable environment, it may be rational to forgo flexibility in order to increase current profitability.

After all of these factors have been accurately considered, a pure Defender strategy will seldom be the optimal choice. If the factors are such that the long-term survival of the organization is a consideration, then this must be taken into consideration. It is not likely that there are many industries where the discount rates are such that the future revenues, and even the survival of the organization, are irrelevant. The problem is that Defenders perceive different levels of uncertainty and opportunity in the environment, and are not willing to pay the same price as Prospectors for flexibility. It is reasonable to expect that, at some lower price, (pure) Defenders would indeed be willing to purchase some degree of flexibility.

This is where real options can assist Defenders. They can lower the price of flexibility to the point where, even though it is not valued as highly by Defenders, some degree of it will still be purchased. It is our viewpoint that all Defenders should purchase what might be called a

“survivorship level” of options – options that would have an organization prepared to deal with drastic changes in its environment (see Table 1). There are not many (if any) industries where a niche can be carved out and defended for the decades necessary to make flexibility irrelevant. Even if this was true at one point in history, it is no longer true today. In even the most stable and mature industries, there are many examples of drastic market changes for which organizations and industries were unprepared. Consider the effect that the oil shock of 1973-1974 had on the U.S. auto industry. Previous to this oil shortage, the “Big Three” had a commanding share of the U.S. market, and had little concern for building fuel efficient automobiles. Since they were unprepared for the possibility of an oil shock, the U.S. automakers allowed the Japanese automakers to get a foothold in the U.S. market. They have been continually losing market share ever since. A few other examples include the unexpected popularity of personal computers and their effect on mainframe computers in the 1980’s, the effect of digital imaging on film-based photography throughout the 1990’s and early 2000’s, and the impact of video streaming on dvd rentals over the past decade.

Analyzers

In the middle of the innovation-efficiency continuum are Analyzers. This type of organization seeks to strike a balance between the two extreme positions of Prospector and Defender. This strategy can be complex to implement, with its need to coordinate both stable and innovative areas within the same organization. If done properly, though, this has been shown to be an effective strategy (Hambrick, 1983). As an imitator, this organization will innovate nearly as fast as the Prospector (although with no first-mover advantages), and with an operating efficiency close to that of the Defender.

The focus of this paper is less on the Analyzer strategy than on the two extreme strategies of Prospector and Defender. Since all three of these strategies exist on a continuum (with Analyzer in the middle), the majority of the analysis regarding the Prospector and Defender strategies will also hold (to varying degrees) for the Analyzer strategy.

Reactors

A Reactor strategy is not a viable long-term strategy, but real options could also improve the performance of these organizations. Miles and Snow state that the Reactor’s adaptive cycle usually consists of “responding inappropriately to environmental change and uncertainty, performing poorly as a result, and then being reluctant to act aggressively in the future” (1978: 93). It can be inferred from this description that Reactors become hesitant as a result of past financial losses and significant investments that did not turn out as well as expected.

Real options may be able to help with this problem. The hesitant Reactor, who does not have a consistent strategy for dealing with its environment, may become more aggressive in the future if it required less resources (less commitment and uncertainty) to behave this way.

Reactors develop inconsistent strategies for a number of reasons (Miles & Snow, 1978), and, unfortunately, in most circumstances real options can not directly solve the problem of top management lacking a consistent strategy. The benefit of real options to Reactors will generally be that they reduce hesitancy (by lowering the required commitment of resources), somewhat improve performance, and allow the organization to survive until it can develop a more consistent strategy.

One type of Reactor that might directly benefit from the use of real options, and possibly even cease to be a Reactor, would be the organization that continues to employ a consistent (but outdated) strategy, despite “overwhelming” (Miles & Snow, 1978: 93) changes to the environment. This type of organization understands how to employ a consistent strategy, but is reluctant to adapt to the environment. This could be due to inertia, or due to the fact that they are extremely risk-averse. If this organization could be shown that at times it requires only a very small commitment of resources in order to be prepared for the future, it might quickly evolve into either a Defender or Analyzer. It could then expect a significant improvement in performance.

DISCUSSION AND CONCLUSION

This paper has attempted to extend the literature by integrating the framework of Miles and Snow with the more recent research in real options. Our goal has been to assist managers in understanding the concept of real options and being able to judiciously apply it in practice as they view their firms and make strategic decisions under conditions of uncertainty. The results for managers and their firms include - increased identification and preservation of opportunities, flexibility in uncertain and fast-changing environments, more accurate valuation of real investments, and increased financial performance.

Opportunities for using real options have been identified at each stage of the adaptive cycle, and also in each type of organization specified in Miles and Snow’s strategy typology. By viewing the Miles and Snow framework through a real options lens, all types of organizations can increase their flexibility, prepare for uncertainty in their future, and reduce the resource allocations necessary to invest in future opportunities. Again, the purpose of a lens is to help a viewer see things more clearly. The model proposed here can guide firms in the choice of real options that are most appropriate for their stage in the adaptive cycle, their strategic type, and their environment.

Reading the columns of Table 1 from top to bottom, we illustrate how each strategic type of organization can make use of real options throughout its adaptive cycle. Prospector organizations can employ growth options such as new technological platforms when dealing with the entrepreneurial problem. When solving the engineering problem, they may invest in options to switch such as flexible production technologies or the development of widely-applicable organizational capabilities. They may also use the option to defer by leasing a new production technology before committing to it, or they may use the option to abandon by taking into consideration the salvage value of machinery and technology before investing. When solving the administrative problem, Prospectors might consider investing in the human capital of individual employees and the development of organizational capabilities. These investments are likely to have characteristics of both growth and switching options and will provide knowledge and flexibility needed to solve administrative problems.

Defender organizations may solve their entrepreneurial problem with the option to abandon or the option to alter scale. As they are concerned primarily with defending a portion of the market in which they currently compete and less concerned with incremental investments that would provide exploration, they are likely to make significant investments in these markets. The option to abandon for salvage value would mitigate losses should one of these investments not work out. The option to alter scale would provide flexibility to increase participation in a product or market as demand increased, thereby allowing the firm to better “defend” its share of

the market. Defenders might solve their engineering problem with the option to defer or the option to abandon. As Defenders focus on making significant investments in single core technologies in an effort to maximize efficiency, they are less likely to be interested in flexibility options. Also, many of the incremental options might slow down their ability to get fully invested in and “defend” their markets. However, the option to defer would allow the Defender to initially lease new production technology while still being able to fully satisfy and “defend” its market share. As mentioned earlier, the option to abandon for salvage value would allow the Defender to mitigate losses if a new production technology did not work out. When solving the administrative problem, Defenders should consider the importance of planning and being able to keep current markets satisfied as efficiently as possible. The option to alter scale can help here by ensuring that Defenders can increase production as necessary to defend their markets and by ensuring that they can decrease production if necessary to remain efficient.

As Analyzer organizations fall between Prospectors and Defenders on the innovation – efficiency continuum, the majority of options described above will apply to them to varying degrees. Last, the ability of real options to improve the performance of Reactor organizations depends upon the reasons for their instability. For example, in the case of a Reactor who had formerly been a Prospector but who now had a poor fit between strategy and structure (e.g., entrepreneurial aspects to strategy, and economizing structure), incremental growth options or the staging of investments (option to default) would lower the cost of prospecting activity until the organization could align its strategy and structure and cease being a Reactor.

This work is not intended to be the final investigation of this topic. As it is consistent with both the resource-based view and the knowledge-based view of strategic management, there is considerable room for further refinement and integration of these topics. One opportunity for further research would be to investigate how investments in human capital (Kogut & Kulatilaka, 1994b) and/or capabilities (Helfat & Peteraf, 2003; Kogut & Kulatilaka, 2001) both have option value and interact with other real options. In addition, there is an opportunity to conduct research that would identify how the use of real options contributes to persistent firm heterogeneity within an industry.

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SALIENCE OF STAKEHOLDERS AND HUMANISTIC AND SUSTAINABILITY PRACTICES AMONG PHIL. FMCG COMPANIES

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ABSTRACT

According to the stakeholder management theory, practices directed towards specific stakeholders are pursued by business when the salience or importance of these stakeholders is ascertained. Consistent with this theory, this study aims to examine whether humanistic and sustainability practices among companies differ according to the salience given by these companies to their various stakeholders.

Data were collected through a questionnaire from managers of Fast Moving Consumer Goods (FMCG) companies in the Philippines with regard to their humanistic management and sustainable practices. ANOVA results indicate that the level of practice differs with the level of salience given to stakeholder groups. Companies with high levels of humanistic and sustainable practice give the most salience to the competitors, government, customers and employees. Companies with the lowest level of humanistic and sustainable practice are those who give salience to the owners.

INTRODUCTION

Business creates wealth for the economy and society by generating value from its activities in the form of profit. However, these days, it is also widely recognized that business should go beyond just making profits. As John Paul II succinctly puts it in the encyclical *Centesimus Annus*, which he wrote in 1991:

“...the purpose of a business firm is not simply to make a profit but is to be found in its very existence as a community of persons who in various ways are endeavouring to satisfy their basic needs, and who form a particular group at the service of the whole society”

A firm is, thus, made up of a community of persons or stakeholders who are key to the success of the business. This community of persons or stakeholders, not just the owners, have expectations as to what constitutes appropriate business behaviour faithful to the purpose which it should fulfil. They exert influence on business to behave ethically and responsibly (Avery & Bergsteiner, 2011).

Humanistic management and sustainability practices of companies are among those that enable business to have a clear path towards responsible management (Spitzek, 2011; Ameer & Othman, 2011). In the pursuit of profit, business can work for human development (Neesham, etal, 2010) through the practice of humanistic management. Humanistic management is geared towards actions that uphold human dignity (Mele, 2003; Spitzek etal, 2209 in Spitzek, 2011).

It is founded on the belief that firms can contribute to social well-being (Avery & Bergsteiner, 2011).

Likewise, the actions of business have significant economic, social and environmental impacts. Through engagement in sustainability practices, companies are able to fulfil responsibilities that are ethical and responsive to the needs of employees, customers, the environment and other stakeholders (Ameer & Othman, 2011). In the process, long-term relationships with stakeholders are created (Avery & Bergsteiner, 2011).

The Fast Moving Consumer Goods (FMCG) industry is one industry that is serious about its business behaviour towards the many individuals and entities it affects (Kim, 2006). Considering the latter's salience or perceived importance, different stakeholders are given priority according to their unique concerns and their effect on business survival and success (Ferguson, 2009).

THIS RESEARCH STUDY

Statement of the Research Problem

What is the level of implementation of humanistic and sustainability practices among FMCG companies in the Philippines? Do humanistic and sustainability practices of Philippine FMCG companies differ according to the salience given by these companies to their various stakeholders?

Objective

This study aims to determine the level of practice of humanistic and sustainability practices among FMCG companies in the Philippines. It also aims to examine whether humanistic and sustainability practices among Philippine FMCG companies differ according to the salience given by these companies to their various stakeholders.

Significance

The determination of the level of implementation of humanistic and sustainability practices will heighten awareness and serve as baseline data for companies on how they are faring with regard to the humanistic and sustainability challenge. It is hoped that they will be able to identify ways to better orient themselves to being both humanistic and sustainable in their business operations. Those in the academe will be helped in their task of forming future business leaders to understand humanistic and sustainability practices and the factors that companies consider in implementing them.

Scope and Limitations

The study will be limited to a sample of Philippine FMCG companies. The results can only provide preliminary insights about humanistic and sustainability practices of companies and is best understood within the context of a more extensive study which it is a part of.

REVIEW OF RELATED LITERATURE

There have emerged ways by which a business is seen not just as an entity mainly focused on profits. Rather, it is seen as an institution where employees are allowed to flourish and the interest of owners or shareholders are weighed against duties towards other stakeholders in the community (Sargent, 2004). This new orientation is manifested in humanistic and sustainability practices which management adopts.

Humanistic management upholds human dignity through responsible behaviour anchored on the practice of virtues in corporate decision making. Practices are pursued to serve people and provide them with a better life. Sustainability practices, on the other hand, integrate environmental and social management within business processes to address the impact of operations on society and environments of the future (Spitzeck, 2011).

Businesses which pursue humanistic management and sustainability practices prioritize being “profit-satisfying” instead of “profit-maximizing”. It is licit to make a profit but it is not business’ be-all and end-all. It is only an “indicator that a business is functioning well” (John Paul II, 1991, in Sargent, 2004).

Central to this new orientation is the human person and its integral development which makes profits not ends in themselves but as means for human beings to flourish (Sargent, 2004). Specifically, it runs counter to the market economy’s image of a human person as a consumer whose unlimited wants have to be gratified with an increasing supply of material goods (Coughlin, 2003). Thus, concerns of various stakeholders are actively addressed by humanistic and sustainability-oriented businesses. Products and services are designed to address genuine human needs (Spitzeck, 2011). Moreover, businesses take on responsibilities with a focus on ethics and the welfare of employees, customers and the environment (Ameer & Othman, 2012).

It has become imperative for businesses these days, more than ever, to serve the needs of various stakeholders not just by selling products of good quality and reasonable prices but also to protect the environment, treat employees and suppliers equitably, behave ethically and generate wealth and well-being for all stakeholders (Kim, 2006).

A stakeholder is a person and entity whose interactions with the business can affect and is affected by the business (Ferguson, 2009). Stakeholders control the resources of the business in various ways. Some stakeholders have control over critical resources necessary for the survival of the firm. It is important for a business to identify the stakeholders and the issues specific to a stakeholder in order to address them and get the support from them, the absence of which can adversely affect operations (Mishra & Suar, 2010).

Managers align organizational policies and practices to various stakeholder concerns. These concerns should be considered for its own sake, that is, with intrinsic value and not merely just for the shareholders (Donaldson & Preston, 1995, in Sodhi, 2015). This is especially true if they are certain about the stakeholder’s salience relative to the survival of the business (Mishra & Suar, 2010). According to the stakeholder management theory, managerial action can benefit or harm others (i.e. employees, their families, communities, etc.) (Mariappanadar, 2012). Furthermore, management practices directed towards specific stakeholders are pursued by business when the salience or importance of these stakeholders is ascertained. Salience is the level of responsiveness management has towards specific stakeholders (Mitchell, et al, 1997, in Mishra & Suar, 2010). It depends on how the business is dependent on the resources the stakeholder has control of. It also depends on the urgency with which certain stakeholders demand attention. Salience is also dependent on what is considered desirable, proper and socially acceptable (Mishra & Suar, 2010).

The fast moving consumer goods (FMCG) industry is one important industry not just in the Philippines but worldwide. It employs a lot of people and is responsible for billions of consumer expenditure and contribution to GDP. They are also known as consumer packaged goods or groceries (Francis, Dorrington & Hones, 2006). It is composed of categories such as cosmetics, nondurables and food products (Kumar & Anand, 2012). Large multinationals in the industry such as Proctor & Gamble has affirmed the need to be sensitive to the needs of all stakeholders and have adopted practices accordingly (Kim, 2006).

METHODOLOGY

A sample of 89 FMCG businesses of varying sizes was used through convenience and snowball sampling. The firms were investigated through a survey questionnaire using measures used in previous works. The questionnaire was designed by a team of researchers as part of the study on the Assessment of Corporate Responses to the Sustainability Imperative under the Commission on Higher Education- De la Salle University (CHED-DLSU) Research Program on Sustainability Studies, commissioned by the CHED-Philippine Higher Education Research Network (PHERNET). The instrument was pre-tested. The results of the pre-test were subjected to Reliability Analysis to determine the reliability of the instrument. The alpha values obtained were found to be above the acceptable level of .60 in exploratory research as defined by Hair, et al. (1998).

The survey questionnaire consists of fourteen parts, the first eight of which correspond to categories under which humanistic and sustainability practices can be classified, namely:

1. Employee Orientation : practices pertaining to employee development
2. Employee Conservation : practices that enables employee to focus resources such as time and energy to productive work
3. Managerial Decision-making : practices pertaining to effective management oversight
4. Human Resource Management: practices that attract, develop and maintain people in the organization
5. Environmental Protection : practices that minimize negative environmental impacts in operations
6. Conserving Materials : practices pertaining to the efficient use of natural resources
7. Marketing Chain Enhancement : practices that enable the organization to truly serve the legitimate needs of the end consumer while protecting the company's interest
8. Sustainability Management – practices that enable the company to manage its social and environmental impact

The respondents, usually one manager from each of the 89 firms who is most knowledgeable about the practices, were asked to specify the extent by which each item is being practiced by the firm by using a five-point Likert-type scale ranging from "1-not at all to 5- very large extent". The remaining five sections have questions that require ranking and answers to open ended questions on reasons for the implementation of practices, the level of importance given by the firm to specific stakeholders and challenges in the adoption of the practices. The results of the survey were encoded, processed and analyzed with the aid of statistical software. Using Analysis of Variance (ANOVA), the study determined whether the difference in the FMCG companies' level of practice can be attributed to the level of salience given to stakeholder groups. .

RESULTS AND DISCUSSION

Results show that the Philippine FMCG companies level of implementation of humanistic and sustainability practices are moderate with an average of 3.65. Table 1 shows how they fare in each category of practice.

Practices	Mean	Std Dev
Employee Orientation	4.11	0.17
Employee Conservation	2.28	0.49
Managerial Decision making	3.72	0.39
Human Resource Management	4.04	0.08
Environmental Protection	3.94	0.21
Conserving Materials	3.39	0.14
Marketing Chain Enhancement	4.11	0.28
Sustainability Management	3.64	0.24
Overall Level of Implementation	3.65	

Based on the mean scores per practice, the FMCG companies can be said to be very employee and customer oriented. They, however, have to improve in facilitating the use of resources such as time and energy for its employees. There is also room for growth in its environmental orientation.

This finding is confirmed when the FMCG companies were grouped according to the stakeholder they give most salience to. Furthermore, it can be noted that companies which have high levels of humanistic and sustainable practice give the most salience to the competitors, government, customers and employees. Companies with the lowest level of humanistic and sustainable practice are those who give salience to the owners. In fact, more than half of the companies in this group have less than moderate levels of humanistic and sustainable practices. There is definitely still some room for improvement for these companies. These are shown in Table 2.

Group with Most Salience	No. of FMCG	Level of Practice (Mean Score)	Percentage of Companies within the Group with High Level of Practice (3 and up)
Customers	52	3.8365	84.7%
Employees	16	3.6406	78.1%
Owners	11	2.6136	36.3%
Suppliers	1	3.0	100%
Top Management	5	3.4	80%
Government	1	4.0	100%
Competitors	3	4.3	100%
TOTAL	89		

ANOVA results indicate that the level of implementation differs with the level of salience given to stakeholder groups. This can be seen in a significant F-stat found in Table 3 below.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	15.863	6	2.644	2.611	.023
Within Groups	83.019	82	1.012		
Total	98.882	88			

CONCLUSION AND RECOMMENDATIONS

Thus, the corporate response to the humanistic and sustainability challenge is gaining ground and is directed towards various stakeholders at varying levels depending on stakeholder salience. Balancing stakeholder concerns depending on stakeholder salience tend to orient companies to either “profit-maximize” or to “profit-satisfy”. Indeed, stakeholders exert influence on the way firms are managed. The adoption of humanistic and sustainability practices support the view that profit is necessary but is not sufficient. Companies which prioritize the profitability concern of shareholders above all else have lower levels of humanistic and sustainability practices than those which take into account the interests of other stakeholders, such as competitors, government, customers and employees.

The study showed an increasing proportion of firms that are more humanistic and sustainability-oriented. FMCG companies, in particular, while keeping an eye on profitability, exert significant efforts to develop and nurture their employees. They are also genuinely keen on serving the needs of their customers. Thus, the well-being of various stakeholders, not just shareholders, has become a key consideration for companies. Despite that, future research can identify the challenges that companies have to deal with in its efforts to be more humanistic and sustainability-oriented in its management practices. As for those practicing it, mechanisms and reasons behind this phenomenon or what drives companies could be explored, including, the benefits that go with humanistic and sustainability management, among other possible considerations.

Looking at both tangible and intangible effects can give a more holistic view of this management approach. The effect of humanistic and sustainability practices on firm’s long term performance and resilience through good stakeholder relationships can be determined. The ways by which to evaluate the effect of this type of management to the well-being of specific stakeholders and the company as a whole in terms of human flourishing can also be defined. Lastly, the influence of business education and the role of leadership and organizational culture in promoting humanistic and sustainability management can also be looked into.

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A RESOURCE-BASED VIEW OF CORPORATE SOCIAL RESPONSIBILITY AND DMNES RISING FROM CHINA'S HIGH-TECH INDUSTRY

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ABSTRACT

Comparative studies of corporate social responsibility (CSR) are relatively rare. Most notably, despite the growing participation and influence of multinational enterprises from developing countries (DMNEs) in the global economy, cross-cultural research and literature on the ethical orientation and CSR practices in and by DMNEs are underdeveloped. Against this background, this research project employs the resource-based view to study the current CSR status and firm-industry specific practices in China. Using the intangible resource-competitive advantage argument, this article selects three types of intangible resources as CSR bases (innovation, human capital and ethical culture) for discussion and covers their specific internal and external benefits. CSR reports of Lenovo and Huawei, two world-renowned Chinese high-tech firms, are analyzed. Results reveal that human capital and ethical culture were emphasized in both companies while innovation was infused in other CSR areas, mainly in environmental performance. The study draws attention to some firm-industry specific CSR activities that were applied to supply chain management in both cases, linking CSR integration of suppliers to potential collectivistic values.

Key Words: *Resource-Based View, Corporate Social Responsibility, Emerging Markets, Mnes, Dmnes, China, High-Tech Industry, Global Supply Chain, Collectivism*

INTRODUCTION

In recent years, corporate social responsibility (CSR) has become considerably more important in formulating corporate strategies. Both scholars and business practitioners recognize the difficulties in globalizing the existing CSR concepts (e.g., McWilliams, Siegel & Wright, 2006). Some relate CSR to financial performances to justify the adoption of CSR (McWilliams & Siegel, 2000). Some regard a firm as a citizen in society, which has responsibilities to other citizens (Freeman, 1984; Donaldson & Preston, 1995; Dawkins & Lewis, 2003). Corporate citizenship as a strategic option recognizes a broader scope of moral obligations to society than self-interest, best described as a stakeholder perspective. Stakeholder theory suggests how the diffusion and transfer of ethical principles and values into business activities could affect stakeholder relations involving various internal and external constituents such as employees, consumers, suppliers, stockholders, local communities, larger society, the environment, and so on. Since stakeholders have different demands and expectations, which are sometimes conflicting or mutually exclusive, their responses to specific CSR approaches range from positive to negative and neutral to skeptical. Nevertheless, CSR continues to attract stakeholder

interest. Porter and Kramer (2002) concluded that integrating CSR in corporate and business strategies will be critical in global competition and sustainable development.

Consistent with McWilliams and Siegel (2001), we define CSR as situations in which the firm goes beyond compliance and engages in “actions that appear to further some social good, beyond the interests of the firm and that which is required by law” (p. 117). Some scholars observe that certain CSR programs lack altruism and merely serve for corporate benefits and as a sign of submission to institutional pressures (Bies, Bartunek, Fort & Zald, 2007). CSR, however, also includes a broad spectrum of actions and strategies that support stakeholder objectives (Waddock, 2004). There are several approaches to integrating CSR into corporate strategy, such as the stakeholder model and the social demand approach to achieve corporate benefits as well as social welfare (e.g., Burke & Logsdon, 1996; Carroll, Hoy & Hall, 1987; Galbreath, 2006). The integration of CSR and corporate strategy blends the moral approach in which the firm becomes an ally of stakeholders and the market-directed approach in which the firm serves business objectives (Kleinrichert, 2008; Pfeffer, 1994). Therefore, even if investors may not have immediate or direct economic returns, CSR investments would be beneficial to sound social and economic changes in the surrounding communities. We argue that business and society are interdependent to the extent that any social welfare expended for society will eventually benefit stockholders.

Comparative studies of CSR are relatively rare. The view of CSR as competitive advantage to legitimize and market the firm has been investigated mainly in North America. As a result, little is known about the desirability and content of CSR images in other nations (Maignan & Ralston, 2002). Most notably, despite growing participation and influence of multinational enterprises from developing countries (DMNEs) in the global economy, cross-cultural research and literature on the ethical orientation and CSR practices in and by DMNEs are underdeveloped. Against this background, this research project employs the resource-based view to study the current CSR status and firm-industry specific practices in China. We will first discuss three intangible resources as prospective CSR bases, followed by an overview of some prevailing CSR issues and the dynamic institutional environment in China, a discussion of intangible resources in relations to China’s high-tech industry, and a case study of two world-renowned high-tech companies in China.

THE RESOURCE-BASED VIEW AND CSR

The resource-based view has long recognized the role of intangible resources as a source of competitive advantage. These intangible resources, such as technology, human capital and reputation, are said to be of greatest strategic importance (Gomez-Mejia & Balkin, 2002). Barney (1986) and Grant (1991) included organizational culture as a strategic intangible resource. By incorporating intangible resources as part of the strategic planning process, some scholars isolated corporate social performance from overall corporate performance and attempted to link the former to corporate financial performance (Surroca, Tribo & Waddock, 2010). McWilliams and Siegel (2001) used a resource-based view model to address optimal investment in CSR. Their study suggests that CSR activities and attributes may be employed as the basis of a differentiation strategy. Along the same line, Surroca, Tribo and Waddock (2010) proposed that innovation, human resources and organizational culture are mediator variables between corporate social performance and corporate financial performance, due mostly to the strong relationship between these intangible resources and the social aspect of the firm. Efficiently managing these intangible resources will make it hard to be matched by rivals (Surroca et al., 2010). In the

Surroca et al. (2010) study, they also found evidence to support the virtuous circle pattern among CSR performance, corporate financial performance and intangible resources. In a case study of Indra, a Spanish technology-intensive firm, Guadamillas-Gomez, Donate-Manzanares and Skerlavaj (2010) successfully linked competitive advantage and better social and financial performances together through incorporating intangible-resources-based CSR into firm strategy. Building on the existing CSR literature and firm-specific cases, this research summarizes the role of three intangible resources: innovation, human capital, and ethical culture as competitive advantage in social and business performances and explores the high-tech industry in an emerging economy, China, in the later sections.

Innovation as an Intangible Resource

As intangible resources, innovation capacity and technology carry potential in improving corporate financial performance. Innovation can facilitate the achievement of higher levels of economic efficiency, consumer confidence, and culture identification; together they result in further knowledge and innovation developments. Taking CSR and ethics into consideration, a firm may begin with exploiting its knowledge base ethically and responsibly to its stakeholders, designing and packaging products with environmental friendly attributes, and developing less polluting and contaminating processes of manufacturing. Consumer-oriented CSR gives opportunity to simultaneously differentiate in both CSR and value added quality and reliability (e.g., environmental friendly product development and customer service), which also means strengthening positive impressions and improving corporate images to stakeholders who place high value on social responsibility (Jones, 1999; McWilliams & Siegel, 2000). A firm's competitive niche can be improved in the ethical and socially responsible stakeholder markets. In the case study of Indra, a Spanish tech-intensive company noted earlier, it was found that improvement in the competitive context "is allowing the attainment of strategic objectives by means of the development of new markets, sales growth in actual markets and the launching of new products and services" (Guadamillas-Gomez et al., 2010, p. 29, 30).

The slack-resources view also provides support for innovation (Nohria & Gulati, 1996). Firms that possess a substantially large supply of cash can invest in alternative products and process improvement (i.e., CSR-based inventions), even though the concepts are novel and the market opportunities might seem limited. Scholars have also observed that the industry growth rate plays a role in CSR-based innovation (Aragón-Correa & Sharma, 2003). Firms of high-growth-rate industries tend to be less hesitant in pursuing new inventions for several reasons. First, in these industries a firm's survival depends on its capacity to innovate in order to take advantage of growth opportunities. Second, in high-growth industries firms are more likely to recognize and assimilate valuable external environmental information and change their usual practices (Shrivastava, 1995). Third, high-growth industries tend to be populated with firms of flexible, organic structures that facilitate the exploration of new ideas that embrace socially and environmentally responsible attributes. Fourth, high-growth-rate industries tend to be more tolerant of novel ideas, including social entrepreneurship. Fifth, since these industries' future is often unanticipated, there are opportunities to write the rules of the game (Rueda-Manzanares, Aragón-Correa & Sharma, 2008). Together these reasons provide incentives and motivate firms in the high-tech industry to integrate proactive CSR approaches in their strategizing and operational processes.

CSR-based innovation in the high-tech industry in China plays a critical role in two aspects. By nature, innovation is a source of competitive advantage for high-tech firms.

Additionally, China is a rapidly growing market that provides an impetus for high-tech industry growth. As multinational enterprises (MNEs) and the local Chinese high-tech firms compete with one another or form strategic partnerships, it would be reasonable to expect that some innovation efforts would be funneled into CSR activities.

Human Capital as an Intangible Resource

Human capital is an intangible resource that heavily affects the success of a company. Proper management of human capital development and retention may help enhance employee loyalty, involvement, sense of belongingness, sense of pride, job satisfaction, job attractiveness, credibility, and firm reputation (Surroca et al., 2011). Employee empowerment, profit-sharing plans, advanced training and career opportunities, team collaboration, and well-designed reward systems motivate employees to understand problems, identify solutions, and improve corporate financial performances (Hart, 1995; Wright, Gardner, Moynihan & Allen, 2005). Other indirect benefits of effective human resource management include company growth through employee feedback, reduction of risk and costs associated with lawsuits, union strikes, and health and safety fines, and strong partnerships with local communities and constituencies. Commitment-based human resource practices are a powerful CSR tactic that best serve the firm (De la Cruz Deniz-Deniz & De Saa-Perez, 2003; Liedtka, 1998) and reinforce a humanitarian-oriented corporate culture. Guadamillas-Gomez et al. (2010) found that Indra's human capital element in corporate practices such as forums on diversity policy and work conciliation programs reinforce employee motivation and participation. Indra's team approach promotes innovation and ethics as part of the corporate culture. To integrate CSR into strategic human resource management, strong commitment is necessary. High commitment begins with intangible resources, i.e., people from top down and bottom up who share the CSR vision and are willing to implement CSR initiatives. CSR initiatives should be viewed as value-added activities rather than expenditures (Jones, 1999).

Historically, emerging and developing economies serve as a source of low-cost, low-skilled labor supply for high-tech MNEs and as a dominant production factor of comparative advantage. As the competitive landscape in the high-tech industry changes, both low- and high-skilled labor are critical sources of competitive advantage. In the case of emerging markets, by building learning opportunities and career aspirations among young workers and migrant employees, businesses play an important role in connecting CSR activities with strategic human resource management and better quality of life in local communities. As competition for human capital intensifies in the high-tech industry, growing your own talent pool both internally and externally are vital for sustaining competitive advantage. The paradox of focusing on cheap, low-skilled labor is the growing need to invest in the workforce.

Corporate Culture as an Intangible Resource

Can ethics, as part of corporate culture and an intangible resource in CSR, be more than 'do the right thing'? The role of culture has been discussed in the strategic management literature (McWilliams & Siegel, 2001). Organizational culture, as an intangible asset, has been recognized as a source of competitive advantage (Surroca et al., 2010). Establishing a strong organizational culture strengthens a firm's beliefs, values, and commitment in certain aspects that may yield significant financial performance (Barney, 1986; Marcoulides & Heck, 1993; Pfeffer & Veiga, 1999). Culture is always dynamic and can renew itself as new ideas are continuously

incorporated and integrated (Denison, 1990). Management can cultivate an ethical and socially responsible culture through deliberate actions. Referring to Sharma and Vredenburg (1998), Surroca et al. (2010, p. 468) indicates that “the adoption of a socially responsible strategy can be a source of fundamental changes involving business philosophy, decision-making criteria, and ways of working together.” When there is a fundamental change in business philosophy, it changes the corporate culture. In the case study of Medtronic, it was found that a humanistic culture, a CSR attribute, of “high involvement, commitment, coordination, and identification with core values” was developed and resulted in high financial gains for the company (Surroca, et al., 2010, p. 470). A humanistic culture can also spark employees to behave and stand up for ethical practices (Kitazawa & Sarkis, 2000). Other benefits include a positive work environment and climate, good rapport, mutual trust, commitment, and environmental awareness among all divisions of the organization (Frey & Denison, 2003; Maignan, Ferrell & Hult, 1999; Surroca et al., 2010).

This section reviews innovation, human capital, and ethics as corporate culture in relation to CSR. Based on the resource-based view, all three are of strategic value as they can serve as bases of competitive advantage but the impacts are far from immediate. The following sections look at China’s high-tech industry in relation to these three types of intangible resources and CSR practices. Specific CSR issues in the country are identified and thereafter an analysis of how two major high-tech companies, Lenovo and Huawei, incorporate them in their CSR coverage.

CSR IN CHINA

Some may believe that China, as a socialist country, has assumed social responsibilities as part of government duties. Attention to social causes and taking care of its people are expected from the authorities. However, over three decades of China’s open-up policy and economic reforms, dramatic changes have been taking place. What it used to be the job of the “*den wei*” (government office or work unit of the state-owned enterprises) was gradually transferred to private organizations such as the transnational corporations (Li & Wang, 1996). Many social responsibilities are still yet to be fulfilled. In the beginning, labor issues were the primary concerns. It started with the supplier and contractor employee work environments and later extended to child labor, compensation, work hours, education, health care, defective consumer goods, toxic waste and emissions, worker suicides, and the like. It has been increasingly recognized that while the rapid annual GDP growth in the past three decades has lifted millions of citizens out of poverty, there are growing questions of sustainability as China grapples with pressing social and environmental problems such as pollution, intensive energy use, resource depletion, and widening social and economic disparities. China’s Twelfth Five-Year Plan makes a turning point from the country’s previous focus on headline growth to now prioritizing strategies and measures to ensure long-term prosperity for the entire nation (KPMG China, 2011). To many MNEs, what once merely a discussion of export oriented factors, such as low cost manufacturing and supplier selection, now involves a greater variety of considerations such as prioritizing sustainable development through positive contributions to CSR initiatives, balancing cost and the rise of green consumer preferences, enforcement of penalties for non-compliance, and the need for a CSR strategy (AMCHAM Shanghai, 2012).

As China evolves from a production site to a prospective developed economy, it aspires to become a leading country, moving from “China manufactured” to “China innovated”. China also aims to take a leap in making its own mark on corporate social responsibility (Zu & Song, 2009). Social responsibility observers believe that corporate responsibility is a pre-condition for

China's domestic stability and a moral mandate as an emerging superpower. A typical approach starts with government standards and close monitoring of business practices (Zadek, 2012). In 2005, the government set the tone in moving forward in this direction. In 2007, the State Owned Asset Supervision and Administration Commission (SASAC) issued the Notification on Issuance of The Guidelines on Fulfilling Social Responsibility by Central Enterprises (Sutherland & Whelan, 2009), in which social responsibility is recognized as an important way of establishing a modern corporate system and fostering competitiveness. The concepts of undertaking social responsibilities are promoted in corporate governing documents. China's focus on growth is shifting from quantity to "higher quality growth", with key themes in sustainable growth, moving up the value chain, reducing disparities, scientific development, environmental protection, energy efficiency, and domestic consumption (KPMG China, 2011). Consumers in China are increasingly focused on eco-friendly products, ethical labor practices, and carbon footprint reductions. The number of those in China using sustainability criterion in their purchasing choices is reported substantially higher than the 16% in the U.S. and the U.K. (AMCHAM Shanghai, 2012). Related regulations gradually emerged in different industries. For example, the China Banking Regulatory Commission released the Green Credit Guidelines in 2012, which makes green aspects mandatory and linked to licensing agreement (Anonymous, 2012a). Serious efforts have also been made to get Chinese companies compliant with the international SA8000 (Social Accountability) standard. China has also worked with the European Union to set up the China Social Compliance (CSC9000T) standard for the textile industry (Anonymous, 2009b). Due to the scandals in medicine, a call for providing a transparent mechanism in the pharmaceutical industry has been issued and advertising agencies are also asked to follow the guidelines in preparing more trustworthy commercials in promoting medical products. Meanwhile, Chinese citizens are empowered as the media is heavily reporting consumer complaints and lawsuits against companies for their irresponsible decisions (Anonymous, 2009b; Wong, 2009).

The challenges in making CSR a common practice is undoubtedly there. Critics often question the government rule enforcement and see the private sector's commitment to CSR as "green washing". The rush of disaster relief such as earthquake rescue may only be short-lived nationalistic acts (Lin, 2010). Some corporations see it as simply checking a box for compliance to basic standards and regulations. Some prepare the CSR reports but most don't. Even if they do, the reports could be available only to the government but not to the public (Anonymous, 2010d). China has yet to build a strong regulatory framework, bring in expertise, nurture consumers, and raise citizen awareness in CSR. With strong enforcement from the authorities and trust among the government, corporations and citizens, CSR could be successfully in place and China would be on the trajectory of a fairer, more responsible society.

China's High-tech Industry and Corporate Social Responsibility

China, driven by its fast-growing economy, reasonably educated working population, rapidly raising middle class consumers, and its sheer size, has become an increasingly important place to high-tech companies as a leading consumer market and a source of cost-effective labor supply. China is named one of the next fastest-growing computer markets (Fletcher, 2011) and has recently surpassed the United States to top the world with the highest numbers of Internet users and mobile phone subscribers (Anonymous, 2011a; Anonymous, 2011c). China's numerous frequent Internet users and mobile phone subscribers have also generated a large online shopping base throughout the country. The Chinese consumer preferences and tastes are

crucial to product development and marketing. While some MNEs of household products such as P&G and Unilever are going down the socioeconomic pyramid to serve consumers who make less than US\$2 a day in China, others are aiming at the segment that can afford luxury brands (Reingold, 2011). Apple, Inc., for example, is targeting upscale shoppers and has launched an online store in China, which offers the easiest way to shop for a wide selection of Apple's revolutionary products. The fastest-growing socioeconomic group, the middle class, which is mostly populated with educated professionals and status-sensitive young consumers, is the primary market for high-tech products. Apple Inc.'s iPhone, iPod, and iPad are of great interest to these consumers. The most frequently visited Apple stores are in China. And the company also reported having sold over 2 million iPhone 5 during the first weekend of its launching in China (Anonymous, 2012d). Although China is already Apple's fastest-growing market in terms of sales (Chao & Kane, 2011), Apple is a late-comer to the greater China market and must face stiff competition from early movers such as Hewlett-Packard, Dell, Nokia, Sony Ericsson, Samsung, and Motorola, to mention just a few, who enjoy healthy brand recognition. Local high-tech firms such as Lenovo and Huawei are making inroads with less expensive products. The pace of market changes in China rivals that in developed economies. As China overtook the U.S. to become the world's largest car market, some think China may save automobile manufacturers such as the General Motors as the developed economy markets remain stagnant. It is also possible that the China market plays the same role for the high-tech MNEs. To succeed in this market, it is imperative that MNEs tailor a socially responsible competitive strategy for China. To be competitive, local Chinese firms have much to learn from the experienced MNEs, not only in leading technology and high-tech products, but also in benchmarking CSR related practices and global standards.

The term high-tech denotes cutting-edge technology. The classification of a high-tech industry includes both high R&D intensity and high usage of most advanced technology in a given industry. Because firms in the high-tech industry develop or use the most advanced technology, they are often viewed as having a great potential for future growth. This perception attracts more venture capital into high-tech sectors of the economy. However, if investment exceeds actual potential or actual firm performances, investors can lose all or most of their investment. Thus a high-tech firm is often viewed as having high risk and uncertainty while offering an opportunity for high profits. In the era of economic globalization, high-tech has become an international phenomenon, serving as an entry niche in new markets and as a competitive advantage in the global marketplace. The survival and growth of a high-tech firm are based on innovation and fast-upgrading, not only in product development and services but also through socially responsible manufacturing processes and fair labor practices. A high-tech MNE might work on a project 24 hours a day, with professional teams and operative employees working across the headquarters and foreign subsidiaries, with value-chain management around the globe, and with suppliers and strategic partners in different parts of the world. Strategic CSR requires resource commitment, beginning with intangible resources such as a CSR vision, organizational ethical culture, human capital development and retention, and employee involvement, which in turn help improve a firm's external intangible resources in terms of brand image, firm reputation, consumer confidence and loyalty, stakeholder relations, corporate citizenship in larger society, and so on. Strategic CSR can serve as a differentiation strategy for high-tech MNEs by offering tangible rewards such as improved financial performance and growth as well as intangible rewards such as outstanding organizational reputation and community support, ethical leadership and social entrepreneurship, and self-renewal capability to

meet rising opportunities and challenges in the context of fast socioeconomic changes. Strategic CSR as a differentiation strategy is long-term orientated to sustain a firm's competitive advantage in multiple dimensions: economic, social, and environmental, even if some of the intangible benefits may not be materialized in a short-term frame. Table 1 is a summary of the above discussed intangible resources in relation to strategic CSR of high-tech industries.

Attributes of High-tech Industries	Firm Internal Intangible Resources	Firm External Intangible Resources	Strategic CSR Benefits	Performance and Sustained Competitive Advantage
<ul style="list-style-type: none"> ▪ Cutting-edge technology ▪ Knowledge intensive ▪ R&D intensity ▪ Innovation as the key ▪ Fast upgrading ▪ High growth potential ▪ High risk and uncertainty ▪ Market volatility and unanticipated future ▪ Competition over human capital 	<ul style="list-style-type: none"> ▪ Innovation capability ▪ CSR vision and strategy ▪ Organizational culture ▪ Human capital and retention ▪ Cooperative teams ▪ Specialized knowledge, skills and expertise ▪ Employee involvement ▪ Sound labor relations ▪ Workplace morale ▪ Ethical principles and standards 	<ul style="list-style-type: none"> ▪ Brand image ▪ Firm reputation ▪ Consumer confidence and loyalty ▪ Relations with suppliers ▪ Relations with local communities and constituencies ▪ Strategic partners and mutual trust ▪ Corporate citizenship in larger society 	<ul style="list-style-type: none"> ▪ Improved internal resources ▪ Improved external resources ▪ Reversed diffusion of innovation, creativity, and new knowledge ▪ Enhanced moral standards and organizational commitment ▪ Future talent pool development and attraction ▪ Differentiation and market niche 	<ul style="list-style-type: none"> ▪ Financial performance and growth ▪ Social impact and performance ▪ Environmental impact and performance ▪ Stakeholder satisfaction ▪ Capability for CSR-based inventions ▪ Self-renewal capability to meet emerging opportunities and challenges ▪ Ethical leadership ▪ Social entrepreneurship

Innovation and High-skilled Labor

The strategic role of innovation in high-tech industries has always been recognized. Innovation happening in developed economies is accompanied by high-skilled labor. China has always been a significant OEM (original equipment from manufacturer) factory to high-tech MNEs due to its cheap, reasonably educated workers for high-tech product manufacturing. This phenomenon is depicted in the international product life cycle theory (Vernon, 1966). As products become standardized and mature, production tends to be shifted from developed to developing economies. What is not mentioned in the classical international trade theory is the impact of economic growth on the developing and emerging economies. When these economies progress to be more like developed economies, their national comparative advantages, by design, are also upgraded from low- to high-skilled labor. For example, China's innovation potential attracts major MNEs such as Motorola and IBM. The former established the Motorola University in Beijing to deliver about 130 courses for inspiring mid-level managers and professional teams. The latter opened a China Research Lab to fully utilize local talents. Competing high-tech firms from local or abroad followed shortly thereafter to launch human capital development institutions such as Siemens Management Institute, HP Business School, Ericsson China R&D

Institute, and Haier University. Since innovation and professional teams are critical intangible resources and serve as a competitive niche for high-tech firms, establishing corporate universities and developing partnerships with local universities have become a strategic trend among both Chinese firms and MNEs, which enable them to provide continuous employee training and future talent pool development on all levels, from senior executives to blue-collar factory workers, and involving clients, suppliers, and business partners.

As the comparative advantages shift from cheap labor to human capital and innovation for high-tech MNEs in China, corporate CSR strategy should adjust so that corporate culture becomes more humanitarian and team-oriented. "Corporate universities should be able to adjust accordingly to the demands of clients, suppliers and business partners, to provide comprehensive solutions and consolidate relations. Client loyalty would thus be enhanced and marketing and sales can be executed on a deeper level. At the same time, corporate universities can offer necessary support for companies' future strategic development," according to Motorola human resources management (Cheung, 2007).

Going hand in hand with high-skilled labor is the importance of innovation in the Chinese high-tech industry. India has been a prime location for inexpensive white-collar labor supply. Owing to its language difficulties and lagging in technology training, China was behind in providing white-collar workers. China finally accelerated its pace in the high-skilled labor sector only in recent years (Li & Qian, 2011). One major difference between the case of India and China is how MNEs use high-skilled labor. India was largely an outsourcing site in the beginning. As for China, because of its fast-growing marketplace, it may not become a primary outsourcing site, but instead it will be the next major innovation center for MNEs. To perpetuate global growth, future innovations will mostly be borne with emerging and developing economies' consumers in mind, demonstrating the validity of prevailing views of 'reversed innovation', 'trickle-up' and 'bottom-up' innovation. This approach also coincides with the glocalization strategy in that a firm's global view is supported by localized orientation and actions. As Ghemawat (2011) suggests, MNEs ought to behave like a cosmopolitan corporation. Having the R&D department working side by side with manufacturing shortens the internal distance within the company.

Human Resource Issues

Among all human resource issues, labor issues stand out. There are two interrelated labor issues in China: rising wages and fair labor practices. Labor shortages in China have given workers the leverage for better pay and a healthy work environment. To respond, some high-tech MNE suppliers in China such as Foxconn, the Taiwan supplier of Apple, Inc., more than doubled the minimum wage for some to \$295 a month (Anonymous, 2010c). Honda, the Japanese car maker, has also increased wages and benefits for its Chinese workers after a wildcat strike, including an ¥80 (about \$15) housing subsidy per month (Carter, 2010). It has been increasingly documented that MNEs in China are confronted with high turnover rates and severe competition over skilled workers and experienced managers. The changing competitive landscape of China's labor market drives to alter corporate cost structures and draws attention to growing unionization into private and foreign-owned sectors (Yang, 2008). Pay increases alone will not solve the problem; a beginning step towards more socially responsible labor practices is needed. In the case of emerging economies like China, labor law and employment law exist but are not adequately institutionalized. Necessary CSR measures that high-tech MNEs can adopt to take the lead and win respect from stakeholders include addressing workplace safety, living conditions,

and social welfare such as healthcare and education for migrant workers who often live onsite in factory dorms and work extensive overtime hours without fair compensation and welfare protection. Humanitarian organizational culture and proactive CSR programs can help a high-tech MNE grow and retain its own talent pool, enhance workplace morale, and improve supply chain management, including ethical standards.

The legal and socioeconomic changes and the support from activists empower Chinese workers to demand fair labor practices of MNEs and their suppliers. A recent labor law, effective January 2008, gives more job security to workers. Employees are more educated about their employment rights and ways to voice their demand for organizational justice and better quality of lives. The new, young generation of workers is less tolerant of the “electronic sweatshop” that China has been known for (Moore, 2011). MNEs, for example, are said to be responsible for a string of suicides in the supplier factories (Moore, 2011). Workplace stress, up to extra 40 hours overtime per week, below affordable living standard pay, poor and unsafe work environments such as toxic leaks and factory explosions, child labor, and the like, make dozens of MNEs the targets of criticism (Barboza, 2011). To ease the complaints and close the gap between labor and management, Foxconn handed the worker dormitories to local Chinese property management companies (Barboza, 2011). In China, “providing employees with basic necessities including a safe and convenient place to live at the work-site might have been sufficient in the past, but this arrangement no longer satisfies the needs of the young migrant workers of today” (Pevzner, 2010). Unionization pressure from younger workers is the norm in China today (Sarkis, Ni & Zhu, 2011).

Child labor as a common phenomenon in China continues. The Compulsory Education Law of the Chinese Constitution has helped little in this aspect due to weak enforcement. It is said that up to 20% of China’s workforce is child labor (Crystal, 2010). Unfortunately, the current phenomenon expands to tens of thousands of illegal immigrants crossing the Chinese border from Vietnam, Cambodia, Burma and other Southeast Asian countries to China’s bordering and coastal areas such as Guangxi and Guangdong for low paying jobs (Epstein, 2010). Many of the undocumented immigrants are children. Apple admitted that child labor issues are worse than before. Ninety-one children under the legal age of 16 were found working in Apple’s supplier factories. Dell found that only 46% of its suppliers conformed to the rules set forth by the headquarters (Moore, 2011). Some labor issues cross managerial and ethical lines. Successful MNEs are those who earn respect from the public for ethical and fair labor practices.

Ethics in Chinese Corporate Culture

Ethical concerns in China go beyond labor. Because of the most intense competition among suppliers and the weak government law enforcement, CSR is often ignored (Hook & Hille, 2011). Supply chain CSR management in labor, environment, and workplace safety issues is particularly difficult for major electronic brands in China and other emerging and developing economies (Kurtenbach, 2011). Chinese suppliers of high-tech MNEs have been notorious about their environmental violations (Barboza, 2011). More serious scandals include endangering public health by improper handling and disposing of heavy metals and toxic wastes. There are also violations that are allegedly causing high cancer rates among villagers (Hook & Hille, 2011). Even though MNEs may have their own CSR standards, which may in writing specifically cover their foreign subsidiaries, local contractors and business partners, non-compliant suppliers are commonly identified along the supply chain. It is believed that major

high-tech brands can be more influential on the behaviors of their suppliers (Hook & Hille, 2011) and should carry their weight in auditing and enforcing CSR measures along the chain.

DMNE CASE STUDY: LENOVO AND HUAWEI

This section presents two cases in the high-tech industry in China. It is not the scope of this study to investigate the relations of CSR to corporate performances. The goal is to find the extent of the company CSR efforts in the three areas of intangible resources. Two well-known Chinese high-tech firms that have CSR reports available to the public are selected. Lenovo (Lenovo Group Corporation) and Huawei (Huawei Technology Co., Ltd.) are listed as the top two electronic companies in China (Beutler, 2007, von Morgenstern 2006). They are well-known examples of Chinese high-tech companies that have established a global footprint (McKinsey, 2006). The two high-tech companies were established in 1984 and 1988 respectively. Lenovo has been publishing CSR reports since 2009 and Huawei since 2008. At the time of this study, only 2008-2011 reports are available so only seven reports are reviewed (Anonymous, 2009a; 2009c; 2010a; 2010b; 2011b; 2012b; and 2012c). The reports cover two to eight general categories depending on the company and the reporting year. No priority of CSR aspects is indicated in the reports so it cannot be concluded that certain activities are considered to be more important than others.

The following is a summary of the companies' CSR activities. Because both companies adopt their own systems, this study adopted the thirteen-category system in the China CSR Map (2013) to standardize the reporting in the current paper. China CSR Map is a Chinese not-for-profit organization that collects information about CSR profiles of 574 organizations and 212 practitioners. It also serves as a platform of CSR services. The authors believe that its system is tailored to the Chinese economy and industries and suits the needs of this study. In most cases, Lenovo's and Huawei's CSR activities can be placed in these categories. When a CSR practice can fit in more than one category, the authors made an arbitrary decision. Among the thirteen categories in the China CSR Map, the two companies' activities can generally be placed in six. One more category that repetitively appears in both companies' reports but does not distinguish as a standalone category in the China CSR Map is supply chain management. Based on these findings, the following analysis will focus on seven CSR categories.

Anti-corruption and Transparency

It is a consistent element in Lenovo's CSR reports of 2009-2011 but is missing in Huawei's 2009 reports. Among many similar activities, Lenovo has established the company's Anti-Bribery and Anti-Corruption Policy, whereby it installs mandatory employee training against bribery and corruption, sets up Internal Code of Conduct, and provides multiple reporting channels. Huawei has developed Business Conduct Guidelines at external, internal and personal levels. Its CSR reports have also included issues such as compliance with the legislation and national standards in China, intellectual property rights, and anti-monopoly.

Environment

Lenovo's environment concerns are mostly in products and services through energy efficiency, recycling, environmentally preferred materials, green product packaging, partnership in greening, and the like. Huawei adopts a "Green Communications, Green Huawei, Green

World” strategy. It researches green solutions, energy conservation, emissions reductions, water resources preservation, wastewater management, management of water, gas and waste, green packaging, green logistics, and the like. Over the past several years, both companies expanded their concerns for the environment to both upstream and downstream partners.

Education

Lenovo has established the Next Generation Hope Fund for K-12 and higher education across the global market, sponsors Youth Public Entrepreneurship in China, and supports other education and research needs. Huawei sponsors outstanding students for further education and donates school supplies. Perhaps another way of seeing Huawei’s education commitment is narrowing the digital divide through free technological education.

Health and Safety

Lenovo Global Management Systems have received the ISO 9001 certification, further ensuring the company’s interest in product safety. It also shows commitments to providing a healthy and safe working environment to employees. Huawei has adopted a “Safety First, Prevention First” policy. It extends to manufacturing safety, engineering delivery safety, and product and service safety.

Philanthropy and Charity

Lenovo’s policy is donating equipment and up to 1% of pretax income to charity. Its overseas employees also volunteer in local communities. Huawei provides help in social programs, welfare, health, and disaster relief through financial, material and human resources.

Social Standards and Labor Protection

Lenovo aims at incorporating diversity in its corporate environment such as the Women in Lenovo Leadership program. Other activities include policies on privacy, harassment, complaint, competitive compensation, and opening reporting channels to employees. It also provides employees opportunities for advancement. In Huawei, narrowing digital divide, which raises social standards, is an important part of the CSR. Its eCity is designed to help improve urban management efficiency such as better functioning of government units, resources allocation and redundant reduction. Internally, the company emphasizes health and welfare, promoting individual advancement, employee general well-being, non-discriminating practices, fair compensation and benefits, support for career growth, capabilities enhancement, job training, stress relief measures, medical exams, diseases prevention and awareness, workplace health and safety, and the like. Huawei also includes fair labor standards in regard to child labor and forced labor practices; both issues have raised public concerns in developed economies.

Supply Chain Management

This is not a typical category in most CSR activities and is not listed as a distinct category of CSR working fields in the China CSR Map, but rather by way of parenthesis it falls within the category of “social standards and labor protection”. Although most of the contents can be also overlapping with other CSR categories, this is an emerging challenge and raises special

questions to MNEs who have expanded supply chains or value chains across borders. An important question relevant to all of the possible CSR categories is whose standards to follow when applied to business partners (i.e., global, parent-country or host-country standards) regarding workplace health and safety issues, employee training and career opportunities, sourcing, processing, impact to local communities and environment, and the like. Apparently this is crucial enough as a standalone item of CSR commitment. Both Lenovo and Huawei have extensive coverage in monitoring their suppliers, partly due to the Chinese government goals in carbon intensity and energy and fossil use, which directly affect supply chain operations (AMCHAM Shanghai, 2012). Lenovo starts out with a general concept of supplier compliance and extends to supplier CSR principles and policies in human rights, safety standards in material choices, shipping methods, packaging, production, procurement, environmental affairs, and regulations. It became a member of the Smartway program, a partnership with the U.S. Environmental Protection Agency to promote green effects through careful choice and planning in transportation to the United States and Canada. Huawei takes an overall approach of promoting sustainable development and social responsibility to suppliers, within which labor standards, employee health and safety, environmental protection, ethics, and CSR management systems are found. It also helps suppliers to manage their procurement, company's lifecycle, and innovation. By monitoring suppliers, Huawei hopes to gain confidence of global customers.

Table 2
LINKING CSR AND INTANGIBLE RESOURCES IN HUAWEI AND LENOVO

CSR Categories	Innovation	Human Capital	Ethical Culture
Anti-Corruption	<ul style="list-style-type: none"> ▪ Intellectual property rights ▪ Anti-monopoly 		<ul style="list-style-type: none"> ▪ Anti-bribery and anti-corruption policy ▪ Compliance with legislation ▪ Internal and external codes of conduct ▪ Business Conduct Guidelines ▪ Anti-bribery and anti-corruption training ▪ Multiple reporting channels
Environment	Environmental technology issues such as: <ul style="list-style-type: none"> ▪ Energy efficiency in product and services ▪ Green solutions ▪ Green packaging ▪ Green logistics ▪ Water resources preservation ▪ Energy conservation ▪ Emission reductions ▪ Recycling ▪ Partnership in greening 		<ul style="list-style-type: none"> ▪ Environmental protection ethics ▪ Green communications ▪ Green world strategy

Table 2 LINKING CSR AND INTANGIBLE RESOURCES IN HUAWEI AND LENOVO			
CSR Categories	Innovation	Human Capital	Ethical Culture
Education		<ul style="list-style-type: none"> ▪ Scholarships for K-12 and higher education across the global market ▪ Sponsorships in math, engineering, and sciences ▪ Free technological education ▪ Funding and equipment donations to school districts ▪ Partnerships with universities and research labs ▪ Youth public entrepreneurship in China 	
Health and Safety		<ul style="list-style-type: none"> ▪ ISO certification ▪ Commitment to healthy and safe work environment ▪ Product and service safety 	
Philanthropy			<ul style="list-style-type: none"> ▪ Donates equipment and income to charity ▪ Employees volunteer in local communities ▪ National volunteer week ▪ Focus on social programs, welfare, health, and disaster relief
Social Standards and Labor Protection		<ul style="list-style-type: none"> ▪ Diversity in corporate environment ▪ Women in leadership programs ▪ Policies on privacy, harassment, complaint, and compensation ▪ Non-discrimination practices ▪ Opportunities for employee advancement ▪ Child labor and forced labor policies 	<ul style="list-style-type: none"> ▪ Bridging digital divide through free technical education and equipment donations ▪ Support for children's medical center, breast cancer cure project ▪ New homes for struggling families
Supply Chain Management	<ul style="list-style-type: none"> ▪ CSR integration of both upstream and downstream partners ▪ Supplier compliance with environmental protection ▪ Help suppliers manage their procurement, lifecycle, and innovation 	<ul style="list-style-type: none"> ▪ Supplier compliance with labor standards and employee health and safety 	<ul style="list-style-type: none"> ▪ Supplier compliance with CSR principles and human rights policies ▪ Supplier ethical operations

Table 2 illustrates how the seven categories of CSR practices revealed in this study relate to innovation, human capital and ethical culture in the firm-industry specific competitive context. In sum, both companies show efforts in various CSR areas. Several CSR categories stand out to be of primary interest to Lenovo and Huawei. They are anti-corruption, environment, labor protection, and supply chain management. This study focuses on innovation, human resources, and ethics. Both companies show significant commitment to the last two, as seen in the ‘anti-corruption and transparency’ and ‘social standards and labor protection’ sections. These two areas are also infused in the ‘supply chain management’ section. For example, human rights in Lenovo’s supplier management and Huawei’s assertion of supplier ethical operation. It is noteworthy that even though both of them are in the high-tech industry, innovation is not an independent category but is indirectly present in the environment category. For example, Lenovo introduces new ways of logistic operations itself and expands to the suppliers such as the Smartway transportation, energy efficiency, green packaging, and green solutions. Huawei’s eCity project is an innovative approach to urban management problems. Innovation is also crossing over to product development as building energy efficient models is emphasized in both companies. Environment, as an area by itself, weighs heavily in both Lenovo and Huawei. A cross-category CSR activity is Huawei’s narrowing digital divide, which is part of community care, social standard education, and human resource development. It apparently has high priority in the company. The seven CSR categories revealed in this study directly or indirectly involve employees in terms of training, voluntary opportunities, and connection to local communities.

CONCLUSION

The value of corporate social responsibility (CSR) has been a topic of discussion among both scholars and practitioners. The resource-based view suggests a relation between CSR and competitive advantage. As part of a cross-cultural research project on CSR involving multinational high-tech firms, this study explores the relations between CSR approaches and three intangible resources, i.e., innovation, human resources, and ethical culture, based on the resource-based view and relates them to China’s high-tech industry. Organizations that have key competencies based on intangible resources should be more proactive and capable of engaging in CSR activities, which in return yields internal benefits by helping a firm improve its intangible resources and capabilities such as healthy labor relations, human capital development and retention, innovation capacity, and employee commitment. It also yields external benefits such as value chain social impacts, firm reputation, brand image, consumer confidence and loyalty, relations with suppliers, and relations with society.

In this paper, we propose a set of internal and external intangible resources in the Chinese high-tech industry and have focused our discussions on innovation, human capital, and ethics. The case study of Lenovo and Huawei shows that these three areas indeed received attention from both companies. Our findings indicate that both Lenovo and Huawei have committed resources to seven specific categories of CSR practices that directly or indirectly help them enhance innovation capabilities (e.g., green product development, energy efficiency in services, improved operation processes, green solutions, etc.), human resources (e.g., internal and external talent pool development, employee commitment, policies on diversity, equity and safety), and ethical culture (e.g., transparency, employee awareness of ethical issues, training and voluntary programs in CSR, compliance with global standards, etc.). It is particularly revealing that both companies assume responsibilities in monitoring the CSR practices in their supply chain partners. Perhaps, in addition to government interest, this is an effect of the Chinese culture.

Driven by collectivistic values, for example, both Lenovo and Huawei may feel that they have to offer parental guidance and assistance to the suppliers who may be smaller shops and/or dependent on them for business. The distinction of CSR-driven supply chain management as a standalone category of CSR commitment implies an effort to integrate suppliers into socially responsible partnerships and cross-border CSR practices, which differentiate Lenovo and Huawei as a responsible and active corporate citizen in larger society, which is a competitive advantage in the global marketplace.

Despite growing participation of multinational enterprises from developing countries (DMNEs) in the world economy, research and literature on the ethical orientation and CSR practices in and by DMNEs are relatively underdeveloped. This study expands prior research by exploring such corporate practices with special attention to China's high-tech industry. First, two factors have emerged, which help deepen the knowledge of China's dynamic institutional environment: trends in government directives and growing public pressures for sustainable development, both are largely driven by growing concerns over corruption, labor practices, and environmental issues. Second, integration of suppliers into the parent-firm CSR guidelines and support programs stand out as a differentiation strategy in both cases, reflecting a collectivistic CSR orientation, such as involving and assisting suppliers as in-group members. Third, firm-industry specific CSR approaches identified shed light on how DMNEs adapt their ethical and CSR policies and practices as they expand and operate across borders.

Our findings are limited to two cases of China's high-tech industry. It calls for further investigation to deepen the knowledge of CSR in relation to global strategy and competitiveness based on the resource-based view. This research project will continue with a more in-depth case study of the high-tech industry in China. Field trips, interviews and anecdotal data collection will be conducted to explore current practices and future opportunities for MNEs. Ultimately we hope to explain how firms located in countries of high individualism navigate the cultural norms of doing business in emerging economies associated with collectivistic values. Knowledge of cross-cultural differences will serve as an intangible resource that will strengthen the competitive advantage of firms from individualistic countries as they build their business in collectivistic countries. We anticipate that certain CSR programs that are long-term oriented and are mutually beneficial to society and businesses will be more likely to generate support from local stakeholders and thereby help sustain a firm's market entry niche and future growth in highly collectivistic and long-term oriented economies, such as China.

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